FRAMEWORK FOR ANALYSIS OF CULTURAL BASIC ASSUMPTIONS OF PUBLIC SECTOR CONSTRUCTION PROJECTS

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Degree of Doctor of Philosophy

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July 2018

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Thesis submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy in Department of Building Economics

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Declaration

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Name of the supervisor: Dr. Y.G. Sandanayake

Signature of the supervisor: Date:

Dedication

This piece of work is dedicated to my beloved father and mother for all the sacrifices they have done to create a better future for me.

Acknowledgement

There were many persons, who were of great importance and influence to me throughout the period in which this thesis was developed, whom I would like to most gratefully acknowledge.

First and foremost, I would like to acknowledge my gratitude to Dr.Sepani Senaratne and Dr.Yasangika Sandanayake for their enormous support and guidance given as my supervisors, especially for their patience and efforts in convincing and encouraging me throughout the study. Further, I highly appreciate the constructive feedback and guidance received from Associate Professor Thayaparan Gajendran.

I must express my gratefulness to Mr. D.N.A. Galappaththi, the Chief Quantity Surveyor of State Engineering Corporation of Sri Lanka; Ms. Devika Liyanage, the former Deputy General Manager (Contracts and Quantity Surveying) of Central Engineering Consultancy Bureau and, Mr. Bandura Sajotha of Department of Buildings, for their immense help in obtaining access to the selected cases. Further, it is my duty to forward gratitude to all the participants in the data collection process for their time, collaboration, openness and support in making my study a success.

My special thanks is forwarded to Ms.Daya Samarasingha for her invaluable involvement in copy editing the text. In addition, I appreciate the technical support received from Mr.A.A.D.W.V. Udayashantha. Especially, I am very much grateful to Mr.Gration Fernando, Dr.Kapila Devapriya, Dr.Sachie Gunatilake and Dr.Chandanie Hadiwattege for their invaluable help and support, which had a highly positive influence on my journey. Further, I would like to thank all my colleagues in the staff for their friendship, and assistance in numerous ways.

I am forever indebted to my parents, sister, brother and brother-in-law for their unconditional love, emotional sacrifices, and for their constant help and encouragement, without which I would have never realised my objectives. Finally, I forward my special thanks to my beloved friends Ms.Piyumi Alwis, Ms.Maneka Balasooriya and Mr.Harshadewa Alwis for their constant encouragement and priceless support given to make this study a success.

Abstract

Cultural differences cause conflicts among construction project participants, deterring success of the projects. Understanding such different cultural manifestations could help removing misunderstandings among sub-cultural groups and removing formal irrationalities. Among different cultural manifestations, basic assumptions better explain a cultural context as unconscious psychological processes in mind, which conceptualise culture as a root metaphor as opposed to culture as a variable. Knowledge on basic assumptions could help to predict the behaviours of project participants in a given situation, contributing for better negotiations, change management and conflict management among team members. Thus, this research aims to develop a methodology to determine the public sector building construction project culture in Sri Lanka, by analysing underlying basic assumptions. The literature synthesis based on construction and management literature led to define construction project culture and identify a methodology to derive basic assumptions by extending Value Orientation Theory (VOT). Positioning this research in interpretive research paradigm, descripto-explanatory case study was adopted as the research strategy. Three public sector building construction projects were selected as the cases, using theoretical sampling strategy. Construction project culture was considered as the main unit of analysis. Cases were restricted to traditional method contracts, which were commonly used in Sri Lankan public sector building construction projects. Team setting of the selected projects consisted of public sector clients, public sector consultants and private sector contractors. Nine semi-structured interviews, observation of two progress review meetings and documentation review per case were used for data triangulation. During data collection, responses for internal integration and external adaptation problems of each project were questioned and observed. Code based content analysis was used in data analysis. Patterns of underlying basic assumptions were derived to determine the basic assumptions of each dominant sub-cultural group of contractor, consultant and client pertaining to eleven cultural dimensions. More insight into the construction project culture could be reached through the analysis of basic assumptions in integration (shared view of basic assumptions), differentiation (basic assumptions shared only in sub-cultures) and fragmentation (ambiguities in basic assumptions) perspectives. A guide to determine basic assumptions of public sector building construction projects in Sri Lanka was designed by mapping the identified basic assumptions with ten key features of external cultural setting. This research mainly contributed to the existing knowledge domain of construction project culture. It demonstrated how VOT could be used to extract basic assumptions to understand construction project culture. Research findings highlighted the possible conflicting and consistent/compatible basic assumptions among client, contractor and consultant, which could bring in negative and positive implications to project. The guide designed could be effectively used for project decision making during change initiatives, conflicting situations and negotiation processes. Further research of this study suggested a longitudinal study along the construction project life cycle, to understand how basic assumptions emerged from new learnings and transformation of culture happened to understand the dynamism of culture.

Key Words: Basic Assumptions, Construction, Project Culture, Public Sector, Root-Metaphor

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List of Abbreviations

CPQ	Cultural Perspectives Questionnaire
CVF	Competing Value Framework
DG	Director General
DGM	Deputy General Manager
MOU	Memorandum of Understanding
OPD	Out Patient's Department
VOT	Value Orientation Theory

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CHAPTER 01: INTRODUCTION

1.1 Background

The construction industry has its run through different human interactions along the design and construction phases of a construction product. Hence, behaviour of each and every individual within a project is significant to its success. 'Culture' is believed to create differences in behaviour of the people involved (Fellows, Grisham & Tijhuis, 2007). Cultural differences could create misunderstandings between people and between businesses, creating a risk for conflicts and dissatisfaction between construction project participants (Tijhuis, 2011). Ankrah and Langford (2005) indicate that conflicts related to human interaction could occur with cultural differences and negatively affect the achievement of project objectives.

As per the findings of the research carried out by Kivrak, Ross, Arslan and Tuncan (2009) in United Kingdom about 'impacts of cultural differences on project success in construction', cultural awareness is a significant factor in determining the success or failure of a project in a multi-cultural background. According to Kendra and Taplin (2004), it is a must to develop a project management culture based on shared cultural values of the organisation's members for better project outcomes. Thomas, Marosszeky, Karim, Davis, and McGeorge (2002) put forth similar views and elaborate that clan type of a culture within the project team, where the project manager acts as a mentor by placing a premium on teamwork, participation and consensus can lead to achieve better quality outcomes in construction projects. In order to bring such cultural awareness for effective project management, it is important to analyse how culture exists in a construction project setting.

Project managers have an important contribution to make towards knowledge management in project environments, where a favourable project culture and environment is vital, if tacit knowledge is to be exploited for the purpose of innovation (Egbu, 2001). Vick, Nagano and Popadiuk (2015) analyse how relationship-based, risk-taking, rule-following and result-oriented cultures are important for knowledge sharing in collaborative technological innovation projects with university teams

involved. They emphasise the importance of culture within teams and projects for successful knowledge transfer. Similarly, Ngowi (1997) states that a construction project team with members from different cultural backgrounds are more innovative than team members from similar cultural backgrounds. The author further highlights the importance of understanding the cultural background of construction project team members in project management to create a conducive environment for innovation. These studies as a whole indicate the significant role that project culture plays in bringing innovation and successful project outcomes in construction.

Construction project culture is still a nascent and less defined area (Liu and Fellows 2013). A proper definition for construction project culture has not been much discussed within extant literature. A general definition that is derived by organisational cultural definitions refers to project culture as shared beliefs, values and basic assumptions, which determine the way the project is processed and the nature of relationships, which are built among members (Zuo and Zillante, 2005). Several other attempts to explain construction project culture include some models developed by Kumaraswamy, Rowlinson, and Phua (2001); Kumaraswamy, Rowlinson, Rahman, and Phua (2002), and Zuo (2008) to identify components of project culture. In addition, Ankrah, Proverbs and Debrah (2009) have identified some factors affecting the project culture. However, these studies have limitations, as discussed next, in offering an in-depth analysis of construction project culture.

1.2 Research problem justification

Most of the current cultural analysis in construction context refers to culture at a surface level, which includes artefacts, norms, behaviours, values, to name a few. However, the leading authors on general cultural studies such as Kluckhohn and Strodtbeck (1961), Turner (1983) and Schein (2009), highlight the value of identifying the core culture in a cultural analysis. This core culture includes identifying the underlying basic assumptions of the culture. The reason is that the underlying basic assumptions and their patterns of existence provide a true picture of a cultural setting (Schein 2009). In addition, Wei and Miraglia (2017) too indicate that learning basic assumptions in an organisational cultural research is more important than studying the

artefacts, norms, and shared beliefs. Highlighting the importance of studying basic assumptions in a cultural analysis, Schein (1990) mentions that it is possible for a group to hold conflicting values and behaviours, while having complete consensus on the underpinning basic assumptions. Similarly, it is quite possible to have consensus on the behaviours and values and later develop serious conflicts due to having no consensus on critical basic assumptions within the group. This emphasises the danger of only studying values and behaviours of a cultural context, while disregarding basic assumptions in the cultural analysis. Thus, deciphering construction project culture through underlying basic assumptions would bring in more insight into construction project cultural context. However, underlying basic assumptions of a construction project are yet to be unveiled.

Cicmil and Gaggiotti (2014) explain that one reason for project culture is being used as a 'slippery' concept in management context is due to the difficulties of its identification. Elaborating on the uses and misuses of the concept of culture in construction management context, Fellows and Liu (2013) highlight the methodological issues arising by adopting single models and trying to measure cultural dimensions quantitatively based on functionalist paradigm. They identified how the popular Hofstede's (1980) model of national culture is used to measure cultures at different levels such as organisational, industry and individual without proper attention to the level of analysis. Popular attempts to elaborate construction project culture in functionalist paradigm include the work by Ankrah, Proverbs and Debrah (2009), Thomas et al. (2002) and Zuo (2008). Gajendran, Brewer, Dainty, and Runeson (2012) argue that non-functional paradigm or qualitative attempts allows the behaviour of construction project participants to be properly contextualised within the temporary multiple organisations. Thus, a research focusing on developing proper methodologies to understand construction project culture in non-functional paradigm would be worth initiating.

Within the cultural research arena, there are two main conceptualisations of culture, either as a 'variable' or as a 'root metaphor'. The researchers into the belief of culture as a variable, try to identify the effect of culture on various organisational aspects

(Smircich, 1983). Following that belief, Thomas et al. (2002), Zuo (2008) and Ankrah et al. (2009) have considered project culture as a variable in their studies. For example, Thomas et al. (2002) argue that the construction industry would highly benefit by developing a 'deeper relationship', which leads to 'clan types' of cultures. The authors believe in the possibility of developing a 'clan type' of culture within a construction project team. According to Smircich (1983), researchers who believe culture as a root-metaphor conceptualise culture either as a system of thought, some patterns of symbolic action or as some unconscious process. These manifestations of culture obviously become difficult to change, other than through a transformational process. Schein (1990), who defined organisational culture to be a pattern of underlying basic assumptions of the group members, apparently has considered culture as an 'unconscious process of mind' and also believed in difficulty of managing culture. Hills (2002) describes how understanding of basic assumptions of cultural groups have been successfully used in negotiations between the groups indicating some empirical evidence. Schein (2009) suggests that it is important to understand these patterns of underlying basic assumptions, so that managers can take them into account during change initiatives. Further, according to the author, managers can plan the change processes as not to hurt those basic assumptions, but to use those assumptions identified tactfully. Thus, there are practical advantages in deciphering basic assumptions in a cultural study.

Martin (2004) disagrees with the definition of culture as a "shared" phenomenon among the members of the organisation. Martin (2002) describes that culture consists of the patterns of meanings that link the cultural manifestations together, sometimes in harmony (integrated perspective), sometimes in bitter conflicts between groups (differentiated perspective), and sometimes in webs of ambiguity, paradox, and contradiction (fragmented perspective). For these reasons, it is too simple to define culture in unifying, harmonious terms, for example, in terms of values that are espoused by management and apparently shared by most employees (Martin, 2004). The use of the term 'shared' in the definition of construction project culture by Zuo and Zillante (2005) as explained in Section 1.1, indicate culture as a unifying and integrated phenomenon among the members in the construction project cultural

context. Kumaraswamy et al. (2002) highlight that despite a dominantly shared culture, construction project culture consists of several sub-cultures. Further to Gajendran et al. (2012), there could be ambiguities and paradoxes in meanings created by cultural manifestations, contributing to construction project culture, which are mostly disregarded by many researchers. Accordingly, a single cultural study investigating all three perspectives (integration-differentiation-fragmentation) is worth carrying out within the construction project context.

In addition, there is ample empirical evidence for cultural differences between public and private sectors. Nutt (2005) explains that the main reason for such cultural differences between private and public resides with the purpose or objective of organisation. According to Nutt's (2005) explanations, the objective of the private sector is to create wealth for shareholders, while the public sector intends to provide a service to fulfil a public need. Harrison and Baird (2015) carried out a research on identifying the organisational culture of public sector organisations in Australia. They conclude that local councils in Australia have matched the private sector organisations but, government departments and agencies are lagging behind the private sector in terms of the cultural factors such as; outcome orientation and innovation. Rukh and Qadeer (2018) indicate that analysis of culture of public organisations separately is extremely important and in great demand because, those organisations operate in complex social, political and economic environments.

Overall, an attempt to identify proper methodologies and deciphering construction project culture in public sector through underlying basic assumptions would add more value to the organisational behavioural areas such as knowledge management, change management, quality management, conflict management, human resource management and so on in public sector construction projects.

The research question therefore is;

> "*how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives*?"

As described by Kumaraswamy et al. (2002), national culture and industry culture are major contributors to project culture. Since national cultures differ across countries, cultural studies particularly demand separate studies for different geographical regions. The limited number of cultural studies in construction related to the Sri Lankan context include a comparative organisational cultural study about contracting and consultancy organisations (Rameezdeen and Gunarathna, 2003) and a study on the effect of organisational culture on organisational learning of public sector contacting organisations (Senaratne and Victoria, 2014). However, these studies discuss about culture at organisational level only. A research with the focus of understanding culture at the project level in the Sri Lankan context is not popular in the construction research arena. Therefore, this research intends to fill these existing research gaps, mainly focusing on the Sri Lankan public-sector construction industry.

1.3 Aim

The aim of this study is to develop a methodology to determine the public sector building construction project culture in Sri Lanka, by analysing underlying basic assumptions.

1.4 Objectives

The aim will be achieved by following objectives:

1. review the concept of basic assumptions in a cultural context, in order to develop a working definition and a conceptual framework, which help to understand construction project culture using underlying basic assumptions
2. develop a methodology to derive underlying basic assumptions of public sector building construction projects
3. analyse patterns of underlying basic assumptions to derive basic assumptions of the sub-cultural groups of contractor, consultant and client in public sector building construction projects in Sri Lanka
4. analyse the underlying basic assumptions of public sector building construction projects in Sri Lanka, using the integration, differentiation and fragmentation perspectives of culture

5. design a guide to determine the public sector building construction project culture in Sri Lanka, using underlying basic assumptions of dominant sub cultures

1.5 Overview of the Research Method

Case study was identified as the research strategy for this research. Three public sector construction projects from the Sri Lankan context were selected as the case studies considering the 'construction project culture' as the unit of analysis. Data collection techniques included semi-structured interviews, observations and documentary survey for effective data triangulation. A pilot case study was carried out to test and refine the guidelines for interviews and observations. In the detailed case studies, nine project team members from each case were interviewed in-depth. The interview process included indirect questioning with the intention of extracting basic assumptions of the project culture. Observations were mainly made by participating in progress review meetings of each selected project, while recording observation data based on a pre-developed guideline. Data were further collected from consultancy and construction contract documents and from some selected progress review meeting minutes. Within-case analysis and cross-case analysis were done using code based content analysis during the data analysis process.

1.6 Scope and limitations

This study was limited to the Sri Lankan context with all cases selected being limited to public sector building construction projects, considering the cultural specificity demands on different studies across different sectors and national territories. All the selected projects were on traditional procurement method, to avoid possible effects of different procurement methods on project culture, if any. The number of cases was limited to three with a robust process of data collection, using three data collection techniques (semi-structured interviews, observations and documentation) allowing adequate data triangulation followed by ample data saturation during case analysis. Project team setting of the selected cases was confined to private sector major contractors, public sector clients and public sector consultants, considering the popularity of such a team setting for public sector building construction projects in the

Sri Lankan context. The detailed limitations of this research can be found in Chapter 10.

1.7 Significance of the study

This research developed a framework to understand the public sector building construction project culture as a root metaphor by using patterns of underlying basic assumptions as the cultural manifestation. In relation to this framework, a methodology was identified and empirically tested to extract the patterns of basic assumptions and the basic assumptions using internal integration and external adaptation problems of the construction project. Following the methodology identified, underlying patterns of basic assumptions and the basic assumptions of the client, contractor and consultant sub-cultures of the public sector building construction project culture of Sri Lanka were extracted and analysed, using integration, differentiation and fragmentation perspectives. This knowledge created provides a deeper understanding of the existing construction project culture of Sri Lanka, which could be used for decision making, change management processes, negotiations and conflict management in project management practices.

1.8 Chapter breakdown

Chapter breakdown of the thesis is described as follows (refer Figure 1.1 for a map between chapters and the objectives of the research):

Chapter 01: Introduction to the Research - The background of the research, research problem, aim, objectives, method of study, the scope and limitations and the chapter breakdown are described in this chapter.

Chapter 02: Project Culture in Construction - A literature review on the concept of basic assumptions is discussed in detail. Further, different attempts in identifying project culture within the construction context are analysed. Finally, the suitability of adopting Value Orientation Theory to extract basic assumptions for understanding public sector building construction project culture is discussed in this chapter.

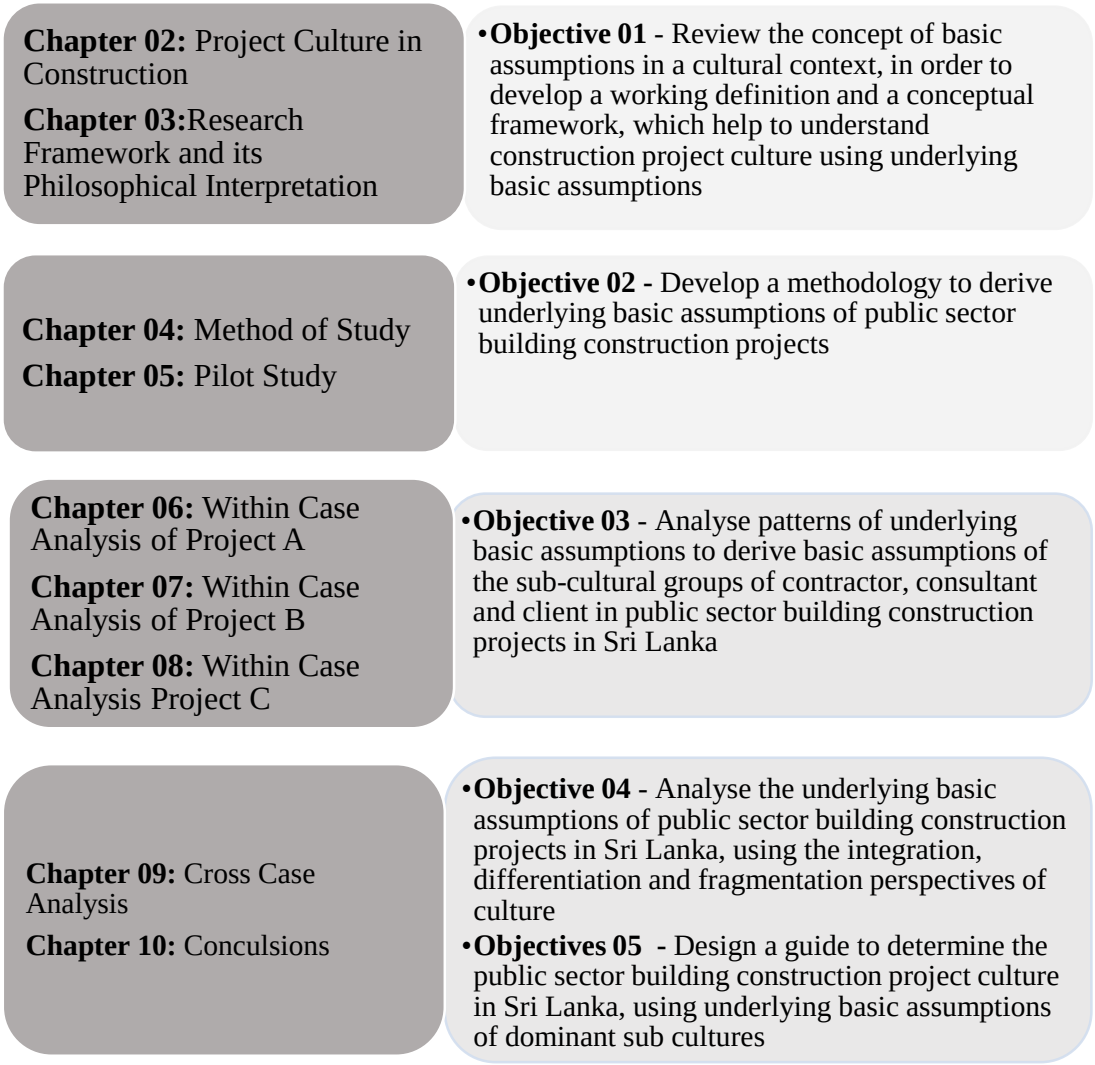


Figure 1.1: Map between chapters of the thesis and the objectives

Chapter 03: Research Framework and its Philosophical Interpretation - This chapter includes elaborations on the research framework development to understand public sector construction project culture and details on its philosophical position. This chapter argues on the suitability and importance of conceptualising construction project culture as a root-metaphor.

Chapter 04: Method of Study - Development of a research methodology to extract underlying basic assumptions of a public sector building construction project is presented in this chapter. Case study was used as the research strategy. How different

data collection techniques are combined for proper data triangulation for this cultural study is elaborated.

Chapter 05: Pilot Study - The findings of the pilot case study is presented in this chapter. The main objectives of the pilot study include; testing the appropriateness and robustness of the questions being developed, rehearsing in-direct questioning as a pre-test and testing the ability to extract basic assumptions form the data being collected.

Chapter 06: Within Case Analysis of Project A - The analysis of the empirical data of Project A by constant comparison, coding, and theme building was done within this chapter. The patterns of basic assumptions and the basic assumptions of the sub-cultural groups of Project A are presented in this chapter.

Chapter 07: Within Case Analysis of Project B - The analysis of the empirical data of Project B by constant comparison, coding, and theme building was done within this chapter. The patterns of basic assumptions and the basic assumptions of the sub-cultural groups of Project B are presented in this chapter.

Chapter 08: Within Case Analysis of Project C - The analysis of the empirical data of Project C by constant comparison, coding, and theme building was done within this chapter. The patterns of basic assumptions and the basic assumptions of the sub-cultural groups of Project C are presented in this chapter.

Chapter 09: Cross Case Analysis – This chapter presents the elaboration of basic assumptions of client, contractor and consultant sub-cultures across the three cases and a further analysis of those basic assumptions using integration, differentiation and fragmentation perspectives. In addition, a guide to determine basic assumptions of public sector building construction projects in Sri Lanka is presented.

Chapter 10: Conclusions - Conclusions derived from the research are discussed in this chapter highlighting contribution to knowledge and implications for the practice. Finally, limitations of the research together with possible areas for further research are presented.

1.9 Summary

This chapter discussed the focus of this research, justifying the research aim of developing a methodology to determine the public sector building construction project culture in Sri Lanka, by analysing underlying basic assumptions. The importance of basic assumptions as the core culture and which provide more insight into culture for better management of project organisational behavioural areas such as conflict management, change management, quality management and so on was discussed in detail. In addition, the outline plan set to achieve the said aim was discussed briefly using case study research strategy.

CHAPTER 02: PROJECT CULTURE IN CONSTRUCTION

2.1 Introduction

This chapter presents a review of literature on the project culture in construction and the prevailing research issues. Initial discussion includes an elaboration of generic cultural literature including contents of culture, levels of cultural manifestations and values and underlying assumptions of culture, focusing on value orientation theory. Next, a detailed analysis of existing cultural literature is carried out to identify the possibility of deriving basic assumptions of construction project culture through its sub-cultures using three perspectives theory. Finally, the necessity of carrying out cultural research for public and private sectors, the research issues in understanding construction project culture through organisation cultural models and challenges in identifying a unique project culture are discussed

2.2 Complexity of culture in construction

Both culture and construction are considered as complex. Culture is considered to be governing complex human behaviours, while construction involves many and complex human activities throughout its design, production, occupation and disposal processes (Fellow and Liu, 2010). As described by Tijhuis (2011), individual human beings have collective values and behaviours creating a culture, which can be recognised by analysing the social groups to which they belong. Further, related to the construction industry, Tijhuis (2011) elaborates that such a social group may be considered as an industry segment, companies within the industry segment, geographical region of an industry segment or individuals within it. Analysing each of it unveils the professional culture, industry/business culture, national or regional culture and family culture respectively. These different levels of culture create a complex arena in which cultural issues are emerging and influencing behavioural interactions within construction.

Fellow et al. (2007) further describe that projects in construction are seen as temporary multiple organisations, where members from different organisations are brought together. Hence, construction projects present mixes of cultures of constituent

organisations and nations as well. These cultures are of a complex nature due to the combination of different artefacts, beliefs, norms, values, manifestations of behaviour, language to name a few. These contents of culture are discussed in detail in the next sub section.

2.3 Contents of culture

Culture is visible as a set of manifestations. Basically, this long list of cultural manifestations includes values, norms, basic assumptions, relationships, patterns of behaviours, rituals, heroes, symbols and formal practices such as; pay levels, structure of the hierarchy, job descriptions, and other written policies (Hofstede, 2001; Marrewijk, 2007; Martin, 2004; Zuo, 2008). Many researchers have tried to define culture by using these cultural manifestations.

For example, Duarte and Snyder (1999) define culture as a set of learned mores, values, attitudes and meanings that are shared by the members of a group where culture is often one of the primary ways to differentiate one group from another. A similar definition put forward by Hofstede (2001, p.552) is that culture is "transmitted and created content and patterns of values, ideas, and other symbolic meaningful systems as factors in the shaping of human behaviour and the artefacts produced through behaviour". Duarte and Snyder (1999) further describe culture as hidden 'scripts', which are often partially or totally hidden. However, it can affect people's assumptions, behaviours, and expectations about leadership practices, work habits, and team norms. They further describe that these hidden 'scripts' are created through repeated interactions between members.

Researchers have tried to classify these different cultural manifestations for better understanding. Among such researchers, Martin (2004) has identified these cultural manifestations in three groups as; cultural forms, practices and content themes. Kappos and Rivard (2007) describe these three classifications as follows:

a. **Cultural forms –** These include physical and behavioural products of the culture that serve to describe or paint a picture of a cultural reality; take the

form of stories, scripts, humour, jargon and/or physical arrangements such as dress code, architecture, interior decor.

b. **Practices including both formal and informal practices -** Formal practices are typically written down; they describe how an organisation is formally organised (structure); what individuals are required to do and how they should do it (task and technology considerations); rules and procedures actors are required to follow and financial controls. Informal practices are typically not written down and they evolve through social interaction and involve behavioural rules and norms that have evolved through interactions among the members of a culture.
c. **Content themes -** These include cognitive and attitudinal aspects of culture; describe what people believe to be true and what should be true and may include values, beliefs and assumptions.

With regard to the construction project culture, Marrewijk (2007) comes-up with two episodes of culture in Environ mega project, in-relation to the aforesaid cultural classification of cultural forms, practices and content themes. Marrewijk (2007) indicates the presence of two dominant cultural episodes, elaborating the episode of ‘Gideon’s Gang’ (1996–2001) being dominant for innovative and entrepreneurial value orientations related to the content themes. During the other episode called ‘Diplomats’ (2001–2004), these new value orientations replaced the former project culture at the realisation phase with control, accountability, integrity, stability and lawfulness.

However, mere presentation of these groups of cultural manifestations adds no value, where the in-depth analysis of culture requires the understanding of the relationship between these cultural manifestations, which is described in the next sub-section.

2.4 Levels of cultural manifestations

Most researchers explain that understanding organisational culture of a given set-up involves the interpretation of these cultural manifestations (Martin, 2004; Schein, 1984). Accordingly, Schein (2004, 1990, 1984) describes that these cultural

manifestations can be identified in three levels as; 'visible artefacts' in the primary level, 'espoused values' at the next level and 'underline assumptions' at the highest level, giving the proper interpretation to the exact organisational culture (refer Figure 2.1). Visible artefacts contain the constructed environment of the organisation, its architecture, technology, office layout, manner of dress, visible or audible behaviour patterns and public documents such as charters, employee orientation materials, stories. Further, as he describes analysing these visible artefacts, it is possible to answer "how" a group constructs its environment and "what" behaviour patterns are visible among the members. However, to answer the question "why" a group behaves in a certain manner, it is required to analyse the espoused values and basic assumptions (Schein, 1984). A model developed by Rousseau (1990) (refer Figure 2.2), is consistent with Schein (1984)'s model, but identifies two more layers of cultural manifestations, namely; 'behavioural norms' and 'patterns of behaviour'.

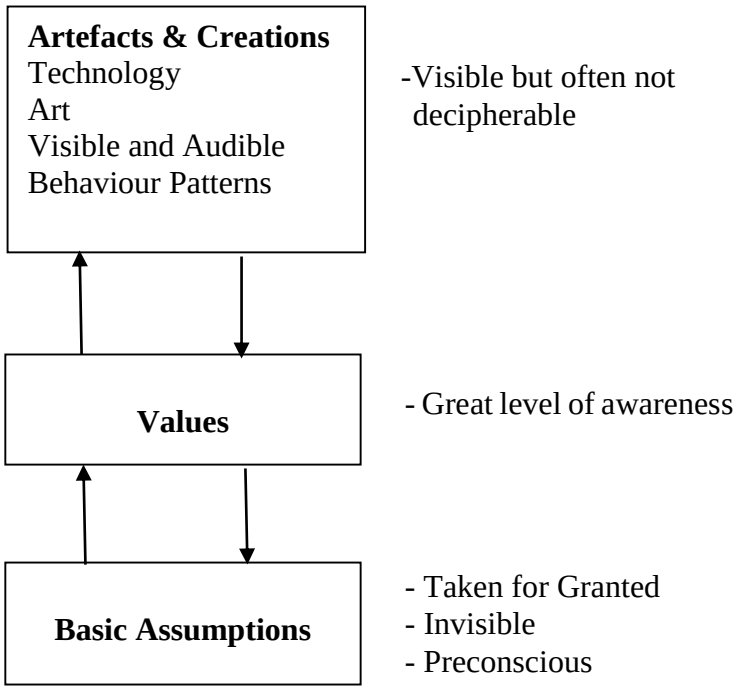


Figure 2.1: Levels of culture

Source: Adapted from Schein (1984)

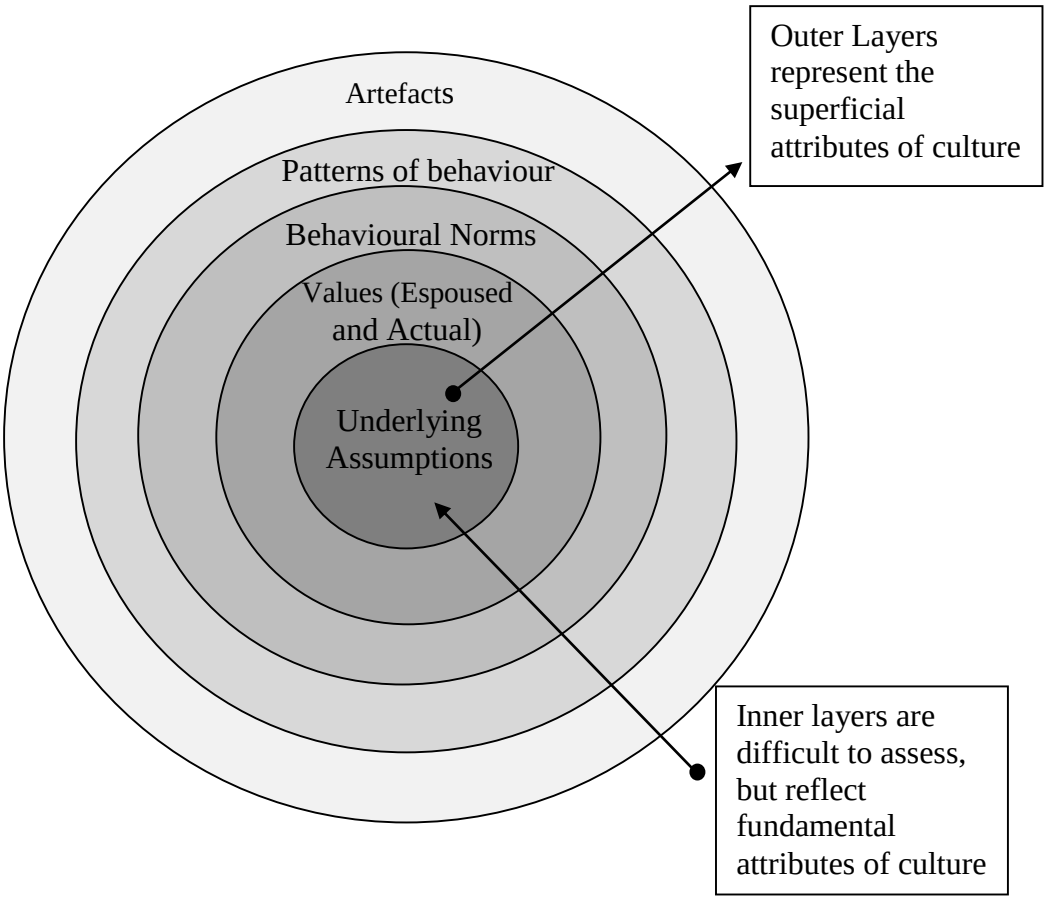


Figure 2.2: Levels of culture
Source: Adapted from Rousseau (1990)

Hatch (1993) identifies the links between these artefacts, values and basic assumptions, which Schein (1984) has not addressed. These links are called cultural dynamics and are depicted in Figure 2.3. These cultural dynamics include manifestation, realisation, symbolisation, and interpretation. In order to do more clear elaborations, Hatch (1993) introduced a new element called 'symbols' to his model. According to Hatch (1993), Schein's elaborations focus on what artefacts and values reveal about basic assumptions, however, his concern is about how cultural elements are related along the links answering the question "How is culture constituted by assumptions, values, artefacts, symbols, and the processes that link them? (p.660)". Manifestation refers to any process by which, perceptions, cognitions and emotions give rise to basic assumptions. Realisation is the process by which the values give rise to transform to and maintain different behavioural outcomes. Symbolisation refers to culturally contextualised meaning creation via the prospective use of objects, words

and actions. Finally, the study of interpretation processes calls for investigating how symbols are moulded by existing ways of understanding. As per Schein (1983) and Martin (2002), it is the underlying basic assumptions or the inner layers in Figure 2.2 that really help to understand what the culture of a given group is. Trying to interpret culture based on the artefacts, behaviour patterns and behavioural norms, which is the visible part of the culture is regarded as being misleading. Hence, this idea is discussed in-depth in the subsequent sub-section.

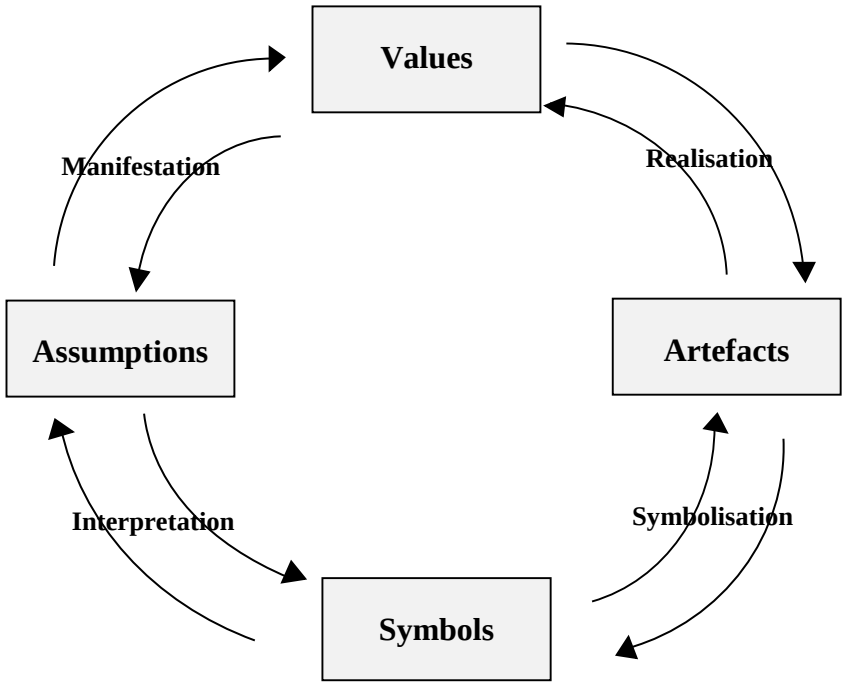


Figure 2.3: The cultural dynamics model

Source: Hatch (1993)

2.5 Values and underlying basic assumptions of culture

Considering the importance of inner layers in culture, many researchers try to interpret culture using values and underlying basic assumptions (refer Rokeach, 1979; Schwartz, 1994; Hills, 2002). Since underlying basic assumptions are the taken for granted values (refer Schein, 1984; Hofstede 1980), it is important to understand in detail what values really are.

2.5.1 Values in Culture

Values are micro–macro concepts. At the micro level of individual behaviour, values are motivating as internalised standards that reconcile a person's needs with the demands of social life. They allow individuals to evaluate the options that are available to them for action. At the macro level of cultural practices, values represent shared understandings that give meaning, order and integration to social living (Parashar, Dhar, & Dhar, 2004). According to Kluckhohn (1951, p.4), value is; "A conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of action". Therefore, a value is an enduring belief in an individual or a group, which gives preference to a course of action or thought over its opposite.

Rockeach (1973) is into cultural research at individual level, focused on studying human values. Rokeach (1973) identifies thirty six numbers of values, which he lists under two types of value categories called 'terminal values' and 'instrumental values', each consisting of eighteen end-states. Terminal values refer to desirable end-states of existence; the goals that a person would like to achieve during their lifetime. These may vary among different groups of people in different cultures. Instrumental values refer to preferable modes of behaviour. These are the preferable means of achieving the terminal values. These values can be ranked according to their relative importance and a tool has been developed by Rokeach (1973) called Rokeach Value Survey (RVS). As described by Yeganeh (2009), Rokeach Value Survey is a very simple and practical tool that can be used for comparisons of values both at individual and collective levels. As stated by Hills (2002), Rokeach's (1979) thirty-six values are at

most thirty six values held by human beings and are considered to be widely, and perhaps universally held.

Another cultural interpretation framework for individual level was brought in by Schwartz (1994) by doing some modifications to the long list of values of Rokeach (1979). Importantly, introduction of a dynamic structure of relations among the values has been done by Schwartz (1994). The author identifies that values in the form of conscious goals, represent responses to three universal requirements with which all individuals and societies must cope. Those three universal requirements include: needs of individuals as biological organisms; requisites of coordinated social interaction; and, requirements for the smooth functioning and survival of groups. Ten motivationally distinct types of values were derived from these three universal requirements; power, achievement, hedonism, stimulation, self-direction, universalism, tradition, conformity, security. Answering the question whether this set of ten value types exhaustive of all the main types recognised in different cultures, Schwartz (1994) says that it is possible to classify virtually all the items found in lists of specific values from different cultures into one of these ten motivational types of values.

According to Yeganeh (2009), the typology of Schwartz concerns the very fundamental values suitable to be applied in a wide range of research areas such as marketing, consumer behaviour, human resource management, organisational behaviour, cross national comparisons and even finance and economics. Schwartz made a clear distinction between individual and other cultural levels of analysis and presented the results of each level separately. The most important characteristic of Schwarz's model is that he studied both the content and structure of human values. The content of every value is related to the criteria people take into account when evaluating a situation or taking an action. By contrast, the structure is related to the organisation of these values based on their similarities and differences.

It is apparent that Hofstede's use of the concept of 'value' in defining national culture dimensions (Hofstede, 1980) (which include; power distance, uncertainty avoidance, masculinity-femininity, collectivism-individualism) and organisational culture

dimensions (Hofstede, Neuijen, Ohayv, & Sanders, 1990) (refer Sub-Section 2.8 for dimensions) only proposes the structure of human values and not the content as in the work of Schwartz (1994). According to Yeganeh (2009), though Hofstede (1980) argues that his cultural dimensions could only be applied at the national level, he does not provide a clear argument in support of this assertion. According to the definition of Hofstede (1980), culture has a collective nature that can be applied to various groups of society. In fact, if he could use mean scores for analysing culture at national level, it is possible to use them at different levels such as industry, corporation, department, function and so on.

According to Homer and Kahle (1988), values give rise to a set of attitudes, which in turn decide the behaviour of a given individual. This sequence is called by them as value – attitude – behaviour hierarchy. Duarte and Snyder (1999) carry a similar view on culture. As they explain, culture is hidden 'scripts' that people use to guide their behaviours, where these scripts are created by repeated interactions between members of the group that create them. Over time, those become second nature and serve as shortcuts for guiding actions and making decisions. Therefore, 'hidden scripts' seems another interpretation of so called underline assumption described by Schein (1983, 1984).

2.5.2 Basic Assumptions in Culture

Schein (1984) also holds a similar cyclical interpretation as Hatch (1993) to the formation of culture. It is that values of an individual or a group that lead to behaviour and, when the behaviour begins to solve the problem, which leads to the behaviour in the first instance, that value is transformed into a basic assumption. Schein (1983, 1984, 2009) explains basic assumptions as mostly unconscious and are taught to new members as a reality and as the correct way to view things. Values become apparent by interviewing key members of the organisation to identify the reasons for the behaviour of the members. Nevertheless, he argues that to really understand the culture, it is important to identify the underlying assumptions. In addition, Hofstede (1980) also refers these underlying basic assumptions as 'taken for granted values'.

Thus, underlying basic assumptions or otherwise called taken for granted values are considered as the core of the culture or the essence of the culture (Schein, 1984).

The Value Orientation Theory (VOT) by Kluckhohn and Strodtbeck (1961) is one of the theories that best describes the value content of culture. Many of the researchers, who made the attempt to capture the taken for granted values or the basic assumptions of culture in cultural interpretations have followed the work of Kluckhohn and Strodtbeck (1961) (refer Schein, 1984; Hofstede, 1980). It is important to note that though the term 'values' is used in a more generic manner in this theory, it refers 'values' specifically for 'taken for granted values', thus the basic assumptions of humankind. Initially, VOT put forward some three basic assumptions (Hills, 2002, p.4) for applying the theory:

- "There is a limited number of common human problems, for which all people must at all times find some solution".
- "While there is variability in solutions of all the problems, it is neither limitless nor random but is definitely variable within a range of possible solutions".
- "All alternatives of all solutions are present in all societies at all times but are differentially preferred".

Further, Kluckhohn and Strodtbeck (1961) suggest six basic types of problems to be solved by every society, together with possible three orientations for each of the problem described as follows:

1. What is the nature of human beings: are they good, evil or neutral?
2. What is our relationship to nature: are we subjugated to nature, in harmony with nature, or do we have mastery over it?
3. What is our relationship to other human beings: is it lineal (ordered position within groups), collateral (primacy given to goals and welfare of groups), or individualistic (primacy given to the individual)?
4. What is our primary mode of activity: is our basic orientation one of being-in-becoming, doing or reflecting?
5. How do we view time: do we focus on the past, present, or future?

6. How do we think about space: is it public, private, or mixed?

A preferred orientation by an individual or a society can be considered as a basic assumption of the individual or the society. Kluckhohn and Strodtbeck (1961 cited Hills, 2002) then propose means of measuring the orientations it produced, which are considered as a universal set of human values or universal set of basic assumptions. They suggest intensive interviewing to be used with a series of probing questions for exploring each of the basic assumptions with the interviewee. However, they also recognise that many people find it difficult to think in the abstract, so suggested that real-life situations to be outlined, which involve the particular orientation being investigated. Maznevski, DiStefano, Gomez, Noorderhaven and Wu (2002) use VOT to develop 'Cultural Perspectives Questionnaire (CPQ), version 4' to explore cultural orientations. This framework adds insight and new perspectives to critical questions in cross cultural management research. This framework has many advantages such as comprehensiveness, dimensions' exclusiveness, and parsimony. The data being collected by the CPQ are interval, allowing the application of a wide range of statistical techniques. Another major advantage in applying this framework is that it distinguishes between individual and aggregate levels. Accordingly, researchers can make hypotheses and test them at the individual level or in aggregate to develop descriptions to examine variance both within and between cultures (Maznevski et al., 2002).

Schein (1983, 2009) identifies a set of such underlying basic assumptions of organisational culture, which are summarised in Table 2.1. Hills (2002) has identified some underlying basic assumptions of culture at individual level, which are not included in Schein (1983, 2009)'s work (refer Table 2.1). However, there is no such attempt popular for identifying the basic assumptions at project culture level in the extant literature. According to Table 2.1, Schein (1983, 2009) indicates possible cultural orientations (basic assumptions) for some cultural dimensions such as; the organisation's relationship to its environment, the nature of human activity, the nature of reality and truth, the nature of time, the nature of human nature, the nature of human relationships, homogeneity vs. diversity and unknowable and uncontrollable.

Similarly, Hills (2002) indicates possible cultural orientations for some cultural dimensions such as; work, gender, the state-individual relationship and motive for behaving.

Table 2.1: Underlying assumptions of organisational culture

Cultural Dimension	**Questions to be Answered**	**Orientations (Basic Assumptions)**
Adapted from Schein (1983)		
The organisation's relationship to its environment	Does the organisation perceive itself to be dominant, submissive, harmonising, searching out a niche?	- Dominant - Submissive - Harmonising - Searching out a niche
The nature of human activity	Is the "correct" way for humans to behave to be dominant, harmonising, or fatalistic?	- Dominant - Harmonising - fatalistic
The nature of reality and truth	How do we define what is true and what is not true; and how is truth ultimately determined both in the physical and social world? By pragmatic test, reliance on wisdom, or social consensus?	- Pragmatic test - Reliance on wisdom - Social consensus
The nature of time	What is our basic orientation in terms of past, present, and future, and what kinds of time units are most relevant for the conduct of daily affairs?	- Past - Present - Future
The nature of human nature	Are humans basically good, neutral, or evil, and is human nature perfectible or fixed?	- Good - Neutral - Evil
The nature of human relationships	What is the "correct" way for people to relate to each other, to distribute power and affection? Is life competitive or cooperative?	- Competitive - Cooperative
	Is the best way to organise society on the basis of individualism or groupism?	- Individualism - Groupism?
	Is the best authority system autocratic or participative?	- Autocratic - Participative
Homogeneity vs. diversity	Is the group best off if it is highly diverse or if it is highly homogeneous,	- Diverse - Homogeneous
	Should individuals in a group be encouraged to innovate or conform?	- Innovate - Conform
Adapted from Schein (2009)		
Unknowable and uncontrollable	Do we tend to believe in fate/god or not?	- believe in fate/god - do not believe
Adapted from Hills (2002)		
Work	What should be the basic motivation for work? To make a contribution to society, to have a sense of personal	- Contribution - Achievement - financial Security

	achievement, or to attain financial security?	
Gender	How should society distribute roles, power and responsibility between the genders?	- Male - Female - Both
The state-individual relationship	Should precedent right and responsibility be accorded the nation or the individual?	- Individual - Nation - Both
Motive for behaving	What should be the motive for behaving? Taking part in a purposeful activity (doing), take time to reflect and appreciate the meaning and value in what is done (being) or strive to develop, change, grow and be better (being-in-becoming)?	- Being - Being-in-becoming - Achievement (Doing)

Some empirical evidence can be brought forward from Schein (1990) to elaborate how these basic assumptions are visible in organisation cultural context. The visible version of a basic assumption is identified as a 'pattern of the basic assumption' by Schein (1990) (a detail illustration of patterns of basic assumptions is given provided in Sub Section 3.6 of Chapter 3). It is also a psychological thinking process based on the basic assumption/s. A pattern of basic assumptions may be based on one or more basic assumptions. Thus, derivation of the basic assumptions can be done through in-depth analysis of the patterns of basic assumptions only. The patterns of basic assumptions are illustrated in Figure 2.4 for Case 01 and Figure 2.5 for Case 02.

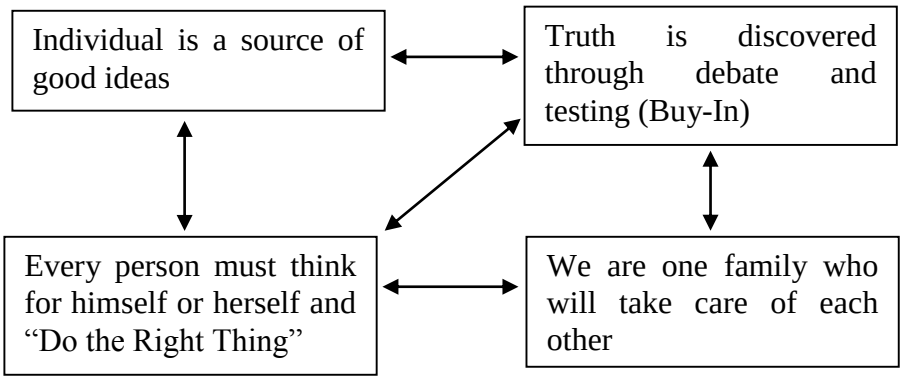


Figure 2.4: Patterns of basic assumptions in Action Company

Source: Schein (1990)

Case 01 is about a company named as 'Action Company'. Four patterns of basic assumptions have been identified related to this case. Case 02 is about a company named 'Multi Company'. Seven patterns of basic assumptions have been identified related to this case. These patterns of assumptions identified can be mapped with the basic assumptions listed in Table 2.1. For example; 'the pattern of basic assumption' in Case 03 that; 'truth is discovered through debate and testing (Buy-In)' is related to the basic assumption identified by Schein (1983) in Table 2.1 of 'truth is defined through pragmatic test'. This is related to the dimension 'the nature of reality and truth'. Further, these cases pinpoint that only several basic assumptions out of the many listed in Table 2.1 would be dominant in a given context.

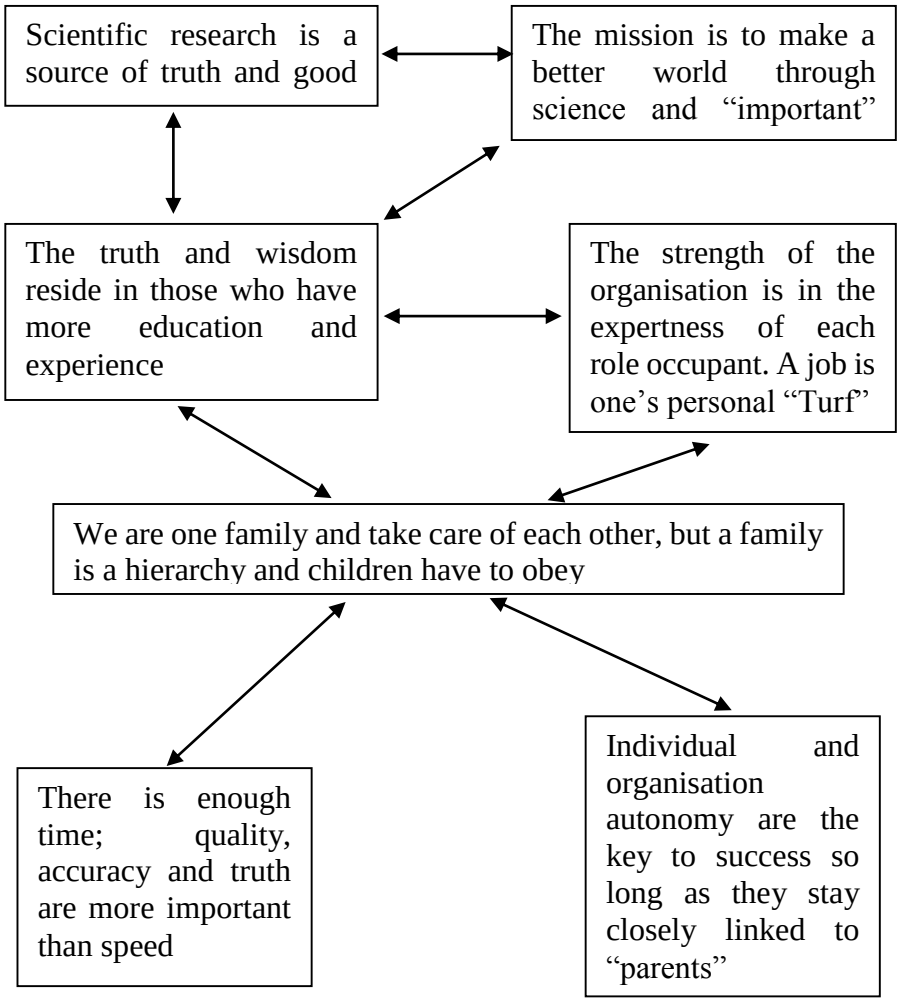


Figure 2.5: Patterns of basic assumptions in Multi Company

Source: Schein (1990)

This research study considers the terms ‘basic assumptions’ and ‘beliefs’ similar in interpretation, considering Schein (1990, 2009) referring the basic assumptions as deep beliefs in the cultural setting.

2.5.3 Means of Realising Basic Assumptions

Schein (1984) explains that patterns of basic assumptions of organisational culture are realised through the attempt of the group of people in coping with the problems of internal integration and external adaptation. Ankrah et al. (2005) explain that construction project organisations can be effectively considered as short life organisations. This is due to ‘projects’ holding characteristics similar to ‘organisations’ but, one-off nature of projects being the significant difference. Thus, it could be argued that similar to organisational culture, project culture also emerges in the attempt to survive from the said internal integration (those that deal with the group’s ability to function as a group) and external adaptation problems (those that deal with the group’s basic survival) (refer Figure 2.6).

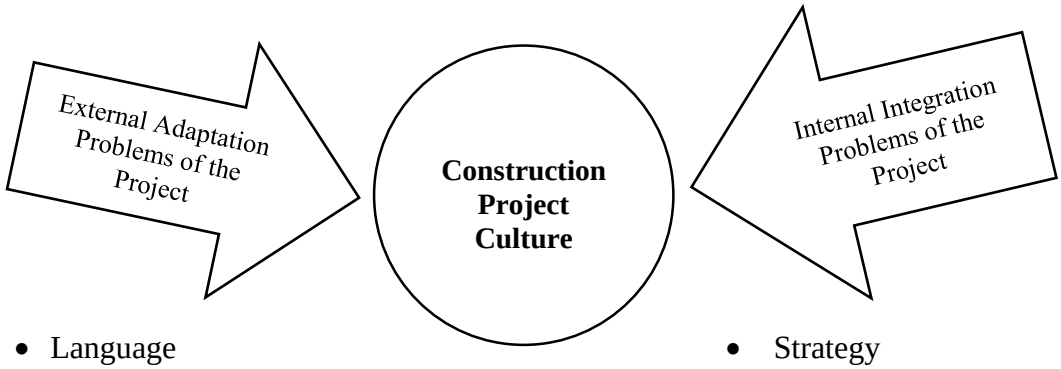


Figure 2.6: Means of realising basic assumptions in construction project culture

Problems of external adaptation and survival include (Schein, 1984, p.9):

- Strategy - Developing consensus on the primary task, core mission, or manifest and latent functions of the group
- Goals - Consensus on goals, such goals being the concrete reflection of the core mission.
- Means of accomplishing goals – Developing consensus on the means to be used in accomplishing the goals - for example, division of labour, organisation structure, reward system, and so forth.
- Measuring Performance - Developing consensus on the criteria to be used in measuring how well the group is doing against its goals and targets - for example, information and control systems.
- Corrections - Developing consensus on remedial or repair strategies as needed when the group is not accomplishing

Problems of internal integration include (Schein, 1984, p.11):

- Language - Common language and conceptual categories. If members cannot communicate with and understand each other, a group is impossible by definition.
- Boundaries - Consensus on group boundaries and criteria for inclusion and exclusion. One of the most important areas of culture is the shared consensus on who is in, who is out, and by what criteria one determines membership,
- Power and Status - Consensus on criteria for the allocation of power and status. Every organisation must work out its pecking order and its rules for how one gets, maintains, and loses power. This area of consensus is crucial in helping members manage their own feelings of aggression.
- Intimacy - Consensus on criteria for intimacy, friendship, and love. Every organisation must work out its rules of the game for peer relationships, for relationships between the sexes, and for the manner in which openness and intimacy are to be handled in the context of managing the organisation's tasks.
- Rewards and Punishments - Consensus on criteria for allocation of rewards and punishments. Every group must know what its heroic and sinful behaviours are; what gets rewarded with property, status, and power; and what gets

punished through the withdrawal of rewards and, ultimately, excommunication.

- Ideology - Consensus on ideology and "religion." Every organisation, like every society, faces unexplainable events that must be given meaning so that members can respond to them and avoid the anxiety of dealing with the unexplainable and uncontrollable.

If it is required to identify the elements of a given culture, it is necessary to go down the list of issues (internal integration and external adaptation problems) and ask how the group views itself in relation to each of those problems: what seems to be its core mission, its goals, the way to accomplish those goals, the measurement systems and procedures it uses, the way it remedies actions, its particular jargon and meaning system, the authority system, peer system, reward system, and ideology. Once this is done, it would be apparent that there is a deeper level of assumptions, which ties together the various **'responses'** to these various problems (Schein, 1983). This deeper level deals with more ultimate questions (basic assumptions) as described in Table 2.1. The link between internal integration and external adaptation problems, responses for internal integration and external adaptation problems, patterns of basic assumptions and basic assumptions is depicted through Figure 2.7.

As explained by Schein (1983), an organisational culture depends for its existence on a definable organisation, in the sense of a number of people interacting with each other for the purpose of accomplishing some goal in their defined environment. An organisation's founder or leader simultaneously creates such a group and, by force of his or her personality, begins to shape the group's culture. However, culture of a new group does not develop until it has overcome various crises of growth and survival, and has worked out solutions for coping with its external problems of adaptation and its internal problems of creating a workable set of relationship rules. Therefore, it could be argued that as a leader of an organisation contributing to the culture of the organisation, there is a substantial effect from project leader or the powerful members within the project team for the evolution of construction project culture. This powerful member can be the project manager or any other leading character in construction

project team, which need to be analysed cautiously. Research work of Ankrah et al. (2009) on factors affecting project culture includes similar factors to the aforementioned problems. For example; in problems of external adaptation and survival, 'goals' could include factors such as number of variations, level of importance of the cost and health and safety, while 'means of accomplishing goals' could include factors such as level of subcontracting. With regard to problems of internal integration, 'boundaries' could include the factor of participants involved and 'power and status' could tally the factor of level of influence of participants like the quantity surveyor, client and the main contractor.

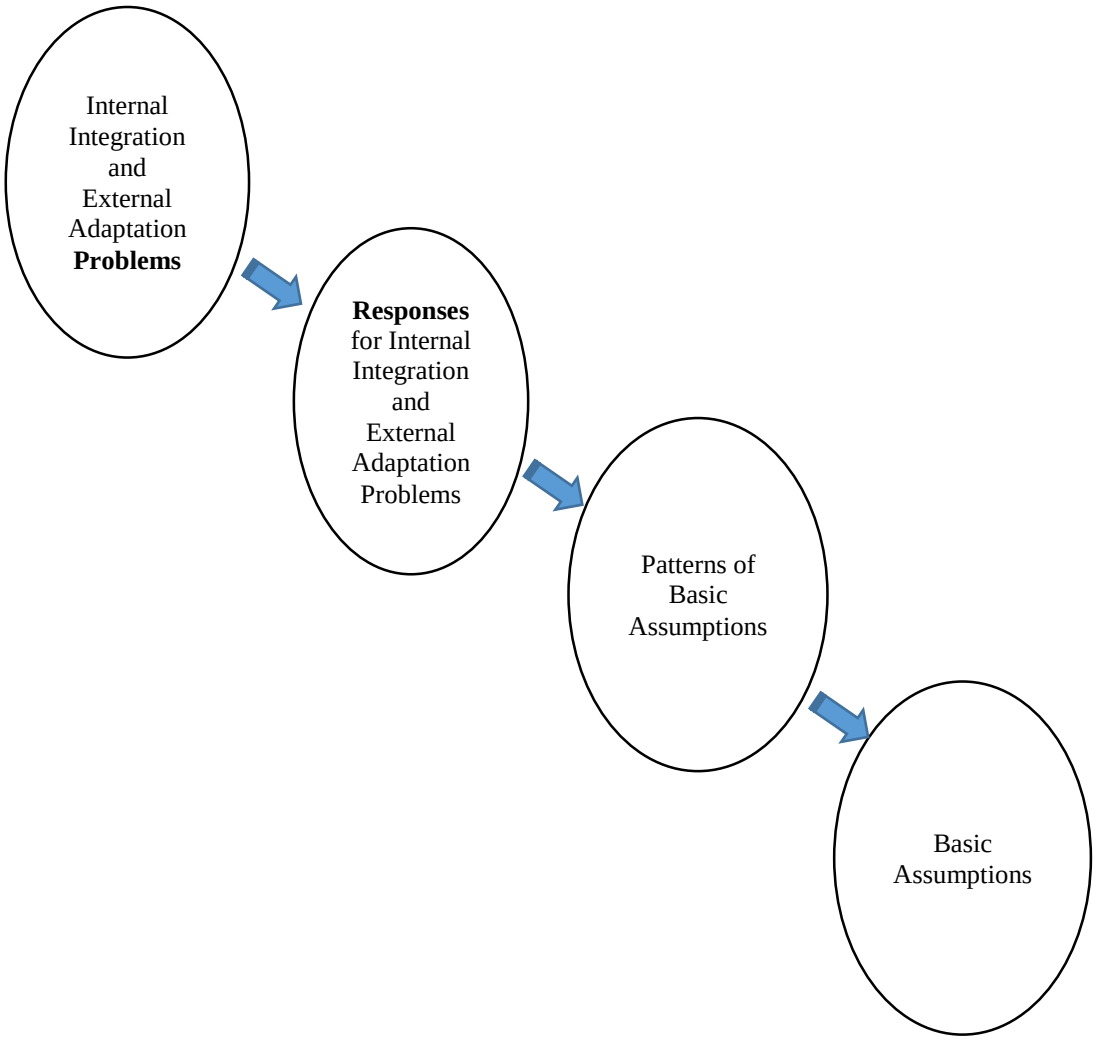


Figure 2.7: Link between internal integration and external adaptation problems, responses, patterns of basic assumptions and basic assumptions

2.5.4 Importance of Studying Basic Assumptions

Having elaborated on the difference between the values and basic assumptions, it is vital to highlight the importance and usefulness of learning about the basic assumptions of a given cultural context. More importantly, such an elaboration provides room for practical use of the identified basic assumptions. It is worth highlighting the following comment by Schein (1990) with regard to the importance of studying the basic assumptions:

> It is quite possible for a group to hold conflicting values that manifest themselves in inconsistent behaviour while having complete consensus on underlying assumptions. It is equally possible for a group to reach consensus on the level of values and behaviour and yet develop serious conflicts later because there was no consensus on critical underlying assumptions. (Schein, 1990, p.112)

To prove this argument, Schein (1990) brings in an empirical case evidence (refer Case 03) on how values and behaviours could not help to explain a given organisational situation, but the assumptions could. Further, Hills (2002) describes how a Native American small tribe survived by understanding the culture, especially the basic assumption of the culture of majority by using the previously mentioned value orientation theory (refer Case 04). According to Case 04, knowledge of basic assumptions are helpful in negotiations between different cultural groups. This is because, basic assumptions unveil the differences between the cultural groups how they perceive the nature of human nature, human activities, human relationships, nature of reality and truth and so on. So that the behaviours and values of each cultural group will depend on the same. This will help for creating win-win situations during negotiations as each party understands each other.

In addition, Schein (1983, 1984) explains how the knowledge on basic assumptions could be used during change initiatives within an organisation. According to Schein (1983, 1984), changes should be initiated so as not to hurt or go against the basic assumptions of the people inside the organisation who have believed such assumptions

as true for a long period of time. Moreover, he suggests to use the underlying assumptions tactfully during change initiatives so that no any resistance to change would emerge. Case 05 demonstrates such an empirical evidence from an organisation experienced by Schein (2009), how the knowledge on basic assumptions was helpful during a change initiative.

Hence, it is apparent that understanding culture through underlying assumptions rather than elaborating merely through artefacts, behavioural features and values give valuable insights into the culture. An attempt to understand such basic assumptions of a construction project could bring in advantages during change initiatives and negotiations with external parties. However, as explained by Fellow et al. (2007), another factor creating the complexity in culture of a construction project is the existence of different cultural levels and cultural groups within the construction project, which is discussed in detail next.

Case 03

During a cultural analysis in a rapidly growing high technology manufacturing company, there had been some observable behaviours on high degree of conflicts, fighting and confrontation in meetings. Similarly behaviours included; emotional involvement of employees staying late and expressing excitement about the importance of their work. When questioned about their behaviours, it has been revealed that when an employee fails, he or she is simply assigned to another task, not fired or punished in any personal way resulting in a low employee turnover. These are apparently conflicting values. One may be surprised how the organization tolerate extremely high degree of conflict without destroying or demotivating employees. After carefully understanding the patterns of underlying basic assumptions, it has been identified that the organization holds the assumption that; 'the company members are one big family who will take care of each other and protect each other even if some members make mistakes or have bad ideas'. Without understanding that pattern on basic assumption, it would have been difficult to interpret the cultural environment of values and behaviours of that company. Thus, it provides evidence on how important and meaningful it is to understand the patterns of basic assumptions in an organization.

Case 04

There is a Native American tribe called ‘Lummi’. The Lummi have their own reserve territory on the western coast near the Canadian border. There they pursue their traditional industry of deep sea fishing, as well as more recent trades such as liquor retailing. Their success in these and other enterprises depends on their ability to relate successfully to the predominantly white American majority population surrounding them. The majority population forms the bulk of potential customers for their products, and at the same time is the prime source of food, clothing and manufactured goods. Moreover, it is this majority who controls such vital necessities such as access to power, water and timber. Members of the cultural majority have to be negotiated concerning the issues such as taxes and transport.

The Lummi have therefore realised that it is vitally important that they understand the cultural mores of the majority if they are to interact successful with them. Issues such as the assumed basic motives for behaviour, the importance or otherwise of tradition, relationships between older and younger generations, accepted modes of decision-making so on, have to be understood before harmonious and successful discussion can take place. Toward this end measures were developed to assess the preferred value orientations of the majority, and of the Lummi themselves. Differences and similarities have been clearly demarcated, and each party to potential negotiations made aware of them.

Thus, when Lummi leaders go to discuss trade, taxes, utilities or transport with local business people and officials, they are aware of the world views of those with whom they are discussing, and of the similarities and differences between themselves and their neighbours. Such foreknowledge has resulted in a successful and harmonious relationship between the two cultural groups for many years. This testifies to both the importance of understanding each other’s basic assumptions in culture, and the efficacy of the value orientation theory in doing so.

Case 05

A newly appointed Chief Executive Officer (CEO) of a large insurance company experienced a failed change initiative. This was due to his inability to identify an underlying basic assumption of the company which included; 'the correct way to do things is to follow the rules'. Here, new CEO wanted to change the organization to a more innovative one, since he had identified the problem of the organization was lack of innovation. His change plans included launching various campaigns to reward innovation with suggestion boxes, prizes for new ideas, yet, received little response. The suitable change initiative to match the said basic assumption suggested by Schein (2009, p.39) was; "every month every department had to invent three new ways of doing things and write up a manual to that effect". This is because, the organization had used to follow rules written on manuals, thus, they only tended to believe that such mechanisms would only capable of bringing in results. Thus, CEO had to understand that any change initiative going against the belief on following rules might not bring in positive results.

Source: Schein (2009)

2.6 Construction project culture through its sub-cultures

The project culture seems to be affected by different cultures at different levels including national culture, industry culture, organisational culture and professional culture. Ofori and Toor (2009) identify the importance of understanding levels of culture and their relationship in defining the culture in a cross-cultural construction project setting. They explain that in a major construction project, when members from different countries participate, it would be inappropriate to define a culture at the national level where the team is located because, although foreigners from different countries adopt the local culture, they still maintain some ties with their roots. This shows the impact of national culture on project culture. A similar argument has been brought forward by Evaristo and Scudder (2000) that the project culture may borrow national cultural characteristics of its team members and of its different locations.

Further, Zuo and Zillante (2008), who have done a preliminary study on national culture and project culture argue that there is a clear possible link between national and project cultures, while a strong project culture would override the national culture of construction project team members. Further, it is apparent in the extant literature that many project cultural studies being carried out are more specific to the nationality of the team members than a universality. For example, project cultural studies of Ankrah et al. (2009) for United Kingdom, Zuo (2008) for China and Australia and Thomas et al. (2005) for Australia. However, as there is no popular study available for the Sri Lankan context for construction project cultural context, a focus on the Sri Lankan context would be a new knowledge contribution to the domain of construction project culture.

When a construction project team is formed with different participants from different organisations, mainly; consultants, contractors and other stakeholders, many difficulties seem to arise due to the conflicts of different business objectives and lack of sensitivity and tolerance of difference between participants. This brings out the importance of understanding organisational culture for successful project management (Fellow et al., 2007). Further, Rameezdeen and Gunarathna (2003) elaborate the cultural differences between contracting and consultant organisations in Sri Lanka. According to them, consultants believe that their success depend on the development of human resources for achieving specific goals of the organisation which emphasises on a culture with loyalty, value traditions and openness. In contrast, contracting organisations are driven towards output maximisation where they encourage a competitive work environment and culture. Moreover, Ankrah and Langford (2005), who conduct studies on architectural and contracting organisations, explain that major differences exist in these two types of organisations. It is not only pertaining to its structure, but also in people issues. Hence, it is apparent that organisational cultures have an impact on the construction project culture.

Kumaraswamy et al. (2002) have attempted to define construction project culture by looking at these impacts from different levels of culture. They have identified ‘organisational’, ‘professional’, ‘operational’ and ‘individualistic’ sub-cultures as the

principal elements that come together to evolve the culture within a construction project as depicted in Figure 2.8. They argue that '**organisational sub-cultures**' are mainly influenced by national culture and industry culture. At the same time, project culture could be affected by three other cultures: professional, operational and individual. '**Professional sub-cultures**' are influenced by factors such as the type of members, origin and history and type of task/function. '**Operational sub-cultures**' could comprise of quality culture, safety culture, and learning culture. '**Individualistic sub-cultures**' are influenced by factors such as national culture, ethnic factors, social status and religion.

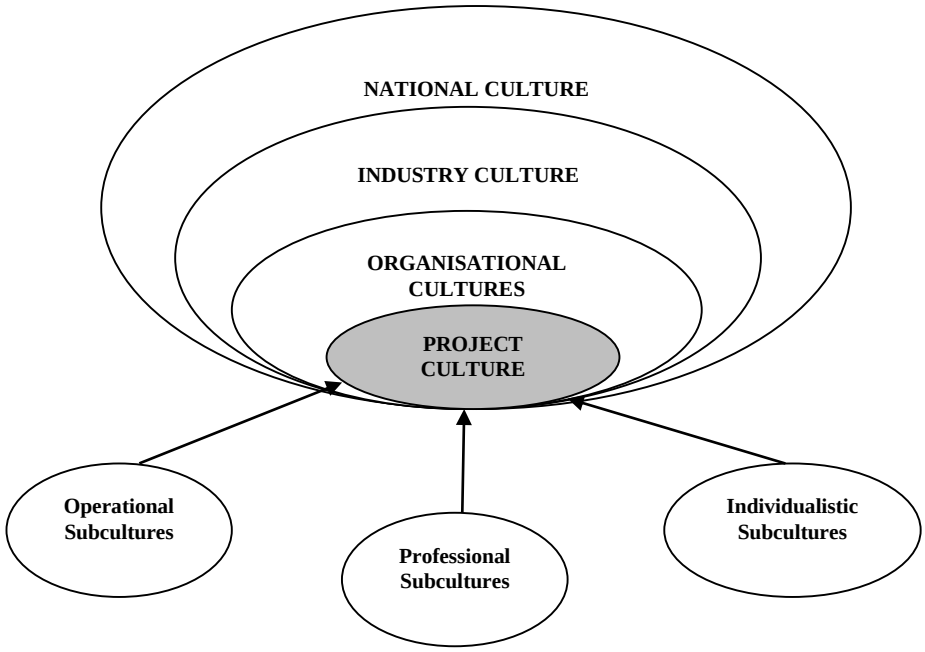


Figure 2.8: Sources of typical construction project culture

Source: Adapted from Zuo and Zillante (2005, p.357)

As explained by Kumaraswamy et al. (2002), a number of components contribute to each sub-culture, where one or more sub-cultures may dominate, depending on their 'relative strengths'. Thereby, Hofstede's cultural model (1980, 1991) could be first used to assess the culture in each sub-culture and then to assess the whole project culture. Though the aforesaid framework seems insightful, it does not make easy the task of identifying and investigating the drivers of culture within the project.

Schein (1996) brings forward another interpretation of sub-cultures related to different occupations within an organisation, but not specifically for construction context yet on generic grounds. These sub-cultures include: 'engineers' (technocrats), who design and monitor the technology supporting an organisation's operations; 'operators', who deliver products and services and, 'executives', who primarily focus on financial performance. These are called engineering culture, operator culture and executive culture respectively.

According to Schein (1996), organisational learning and change failures are primarily due to inadequate understanding of occupational cultures existing within organisations. It is because these occupational groups hold different views and interpret differently the same aspect due to the difference in their professional background, which results in communication problems. Their shared patterns of basic assumptions within the sub-cultural groups are presented in Table 2.2. Table 2.2 is an appropriate example to show off that patterns of basic assumptions do exist in sub-cultural groups. As explained in Sub Section 2.5.2, a pattern is the demonstration of a basic assumption through a thinking process or system of thought. Patterns are the demonstration of the basic assumptions discussed in Table 2.1. Each pattern would include one or several such basic assumptions. For example, client sub-cultural group demonstrated a pattern of basic assumptions such as "executives cannot get reliable data from subordinates so they must trust their own judgment" (refer Table 2.2). This is an indication of the underlying basic assumption of client sub-cultural group as 'the correct way to define ultimate truth is by means of pragmatic test' in comparison to the list of basic assumptions presented in Table 2.1. This basic assumption is demonstrated through the behavioural manifestation of executives as 'not depending on the data provided by the subordinates for decision making'. Such a behaviour manifestation could be a 'response' for some internal integration or external adaptation problem/s.

Chapman, Hayes, Sloan, and Fitzgerald (2011), empirically support this sub-cultural group concept proposed by Schein (1996) by using it in a cultural analysis in some organisations in the United States and Australia.

Table 2.2: Patterns of basic assumptions of sub-cultural groups

Patterns of Basic Assumptions of Engineering Sub-Culture	**Patterns Basic Assumptions of Operator Sub-Culture**	**Patterns of Basic Assumptions of Executive Sub-Culture**
• Engineers are proactively optimistic that they can and should master nature. • Engineers are stimulated by puzzles and problems and are pragmatic perfectionists who prefer "people free" solutions. • The ideal world is one of elegant machines and processes working in perfect precision and harmony without human intervention. • Engineers are safety oriented and overdesign for safety. • Engineers prefer linear, simple cause-and-effect, quantitative thinking.	• Because the action of any organisation is ultimately the action of people, the success of the enterprise depends on people's knowledge, skill, learning ability, and commitment. • The required knowledge and skill are "local" and based on the organisation's core technology. • No matter how carefully engineered the production process is or how carefully rules and routines are specified, operators must have the capacity to learn and to deal with surprises. • Most operations involve interdependencies between separate elements of the process; hence, operators must be able to work as a collaborative team in which communication, openness, mutual trust, and commitment are highly valued.	**Financial Focus** • Executives focus on financial survival and growth to ensure returns to shareholders and to society. • Financial survival is equivalent to perpetual war with one's competitors. **Self-Image: The Embattled Lone Hero** • The economic environment is perpetually competitive and potentially hostile, so the CEO is isolated and alone, yet appears omniscient, in total control, and feels indispensable. • Executives cannot get reliable data from subordinates so they must trust their own judgment. **Hierarchical and Individual Focus** • Organisation and management are intrinsically hierarchical; the hierarchy is the measure of status and success and the primary means of maintaining control. • The organisation must be a team, but accountability has to be individual. • The willingness to experiment and take risks extends only to those things that permit the executive to stay in control. **Task and Control Focus** • Because the organisation is very large, it becomes depersonalised and abstract and, therefore, has to be run by rules, routines (systems), and rituals ("machine bureaucracy"). • The attraction of the job is the challenge, the high level of responsibility, and the sense of accomplishment (not the relationships). • The ideal world is one in which the organisation performs like a well-oiled machine, needing only occasional maintenance and repair. • People are a necessary evil, not an intrinsic value. • The well-oiled organisation does not need people, only activities that are contracted for.

Source: Schein (1996)

However, their selection of individuals for each sub-culture group was based on: job titles such as chief executive officer, vice president, and senior manager classified as ‘executives’; job titles such as consultant, project manager, and sales representative as ‘operators’ and, job titles such as engineer, information technology analyst, and operations manager as ‘engineers’.

Going in line with such sub-cultures, it could be argued that even a construction project could include similar sub-cultural groups operated within (refer Figure 2.9). Client and client’s representatives can be identified as the ‘executive sub-culture’, since this sub-cultural group is more concerned with the financial performance of the construction project.

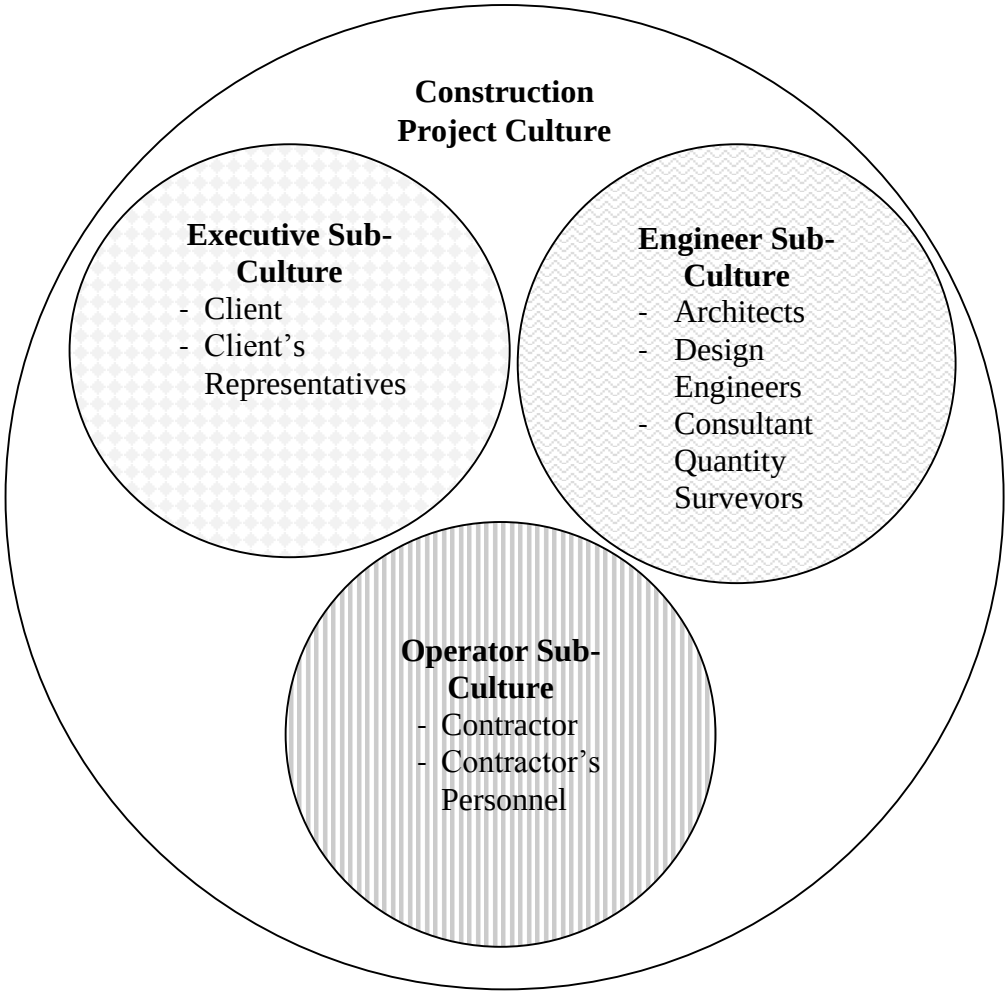


Figure 2.9: Sub-cultural groups in construction project culture

Consultants including architects, design-engineers and consultant quantity surveyors can be identified as the 'engineer sub-culture', since they are more into design aspects working mainly with technical backgrounds. Moreover, contractor's personnel can be identified as having similarities with 'operator sub-culture', since they are the sub-cultural group that really struggle at the field with labour, plant material to realise the construction output. Schein (1996) elaborates that although this sub-cultural grouping as executive-engineer-operator is most visible in traditional engineering functions, it is also evident among the designers and implementers of all kinds of technologies - information technology, market research, financial systems, and so on.

This existence of sub-cultural groups in organisations and project teams is contradictory to the shared view of culture put-forward by many researchers including Hofstede (1980) and Schein (1984). This is because, the existence of sub-cultures indicates that a shared culture exists not at organisational wide but, only at sub-cultural level. This phenomenon is discussed in detail in subsequent section with the introduction of the Three Perspective Theory of Culture by Martin (2002, 2004).

2.7 Three-perspective theory of culture

As defined by Duarte and Snyder (1999), culture is a set of learned mores, values, attitudes and meanings that are 'shared' by members of a group and so culture is often one of the primary ways to differentiate one group from another. Even Hofstede (1980) agrees with the interpretation of culture as a shared thing among the human group, but here the culture is elaborated as mere values. "Culture is the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture in this sense is a system of collectively held values (Hofstede 1980, p.25)."

However, Martin (2004) disagrees with the definition of culture as a "shared" phenomenon among the members of the organisation. As Martin (2004) explains, all of these cultural manifestations are interpreted, evaluated, and enacted in varying ways because cultural members have differing interests, experiences, responsibilities and values. Further, more importantly, culture consists of the patterns of meanings that link

these manifestations together, sometimes in harmony, sometimes in bitter conflicts between groups, and sometimes in webs of ambiguity, paradox, and contradiction. For these reasons, it is much too simple to define culture in unifying, harmonious terms, for example, in terms of values that are espoused by the management and apparently shared by most employees. Therefore, it is worth looking into these three perspectives of culture explained by Martin (2004).

Martin (2002) conceptualises culture from three different perspectives; integration, differentiation, and fragmentation. These perspectives are complementary, in that each allows the researcher to investigate the blind spots inherent in the others (Kappos and Rivard, 2007).

Integration refers to interpretations that lead to consensus across the whole collective. No ambiguity exists in members' interpretations of the manifestations and interpretations are clear to all. Integration assumes that actors within a collective interpret the manifestations in the same way, and that those manifestations will be consistent with each other (Martin 2002) (refer Table 2.3). A case study of three retailing organisations done by Harris and Ogbonna (1998) found that that each of Martin's (2002) three perspectives corresponds to different hierarchical positions.

Table 2.3: Three-perspective theory of culture

Orientations and Relations	**Cultural Perspectives**		
	Integration	**Differentiation**	**Fragmentation**
Orientation to consensus	Collective-wide consensus	Subcultural consensus	Lack of consensus
Relation among manifestations	Consistency	Inconsistency	Not clearly consistent or inconsistent
Orientation to ambiguity	Exclude it	Channel it outside of subculture	Acknowledge it

Source: Kappos and Rivard (2007, p. 9)

The study of head office personnel finds that they tend to adopt an integration perspective on organisational culture. That is, culture is viewed in terms of consensus and consistency. Cultural deviation is considered unwelcome whereas cultural change is viewed as transformational rather than incremental.

Differentiation does not assume a collective-wide consensus on interpretations of the manifestations. This perspective concerns those interpretations of manifestations that lead to a consensus only at the sub-cultural level. The manifestations of culture may be interpreted differently from one group to another. The manifestations and their interpretations are inconsistent with other manifestations in the cultural collective, and represent the inconsistencies that describe sub-cultural boundaries. These inconsistent interpretations are often the source of conflict, which will define relationships between the groups. Under the differentiation perspective, ambiguous interpretations are not assumed away, and are investigated in as much as they reflect boundaries between the sub-cultures. This is to say that ambiguous interpretations are acknowledged in descriptions of the differences between groups, but not on their own merit (Martin 2002). The case study of three retailing organisations by Harris and Ogbonna (1998) revealed that store managers commonly adopt a differentiation perspective on organisational culture i.e. store managers view culture as dichotomous, inconsistent and characterised by subcultural consensus.

Fragmentation assumes that ambiguous interpretations of manifestations by members of the collective are inevitable. These interpretations should not be ignored (as in the integration perspective) or automatically attributed to differences between the groups (as in the differentiation perspective). Ambiguous interpretations of manifestations are likely to result in paradoxical or ironic actions and reactions. Such interpretations do not suggest any clear cultural or sub-cultural boundaries and produce a fragmented view of the manifestations. In essence, the members of an organisation can and do interpret the manifestations in a number of different ways, thus never delineating islands of consensus, consistency, or clarity (Martin 2002). The case study of three retailing organisations by Harris and Ogbonna (1998) depicts that shop floor workers tend to exhibit a fragmentation perspective on organisational culture where the views

of shop floor workers tend to focus on the ambiguity, fluidity and complexity of organisational culture.

Martin (2004) suggests that using all three perspectives together in one study brings valuable insights into the cultural context and avoids the theoretical blind spots of single-perspective. Gajendran et al. (2012), elaborating on a framework for understanding cultural philosophical positions for analysing construction project culture, indicate the importance of following a construction project cultural research as a hybrid function/non-functional cultural analysis, which includes three cultural perspective of integration, differentiation and fragmentation. Thus, within the sub-cultural context of a construction project, integration perspective includes the cultural manifestations agreed by all the sub-cultural groups (refer Figure 2.10).

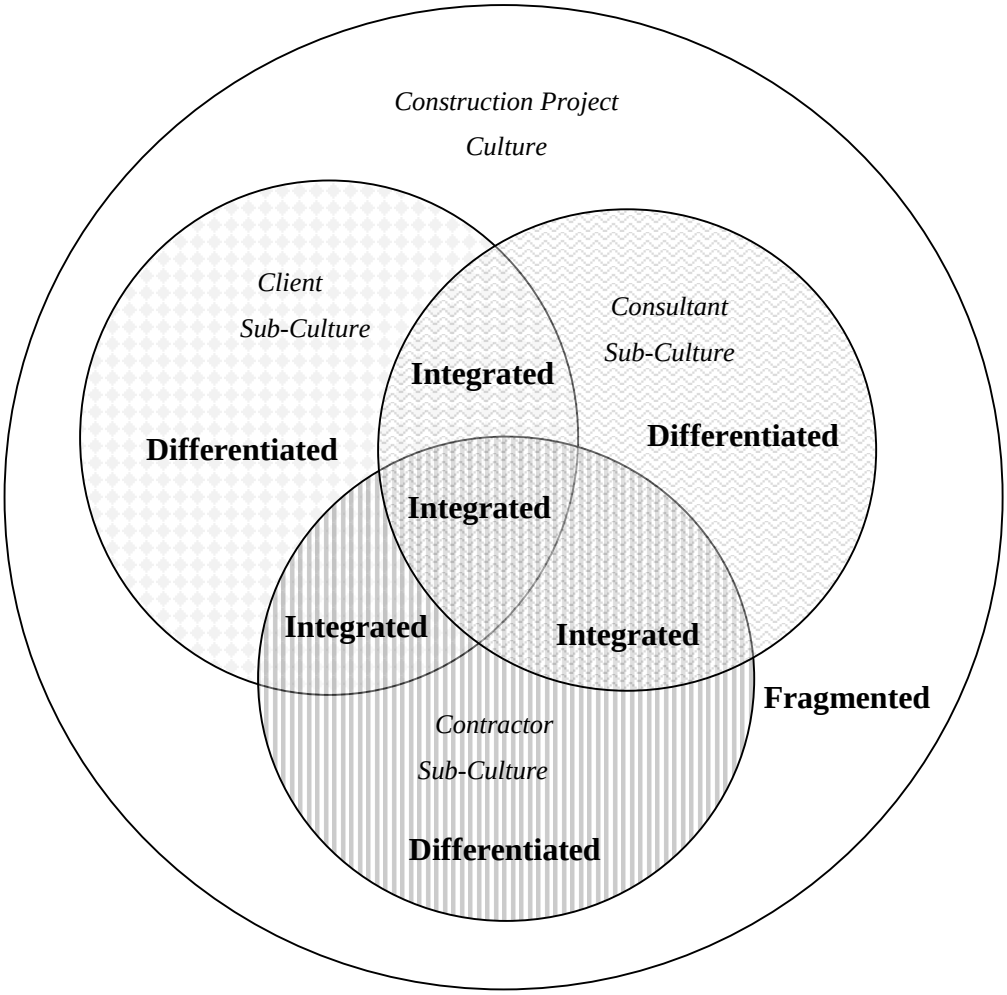


Figure 2.10: Three-perspectives of construction project culture

Further, differentiation perspective is valid for manifestations agreed within a given sub-cultural territory. Moreover, fragmentation perspective is valid for the contrasting cultural manifestations prevailing within the total project cultural territory.

Despite all these complexities, researchers tried to adopt different organisational culture models to understand what the culture of a construction project team really is, which is discussed in a subsequent section.

2.8 Research issues in understanding construction project culture through organisation cultural models

As highlighted by Ankrah et al. (2009), there are two different views of organisational culture among researchers. One view to be culture as 'something an organisation is' considering culture as a "root metaphor" where research focus of that would be looking for how an organisation work is accomplished and what it means to be organised. The other set of researchers argue organisational culture to be something an organisation has considering culture as a "variable". As per Ankrah et al. (2008), the latter is regarded as the most popular among researchers. Hofstede et al. (1990) being in the latter category of researchers considered the organisational culture to be 'features an organisational culture has' which goes in line with the second category of researches described by Ankrah et al. (2008). The said organisation culture description of Hofstede et al. (1990) was related to some "practice dimensions" of organisations mentioned as; Process Oriented vs. Results Oriented, Employee Oriented vs. Job Oriented, Parochial vs. Professional, Open System vs. Closed System, Loose Control vs. Tight Control and Normative vs. Pragmatic. These features indeed give an understanding about organisational culture. However, these features still contains an unanswered question 'why an organisation is meant to have a selected set of those features' - for example; 'why is that organisation practising a tight control or loose control?', 'why does that organisation exist as open system or a closed system?; Answering these questions could go into realising the deep-level values and basic assumptions the group of people carry. which are more insightful and useful in understanding or changing a given culture.

Zuo (2008) has carried out research studies on project culture in Australian and Chinese construction industries combining some popular organisational culture models (e.g. Cameron and Quinn, 1999; Hofsted et al.,1990 etc.) to suit construction project context. According to his proposed project culture model (refer Figure 2.11), project culture consists of five dimensions as; Integrative, Cooperative, Goal oriented, Flexible and People-oriented.

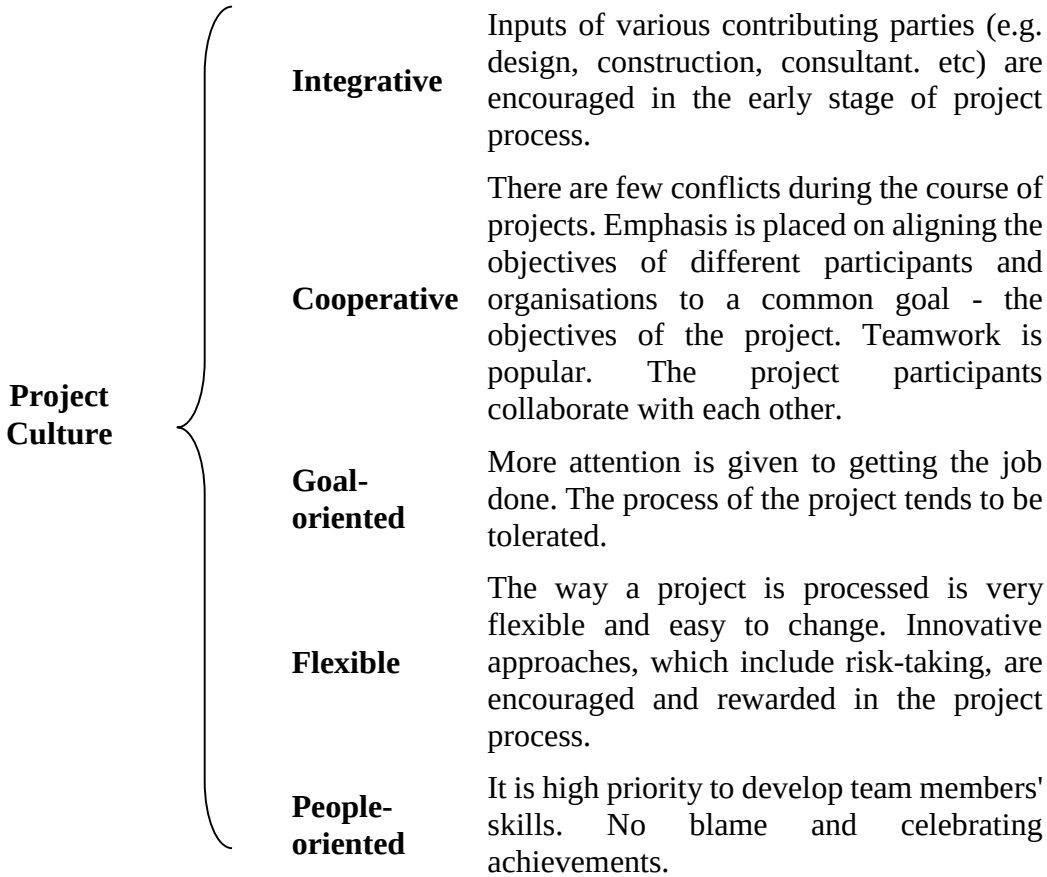


Figure 2.11: Project culture model proposed by Zuo (2008)

Source: Zuo (2008, p.274)

In this model, also Zuo (2008) depicts the structure of the project culture he proposes and not the content. For example, according to Zuo, project culture is ‘flexible’ and easy to change. The question arises as to why practise a flexible atmosphere. It could be because the nature of human nature to be assumed as good so the flexibility is

allowed which could provide a better clarification according to the value orientation theory of Kluckhon and Strodbeck (1961). The project culture has the feature of being 'corporative' which raises the question 'why being corporative?'. One reason behind this could be because the project team have the assumption that the best way the individuals within the project team should relate with others to be 'collateral'. It seems the cultural essence or which is called underline assumptions are not captured by the Zuo's (2008) work. The better understanding would be to explain that the project team members assume that human nature is good and the best way to relating to other people is considering everybody as equal rather than saying team has the feature of corporation and flexibility. This is because, for example, if a change is to be introduced to the project culture and if it to be managed, the most important is what are the underlying assumptions of people and not merely its feature. When the change is introduced, the superiors are aware that going against the underlying assumptions would bring a lot of resistance to the change.

In addition, this project culture model has been developed for relationship contracting projects only. As described by Zuo (2008), relationship contracting or collaboration contracts are to achieve a common project objective which results in win-win situations for client and all other parties involved in the project including major features as all the parties sharing the risk and everyone being responsible for the success or failure of the project. Moreover, they explain that project culture tends to be different in different procurement methods. However, it is the traditional procurement method (where design and construction is carried out in two separate phases of the project) which is the most popular procurement method adopted in most of the construction industries (Love, 2002; Skitmore and Love, 1995). Therefore, whether the proposed project culture model is a fair representation of project culture is questionable.

Thomas et al. (2002) tried to understand cultural orientation of thirteen Australian construction projects using one of the most popular organisation culture models; Competing Value Framework (CVF) developed by Cameron and Quinn (1999). According to Oney-Yazici, Giritli, Topcu-Oraz, & Acar (2007), the CVF is based on

two major dimensions. The first dimension emphasises the organisational focus (internal versus external), whereas the second one distinguishes between the stability and control and the flexibility and discretion. These two dimensions form four quadrants (refer Figure 2.12), each representing a major type of organisational culture; 'clan', 'adhocracy', 'market' and 'hierarchy' which are respectively support-oriented, innovation-oriented, rules-oriented and goals-oriented.

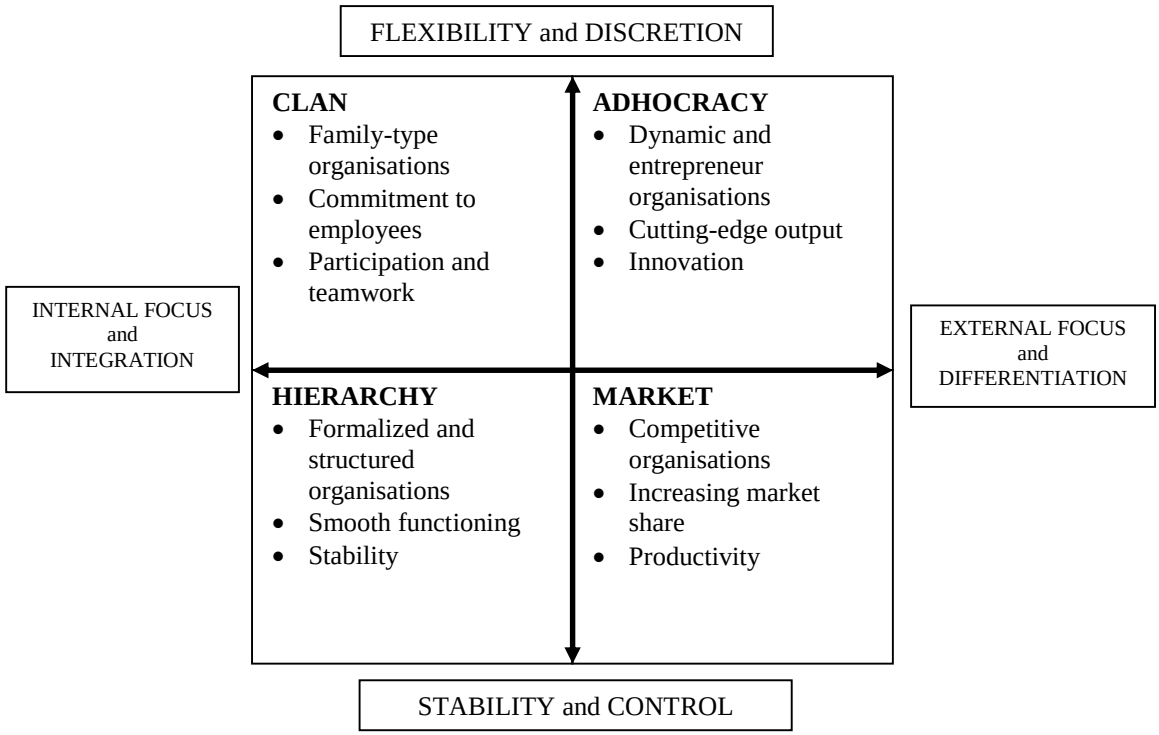


Figure 2.12: The competing values framework
Source: Oney-Yazıcı et al. (2007, p.522) adapted from Cameron and Quinn (1999)

Using this framework, Thomas et al.(2002) find that projects achieving below average performance show a strong orientation towards 'market' forms of culture, which are ironically results orientated. The management styles (implicitly) inherent within this culture are focused on short-term goal attainment and project managers are 'hard-driving' and competitive. This type of culture focuses on the individual and his/her ability to do a production. These forms are not favourable to developing co-operative, open, team environments, but rather, adversarial, conflict-ridden projects concerned with individual, or organisational, self-preservation.

Conversely, projects that produce above average results exhibited considerably weaker market characteristics, while possessing strong traits associated with Clan types of organisation. These are organisations that place a premium on team cohesion, consensus and morale and are led by managers with a mentor or facilitator style, where they were people-orientated. They recognise and are open and listening to the needs of the individual and the team as a whole. It logically follows that this approach to managing projects is most likely to take care of an environment conducive to proactive, committed, and open team working (Thomas et al., 2002).

However, use of CVF in analysing project culture, which has originally been developed to assess the organisational culture, has been criticised by several other researchers. As argued by Zuo and Zillante (2005), general management derived organisational culture models such as Competing Values Framework, have little consideration for the specific characteristics of construction projects. For example, the integration between the functional departments of one organisation, which is stressed in numerous organisational cultural models, should be modified to suit construction projects with the integration of the different functions (services) in construction projects.

Having identified specific research on construction project culture with their limitations, the next section elaborates on the necessity of separate research efforts for different sectors and different nations for the same industry.

2.9 Cultural specificity of public and private sectors

Perry and Rainey (1988) have highlighted the significance of considering the public-private distinction in organisational theories. It is popular that cultural studies are carried out with special focus on public and private sectors, indicating the cultural differences between the two hence, requiring the special attention on sectors in a cultural study.

Lyons et al. (2006) carry out a study to learn the values and commitment differences between public sector, private sector and para-public sector knowledge employees in Canada. The findings declare that private sector employees are having greater

organisational commitment than the employees in public sector sectors. Further, public sector employees value prestigious work and work that contributes to society than the private sector employees (Lyons et al., 2006). Similarly, Harrison and Baird (2015) carry out a research on identifying the organisational culture of public sector organisations in Australia. They conclude that local councils in Australia have matched the private sector organisations but, government departments and agencies are lagging behind private sector in terms of the cultural factors such as; outcome orientation and innovation. Nutt (2005) explains that the main reason for such cultural differences resides with the purpose/objectives of public sector and private sector organisations. According to their explanations, objective of private sector is to create wealth for shareholders, while public sector intends to provide a service to fulfil a public need. A comparative study carried out by Karl and Sutton (1998) about job values among public and private sector workers, indicates that private sector workers value decent wages, while public sector workers value interesting work the most.

Accordingly, as construction projects being carried out by both public and private sectors, it is prudent to give due attention to the relevant sector in a research, as findings could have considerable differences. The next section looks into the challenges in identifying a unique project culture.

2.10 Challenges in identifying a unique construction project culture

Numerous attempts to identify culture in the construction project context are apparent in the construction research arena. These include some explanations for construction project culture through the effect of different subcultures (refer Section 2.6), while some studies identify project culture with the aid of existing organisation cultural models (refer Section 2.8). However, these elaborations have their own deficiencies and assumptions. On the other hand, unique features of the construction project team setting pose challenges in identifying a unique project culture in the construction context. This section attempts to discuss these challenges in detail.

The foremost challenge in understanding the construction project culture is the confusion that exists among different manifestations used to interpret the culture. As

described in Sections 2.3, 2.4 and 2.5, cultural manifestations consist of a long list including artefacts, behaviours, norms, attitudes, values, basic assumptions and so on. Schein (1983, 1984) explains the importance of studying the basic assumptions of the cultural context to capture the real essence of culture. However, capturing the basic assumptions seems to be a tedious task which involves in-depth interviewing of the participants of the cultural context. To ease this task, Schein (2009) explains on procedures of interviewing the participants on internal integration and external adaptation problems of the group. In addition, Hills (2002) elaborates on indirect questioning methods to extract the basic assumptions. Developing such indirect questions and the ability of the interviewer in indirect questioning make the process further challenging.

Next, the differences between a project and an organisation make it difficult to relate organisational cultural theories to the project to understand the culture of the project. Zuo (2008) depicts some differences between a project and an organisation related to time span, uniqueness, stakeholders, team and membership hierarchy. Among these differences, time-span seems to be affecting most the creation of a unique culture within the project. As depicted by Tyron (2003), a general project team could take three forms; 'Continuing Efforts', 'Repeating Efforts' and 'Single-Time Efforts' which seems common to the construction industry as well. Real organisations are with continuing efforts where strong cultures are visible due to the nature of life time which is perpetuity. Further, Palmer (2002) describes the effectiveness of adopting a project culture in Kimberly-Clark; one of the world's largest manufacturers of packaged goods, who are adopting 'Continuing Effort' type of project teams. However, most of the projects in construction take the look of a 'Single-Time Efforts' type of projects with a fixed time span. Further, Turner and Muller (2003, p.7) provide a definition for a project as; "a project is a temporary organisation to which resources are assigned to undertake a unique, novel and transient endeavour managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change".

Here, they also identify a construction project as a temporary organisation highlighting the characteristic of a fixed time span. Meudell and Gadd (1994), who argue on culture

in general management, explain that 'history' is the key influence which affects culture where time allows for relationships to be built up, there is time for top management to exercise influence and for values to be created and transferred. Thereby, cultures are clearly visible with organisations due to their life span, but somewhat unlikely with a project. Further, this is an issue which seems valid for construction projects with fixed life spans. However, Zuo and Zillante (2005), in their proposed project culture conceptual framework suggest that long-term relationships with project participants is a key component of project culture in construction where there could be continuous relationships between project participants and further, clients are willing to use the same project team in their future projects as well. This challenges the common procurement methods such as separate contracts used in construction industry.

Entrance of key members from time to time is another challenge in identifying a unique construction project culture. When a new member enters to the project team, the team development process is reversed back to the earlier stages (refer Senaratne and Hapuarachchi, 2009), which is a barrier to the development of a positive culture. Further, Zuo (2008) argues that the creation of a culture is deterred by key members entering the project team by time to time. Within a construction project with traditional procurement arrangement, due to its nature of the design and construction phase being separated, entrance of project team members from time to time is unavoidable. The contractor, who becomes one of the major stakeholders in the construction project team, enters the project only after the design phase of a traditional procurement arrangement and the sub-contractors at their particular trade. Therefore, creation of a culture within such a project team is highly questionable.

Ankrah et al. (2009) identify the client and contractor as dominant participants influencing project culture. Zuo (2008) highlights the influence of client in creating the culture within the project team. The client's involvement is mainly essential in relationship contracting to allocate resources throughout the project process. Further, it is highlighted that the capacity and the level of resources of the client (such as funds) directly impact the level of influence the client can exert on the project members. Moreover, Zuo (2008) explains that this influence would not be visible in traditional

procurement methods because in such procurement arrangements client will engage in the primary consultation only later the architect or the project manager will manage the project. However, Ankrah et al. (2009) do not indicate project manager as an influencing character for project culture in construction industry in United Kingdom. Nevertheless, Zuo (2008) identifies that project manager has to take responsibility in creating the culture within the project team. Further, Marrewijk (2007) elaborates in detail the two dominant cultural episodes in the Environ Megaproject in Otherlands, due to change of the project manager. Therefore, it is a real time example for the implementation of strong project culture by a project manager. Even as previously highlighted, a strong culture could override the national culture (Zuo and Zillante, 2008).

Further, Zuo (2008) mentions that a strong culture could be created through effective communication between parties mainly through project meetings held face-to-face. Even, Song (2008) explains the importance of information and communication technology in creating a good team culture. In addition, Meudell and Gadd (1994), researching on the hospitality sector projects, argue that a strong culture could be created in projects through proper recruitment and training. This is a further challenge considering that construction project teams are formed mainly based on technical capabilities and contractual relationships.

2.11 Summary

This chapter aimed to review different attempts to understand the culture at project level in the construction context and further, to investigate the possibility of theorising the project culture through underlying basic assumptions. According to the prevailing literature, it is Kumaraswamy et al. (2001, 2002), who made the initial attempt to develop a model to define the culture at project level related to construction industry. However, this model is heavily criticised by other researchers for being complex and difficult to adopt. In addition, there are some other researchers who have carried out different studies related to culture at project level with certain limitations such as ignoring construction project as a temporary organisation and sticking to rare procurement approaches. This is common in the work done by Ankrah et al. (2005,

2009); Thomas et al. (2002); and, Zuo (2008). Thomas et al. (2002) directly used the Competing Values Framework in evaluating the quality outcomes in construction project context with the underpinning assumption that construction projects possess the features of an organisation. However, Ankrah et al. (2005, 2009) and Zuo (2008) have tried to incorporate some of the unique features of the construction project teams during their studies. Zuo (2008) has made a fair attempt to bring forward a model for culture. However, it is limited to procurement approaches like relationship contracting which takes the nature of partnering and alliancing practices while ignoring common methods such as the traditional (separated) procurement which is more popular in construction industries in most of the countries.

More importantly, the biggest flaw in the aforementioned studies is the lack of consensus on what cultural manifestation better describe the culture at project level. The long list of cultural manifestations includes artefacts, norms, behaviours, values, basic assumptions and so on. However, only a limited number of researchers highlight the importance of studying the inner layers of a cultural context which include values and basic assumptions. Schein (1983, 1984) brings forward empirical evidence to convince of the necessity of studying the basic assumptions of a cultural context since basic assumptions are the real essence of culture. Learning basic assumptions gives way to interpret any of the other given cultural manifestation.

In addition, Martin (2004) highlights the drawbacks of cultural studies with single-perspectives; that is either culture is a shared phenomenon throughout the organisation (integration perspective) or culture is shared only among sub-cultural groups of the organisation (differentiation perspective) or there is no shared culture within the organisation and only an ambiguity exists (fragmentation perspective). Martin (2004) elaborates on the value of a cultural research carried out adopting all three perspectives. Thus, considering all the arguments and theoretical concerns related to the project culture, development of a conceptual framework for identifying and analysing construction project culture and its philosophical interpretation are presented in the next chapter.

CHAPTER 03: RESEARCH FRAMEWORK & ITS PHILOSOPHICAL INTERPRETATION

3.1 Introduction

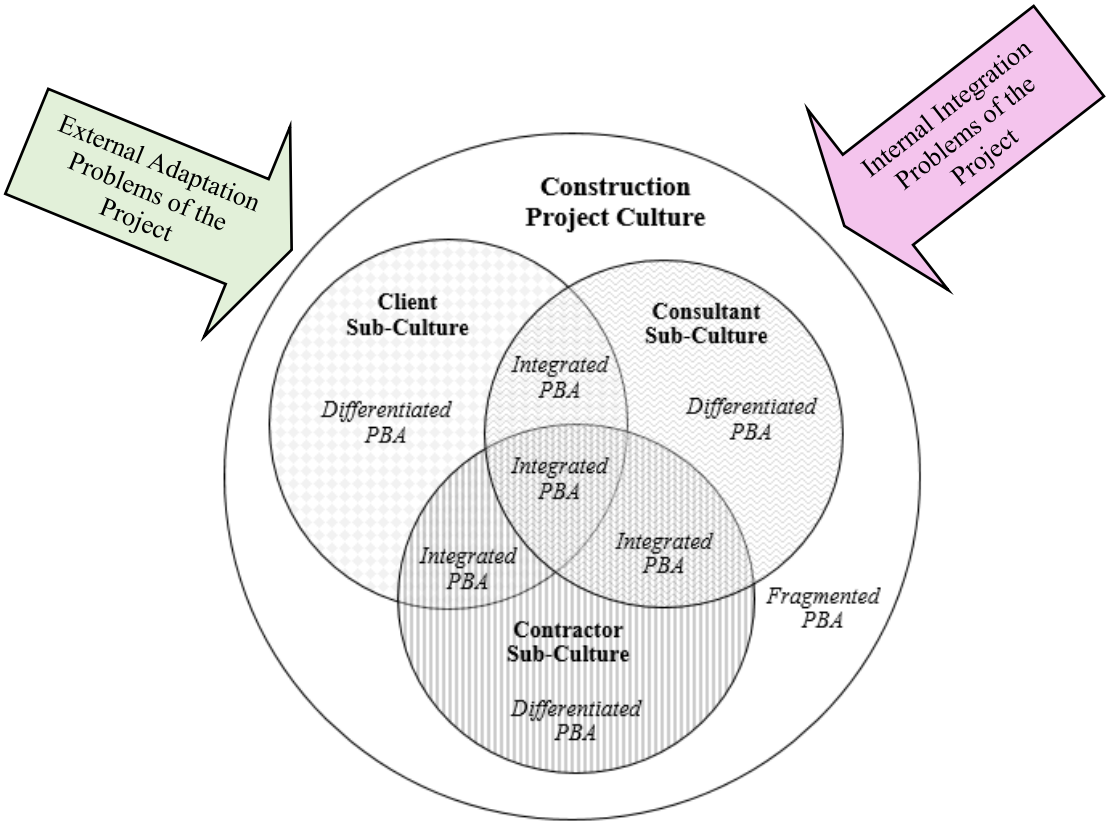
This chapter intends to elaborate on the development of the research framework for construction project culture. Further, a detail discussion on the philosophical position of the proposed theoretical framework is presented including explanations on; philosophical position as a cultural research, philosophical position in using three perspectives of cultural analysis and a critique on conceptualisation of culture as a root-metaphor.

3.2 Conceptual framework for understanding project culture in construction

This research is carried out in search of an answer to the research question "how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?" Considering the comprehensiveness, exclusiveness of dimensions, parsimony and possible application for individual and aggregate levels (Maznevski et al., 2002), this research follows the theory building behind the Value Orientation Theory. Therefore, the research intends to go behind searching solutions (basic assumptions) for the limited number of common set of human problems, for which construction project team members must at all times find some solution within the range of solutions (refer Section 2.3).

From different cultural manifestations discussed in Sections 2.3, 2.4 and 2.5, it is the patterns of underlying assumptions that provide the real essence of culture. Therefore, patterns of underlying assumptions of the construction project team members have been identified as the cultural manifestation of the conceptual framework to understand construction project culture, which is presented in Figure 3.1. According to Figure 3.1, the larger circle shows the boundary of the construction project culture. The three small circles intersecting at the middle demonstrate the three sub-cultures of client, contractor and consultant. Different intersections of the three circles represent

integrated patterns of basic assumptions and differentiated patterns basic assumptions. The area out of the three small group indicates the fragmented patterns of basic assumptions, since this set of basic assumptions include ambiguities in basic assumptions.



PBA – Patterns of Basic Assumptions

Figure 3.1: Conceptual framework to understand construction project culture

The two arrows pointed toward the bigger circle indicate the internal integration problems and external adaptation problems of the construction project, which could give rise to the underlying patterns of basic assumptions of the project culture. This framework is free from concepts specific for any sector (public or private) or the Sri Lankan context. Thus, it could be argued that this framework could be tested for any sector in construction project context or any location.

This research following the Value Orientation Theory, argues on a set of human problems, for which a construction project would respond with different solutions.

These responses as solutions would ultimately reveal the patterns of basic assumptions of the construction project culture. A list of such problems that would aid to unveil construction project culture, derived from the organisational cultural assumptions identified by Schein (1983, 2009) and individual cultural assumptions identified by Hills (2002) are presented in Table 2.1 in Chapter 2. Accordingly, some areas to be looked into when answering the research question, are indicated in Table 3.1. These areas are grouped by the cultural dimensions identified by Schein (1983, 2009) and Hills (2002).

It is important to note that the problem; 'What should be the basic motivation for work?' of Hills (2002) is disregarded as it is very much similar to the idea behind 'What should be the motive for behaving?' in the author's own list. All the other problems for individuals and organisations by Schein (1983, 2009) and Hills (2002) are re-worded to tally with construction project context in search of underlying basic assumptions of the construction project culture.

It is argued in Section 2.6 that more insight could be achieved in project culture, if it could be analysed related to sub-cultures of executive, engineer and operator. Thus, this research expects the 'executive sub-culture' to include the client and the client's representatives, 'engineer sub-culture' to include the consultants and 'operator sub-culture' to include the contractor's team within the construction project cultural context as the dominant sub-cultures. It would be an attempt to believe that 'professional sub-culture' as dominant among the different sub-cultural groups constituting a construction project culture as elaborated by Kumaraswamy et al. (2002). Thereby, in answering the research question, existence of sub-cultural groups also will be looked into.

The three perspective theory of Martin (2002); integration, differentiation, and fragmentation too would be addressed during interpretation of project culture as discussed in Section 2.7. This would provide a vivid picture to construction project culture than elaborating culture only with the shared view, as most of the researchers into construction project culture has done so far. The different areas inside the bigger circle in the framework in Figure 3.1 represent these three perspectives related to

underlying assumptions of the project culture, i.e. integrated patterns of basic assumptions of the construction project, differentiated patterns of basic assumptions of sub-cultural groups and fragmented patterns of basic assumptions of the construction project.

Table 3.1: Cultural dimensional areas to be looked into when answering the main research question

Cultural Dimension	Cultural Dimensional Areas to be Looked into
1. The nature of human relationships	A1 - What is the best authority system for the construction project?
	A2 - What is the best way to organise project society?
	A3 - What is the correct way to relate to each other, to distribute power and affection within project context?
2. The nature of human nature	A4 - What is the nature of human nature?
3. The nature of reality and truth	A5 - What is the way reality and truth to be defined within the project context?
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?
5. The nature of time	A7 - What kinds of time units are most relevant for the conduct of daily affairs within the project?
6. Acceptance on homogeneity or diversity	A8 - Is the team best off if it is highly diverse or if it is highly homogeneous?
	A9 - Should individuals in the project team be encouraged to innovate or conform?
7. Unknowable and uncontrollable	A10 - Does the project team members tend to believe in fate/uncontrollability?
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?
11. The organisation's relationship to its environment	A14 - Does the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?

Thereby, in answering the man research question, the underlying patterns of basic assumptions in construction projects, which are in harmony among all team members (integrated patterns of basic assumptions), some in conflict among sub-groups within the project (differentiated patterns of basic assumptions) and some in paradox (fragmented patterns of basic assumptions) will also be analysed in depth.

Next, the internal integration problems (language, boundaries, power and status, intimacy, rewards and punishments and ideology) and external adaptation problems (strategy, goals, means of accomplishing goals, measuring performance and corrections) (refer Section 2.5.3) of the construction project are used to extract the patterns of basic assumptions in the construction project culture. The two arrows pointed toward the triangle in Figure 3.1 indicate the internal integration problems and external adaptation problems of the construction project team, which give rise to the patterns of underlying basic assumptions of the project culture.

Finally, a definition for construction project culture is derived considering the literature synthesis done in Chapter 2 for better elaboration of the conceptual framework developed in Figure 3.1 as follows:

Construction project culture is the patterns of underlying basic assumptions of the project team members; some in harmony among team members, some in conflict among sub-groups within the project and some in paradox, demonstrated through the responses for internal integration and external adaption problems of the project.

The work of different authors used in developing this working definition and the conceptual framework in Figure 3.1 are summarised in Table 3.2. Next, research philosophies are discussed in general as an approach to the philosophical interpretation of the conceptual framework presented in Figure 3.1.

Table 3.2: Summary of the research works from different authors referred in working definition and the conceptual framework

Theory Area	Author/s Referred
Patterns of basic assumptions as a cultural manifestation	Schein (1983, 1984, 1990, 2009)
Value Orientation Theory	Kluckhohn and Strodtbeck (1961) Maznevski et al. (2002)
Basic Assumptions	Schein (1983, 2009) Hills (2002)
Three Perspectives Theory (Integration, Differentiation, Fragmentation)	Martin (2002, 2004) Kappos and Rivard (2007) Harris and Ogbonna (1998)
Existence of a shared view of culture	Zuo and Zillante (2005) Hofstede (1980) Schein (1983, 1984, 1990, 2009)

Theory Area	Author/s Referred
Existence of dominant sub-cultures	Kumaraswamy et al. (2002, 2004) Schein (1996)
Existence of ambiguities in culture	Gajendran et al. (2012)
Internal integration and external adaptation problems	Schein (1990, 2009) Ankrah et al. (2009)

3.3 Research philosophy

Research philosophy contains the assumptions how the researcher views the world and this affects to the choice of research strategy and method. It provides us an understanding on what we are investigating. Moreover, it reflects the view of the researcher on relationship between the knowledge and the process adopted to create that knowledge. The best choice of a research philosophy depends on the type of research question the researcher tries to find answers to (Saunders, Philip, & Thornhill, 2009). Further, according to Saunders et al., (2009), these philosophical assumptions basically threefold as; ontology, epistemology and axiology. However, Morgan and Smircich (1986) bring-forward three types of assumptions to decide on the philosophical position of the research called; ontological assumptions, assumptions of human nature and epistemological stance. They argue that assumptions on ontology and human nature lead to the decision on epistemological assumptions.

Ontology is about how or in what way the world operates (Saunders et al., 2009) or it is the nature of reality (Kulatunga, Amaratunga, & Haigh, 2008). According to Saunders et al. (2009), the two extremes of ontology are explained through Objectivism and Subjectivisms. Objectivism is that a reality exists independent of the social actors. Therefore, related to management research, objectivists may believe though aspects of management differ organisational-wise, the essence of management would be the same in every organisation. In contrast, subjectivism is that no reality exists independent of the social actors and reality is created through the perceptions and consequent actions of them. For example, objectivism assumes that management in every organisation is similar and is in a structured way. However, subjectivism assume that managers attach their own views to their systems and how they perceive

how jobs should be done and it is worth looking into the management in organisations with those meanings created by them as well. This is viewed as social constructionism.

In addition, Morgan and Smircich (1986) show a further six divisions of assumptions of ontology in social science research along the subjectivist-objectivist paradigm. This includes; 'reality as concrete structure' in its high objectivist paradigm while 'reality as a project of human imagination' or 'reality as a social construction' in the high subjectivist paradigm. A detail discussion of these Morgan and Smircich's (1986) work related to cultural philosophical context would be brought-forward later in this section.

Epistemology is about how knowledge is acquired and accepted (Kulatunga et al. 2008). Creswell (2007) elaborates epistemology by questioning on the relationship between researcher and what is being researched. He indicates that along the subjective-objective paradigm, the epistemological assumption varies towards objectivism to subjectivism as the researcher tries to reduce the distance between himself or herself and that being researched. Saunders et al. (2009) argue that the two extremes of epistemology include acceptable knowledge to be acquired through objective measurement of the phenomenon or by subjective means of knowledge acquisition with thick descriptions and narrations. Morgan and Smircich (1986) identify the two extremes of epistemological stance as to construct a positivist science in objectivist's paradigm and to obtain phenomenological insight or to understand how social reality is created in subjectivist's paradigm.

Axiology as the third type of philosophical assumption about how much value is placed by the researcher on the study or throughout the research process. The amount of value placed by the researcher increases more towards subjectivism along the objectivist-subjectivist continuum. More value input is called value laden and lesser value input is indicated as value free (Kulatunge et al., 2008).

Based on these assumptions different researchers bring in number of different types of philosophical positions. Saunders et al. (2009) identify four major types of research philosophies as; Positivism, Realism, Interpretivism, and Pragmatism. Creswell

(2009) name them as research paradigms or worldviews indicating four types; Positivist Worldview, Social Constructivist Worldview (Interpretivism), Advocacy and Participatory Worldview and Pragmatic Worldview. Positivism, Interpretivism and Pragmatism as common three types would be discussed in detail subsequently.

Positivism – Creswell (2009, 2007) explains that positivism argues on a single reality which is impractical for studies on behaviours and human actions. Thus, now it is post-positivism that governs the research arena with some concerns of multiple perspectives from participants. Positivism in management research is apparent when the ontological assumptions include; external, objective and independent of social actors, epistemological assumptions include; focus on causality with high generalisability and reducing phenomena to simple elements and axiological assumptions carrying a value-free way from the researcher. This paradigm governs quantitative means of knowledge creation (Saunders et al., 2009).

Interpretivism (Social Constructivism) – Interpretivism is also called as social constructivism. Berger and Luckmann (1971) provide the following explanation on social construction of reality in social science research with simple explanations on ontology (reality) and epistemology (knowledge) which is worth stating:

> …the man in the street does not ordinarily trouble himself about what is 'real' to him and about what he 'knows' unless he is stopped short by some sort of problem. He takes his 'reality' and his. 'knowledge' for granted…the man in the street may believe that he possesses 'freedom of the will' and that he is therefore 'responsible' for his actions, at the same time denying this 'freedom' and this 'responsibility' to infants and lunatics… and in so far as all human 'knowledge' is developed, transmitted and maintained in social situations, the sociology of knowledge must seek to understand the processes by which this is done in such a way that a taken-for-granted 'reality' congeals for the man in the street. In other words, we contend that the sociology of knowledge is concerned with the analysis of the social construction of reality. (pp. 14, 15)

Social constructivism is into development of subjective meanings with a variety in those meanings thus, complexity in it (Creswell, 2009). Interpretivism holds the ontological assumptions that reality is socially constructed and multiple. Thus, leading to the epistemological assumptions on creating subjective meanings with qualitative research mechanisms. The axiology of the paradigm is value laden with the difficulty to separate the researcher and what is being researched (Saunders et al., 2009).

Pragmatism - The research philosophy-pragmatism governs when a researcher happens to believe that the determinant of the ontology, epistemology and axiology is the research question in hand. If a given research question does not hold the perfect match to interpretivism or positivism where the research approach quantitative or qualitative solely would not serve the purpose (however, the mixed method approach is the one that suits), it is the research pragmatism that governs (Saunders et al., 2009).

Next, these research paradigms together with the underlying philosophical assumptions are further discussed in cultural research context to bring insights into the research philosophy of this research.

3.4 Philosophical position as a cultural research

According to Smircich (1983), culture at organisational level studies carry two forms; either culture as a variable or a root metaphor. Further, culture is considered either as an external or internal variable or dependent or independent variable as something an organisation "has" in comparative management studies or corporate culture studies. These comparative management studies tend to analyse patterns of attitudes, beliefs or managerial practices across countries while corporate culture studies argue on creation of cultural artefacts such as rituals, legends and ceremonies as by-products while dealing with organisational processes and outcomes including; goals, administrative system, sociocultural system, production system and technology and structure. Here, culture is considered as glue that holds the organisation together. The purpose of this research is to view culture as a variable in an organisation and study how culture can be changed to cater managerial requirements.

Thus, it could be argued that these cultural studies on comparative management studies and corporate culture studies hold the ontological assumptions on the phenomenon 'culture' as a 'concrete structure' or a 'concrete process' in relation to the elaborations on social science research by Morgan and Smircich (1986) (refer Table 3.3). According to them, such ontological assumptions in social research lead to the epistemological stance to construct a positivist science or to study systems, process or change with an objectivist approach. Thus, such researches are directed towards the philosophical paradigm of positivism. Researchers in to studying culture at project level in construction context are mostly holding the assumptions related to positivism. For example; Zuo (2008), who developed a construction project cultural framework related to project in relationship contracting has used quantitative methods of measuring the dimensions of culture and studying its effect on project performance. Zuo (2008) attempts to learn lessons from the project culture in Australian construction industry for Chinese construction industry.

Here Zuo's (2008) intention is to study project culture as a variable which could be manipulated for better performance, thus carrying ontological assumptions on project culture as reality as a variable which has an independent existence from its context and could be used as a management tool. Further, Thomas et al. (2002) with their study on analysing the relationship between construction project culture and the project quality outcomes have also followed quantitative means using Quinn's Competing Values Framework. They also consider project culture as a variable which affects the project quality outcomes.

Table 3.3: Philosophical assumptions in social science research

Subjectivist Approach to Social Science ⟷ **Objectivist Approach to Social Science**

Core Ontological Assumptions	reality as a projection of human imagination	reality as social construction	reality as a realm of symbolic discourse	reality as a contextual field of information	reality as a concrete process	reality as a concrete structure
Basic Epistemological Stance	to obtain phenomenological insight, revelation	to understand how social reality is created	to understand patterns of symbolic discourse	to map contexts	to study systems, process, change	to construct a positivist science
Some Favoured Metaphors	Transcendental	Language game, accomplishment, text	Theatre, culture	cybernetic	organism	machine

Source: Adapted from Morgan and Smircich (1986, p.492)

Ankrah et al. (2009) also used objective quantitative means to identify the factors affecting the construction project culture which is more toward looking at project culture as something an organisation has by following philosophical assumption in positivism.

In contrast to the view of culture as a 'variable', culture can also be considered as a 'root metaphor' or something an organisation "is". According to Smircich (1983), culture studies at organisational level are carried out considering organisations as systems of thought (e.g. cognitive organisation theory) or organisations are patterns of symbolic thoughts (e.g. symbolic organisation theory) or organisations are forms and practices of unconscious processes (e.g. transformational organisation theory).

Here, organisation itself is considered as the culture. Smircich (1983) further elaborate that while the purpose of studying culture as a variable in organisational management is to assist prediction, generalisability, causality and control, the purpose of looking into culture as a 'root metaphor' in organisational studies is to learn the fundamental issues of meaning and processes by which organisational life is possible. When culture is understood as a system of thought or in other terms, as a master contract among the members of the organisation, it is to elaborate how the rules have been agreed among the organisational members pertaining to the organisation of material phenomenon, things, events, behaviours and emotions of them. Studying culture as patterns of symbolic thoughts in organisation is to analysis how individuals in organisations interpret and understand their experience and how these interpretations can be related to their actions. Moreover, studying culture as unconscious processes penetrate beneath the surface level appearance and experience to uncover the objective foundations of social arrangements.

Thus, all the three types of cultural studies discussed above are trying to understand culture as a root metaphor which could be argued that they are carrying the ontological assumptions of reality as; a contextual filed of information (culture as systems of thought), a realm of symbolic discourse (culture as patterns of symbolic thoughts) and

reality as a social constructor (culture as forms and practices of unconscious processes) in relation to the explanations on social science research by Morgan and Smircich (1986) in Table 3.3.

Research Philosophy of this research - Having reviewing these three types of cultural analysis, a contention could be brought about that this research is more in line with the belief that culture is the forms and practices of unconscious processes of construction project team members. This is because, this research expects to unfold the patterns of underlying basic assumptions of the construction project teams in Sri Lankan context. This is because, patterns of basic assumptions are unconscious or psychological processes of human mind. Thus, this research tends to consider culture as a root metaphor with ontological assumption of reality as a social construction. Therefore, subjective qualitative means of knowledge creating is expected with thick descriptions with the axiology of more value input from researcher on the research process. This leads to the epistemology of understanding how the social reality about project culture is being created. Thus, the research paradigm of this research is interpretivism with the cultural philosophical position being culture as a root-metaphor. Next, the philosophical position in using the three perspective of cultural analysis would be discussed in detail.

3.5 Philosophical position in using three perspectives of cultural analysis

Gajendran et al. (2012) developed a philosophical framework for studying construction culture at project level as depicted in Figure 3.2. This philosophical framework includes three synthesised cultural philosophical positions namely; integration-technical, differentiation-practical and fragmentation-emancipation.

The integration-technical philosophical position describes that such cultural studies are to identify culture as a shared thing across the organisation (including the project organisation). According to the authors, the purpose of such a study would be to identify and manipulate the culture to an intended type of a culture considering culture as a variable which belongs to the traditional functional paradigm. Here, Gajendran *et al*. (2012) bring in the work of Schein (1993, 2004) to demonstrate how the integration perspective has been used in understanding culture.

Perspective/Attributes	**Integration**	**Differentiation**	**Fragmentation**
Degree of Consensus	Culture as shared across the organisation	Culture as shared within groups but not across an organisation	Culture unshared in the organisation
Relationship to manifestation	Consistency exists among cultural manifestations. Various levels in the hierarchy display similar viewpoints. Culture is monolith, integrated and homogeneous.	Consistency and inconsistency among cultural manifestations exists at different levels. This promotes differentiation and diversity at group and individual level.	Lack of clarity of consistency or inconsistency among cultural manifestations.
Orientation/ Attributes	**Technical**	**Practical**	**Emancipatory**
Focus	The focus is to identify and manipulate cultural variables to generate the intended culture	The focus is to generate and interpret symbolic communication to assist cultural understanding	The focus is to expose domination and exploitation aspects of culture
Process	The emergence/ management of culture is influenced by a 'calculation' process that enhances prediction and control	The emergence/ management of culture is influenced by an 'Appreciation' process that improve mutual understanding	The emergence/ management of culture is influenced by a 'Transformational' process that develops more rational social relations
Outcome	The outcome of this orientation is the removal of formal irrationality in organisations	The outcome of this orientation is the removal misunderstanding	The outcome of this orientation is the removal of socially unnecessary suffering

Figure 3.2: Three philosophical positions of culture

Source: Adapted from Gajendran et al. (2012)

However, Gajendran *et al*. (2012) suggest that purpose of integration perspective is for 'technical' orientation having links with controlling the culture which is against the philosophical position of Schein (1993, 2004). Schein (2009) brings in some empirical data on a case study on an unsuccessful attempt of a newly hired Chief executive Officer (CEO) of a massive insurance company to change the culture.

This case is elaborated in Case 03 in Sub-Section 2.5.4. Within this case, Schein (2009) shows that the change initiatives by the CEO has been unsuccessful due to the reason he had not identified the underlying basic assumption of his company employees of "the correct way to do things is to follow rules". Therefore, to improve innovation, CEO had to bring-in change initiatives to the organisational system that does not go against the said underlying basic assumption. Therefore, it is arguable that 'integrative' perspective to culture not necessarily holds 'technical' perspective in functional paradigm. Further, Parker (2000) depicts that culture can be managed to the extent that nobody can totally control the outcome of such interventions. According to him, this is because culture deals with beliefs of people which are hard to be changed as manager desires.

Study of Thomas et al. (2002) highly converge with the integrate-technical perspective of cultural philosophy where they provide recommendations that 'clan type' of cultures would bring in better quality outcomes while, 'market type' of cultures would bring in weaker quality outcomes in construction projects. They further elaborate that managers in construction industry should look into developing strong relationships which cater for a 'clan type' of a culture to achieve better quality in project processes and output. Here, they argue on a strong 'clan type' integrated culture with a technical orientation of managers.

The construction project cultural framework proposed in this research (refer Figure 3.1) intends to identify the integration perspective in construction project culture yet, not within the functional paradigm of culture as a variable, but within a non-functional paradigm as culture as a root metaphor as described by Schein (2009).

The second cultural philosophical position proposed by Gajendran et al. (2012) is 'differentiation- practical'. Here, 'differentiation' holds the belief that shared cultures exist only among several groups within an organisation and an organisation-wide shared culture will not exist. This is the belief on sub-cultural groups in an organisation. Gajendran et al. (2012) describe that this perspective remains in-between the functional and non-functional paradigm. They further describe that differentiation perspective holds the philosophical paradigm of pragmatism. This is because, according to them, differentiation perspective is formed by a mix of the integration perspective within each sub-culture group and fragmentation perspective among sub-cultural groups.

However, within the extent literature it is found that Hofstede (1998) using solely a functional approach to study organisational subcultures. Here, they use the six dimensions of organisational culture; process oriented vs. results oriented, employee oriented vs. job oriented, parochial vs. professional, open system vs. closed system, loose vs. tight control, normative vs. pragmatic which were proposed previously by Hofestede et al. (1990) in identifying a unitary organisational culture to analyse sub-cultural groups within and organisation and come up with the three types of sub-cultural groups called; professional sub-culture, administrative sub-culture and customer interface sub-culture. In contrast, Schein (1996) studies on sub-cultural groups within and organisation where, he uses subjective interpretive process to elaborate the three types of sub-cultural groups namely; operator sub-culture, engineer sub-culture and executive sub-culture.

Hofstede (1998) describe sub-cultural analysis as another level of analysis within organisational culture. However, for a proper sub-culture to be identified, the unit has to be holding a strong homogenous characteristic with regard to the specific cultural characteristic being studied. According to Hofstede (1998), some aspects of culture can be applied organisation-wide while some aspects can be better identified within small units within the organisation which are called sub-cultural units. This shows that Hofstede (1998) also believes in a shared culture among sub-cultural groups. Similarly, Schein (1990) holds the view that when there are many sub-cultures within

an organisation, a shared culture is negotiated among the sub-cultures as an outcome of the interactions between them. Therefore, integration perspective seems applicable within the differentiation perspective by both functionalists and non-functionalists. Further, with regard to differentiation perspective, Gajendran et al. (2012) explain that integration perspective still remains within the organisation and ambiguity is there only among sub-cultures.

Thus, the conceptual framework for construction project culture proposed in this research (refer Figure 3.1) further includes differentiation perspective together with integration perspective within the assumed interpretive paradigm. Moreover, the purpose of differentiation perspective highlighted by Gajendran et al. (2012) is the elimination of misunderstandings among sub-cultures and within the organisation as a whole. It is called as the 'practical' orientation according to the cultural philosophical framework by Gajendra et al. (2012). This seems to be similar to the purpose highlighted by Schein (2009) for both the integration perspective and differentiation perspective. Schein (1996, p.12) describes that;

> …we must take the concept of culture more seriously than we have. Instead of superficially manipulating a few priorities and calling that "culture change," we must recognise and accept how deeply embedded the shared, tacit assumptions of executives, engineers, and employees are. We have lived in this industrial system for more than a century and have developed these assumptions as an effective way to deal with our problems. Each culture can justify itself historically, and each has contributed to the success of the industrial system that has evolved.

The third cultural philosophical position proposed by Gajendran et al. (2012) is named as; 'fragmentation-emancipation'. Within this philosophical perspective, 'fragmentation' holds the view that there is no shared culture either organisation-wide or within sub-culture groups. It is believed that there is no consistency among cultural manifestations which lead to dysfunctional aspects of in organisations and which aligns with the non-functional paradigm. This perspective tries to acknowledge the ambiguities in within culture where normally integration perspective ignores or tries

to eliminate the ambiguities. The outcome of this perspective is called ‘emancipation’ which seeks to remove the socially unnecessary suffering. Though this perspective is totally within the non-functional paradigm of culture considering culture densely as a root-metaphor, Ankrah et al (2009), being functionalists in construction research context, highlights the importance of fragmentation view in cultural research as follows:

> Another possible area of future research is the examination of whether conflicts exist between organisational and project cultures by exploring differences or similarities between individuals in different firms working on the same projects, in the same firm but working on different projects or across multiple projects, and those involved in long term projects. Such studies will enrich knowledge on project cultures and how these can be aligned with project goals and how interface conflicts or gaps between project and organisational cultures can be bridged. (p.18)

Gajendran et al. (2012) argue that construction project organisations hold the characteristics of fragmentation with the characteristics of not agreeing upon clear boundaries or shared solutions and not attempting to reconcile contradictory beliefs among members. This is due to the culture being a ‘loosely coupled system with transient boundaries and temporarily connected during the project lifetime.

Fragmentation perspective within the differentiation perspective is popular among many research studies. For example; Richter and Koch (2004) elaborates ambiguity in safety culture as the interpretation of risks and how to act was up to the workers. However, in the wake of an accident, management issued warnings if workers did not comply with a rule of stopping machines in risky situations, which the accident proved had been present. This can be highlighted as warnings being ambiguous.

Thus, this research into identifying patterns of basic assumptions in construction project culture also expects to look in to the ambiguity in culture, thereby bringing-in attention of the relevant parties for emancipation of unnecessary tension and suffering between sub-cultural groups and individuals within the construction project culture.

Since, this perspective in cultural analysis is not popular as much as differentiation and integration perspectives, this could bring in lots of eye opening in value of research in fragmentation perspective.

Thus, this research study seeks to analyses and interprets construction project culture in all three perspectives. According to Martin (2004), single study carried out with all three perspectives avoids theoretical blind spots and enhance the understanding. Further, she points out that though single perspective is popular among cultural research, many of the recent research indicate that 'any' organisational culture contains cultural aspects related to all the three perspectives. According to Martin (2004), some popular cultural research carried out using the three perspectives include studies on; temporary educational organisation for unemployed women in England, a newly privatised bank in Turkey, the problem of truancy in an urban high school in the United States, changing organisational cultures in the Peace Corps/Africa, a search for a university provost and professional subcultures in an Australian home care service.

3.6 Critique on conceptualisation of culture as a root-metaphor for studying patterns of basic assumptions

According to Schein (1983, 1990), culture is the thinking processes or the psychological processes of mind. This is called as 'patterns of basic assumptions'. Thus, the basic assumptions alone will not indicate culture, where its 'pattern' gives the notion of culture. It could be argued that 'pattern' is the psychological 'process'. For example; 'a basic assumption' of organisational culture given by Schein (1990, p.114) includes; "the organisational relationship to its environment is that the organisation perceive itself to be submissive", which leads to the 'pattern of basic assumption' of operator sub-culture identified by Schein (1996, p15) as; "No matter how carefully engineered the production process is or how carefully rules and routines are specified, operators must have the capacity to learn and to deal with surprises" (refer Table 2.2 in Sub Section 2.6 of Chapter 2) . Pattern is demonstrated through the other cultural manifestations such as artefacts including 'carefully designed production processes' with the values and behaviour for 'readiness for emergencies'. However, the hidden meaning of these artefacts, values and behaviours could be better

understood only by the basic assumption. Nevertheless, it is not alone with the 'basic assumption' but, through its so called 'pattern'. Thus, these cultural elaborations are highly aligned with Smircich's (1983, p.351) structural and psychodynamic perspective of culture which is defined as; "Culture may also be regarded as the expression of unconscious psychological processes".

However, a strong criticism is brought forward by Ankrah et al. (2009, p.28) on Schein's definition of culture and the philosophical position as; "Even Schein (2004) who fundamentally disagrees with the conceptualisation of culture as something an organisation has and relating to behaviour patterns, recognises that culture is 'developed' through an organisation's attempts to solve its problems of internal integration and external adaptation". Further, based on this argument, Ankrah et al. (2009) try to identify factors affecting the culture, specifically, factors affecting construction project culture considering culture is something the organisation has.

Prior to analyse this argument, it is worth understanding three major theoretical areas on how Schein defined organisational culture throughout the extent literature he has published so far.

A. According to Schein (1990, p.111), organisational culture is defined as; "(a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems".
B. Further Schein (1990, p.112) elaborates; "Culture is ubiquitous. It covers all areas of group life. A simplifying typology is always dangerous because one may not have the right variables in it, but if one distils from small group theory the dimensions that recur in group studies, one can identify a set of major external and internal tasks that all groups face and with which they must learn to cope".
C. Meaning creation of culture is described by Schein (1990, p.112) as; "Once one understands some of these assumptions, it becomes much easier to

decipher the meanings implicit in the various behavioural and artefactual phenomena one observes. Furthermore, once one understands the underlying taken-for-granted assumptions, one can better understand how cultures can seem to be ambiguous or even self-contradictory".

D. In addition, Schein (1984, 1990) describes cultural elements as 'learned solutions to problems'. Thus, Based on (A) above, it could be argued that the 'learned solutions to the problems' are the 'patterns of basic assumptions'. The said 'problems' include the internal integration and external adaptation problems.
E. There are two types of such learned solutions identified by Schein (1984) as; positive problem solving situations, which reinforce, whether an attempted solution produces positive or negative results and anxiety avoidance situations, where the attempted solution does or does not avoid anxiety.

Looking into these facts, following elaborations can be made about how Schein conceptualised organisational culture within the paradigm of culture as a root metaphor; culture is something an organisation is:

- Organisation is a collection of solutions to the problems of internal integration and external adaptation [based on (B)]
- The meaning of these solutions are demonstrated through patterns of basic assumptions, which is the organisational culture [based on (C)]
- Solutions exist because of problems [based on (A,B)]
- However, patterns of basic assumptions (culture) exist not because of problems, but because of solutions to 'previous problems' that proved correct or reduced anxiety [based on (A,D,E)]

Therefore, the argument of Ankrah et al. (2009, p.28) as "culture is 'developed' through an organisation's attempts to solve its problems of internal integration and external adaptation" is invalid. This is because culture is developed from solutions to previous problems, which are from the already developed patterns of basic assumptions from past experience. Therefore, culture has a cyclical dynamic nature. This argument of 'culture is affected by previously formed patterns of basic

assumptions' is in line with the elaboration of Kumaraswamy et al. (2002). They explain that construction project culture is an outcome of national culture, industry culture, organisational culture and different professional sub-cultures. According to Schein (1990), these already developed basic assumptions come from the founder of the organisation in the initial stage of the organisation and original assumptions get modified as the organisation develops its own life experiences. Thus, culture is a complex meaning creation process for solutions to the organizational problems. Therefore, culture as Schein described can be seen as a root-metaphor.

Moreover, it can be argued that within the paradigm of culture as a root-metaphor, what Ankrah et al. (2009) identify as factors affecting construction project culture are not what they really intended, but, mere project organisational problems as described subsequently. According to Schein (1990), these internal integration and external adaptation problems include handling issues of; 'strategy', 'goals', 'means of accomplishing goals', 'measuring performance' and 'corrections' while problems of internal integration include problems related to 'language', 'boundaries', 'power and status', 'intimacy', 'rewards and punishments' and 'ideology', which are similar to the sub-systems of the total organisational system as interpreted by Smircich (1983). The factors Ankrah et al. (2009) identifies as affecting the construction project culture, which are called 'project features' include project size, complexity, the influence of participants like quantity surveyors, client and the main contractor, the level of importance of cost and health and safety, location, and the number of variations. It is obvious these are some of the internal integration and external adaptation problems identified by Schein (1990). For example; project size, complexity and the number of variations are associated with the external adaptation problems of strategy and goals of the project, while the level of importance of cost and health and safety is associated with the means of accomplishing goals. The influence of participants like quantity surveyors, client and the main contractor is associated with the internal integration problems of power and status.

Hence, within the paradigm of culture to be considered as a root metaphor, these are not factors affecting the so called culture, but, some project organisational problems.

Therefore, what Ankrah et al. (2008) have dug around are the problems of internal integration and external adaptation of construction projects, where learned solutions from those problems in abstract terms include the basic assumptions of construction project team members, which are yet to be discovered. Further, more importantly, the 'patterns of these basic assumptions' related to a 'project' also yet to be revealed to identify the real essence of construction project culture. Thus, this research aims at deriving the basic assumptions of construction project team by unveiling the patterns of underlying basic assumptions.

In summary, the research philosophy of this particular research, holding the research question; "how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?", is summarised in Table 3.4. It is important to highlight that this research is carried out within the cultural paradigm of culture to be understood as a root-metaphor, where the culture is described through the sole cultural manifestation of underlying basic assumption. Further, culture is viewed from all the three perspectives; integration, differentiation and fragmentation. However, 'practical-orientation' is used for both integration and differentiation perspectives with the expected outcome to be improvement of mutual understanding and removal of misunderstanding throughout the organisation and among sub-cultural groups. The fragmentation perspective is to hold the emancipation orientation in culture.

Table 3.4: Philosophical positions of the research

Core Ontological Assumption	Reality as a social construction		
Basic Epistemological stance	To understand how social reality is created		
Axiological Assumption	Value laden		
Cultural Perspective	Integration	Differentiation	Fragmentation
Degree of consensus in cultural perspective	Culture has a shared portion across the project organisation	Sub-cultural groups exist with some cultural aspects shared only among the sub-groups	Some cultural aspects are unshared in the project organisation
Cultural orientation	Practical		Emancipation
Outcome of cultural orientation	The outcome of the orientation to be improvement of mutual understanding and removal of misunderstanding throughout the organisation and among sub-cultural groups		The outcome of this orientation is the removal of socially unnecessary suffering
Cultural paradigm	Culture as a root-metaphor (non-functional)		
Cultural Manifestations	Patterns of underlying basic assumptions		

3.7 Summary

This chapter elaborated on the development of the conceptual framework and the working definition to understand construction project culture and its philosophical position. The conceptual framework was presented in Figure 3.1. It depicted how construction project culture could be understood with the aid of underlying patterns of basic assumptions of the project setting. Further, it included the internal integration and external adaptation problems as the means of extracting the patters of basic assumptions of the culture. This framework also guided on using the Three Perspective

Theory on analysing the project culture by studying the integrated, differentiated and fragmented patterns of basic assumptions. Next, a detail elaboration on philosophical position of the research was given. This chapter elaborated the treat of culture as a root metaphor, placing it in the interpretive paradigm and holding the philosophical assumptions of the same paradigms. The subsequent chapter elaborates the methodology developed for the empirical analysis of construction project culture in Sri Lankan context.

CHAPTER 04: METHOD OF STUDY

4.1 Introduction

This chapter intends to discuss the methodological framework used to address the research question identified in the previous chapters. Initially, the research process will be discussed in detail and finally, the validity of the research process will be evaluated. The research process consisted of the stages including purpose of the research, case study research design, data collection, data analysis and write-up. Validity of the research process will be evaluated in terms of construct validity, internal validity, external validity and reliability.

4.2 Purpose of the research

The purpose of this study was to find answers for the research question 'how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?' Accordingly, this research initially attempted to develop a methodology and derive the 'patterns of basic assumptions'. Then, the extracted patterns of basic assumptions were used to derive the basic assumptions. Thus, this study allowed the detail description and analysis of the 'patterns of basic assumptions' and 'basic assumptions' within the construction project. This was done by explaining the relationship of 'patterns of basic assumptions' with the responses for internal integration and external adaptation problems of construction project, which ultimately gave rise to the said 'basic assumptions'. Accordingly, this research study was able to provide 'descripto-explanatory' answers to the aforementioned research question as described by Saunders et al. (2009). According to Saunders et al. (2009), research studies could be categorised as; exploratory studies, descriptive studies and explanatory studies according to the underlying purpose or type of answer a research intends to find out. Exploratory studies were carried out to find out what was happening in a given scenario or to ask questions or to assess a phenomenon in a different set up. As described by Yin (2009), exploratory studies were carried out with the purpose of developing appropriate

hypotheses and propositions for further inquiry. The descriptive studies were carried out with the motive of broadening the understanding of a given phenomenon. These kind of descriptive studies were very popular among management and business research. In contrast, explanatory studies tried to explain causal relationships among variables (Saunders et al., 2009). However, this research was to determine the underlying basic assumptions of the construction project team is a description with a precursor with explanation, making it more of a descripto-explanatory study.

4.3 An introduction to research design and a brief of research philosophy of the research

Many researchers have proposed different frameworks to decide upon a research design. These frameworks comprised of different components to be included in a research design. Some of popular research designs along with the respective components include:

- A framework for design by Creswell (2009) by interconnecting: philosophical worldviews, strategies of inquiry, and research methods
- Nested approach by Kagioglou, Cooper, Aouad and Sexton (2000), including: research philosophy, research approach and research techniques
- Research Onion by Saunders et al. (2009), incorporating: philosophies, approaches, strategies, choice, time horizons and techniques and procedures

According to these three popular frameworks, philosophical worldviews (Creswell, 2009), research philosophy (Kagioglou et al., 2000) and philosophies (Saunders et al., 2009) carried similar meanings, indicating some set of beliefs or assumptions the research to be based on. These were identified by the synonym ‘research paradigms’ by Creswell (2002). For example, Saunders et al. (2009) identified four such research paradigms including positivism, realism, interpretivism and pragmatism.

Similarly, strategies of inquiry (Creswell, 2009), research approach (Kagioglou et al., 2000) and strategies (Saunders et al., 2009) carried similar meanings. Yin (2009) explained this concept of research strategy as the way of doing research. Creswell (2009) identified qualitative strategies of inquiry as ethnography, grounded theory,

case studies, phenomenological research and narrative research. Quantitative strategies of inquiry included survey research and experimental research.

Research techniques were the means of securing data, which were necessary to test propositions and hypotheses to solve the research problem (Baker, 2000). This phenomenon was identified as research methods (Creswell, 2009), research techniques (Kagioglou et al., 2000) and techniques and procedures (Saunders et al., 2009) by the three authors considered. These authors indicated long lists of data collection methods including questionnaires, interviews, workshops, literature review, data collection and data analysis to name few. The design of the research for this research, pertaining to the components of research philosophy, research strategy and data collection techniques are elaborated in detail within the subsequent sub sections of this chapter.

Research Philosophy - A general introduction to research philosophies and the philosophical position of this research were explained in detail within the Sub Sections 3.3 and 3.4 of Chapter 3 respectively. In summary, this research was positioned in the interpretive paradigm due to the reasons of carrying the ontological assumption of reality as a social construction, axiology of more value input from researcher on the research process and epistemology of trying to understand how the social reality about project culture was created.

4.4 Qualitative Research Strategies

According to Creswell (2002), there were main five types of qualitative research strategies as; narrative studies, phenomenology, grounded theory, ethnography and case studies. **Narrative studies** were best fit for capturing the life experiences and stories of an individual or a small number of individuals. Josselson (2006) indicated that narrative researchers refrained from building up objective knowledge about individuals, thus, different narrative researchers interpreted and theorised their understandings differently. In contrast, **phenomenology** explained the lived experience of several individuals about a given concept or phenomenon (Creswell, 2002). For example, Byrne (2001) explained how the lived experience of women, who had undergone a breast biopsy could be analysed using a phenomenological study.

Ethnography involved describing life of people as it was lived and experienced (Ingold, 2017). According to Creswell (2007), ethnography was used to explore and describe beliefs, language, behaviours and power issues of a cultural group, however, this was mostly done through participant observation. It was used when there was dearth of literature on how a certain group works. **Grounded theory** included theory building from scratch by entering the field as soon as possible the area of research was identified, without much guidance of literature, following an inductive, iterative and interactional process of data collection, analysis and interpretation (Douglas, 2003). Creswell (2009) explained **case study** as a study of an issue through the bounded system of one case or cases. These boundaries included the constraints in terms of time, events and processes.

Having given an introduction to each type of qualitative research strategies, it could be argued that grounded theory was not the choice for this research, because grounded theory concerned building up a theory without or a very little guidance of literature for the empirical study (Douglas, 2003). However, this research considered an extensive review of literature to build up a conceptual framework to guide the field data collection. Narrative studies were not a best fit for this research because, narratives were more suitable for analysing and interpreting the stories told by an individual or a small number of individuals (Josselson, 2006). In contrast, this research expected to look into responses of the project, including its members for internal integration and external adaptation problems of the project, depending on multiple sources of evidences than just relying on a narration/narrations by a limited number of members. Similarly, phenomenology too was disregarded as a research strategy for this research, since phenomenology was more into a descriptive type of a research explaining lived experience of some individuals about a given phenomenon (Byrne, 2001). In contrast, this research carried the purpose of a descripto-explanatory study. Ethnography was suited as a method to study the basic assumptions of the construction project cultural context, however, considering the bounded system, within which this research had to be carried out, case study was preferred over ethnography. The said boundaries of this research included limited access for participant observation and limited time frame

considered for the research. The choice of case study as the research strategy is discussed in detail next.

4.5 Choice of case study as the research strategy

Yin (2009) suggested that a particular research strategy has to be selected based on three conditions; the type of research question, the extent of control an investigator has over actual behavioural events, and the degree of focus on contemporary or historical events. In contrast, Saunders et al. (2009) explained that a proper research strategy should be selected based on research questions and objectives, the extent of existing knowledge on the subject area to be researched, the amount of time and resources available, and the philosophical underpinnings of the researcher. Thereby, this research intended to use case study as the research strategy and justifications for the same were elaborated within this sub section, with regard to the criteria stated by both Yin (2009) and Saunders et al. (2009).

As described by Eisenhardt (1989), a research question was much essential in a case study research to have a proper focus within a broad topic. It helped the researcher to collect specific kind of data systematically. Otherwise, the researcher would be overwhelmed by the volume of data coming across during data collection. Mintzberg (1979), elaborating on emerging strategies of direct research, emphasised the importance of having a well-defined research question prior to starting collection of data despite of the size of the sample or how small the research area being. As the author explained, the research question in a study gave a good focus to collect data systematically.

The research question of this study was set as ‘how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?’ According to Yin (2009), case study research design was appropriate for all three types of exploratory, explanatory and descriptive research given as the ‘substance’ of the research question, which included what the study was about. The ‘form’ of the research question, which indicated the type of question being asked

(whether it is a ‘why’, ‘how’, ‘what’, ‘why’ etc. type of a question?). As Yin (2009) elaborated, “how” type of questions were mostly appropriate for explanatory case study designs. However, Yin (2009) was not specifically elaborating on what sort of a research question and a research strategy would best suit for a descriptive type of a research question. Yet, Yin (2009) brought in different examples of descriptive studies and elaborated the use of case study research designs and points out how much such case studies had assisted in intense description of the given phenomenon. For example; the descriptive case study of Street Corner Society by William F. Whyte in 1943/1955. Benbasat, Goldstein, and Mead (1987) too elaborated that most of the ‘how’ type of research questions were best suited with case study research strategies. Since, this study followed a ‘descripto-explanatory study, with a ‘how’ type of research question, case study research strategy could be justified.

As elaborated by Yin (2009), the extent of control the researcher had over the behavioural event and the focus on contemporary event as opposed to the historical events, highly affected the choice of the case study as a suitable research design of a given research. This research was into extracting underlying patterns of basic assumptions and the basic assumptions of a construction project. Accordingly, researcher did not intend to manipulate the behaviour or event, rather interested in studying the actual orientations of project participants to study the patterns of basic assumptions. If there was an ability to manipulate the behaviour within the research problem, then experiments were preferred over case study as research strategy (Collis & Hussey, 2009). Thus, considering the degree of control expected in this research, case study could be justified as appropriate.

With regard to the requirement of contemporary data and events being to be analysed, Yin (2009) explained that case study was preferred over histories as a research. Even this research was interested in studying contemporary events, thus, case study was justifiable as the suitable research strategy.

4.6 Case-study research design

The case study research design included elaborations on unit of analysis and case selection.

4.6.1 Unit of analysis

Yin (2009) explained about four different types of designs for case studies named; single-case holistic design, single case embedded design, multiple-case holistic design and multiple-case embedded design. This case study design categorisation was based on the number of units of analysis and number of cases being selected for the study. When a given study was based on a single unit of analysis, it was referred to as holistic and when several units of analysis were there, the design was referred to as embedded. The unit of analysis of this research was the 'construction project culture'. Therefore, this could be refereed as a holistic study with a single unit of analysis.

4.6.2 Case selection

Eisenhardt (1989) explained selection of cases in comparison to sample selection from a population in hypothesis testing research. According to this author, identifying the population helped to reduce the unnecessary variation of the output of the study and clearly highlight the domain of the findings. According to Mason (2010), frequencies were rarely important in qualitative research, because one occurrence of the data was potentially as useful as many in understanding the process behind a topic. This was mainly because, qualitative research was concerned with meaning and not making generalised hypothesis statements. Mason (2010) further indicated that sample size in the majority of qualitative studies should generally follow the concept of saturation. According to the author, when the collection of new data did not shed any further light on the issue under investigation, it was referred as the point of saturation. Saturation was more concerned with reaching the point, where it became "counter-productive" and that "the new" discovered did not necessarily add anything to the overall story, model, theory or framework. In addition, expertise in the chosen topic could reduce the number of participants needed in a study.

According to Eisenhardt (1989), "the cases may be chosen to replicate previous cases or extend emergent theory, or they may be chosen to fill theoretical categories and provide examples of polar types (p.537)". Going in line with the same idea, Tellis (1997) stated that case study was not sampling research, where selection of the case should be done to maximise, what can be learnt within the given period of time available for the study. Eisenhardt (1989) mentioned that selecting cases from a population in a case study research should be theoretical sampling, in contrast to random sampling in hypotheses testing research, which searched for statistical generalisation.

According to the four categories of case study designs proposed by Yin (2009), number of cases to be selected for a given study was twofold as; single-case or multiple-case. Yin (2009) stated several best rationales to select a single case study. Those were; when the single case being a critical case in testing a well-formulated theory, when the cases used for the study were typical or representative cases, when the case represented an extreme case or a unique case, when the selected case for the study was a revelatory case (where the researcher gets access to a case, which previous researches were unable to reach for) and when it was a longitudinal case studying the same single case at two or more different points in time. Since, neither of the aforementioned five criteria fulfilled the requirements of this research for studying the underlying basic assumptions of the construction project team, a single case study was not considered. Such justifications included this study was not testing a well formulated theory or nor typical cases were found in the construction industry or this was not being a revelatory case or this was not being studying an extreme or unique case or not intended to carry out a longitudinal study. Thus, multiple cases were selected, considering the evidence from multiple cases being more convincing and therefore, the findings would become more robust than a single case study (Creswell, 2007).

Yin (2009) recommended that number of cases should be decided on the basis of how much of literal replications and theoretical replications expected through the study. Literal replication was about predicting similar results, while theoretical replication was about predicting contrasting results, but for known conditions. Eisenhardt (1989)

holding a similar argument to Yin (2009) indicated that the number of cases should be decided on the basis of theoretical sampling and not based on statistical sampling. Eisenhardt (1989) brought in an example for a case selection for a study carried out by Harris and Sutton in 1986 for studying about the parting ceremonies of dying organisations. Eight cases were selected for this purpose, including organisations under four categories; private-dependent, private-independent, public-dependent and public-independent. The purpose of this non-random selection had been to extend the theory to a wider range of organisations and allowing the replication of findings within the four categories of organisations.

Considering all the aforesaid facts and the robustness of the data collection techniques used with proper data triangulation (refer Sub Section 4.7), three (03) number of cases were selected for this study (Case A, Case B and Case C). The high data saturation experienced during data analysis justified the adequacy of the number of cases selected. All three cases were limited to the government projects. Similar three projects were selected expecting literal replication. Further, following criteria was considered in case selection, in addition to the aforementioned criteria:

- All cases were public sector building construction projects to limit the scope of the study
- Construction procurement method was traditional method to prevent the possibility of procurement method being a factor affecting construction project culture
- All projects were on-going to accommodate observations of the project and project team functions. This was to ease the verification of identified shared basic assumptions by participating any event, where all the interviewed members of the project team were participating (e.g. progress review meeting)
- Total project duration was more than two years and at least one year was passed since the commencement of construction stage to allow adequate time for a project culture to be developed

- Project team setting of each case consisted of a public sector client and a consultant with a private sector contractor, which was the most popular team setting for public sector building construction projects
- Past relationships among client, contractor and consultant in different past projects were allowed

Considering the unit of analysis and number of case selected, this research could be categorised as holistic-multiple case design compared to Yin's (2009) explanations on case designs.

4.6.3 Background summary of cases

The empirical study was conducted using three government building construction projects procured under traditional procurement method, located within the Colombo urban area in Sri Lanka. Table 4.1 summarises the key details regarding the three cases. Team setting of each case comprised of team members from a government client organisation, a government consultancy organisation and a private contractor organisation.

4.7 Data collection

This section explains with how the qualitative data was collected including illustrations on the interview structure and the interview process. As indicated by Yin (2009), there were six sources of data collection techniques including documentation, archival records, interviews, direct observation, participant observation and physical artefacts. Eisenhardt (1989) elaborated that interviews, observations and archival records were particularly common among researches carrying out research with case studies. Accordingly, interviews, observations and documentation were selected as the data collection techniques of this study, while major data collection technique being semi-structured interviews.

According to Flick (2009), semi-structured interviews had attracted interest among researchers and were widely used due to the advantage of extracting view points of the interviewee expressed in an openly designed interview situation than in a standardised structured interview or a questionnaire. Yin (2009) identified interviews in similar

nature as 'focused interviews'. This was when the interviews were carried out for a short period of time such as an hour and interviews could be open ended but guided by a set of questions derived from the case study protocol. Accordingly, this research followed semi-structured/focused interviews for data collection based on a pre-prepared interview guideline.

Table 4.1: Details of the selected cases

Case	**Project A**	**Project B**	**Project C**
Type	Extension to a ministry headquarters	Government hospital building	Administration building of a government commission
Project Cost (Sri Lankan Rupees)	1317 millions	500 million	800 million
Project Duration (Construction Phase)	21 months	24 months	30 months
Physical construction progress by the time of data collection	65%	70%	60%
Procurement Method	Traditional method with measure and pay contract	Traditional method with measure and pay contract	Traditional method with measure and pay contract
Past Working History	Contractor and Consultant had worked together for a previous building project	Consultant had worked for the same Client's previous renovation project	Contractor had worked for the same Client's previous renovation project

Creswell (2009, p.178) explained different types of observation techniques such as: (1) Complete participant – researcher concealed role; (2) Observer as participant - role of researcher was known; (3) Participant as observer – observation role was secondary to participant role, and (4) Complete observer – researcher observed without

participating. Yin (2009) too elaborated on two types of observations such as: (1) Direct observation – researcher did not participate with any event within the field and only passive observation and (2) Participant observation – researcher took part in a role within the context being considered. This research followed 'complete observer' or 'direct observation' technique to make passive observation of two progress review meetings of each project and a visitation to the construction site of each project selected. This was considering the boundaries of the case study, in terms of time restrictions of the research and permission available.

Documentary information for a research can be collected by means of (1) Documentation - public and private recorded data and (2) Archival records – data recorded for a period of time (Creswell, 2009; Yin, 2009). Documentation was selected as a data collection technique for this research disregarding any archival record. This was considering the limited access and permission to archival records by the selected projects.

A diagram depicting the data collection process for the three case studies is presented in Figure 4.1. For each case, initially a site visit was paid prior to data collection process, to have an understanding of the progress of work and site conditions. Next, observations were made on a randomly selected project progress review meeting. Afterwards, interviews were carried out with the selected team members from the client, contractor and consultant. Subsequently, participated for the consecutive, next project progress review meeting to make the second observations, either during half way of the total interviews or after finishing all the interviews, as per the progress review meeting got scheduled. Researcher could pay visits to the client's, contractor's and consultant's head offices and site offices during interviews although not pre-planned in the data collection process at the beginning of the research. Document reviews were carried out using some pre-defined set of project documents obtained with necessary permission. Detail descriptions of the data collection techniques are presented in the subsequent Sub-Sections 4.7.3, 4.7.4 and 4.7.5.

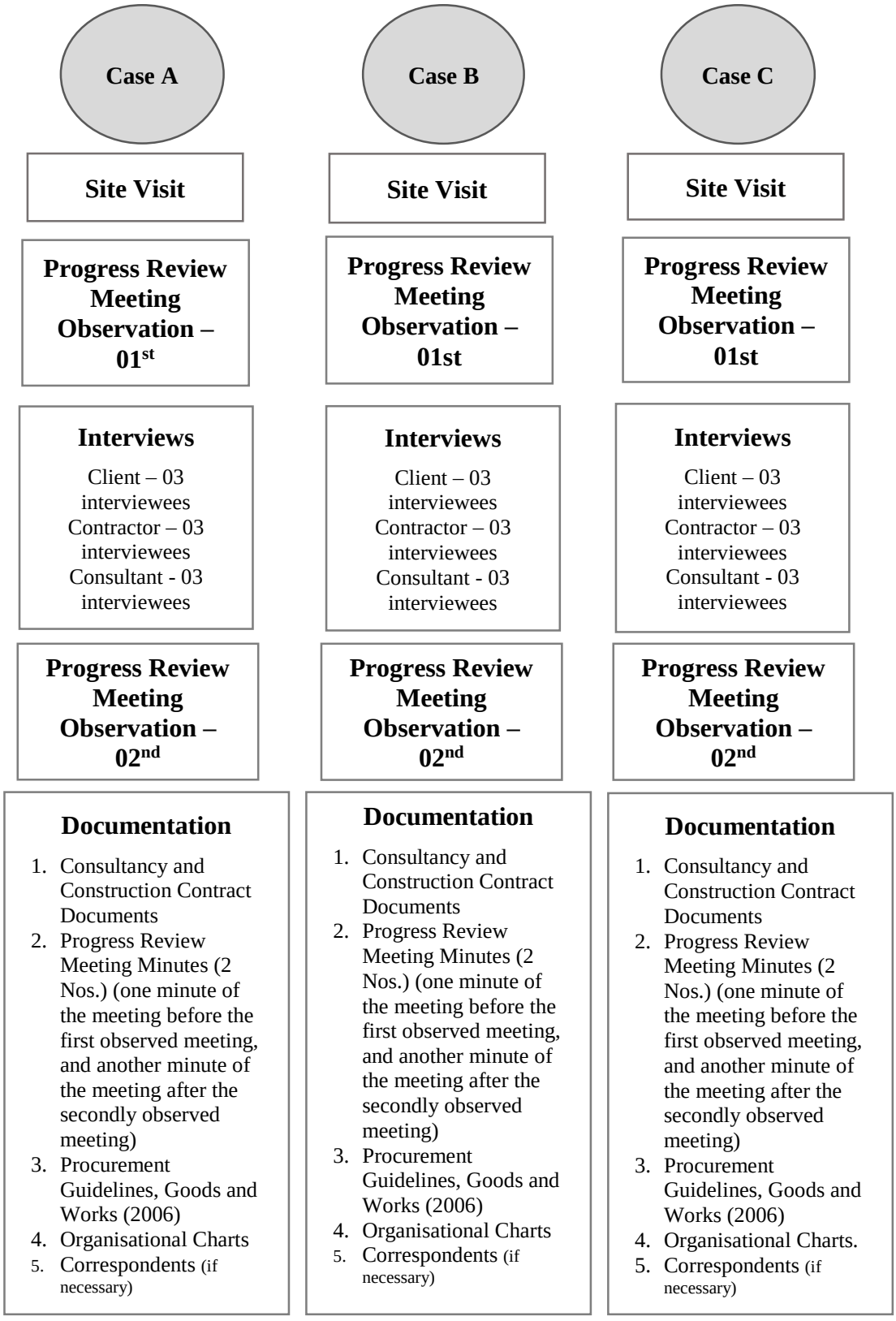


Figure 4.1: Data collection process for three case studies

4.7.1 Data triangulation

Case study was known as a triangulated research strategy. Feagin, Orum, and Sjoberg, (1991) asserted that triangulation can occur with data, investigators, theories, and even methodologies. Stake (1995) stated that the protocols, which were used to ensure accuracy and alternative explanations were called triangulation. The need for triangulation arose from the ethical need to confirm the validity of the processes. In case studies, this could be done by using multiple sources of data (Yin, 2009).

Denzin (1984) identified four (04) types of triangulation: (a) Data source triangulation, when the researcher looked for the data to remain the same in different contexts; (b) Investigator triangulation, when several investigators examined the same phenomenon; (c) Theory triangulation, when investigators with different viewpoints interpreted the same results; and (d) Methodological triangulation, when one approach was followed by another, to increase confidence in the interpretation. This research study used data source triangulation only. The researcher expected to collect data to extract the same pattern of basic assumption from the three (03) types of data collection techniques; ‘semi-structured interviews’, ‘direct observations’ and ‘documentation’.

4.7.2 Interview structure

The interview guideline (refer Annexure 1) was developed to capture data around the research problem developed based on the literature review in Chapter 02 and the objectives established in Chapter 01. Interview guideline was basically consisted of three main sections as indicated in Table 4.2.

The interview guideline developed borrowed features of ethnographic interviews as explained by Gee and Ullman (1998). A map between some exemplary questions from the interview guideline in Annexure 1 and the different types of ethnographic interview questions by Gee and Ullman (1998) are mapped in Table 4.3.

Table 4.2: Explanation on interview guideline and meeting observation guideline

Main Categories of Questions in Interview Guideline and Progress Review Meeting Observation Guideline	Reference to Literature Review	Reference to Research Objectives
Background information	Section 2.10	Objectives 3, 4 and 5
Problems of external adaptation	Section 2.5.3	Objectives 3, 4 and 5
Problems of internal integration	Section 2.5.3	Objectives 3, 4 and 5

Table 4.3: A map of questions in interview guideline with types of ethnographic interview questions

Types of Ethnographic Interview Questions by Gee and Ullman (1998)		Example from the Interview Guideline in Annexure 1
Question Type	**Description**	
1. Grand Tour Questions	The goal of grand tour questions is to find out the information about places, objects, people, events or activities to understand how all of these elements are interrelated within the context	
1.1 General Overview	Ask the interviewee to generalise or to discuss patterns of events, procedures and processes	Question 10.1 - What are the main project communication methods followed among the client, consultant and contractor? Are they formal or informal?
1.2 Specific Tour	Ask the interviewee about a specific incident or what he or she did on a certain day	Question 9.6 - Are there any special challenges, conflicting or critical situations you have faced (e.g. operationally, technically, socially, legally, environmentally etc.), while carrying out this project?
2. Mini-Tour Questions	Mini-tour question deals with a much smaller aspect of experience	Question 14.2 - If you disagree with the leader/project manager, do you feel encouraged or discouraged to voice your disagreement face-to-face? Is it alright to disagree in front of others, or do you have to seek the leader/project manager out and disagree privately?
3. Example Questions	Asking for examples from the interviewee over an elaborated point	Question 14.8 - Do you think about continuing relationship with other team members (either client, consultant or contractor) when taking decisions? If yes, any example of a decision you took considering continuing relationship?
4. Experience Questions	Open-ended experience questions	Question 16.1 - Can you explain any area in project work that was least under the control of the team members?

4.7.3 Interview process

The interviews were carried out with the participation of the nine key team members from each project team in each case (refer Figure 4.1). Interviewees included the three participants from each party; client, consultant and contractor. When selecting key participants, people who participated mostly in decision making were selected. Such members were mainly identified by questioning on whether they participated in project meetings. Those included team members of high-status and lower-status team members such as; site workers of the contractor were not included to the selected interviewees. The main reason for this was that a theoretical assumption of the research included that project culture emerged by trying to answer the internal integration problems and external adaptation problems of the project. The amount lower-status team members such as site-workers could influence on those decision for internal integration and external adaptation problems were regarded as limited. Schein (1983) pointed out that it was the founders and top management that contributed a lot for creation of culture within an organisational context. In addition, Marrewijk (2007) identified two episodes of project culture in Environ mega project due to change in top management within the project lifetime. Cicmil and Gaggiotti (2014) mentioned that powerful groups within a project organisation held more control on meaning-making process of culture creation than those with limited power. However, allowances were made within the data collection process to identify, whether such lower-status members had really influenced for emergence of basic assumptions. This was done by questioning about powerful and influential members of the project team and asking about different critical decisions made within the project with reasons and justifications during interviews. Therefore, such an influence from lower-status team members could have been easily grasped. Interviews were generally held for one hour in duration.

4.7.4 Observations

The next major data collection technique included observation of progress review meetings (refer Figure 4.1). Cicmil and Gaggiotti (2014) highlighted the importance of observation- based methodology for researching project culture. A progress review

meeting observation guideline was developed for this purpose (refer Annexure 2). This technique was mainly selected to ensure proper data triangulation. Two progress review meetings were observed to make notes mainly on their nature of socialisation and record responses to the areas related internal integration of the project including sub-areas of; 'Common language and concepts'; 'Group boundaries: Who was in and who was out'; 'How power, status and intimacy were defined' and 'How rewards and punishments were allocated'. First progress review meeting observation was made prior to start of the interviews because, then researcher was somewhat aware and familiar with critical incidents and problems of the project to question on. Further, some idea on the behaviour patterns and socialisation of team members were important to make correct judgments on the area of 'How power, status and intimacy were defined'. Further, special permissions were taken in advance from the relevant authorised persons to participate the meetings. The researcher ensured to the authorised persons that only note-taking would be done during observation and tape-recording or any other electronic recording mechanism would not be followed. This was because, this type of an exercise allowed the researcher to access all problematic areas and sensitive information discussed in the project progress review meetings. A copy of the meeting observation guideline (refer Annexure 2) was presented to the authorised person for obtaining permission. However, such authorised person was requested not to present the guideline or not to reveal about the content of the research to all other project team members, whom would be observed by the researcher. This was because, it was required to carry out an independent and an objective observation of the team members on how they behaved within the meeting set-up.

The progress review meeting observation guideline consisted of three sections similar to the semi-structured interview guideline; background information, internal integration problems and external adaptation problems. Note taking areas were in line with the questions on the semi-structured interview guideline too. A mapping of meeting observation areas to research objectives is presented in Table 4.2.

4.7.5 Documentation

The third data collection technique was the documentation (refer Figure 4.1). The purpose of this data collection technique too was for proper data triangulation. A structured way of referring documentation was not planned. It was expected to collect records on two (02) progress review meeting minutes, consultancy and construction contract documents, organisational charts and project correspondents (if necessary) per case with permission. The two progress review meeting minutes chosen were the minutes of two meetings, before and after the two consecutive meetings researcher observed. The purpose of reviewing such meeting minutes was to have an understanding of the trending critical issues discussed in four meetings in each case.

4.7.6 Mapping of cultural dimensional areas with the questions and observation areas of interview and observation guidelines

Some cultural dimensional areas to be looked into, in order to answer the research question were indicated in Table 3.1 in Section 3.2. The mapping of questions and observation areas in interview guideline and progress review meeting observation guideline are indicated in Table 4.2. Next, the outline of the pilot study is discussed in detail.

4.8 Pilot study

A pilot case study was carried out prior to the actual data collection. According to Yin (2009), a pilot case study could be helpful to refine the data collection plan with regard to the content of the data and the data collection procedure. When selecting a case for the pilot case study, a more convenient and accessible site for data collection could be considered. Moreover, a less structure and more prolonged relationship between the interviewee and the research investigator could be allowed. Yin (2009) further mentioned that the nature of the inquiry of the pilot case could be much broader and less focused compared to the real case study. In addition, pilot case study should cover more methodological issues and substantive issues.

Table 4.4: Mapping of the cultural dimensional areas with questions in interview guideline and observation guideline

Areas to be looked into	**Interview Guideline Question Number**	**Progress Review Meeting Observation Guideline Observation Area Number**
A1	10.8, 14.1,14.2, 14.3, 14.4, 14.5, 14.10, 14.11, 15.1, 15.2, 15.3, 15.4	10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.11, 10.12, 11.1, 11.2, 11.3
A2	10.8, 11.3, 11.4, 12.1, 12.2, 13.1, 13.2, 13.3, 15.5	7.3, 7.4, 8.1, 8.2, 9.1, 9.2
A3	10.1, 10.2, 10.8, 11.3, 12.1, 12.2, 13.2, 14.10	6.3, 6.4, 7.3, 8.1, 8.2, 10.11
A4	11.1, 11.2, 11.3, 15.1, 15.2, 15.3, 15.4	7.1, 7.2, 7.3, 11.1, 11.2, 11.3
A5	9.1,9.2, 9.3, 9.4, 9.5, 11.1, 11.2, 15.1, 15.2, 15.3, 15.4	5.1, 5.2, 5.3, 5.4, 7.1, 7.2, 11.1, 11.2, 11.2
A6	9.6, 9.7, 10.8, 11.2, 11.3, 10.5, 10.6	6.6, 6.7, 7.2, 7.3
A7	11.3, 14.7, 14.8	7.3, 10.8, 10.9
A8	10.3, 10.7, 10.8, 12.1, 12.2	6.5, 6.8, 8.1, 8.2
A9	9.6, 9.7, 10.3, 10.4, 10.7, 10.8, 11.1, 11.2, 10.6	6.1, 6.2, 6.7, 7.1, 7.2
A10	5, 9.6, 16.1, 16.2	12.1, 12.2
A11	13.4	9.3
A12	11.1, 11.2, 11.3, 14.1, 14.2, 14.3, 14.4, 14.5, 15.1, 15.2, 15.3, 15.4	7.1, 7.2, 7.3, 10.1, 10.2, 10.3, 10.4, 10.5, 10.4, 11.1, 11.2, 11.3
A13	14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.9	10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.10
A14	9.4, 9.5, 9.6, 9.7, 10.5	5.4, 6.6

With regard to this research, it was identified that a pilot case study was an essential, due to the in-depth inquiry being demanded by the research process to extract patterns of basic assumptions. The interviews involved indirect questioning on internal integration and external adaptation problems to get the responses that had been adopted by the team members. Using such responses only the patterns of underlying basic assumptions were to be extracted. Being a more subjective and difficult process, pilot study was an essential to test to appropriateness and robustness of the questions that had been developed. Further, this pilot study acted as a 'pre-test' as indicated by Yin (2009), to rehearse on questioning prior to the real case. Thus, pilot case study allowed the researcher to improve talents on questioning appropriately to extract the patterns of basic assumptions of construction projects.

With regard to the nine number of members expected to be interviewed during the real case study per case, it was expected to interview seven members from the selected pilot case. In addition, observation of one progress review meeting was done to refine the areas to be observed and noted during the process. It was expected to collect data and analyse the data using content analysis technique to check the ability of extracting the patterns of basic assumptions and then the basic assumptions from the developed interview questions and meeting observation guideline.

4.9 Data analysis: the criteria for interpreting the findings

The next component of the case study research design was to establish the criteria for interpreting the findings or data analysis procedure. The approaches to data analysis used within this research included the content analysis, which is further discussed in this section. Data captured through the semi-structured interviews were tape recorded and transcribed. Then, the analysis was done using the content analysis techniques, using case study analytic techniques of within-case analysis and cross case analysis. This was conducted with the aid of a coding scheme. Finally, drawing conclusions was done as the final step of the data analysis.

4.9.1 Content analysis

The content analysis was a reductive analysis of large masses of data, which were oriented to the surface of these texts. It produced a uniform schema of categories, which facilitated the comparison of the different cases to which it was applied (Flick, 2009). This study selected manual coding, where the case data were codified and similar cognitions were taken under a same code for the interpretation. Douglas (2003) indicated three levels of coding as; open coding, axial coding and selective coding to be used in inductive theory generation. Open coding involved similar incidents and phenomena to be compared and contrasted with each other to be coded correspondingly. Such incidents and phenomena could be the events, activities, functions, relationships, contexts, influences, and outcomes. Axial coding involved regrouping the open codes. Selective coding involved selecting the core codes out of the axial codes identified. Core codes were selective codes comprised of strongly related open codes. According to Douglas (2003), rest of the selective codes could be directly or indirectly related to the identified core codes.

4.9.2 Within case analysis

According to Eisenhardt (1989), within case analysis was generally carried out to produce a detailed write-up for each case being studied. The researcher had to deal with an enormous amount of data during a with-in case analysis. However, according to the author, there was no standard format for a with-in case analysis. The presentation could be narrative descriptions, graphical presentations and tabular displays to name few. Thus, the ultimate objective was to increase the familiarity of the case data and the unique patterns in each case, prior to the generalising these patterns across the cases. Moreover, with-in case analysis helped to accelerate the cross case comparison due to the increased familiarity built during the process of with-in case analysis. Within case analysis was done for all the three cases following the three levels of coding indicated by Douglas (2003) as open coding, axial coding and selective coding as described below (refer Figure 4.2):

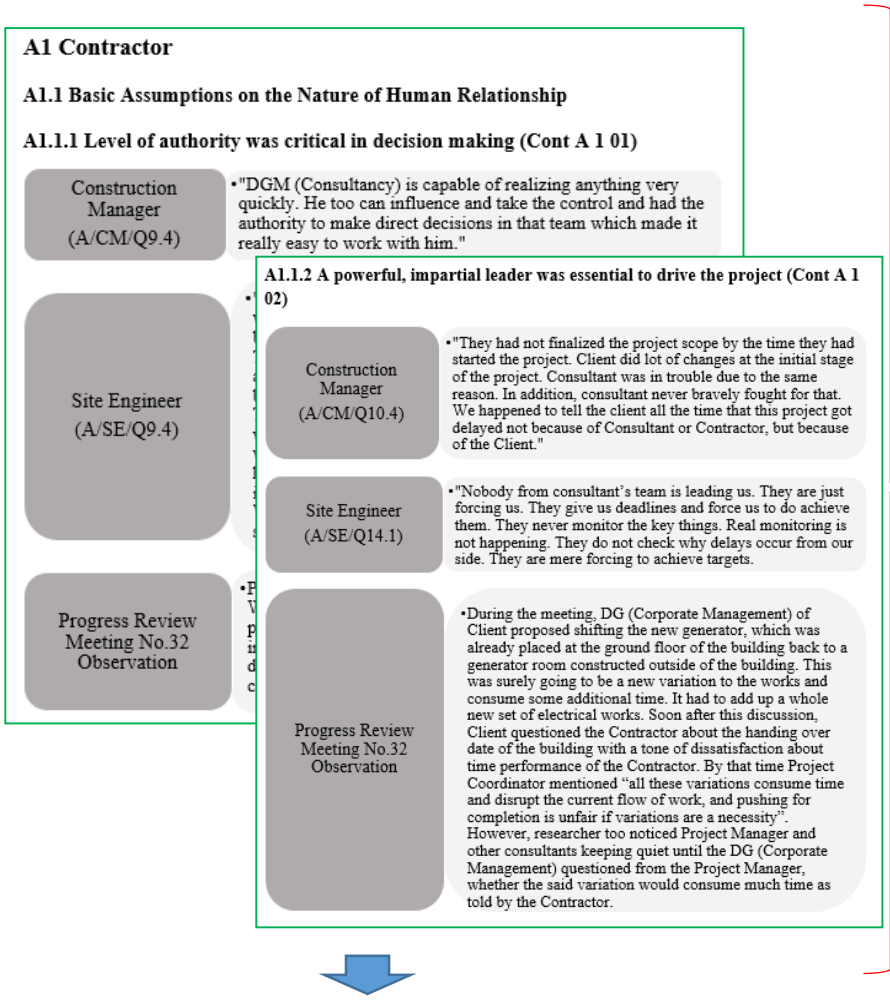


Table 6.3 – Basic Assumptions of Contractor Sub-Cultural Group of Project A

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Level of authority was critical in decision making (Cont A 1 01) 1.2 A powerful, impartial leader was essential to drive the project (Cont A 1 02)

Second Level Coding (Axial Coding)

Basic Assumptions		
Dominant Contractor's Own World View	Contractor's View on Dominant World Views of Consultant	Contractor's View on Dominant World Views of Client
Autocracy		

Third Level Coding (Selective Coding)

Figure 4.2: Levels of coding in within case analysis

- First level analysis and coding (open coding) – identified the similar interpretations demonstrated through the interview, observation and documentation data.
- Second level analysis and coding (axial coding) – derived 'patterns of underlying basic assumptions' of the client, contractor and consultant sub-cultural groups by grouping the similar interpretations.
- Third level analysis and coding (selective coding) – derived the 'basic assumptions of the client, contractor and consultant sub-cultural groups' by analysing the patterns of underlying basic assumptions identified in axial coding.

4.9.3 Cross-case analysis

Cross case analysis was the subsequent step to the with-in case analysis. As explained by Eisenhardt (1989), the methods used in cross case analysis driven by the idea that people are not good information processes, where they come up with conclusions based on limited data and results get affected by the vividness of data, elite respondents to name few. This could lead to false or premature conclusions on data with information biases. Thus, there were several tactics to overcome these problems and to carry out a better cross-case analysis. One such tactic was to select categories or dimensions through literature, suggested by research problem or a selection by the researcher. These categories can be used to dig into within group similarities and intergroup differences. Next tactic was to select pairs of cases and analyse the similarities and differences between pairs. The results of these forced comparisons could give result to new categories and concepts. The third tactic was to divide the data by the source of data and try to develop patterns from different sources. When a pattern from one data source was comparable to the same pattern found in another data source, such finding became stronger (Eisenhardt, 1989). With regard to this study, the first tactic illustrated by Eisenhardt (1989) was used expecting literal replication across Case A, Case B and Case C. The output of within case analysis; the patterns of basic assumptions and the basic assumptions of each case was used as the main input for cross case analysis. The fourteen areas looked into, in order to answer the research question, as mentioned in Table 3.1 were used for identifying the similarities and

differences of basic assumptions across the three cases. The coding and analysis was done as follows:

- **Project basic assumptions for sub-cultural groups** (A fourth level analysis and coding) – The basic assumptions of client, contractor and consultant sub-groups of Project A, B and C, derived through the within case analysis were used to derive the 'project basic assumptions for sub-cultural groups'.
- **Reasons for variations in basic assumptions across cases** (A first and third level analysis and coding) – A combination of third level analysis of the patterns of basic assumptions derived during the within case analysis and another first level analysis of interview, observation and documentation data were used to derive the 'reasons for variations in basic assumptions among cases'.
- **Analyse of project basic assumptions using the integration, differentiation and fragmentation perspectives** – (a) Project basic assumptions for sub-cultural groups were further analysed together to identify the integrated, differentiated and fragmented basic assumptions (A fifth level analysis and coding) and (b) patterns of basic assumptions derived during the within case analysis were analysed further to identify the responses for internal integration and external adaptation problems for the popular integrated, differentiated and fragmented basic assumptions (A third level analysis and coding).
- **Key features of external cultural setting** (A second level analysis and coding) - Reasons for variations in basic assumptions among cases were further analysed to derive the 'key features of external cultural setting'.
- **A guide to determine the basic assumptions of public sector construction project culture in Sri Lanka** (A fifth level and third level analysis and coding) – 'Project basic assumptions for sub-cultural groups' and 'key features of external cultural setting' were further analysed to identify the relationships between those two, in order to develop the guide.

4.10 Conclusion drawing

Conclusion drawing was mainly done using the case data. All the research findings were concluded to the guide to determine the basic assumptions of public sector construction project culture in Sri Lanka. Conclusions were drawn together with a comparison to the existing literature discussed in second chapter as detailed out in Chapter 7. This was referred to as ‘pattern matching’ by Yin (2009). Pattern matching helped to improve the internal validity of the research, when the empirically concluded result coincided with the predicted pattern in literature. Next, the generalisation of research findings and the write-up of the research are discussed.

4.10.1 Applicability of research findings

The issue of generalisation was a frequent criticism of case study research that the results would be not widely applicable in real life. Yin (2009), in particular, refused that criticism by presenting a well-constructed explanation of the difference between analytic generalisation and statistical generalisation. According to Yin (2009), analytic generalisation was done by using a previously developed theory as a template against, which the empirical results of the case study was compared. This was in contrast to the normal statistical generalisation expected in a quantitative research. The inappropriate manner of generalising assumed that some sample of cases were drawn from a larger universe of cases. Thus, the incorrect terminology such as "small sample" arose indicating a single-case study as a single respondent.

Stake (1995) argued for another approach cantered on a more intuitive and empirically-grounded generalisation. He termed it "naturalistic" generalisation. His argument was based on the harmonious relationship between the reader's experiences and the case study itself. He expected that the data generated by case studies would often resonate experientially with a broad cross section of readers, thereby facilitating a greater understanding of the phenomenon.

According to Alasuutari (1996), cultural studies considered theories as a different framework, instead of understanding theory as a set of generalising statements about some universal, social mechanisms to be used as hypotheses in explaining local

phenomenon. In cultural studies, theories did not suggest how to explain the phenomenon, but they provided different viewpoints to social reality. When we conceived of theory as a framework, not narrowly as a theory of a particular problem, it was obvious that a theoretical frame was embedded in any research design. A theoretical framework was not something that could be added to an otherwise completed research design. Rather, the main task of the researcher is to dig out and reconstruct the framework implied in the questions asked and in the research design in question. The main function of data collection and analysis was to make one's own underlying premises as visible as possible and to challenge and develop the initial framework. The results of such a research process were often twofold: one gained a better understanding of the phenomenon and simultaneously developed a theoretical framework that can be applied in studying other things (Alasuutari, 1996).

4.10.2 Write- up

Writing-up of the thesis was progressively done throughout the research process rather than being restricted to the latter part of the project, where the data analysis was done. The write-up was started in a descriptive manner in the early stage and was narrowed towards the latter stages. Next section will explain the validity of the research.

4.11 Role of the researcher

There was a possibility of researcher's personal, emotional, ideological and political dimensions impacting research projects positively and negatively. Level of such an impact was high in a qualitative research with a philosophical underpinning of axiology being value laden (Al-Natour, 2011). Accordingly, it was important to clearly identify and make an account on the role of the researcher of this cultural research, positioned in the interpretive paradigm.

The researcher had six years of experience in the academic field related to quantity surveying. In addition, researcher had industry experience of two years as a practitioner in quantity surveying, working for a leading public sector construction organisation and a leading private sector contracting organisation in Sri Lanka. The researcher's project involvement was mainly in public sector building and

infrastructure projects. Thus, researcher had prior experience in the culture of public sector building construction projects in Sri Lanka. Accordingly, there can be some transfer of values of the researcher to the empirical data collection done through observations and interviews and data interpretation done through qualitative content analysis, despite all the measures taken to improve consistency of the research. However, prior experience of the researcher on public sector building construction project context was helpful to make fast and accurate judgements within the bounded system of a case study with limited access to data and time.

4.12 Research validity

Research validity deals with the quality of the research. As explained by Guba (1981), there were four tests to assess the quality of any empirical qualitative social research, which gave the opportunity to check the quality of the research in terms of the trustworthiness, credibility, conformability and data dependability. These tests were commonly named as ‘neutrality’, ‘truth-value, ‘applicability’ and ‘consistency’ by Guba (1981).

4.12.1 Neutrality

Neutrality or ‘construct validity’ as referred to in most quantitative research deals with establishing correct operational measures for the concepts being studied (Guba, 1981). As stated by Krefting (1991), this could be achieved by using multiple sources of evidence, establishing a chain of evidence and having key informants review draft case study report. Throughout this research, the aforesaid construct validity was achieved by the following procedures stated below:

- Use of three types of data collection techniques including semi-structured interviews, observations and documentation. This led to proper data triangulation thus, increased the construct validity.
- Interviewing nine participants from the same unit of analysis.
- Conducting semi-structured interviews further increased the construct validity of the research as the researcher got the opportunity to get the clarifications done on the issues while interviewing

- Observing progress review meeting prior to the interviews increased construct validity of the collected data, since it aided the researcher to question the interviewee properly with a better understanding of the project environment.

4.12.2 Truth-value

Truth-value was considered as establishing a causal relationship showing certain conditions to lead to other conditions. This was mainly achieved while analysing data (Guba, 1981). Identifying the cultural dimensional areas to be looked into, in order to answer the research questions as indicated in Table 3.1, prior to the data collection, and properly aligning those to the questions of interview guideline and the observation areas in meeting observation guideline (refer Table 4.4) increased the internal validity of the research. Further, a proper pattern matching, carried out in Chapter 9 also improved the validity of the research.

4.12.3 Applicability

Applicability was about the ability of generalising the findings beyond the immediate case study (Guba, 1981). This was mainly achieved while designing the research (Krefting, 1991). Following steps were taken to increase the external validity:

- The use of three case studies
- Use of literal replication logic by including the case design with three similar type of cases with the same team composition of client-public, consultant-public and contractor-private

4.12.4 Consistency

Consistency was about demonstrating that the operations of a study; such as case data collection procedures could be repeated with the same result (Guba, 1981). To achieve this, the following steps were taken by the researcher:

- Having a consistent sample of interviewees from every case including nine participants from each case with three participants from each of the client, contractor and consultant
- Interviewing all the participants based on the same interview guideline

- Developing interview transcripts after tape recording the interviews
- Developing a meeting observation guideline for proper capturing and record of data collected through observations.

4.13 Summary

This chapter discussed on the methodology adopted with this research. Based on the research question to be addressed, case study was selected as the appropriate research strategy. Construction project culture was identified as the unit of analysis. Three number of cases were selected as the unit of analysis. Case selection criteria was mainly restricted to selection of government building construction projects. Semi-structured interviews, observations and documentation were selected as the main data collection techniques with nine members from each project to be interviewed and two progress review meetings to be observed from each case. A pilot case study was conducted mainly to refine the interview guideline and progress review meeting observation guideline to support better indirect questioning and to ensure a better data analysis. Data analysis was carried out with code based content analysis using both within case and cross case analysis techniques. The next chapter will discuss the pilot study carried out.

CHAPTER 05: PILOT STUDY

5.1 Introduction

This chapter presents the pilot case study findings. Initially, the objectives of the pilot study are listed. Next, the realisation of each objective is discussed under the sections of; rehashing the indirect questioning and testing the appropriateness and robustness of the questions, testing the ability to extract basic assumptions from the data being collected and possibility of data triangulation and identifying and refining the areas to be observed during the progress review meeting observation process.

5.2 Objectives of the pilot study

The objectives of the pilot study was as follows:

- To test the appropriateness and robustness of the questions being developed
- As a pre-test to rehearse in-direct questions
- To identify and refine the areas to be observed during the progress review meeting observation process
- To test the ability to extract basic assumptions form the data collected
- To test the ability for data triangulation to improve validity of findings

Details of achievement of the abovementioned objectives are discussed in subsequent sections.

5.3 Background of pilot case

The case selected for the pilot study was a government building construction project in Colombo urban area. It was a university building, where client was the Vice Chancellor of the respective university. The building comprised with 37,500 metre squares of gross internal floor area including two basements, a ground floor, a mezzanine floor and other fourteen (14) stories. The floor area was allocated for pre-clinical department, anatomy department, allied health sciences unit, library, canteen and some other facilities. The construction of the building had been carried out in three stages under three separate contracts called Stages 1, 2 and 3. Reason for the division

of the project into stages was due to funding difficulties with the client. Stages 1 and 2 were awarded under the traditional procurement method, where a single consultant to handle all the three contracts with three separate contractors. Project duration for Stage 1 was 6 months. Stage 2 included the construction of the two basements and half of the ground floor without finishing. Project duration for Stage 2 was 18 months. Stage 3, had not been awarded by the time the research was carried out. Stage 3 was supposed to include construction of rest of the floors in the building including finishing works and services installation for the whole building. It is expected to finish Stage 3 in 24 months. Estimated total cost of the project was Sri Lankan Rupees 5.3 Billion. Contract Sum of Stage 1 included Sri Lankan Rupees 172 Million and Stage 2 included Sri Lankan Rupees 723 Million.

The project had marked its inception stage about ten years ago and the consultant had joined seven years back. Consultant was a major government construction organisation. Stage 1 consisted of site clearing and piling, which had been awarded under a separate contract to one of the leading construction company in Sri Lanka. Project duration of that contract was 6 months, which was completed in the same year. Stage 2 was still under construction by the time of data collection. Initial intended date of completion was set as September 2015 but had been extended due to various reasons to February 2016. Stage 2 contractor was a leading government construction company. In addition, it was worth highlighting that the contractor of Stage 1 was still engaged in the project, while the Contractor of Stage 2 was carrying on the work. This was because, appointing the Stage 2 contractor had been delayed due to funding problems with the government, which had prevented the Stage 1 contractor in completing the levelling and pile hacking prior to the completion of the project by that time. Thus, the Client had happened to get the same Stage 1 Contractor to work in parallel with the Stage 2 Contractor by continuing the previous contract with them but with some amendments incorporated with a memorandum of understanding signed between the two parties. Yet, this was without any contractual relationship between Stage 1 Contractor and Stage 2 Contractor. However, work progress of Stage 2 Contractor heavily depended on the work progress of Stage 1 Contractor. Thus, project comprised of four parties including Client, Consultant, Stage 1 Contractor and Stage 2 Contractor.

Next, the findings related to the first two objectives based on the pilot study is presented.

5.4 Rehashing the indirect questioning and testing the appropriateness and robustness of the questions being developed

The main objective of the pilot case study was to check the appropriateness and robustness of the questions developed in the draft interview guideline. This was because, interview guideline was developed for indirect questioning to extract the basic assumptions of the construction project culture supported by a set of pre-determined basic assumptions as indicated in Table 4.4.

The questions in the interview guideline were developed related to the internal integration and external adaptation problems identified by Schein (1990, 2009). However, it was identified with the pilot study that questioning on the challenging, conflicting or critical situations also allows a lot to probe in-depth to the cultural context, since culture basic assumptions directly affect the decision making in those situations. Thus, the following two questions were added to the list of questions related to the external adaptation problems.

a) Are there any special challenges, conflicting or critical situations you all have faced (e.g. operationally, technically, socially, legally, environmentally etc.) while carrying out this project?
b) Have you all found solutions for above mentioned problems? What was done, why it was done and what were the outcomes? Do you all think there is a solution for every problem being encountered?

Many of the answers provided for question (a) were related to the other areas in the internal integration and external adaptation problems. However, question (b) allowed to go in-depth in those problem areas than possible with other questions in the interview guideline.

Moreover, pilot study allowed rehashing indirect questioning. To reach to the real assumptions hidden, it was important to keep on questioning reasons for the provided

answers until the interviewee came to a position that he/she was unable to provide a further reason. Such ultimate reason became the hidden assumption. This required every question to include inquiring the reason for the provided answer. Therefore, after the pilot study, it was decided to modify the questions to accommodate inquiring the reasons. Following questions can be quoted as examples for such modifications:

- Do you see a huge difference among how client, consultant and contractor works in the project in terms of working patterns, norms, treating the subordinates and other team members and ethics? What are the reasons for those difference?
- Have you all found solutions for above mentioned problems? What was done, why it was done and what were the outcomes?

When the interviewee provide an answer, it was important to ask for any examples for better clarification of the answers they provide. For example; the Assistant Registrar-Capital Works of the university was questioned whether she disagrees with the leader of the project team (who was supposed to be a client's own representative) face-to-face and whether she feels it's alright to do so. This was questioned with the intention of exploring the basic assumption of the team members whether the best authority system within a construction project team is either autocratic or participative. Instantly, the Assistant Registrar-Capital Works gave the answer 'yes', with a strong sense of having a participative system within the team. However, when she was asked for an example for a situation where she posed her disagreement, she was unable to prove her initial answer. She stated that; "*that rarely happens because I am also the same as the client. We all the time in the same idea*". Asking for examples, allows the interviewee to reflect on his/her own idea. It provided the interviewer with further clarification and justification on the answer provided.

Considering the fact mentioned above, questions were modified with requesting examples. For example; "Do you all think about continuing relationship with other team members (either client, consultant or contractor) when taking decisions? If yes, any example of a decision you all took considering continuing relationship?". Next,

the process adopted to extract basic assumptions from the data being collected and the possibility of data triangulation is discussed.

5.5 Testing the ability to extract basic assumptions from the data being collected and possibility of data triangulation

Data analysis for this section was done using code based content analysis. Similar cognitions were extracted using manual coding. Evidences were available in the pilot case study for the existence of three sub-cultural groups related to the client, consultant and contracted. All interviewees elaborated on the differences in attitudes and working patterns in the identified three sub-cultural groups. Thus, to test the ability to extract basic assumptions, data were analysed to extract such assumptions of the client sub-cultural group. The reason for considering the Client sub-cultural group was that interviews of the three Client's Representatives were held after refining the interview guideline, following the first four interviews including (Architect, Contractor's Site Manager, Design Engineer and Deputy General Manager (Consultancy) of the consultancy firm. Following three patterns of basic assumptions of the Client-sub-cultural group were derived from pilot case study:

- Contract was the most important and Contactor and Consultant were bound to deliver what was in the contract.
- Formalities were crucial for realising the project
- People should be monitored frequently to get the work done.

These patterns of basic assumptions were extracted mainly from the data collected from the two Client's Representatives interviewed including; Deputy Registrar and the Assistant Registrar-Capital Works of the related university. However, data triangulation was done with the data collected from some of the other interviewees (Architect, Contractor's Site Manager, Design Engineer and Deputy General Manager (Consultancy) of the consultancy firm who is the Engineer to the Contract), meeting observations and document review, which were highlighted then and there within the subsequent explanations. The researcher tried to identify common themes hidden within the descriptions of the interviewees of the sub-cultural group to extract the

patterns of basic assumptions. Those common themes were identified as the patters of basic assumptions if those demonstrated direct links to a solution for the questions listed in Table 3.1. The identified patterns of basic assumptions of the client sub-cultural group mapped with the basic assumptions predicted in the Table 3.1 are presented in Table 5.1.

Table 5.1: Mapping of patterns of basic assumptions of client sub-cultural group with basic assumptions

Patterns of Basic Assumptions of Client Sub-Cultural Group	**Basic Assumption**
• Contract was the most important and contactor and consultant were bound to deliver what was in the contract.	• The construction project team was better encouraged to conform (A9)
• Formalities were crucial for realising the project	• The nature of human nature is evil (A4)
• People should be monitored frequently to get the work done.	• Autocracy is the best authority system within a construction project (A1)

The most visible pattern of basic assumption from the client's sub-cultural group was that they believed that contract as the most important and Contractor and Consultant were bound to deliver what was in the contractor. All their thoughts and actions were guided by the same. When questioned about the governing project objectives, Deputy Registrar said that; "the most important thing is now that we have fixed the contract approved by the Cabinet. So we have to adhere to that." When questioned about main strategies set to achieve those objectives he stated that; "Master programme is there. The deadlines are indicated and where we can do parallel jobs are indicated. All those things are stated there. We are working with that". When questioned about issues in systems and processes he stated that; "We have guidelines. After the tender is awarded, they know that the contract agreement is there. We have our authority. There we know what each person has to do. Their role and our role are clear". Thus, they believed that since each party had agreed on each and every aspect on the contract, they get bound to deliver that to the Client. Charging monetary penalties from the Consultant, due to the negligence of the Consultant to provide adequate advice to select a suitable method of shoring, which had led to some time delays strengthens the existence of such an

assumption. Normally, such monetary penalties to consultants are rare in the Sri Lankan industry, unless otherwise in a critical issue. Further, a statements by the Assistant Registrar-Capital works supported this argument "we go contractually, because we have to answer the auditors", "sometimes Consultant tends to certify amounts with some documents pending because they want to run the project. But I have rejected and held the payments", "there is no control to variations and for revisions for the contractor's initial work programme given. I am searching for a contractual solution for that…this is a nuisance and it is better if we can find a solution to stream line these time targets". She was making these statements even agreeing that the project came up with number of unforeseen conditions beyond the control of the Contractor. Thus, this pattern of basic assumption proved that Client always attempted to adhere to the contract in whatever the situation arose. This had led the team members being encouraged to conform than to innovate.

The next pattern of underlying basic assumption of the Client as a sub-cultural group was that 'formalities were crucial for realising the project'. Being a government organisation, Client was responsible for different government authorities and government regulations. It was observed by the researcher that the progress review meeting was taking a very formal outlook. When questioned on having the meeting room environment very formal, the Assistant Registrar-Capital Works mentioned that; "*Yes, it should be formal. Otherwise, other parties will not take the things serious. Now they know that we consider everything very formal. Otherwise they will not have a worry about achieving the targets. They will try to slide very easily when it becomes informal*". Formalities were there because they believed that the nature of human nature was evil. The only way to control them and follow the regulations was by maintaining formalities. According to the Deputy Registrar, the reason for somehow getting the Stage 1 Contractor back to the project during Stage 2 for pile hacking was because, Client doubted about transferring this balance work of the Stage 1 Contractor to a new Contractor or the Stage 2 Contractor. It was because, they thought, whoever taking over the remaining work of Stage 1 Contractor would tend to be relax on their responsibilities passing the fault to the Stage 1 Contractor. The extent of their suspicion was depicted through the statement of Deputy Registrar; "*we are in big trouble. Better*

to keep Stage I Contractor in. Everything is under the ground. We can't see anything". Even, Client agreed to pay the Stage 1 Contractor the price escalation for the work items for the contract ended in the year 2009. When questioning about the continuing relationship with project team members, Assistant Registrar expressed his view about the relationship with the Stage 1 Contractor as; "*With Stage 1 contractor, we maintained a mutual relationship until the MOU (Memorandum of Understanding) was signed… Still it is there, the concern about the relationship, but not at the previous level of concern. Now it is contractual. After MOU was signed, now we are following the MOU*". Thus, formalities were the crucial aspect for the Client. They felt unsecure till the formalities were done among the two parties. Even they had considered maintaining a cordial relationship, until the formalities were done. All these were pertaining to their basic assumption of nature of human nature being evil.

The next identified pattern of basic assumption of the Client – sub-cultural group was that 'people should be monitored frequently to get the work done'. Though professionals were involved with the construction project team carrying greater responsibilities with contractual liabilities, still, client used to chase behind the project team members to get the work done. The Deputy Registrar frequently used the phrase 'to get the work done' during the conversation, which implied his belief that allowing the Consultant and Client to work autonomously even under the contract, did not work. Assistant Registrar – Capital Works used the phrases 'push the contractor' and 'push the consultant' frequently during interview. They were holding bi-weekly progress reviews with the intention of maintaining the speed of the work being carried out. Even, Contractor was asked to inform the Client on daily progress of work through e-mails. Such daily information looked unnecessary for the Client yet, they were doing that to convince the Contractor and Consultant that Client is keeping an eye on the progress. Assistant Registrar – Capital Works stated that; "*attendance of piling contractor's workers is reported on daily basis. Chairman of buildings committee worries about that. He checks normally, how many workers have reported for the work. Sometimes that might not be an issue to be attended by the Client. But, Client is concerned about that. Therefore, Residential Engineer daily sends the update*". This strict monitoring was not because Client was unsatisfied with the progress of work by

the Contractor or the Consultant. Even Client was aware that the delays had occurred due to unforeseen circumstances at the site, which were beyond the control of the Contractor. Thus, this strict monitoring can be a cultural practice within the bureaucratic government organisation of the Client with autocratic authority systems. Hence, Client seemed difficult to keep faith on the expected participative authority system expected from a team working environment. Thus, it was evident through this analysis that it is possible to extract basic assumptions using the methodological framework adopted within the research.

5.6 Identifying and refining the areas to be observed during the progress review meeting observation process

A progress review meeting was observed within the pilot study. It was identified that meeting observation was worth carrying out initially, prior to the interviews. This was because, it was realised that the interviewer acquired a better understanding of the project environment and issues by participating in the meeting. It was possible to get to know the team members prior to the interviews and observe their behaviours. When the several interviews were done after the progress review meeting observation, there were number of questions interviewer could aske in detail inquiry of the topics discussed. Further, it was easy for the interviewee since interviewer had the background knowledge of the project. For example, during the pilot study, when questioning about critical, challenging and conflicting situations, many of the interviewees mentioned about the crack development in the adjacent building due to the construction at site and the issue with the shoring method adopted at the site. These matters were heavily discussed at the meeting and more insight into the decision making during those issues could be questioned by the interviewer due to the prior knowledge had with the meeting observations and site visits.

In addition, within the pilot case, it was evident that there was a personnel from the consultancy organisation designated as the project manager. He seemed to be holding a mere coordination work to the project, and was not playing a huge management or leadership role. He was not chairing the meeting as the project manager. By participating the meeting, the role of this project manager was clearly evident to the interviewer. Further, it was understood, which people were really powerful and led the

project, irrespective of the positions and designations. This observation led to the revision of the list of areas of observation in the section ‘How power, status and intimacy are defined’ by including the following additional areas:

- Who is chairing the meeting?
- Is the person chairing the meeting have the control of the meeting while proceeding?
- If not, who are the team members interrupting the meeting chair massively?

Further, it the value of obtain permission to observe the meeting as an independent observer was realised. This was because, the participants were not aware what the observer was observing for. Otherwise the meeting participants could get themselves adjusted to the observations been made resulting a Hawthorne effect.

5.7 Summary

This chapter discussed the pilot study carried out prior to the data collection process. Pilot study carried four objectives such as: to test the appropriateness and robustness of the questions being developed; to rehearse in-direct questions as a pre-test, to identify and refine the selected areas to be observed during the progress review meeting observation process; to test the ability to extract basic assumptions form the data collected and, to test the ability for data triangulation to improve validity of findings. Several questions were refined and few questions were added newly to the questionnaire. Basic assumptions of the client sub-cultural group were extracted to test the ability of extracting basic assumptions from the data collected. Those were identified as patterns of basic assumptions, since those demonstrated direct links to the basic assumptions. Such patterns of basic assumptions of the client sub-cultural group of pilot case study included; contract was the most important and contactor and consultant were bound to deliver what was in the contract, formalities were crucial for realising the project and people should be monitored frequently to get the work done. The basic assumptions of the client sub-cultural group of pilot case study included; the construction project team was better encouraged to conform, the nature of human nature was evil, autocracy was the best authority system within a construction project. Next chapter presents the within case analysis of the research.

CHAPTER 06: WITHIN CASE ANALYSIS OF PROJECT A

6.1 Introduction

This chapter presents the within case analysis of Project A in line with the 'Chapter 3: Method of Study' and the findings of the 'Chapter 5: Pilot Study' on testing the ability to extract basic assumptions from the data being collected and possibility of data triangulation. Initially, background details of Project A and project team, details of techniques used for data collection and overview of responses to internal integration and external adaptation problems are described. Next, analysis of patterns of basic assumptions and basic assumptions of contractor's, consultant's and client's sub-cultural groups of Project A are presented.

6.2 Background details of Project A and project team

Client of the Project A was one of the powerful ministries in Sri Lanka. The Client's requirement was to construct an extension building to their existing headquarters building of the ministry situated at the centre of Colombo. This existing building was indicated as one of the heritage buildings in Sri Lanka. Therefore, Consultant was required and challenged to design the new extension building to match the exterior of the existing heritage building, without damaging the view of the existing building. The interior of the building required to be done in luxury type finishes as this new building would be a place, where foreign delegates coming to invest in Sri Lanka would be meeting government officials.

The scope of work of Project A consisted of construction of a six storied building including a semi-basement with a total gross floor area of 3821 m2 (approximately) for office areas, seminar rooms and associated services such as cafeteria and kitchen. This building included bored cast in-situ piles as foundation, reinforced concrete framework, Calicut tile roof, timber and aluminium glazed doors and windows, brick walls finished with plastering and painting, imported marble and wall nut veneer, floor finished with imported granite and marble, ceilings finished with aluminium strip, gypsum board and mineral fibre ceilings. Services to be installed included; plumbing works, electrical works, air conditioning, fire detection and protection systems, public

address system, closed circuit television system, building management system, data cabling system and access control system. The background of the project staff is as follows:

- **Client's Personnel** - Secretary to the ministry was appointed as the Client to the Construction and Consultancy Contracts. Director General (DG) (Corporate Management) had been appointed as the Client's Representative. Organisation structure of the Client's Personnel involved with Project A are depicted in Figure 6.1.

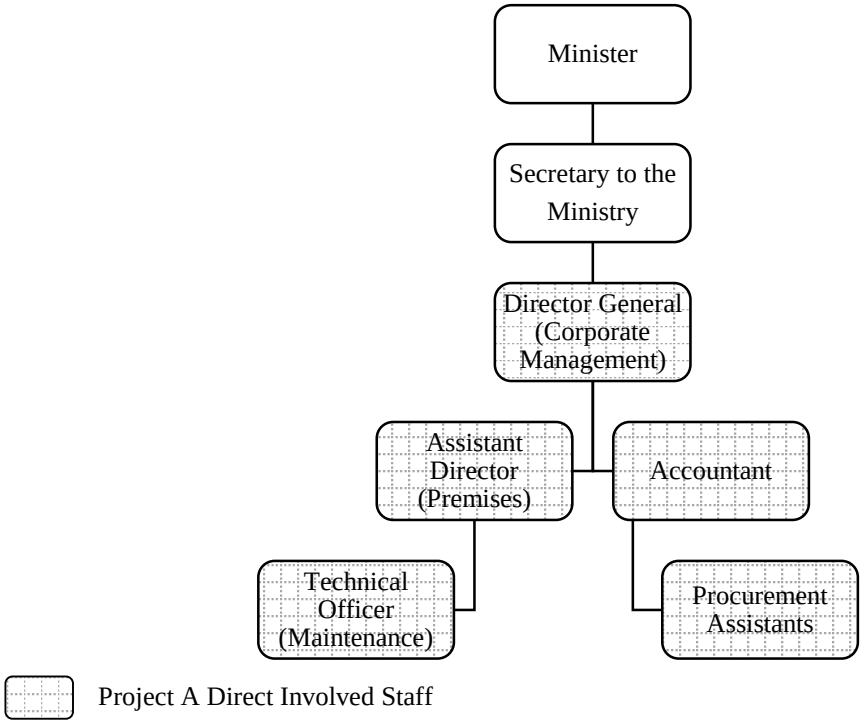


Figure 6.1: Organisation structure of the client's personnel of Project A

There was no separate division or personnel dedicated only for the supervision and management of the construction project from Client's party. All Client's Personnel involved with Project A were providing an extra service to the project apart from their normal routine at the ministry. All procurement works including appointing the Consultant and Contractor were handled by the procurement division at the accountancy division of the Client's organisation. After selecting the Consultant and Contractor, all the management works of the

project was taken care by the Assistant Director (Premises) under the supervision of the DG (Corporate Management). A person designated as Technical Officer (Maintenance) helped Assistant Director (Premises) with the Client's role of the Project A but, this technical officer's normal job description included the maintenance works of the existing building only. Although there was no contractual relationship for the Consultant with Assistant Director (Premises), all communications to the DG (Corporate Management) took place via Assistant Director (Premises).

- **Consultant's Personnel -** Consultant of Project A was one of the leading semi-government consultancy organisation, nominated and selected by the client through negotiation. It was an organisation both into construction and consultancy. Consultancy division was in a centralised management system. Organisation structure of the Consultant's Personnel involved with Project A are depicted by Figure 6.2. The consultancy division consisted of sub-divisions as; architectural, engineering design, quantity surveying, electrical and project management. External consultants were hired for specialised electrical works. Head of the consultancy division was the Deputy General Manager (DGM) (Consultancy), who reported to the General Manager of the organisation. Each sub-division had a head designated as; Chief Architect, Chief Engineer-Design, Chief Quantity Surveyor or Chief Electrical Engineer who reported to the DGM (Consultancy). DGM (Consultancy) was the head of project management division. Further, due to the position of Chief Architect being vacant for a long time, DGM (Consultancy) was acting as the Chief Architect for about four years, as he was an architect by profession. DGM (Consultancy) was appointed as the 'Engineer to the Construction Contract' in Project A. Project Manager of the project was appointed from the project management division, who was a civil engineer by profession and who was also the Engineer's Representative to the Construction Contract. He was based at the site of Project A with a staff separate from Consultants at head office staff including a resident civil engineer, a quantity surveyor and several technical officers. These staff had been recruited on project basis.

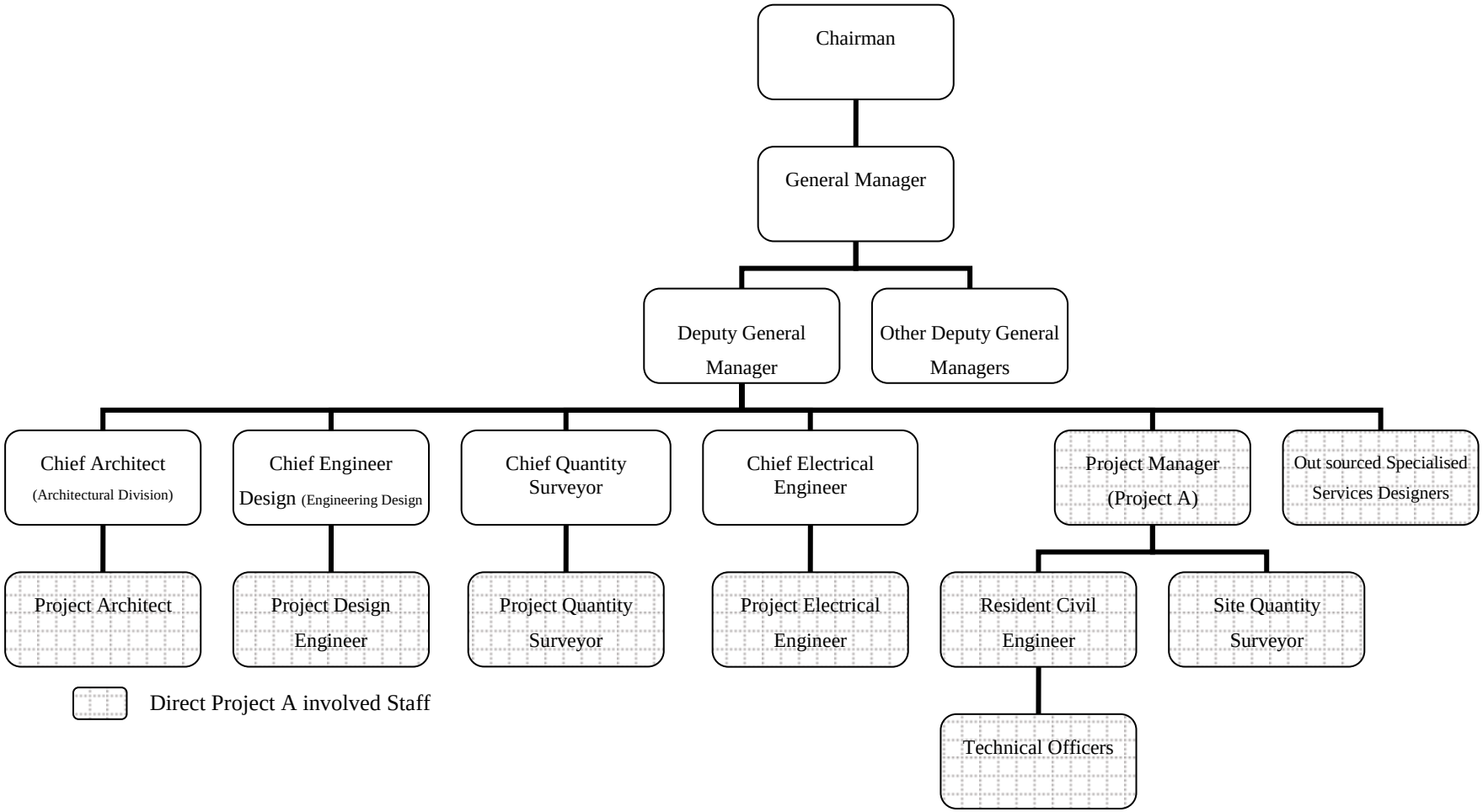


Figure 6.2: Organisation structure of the consultant's personnel of Project A

All the consultants appointed from each sub-division at head-office provided instructions to the Contractor through the Project Manager. They were residing at the head office of the consultancy organisation and paid visits to site when necessary. A separate design team had been hired in externally for designing all services except electrical works who reports to the DGM (Consultancy).

- **Contractor's Personnel -** Contractor of project A was one of the leading major construction contractor organisations in Sri Lanka. The organisation structure of the Contractor's Personnel working for the Project A is presented in Figure 6.3. They had been selected in a selective tendering process out of three major contractors operating in Sri Lanka. The head of the site staff was the Project Coordinator, who was responsible for overall management and specifically took care of contractual matters of the project. Construction manager looked after the construction related matters only. He was responsible for planning and quality controlling in all construction works. Both Project Coordinator and Construction Manager were based on the site of Project A. However, Project Coordinator looked after matters in several other projects too with random visits to those sites. Site Engineer was responsible for physical operations on site including managing the technical officers and the labour teams related to civil construction works. Physical operations of services installations including specialised services were a responsibility of Electrical Engineer of the site, who received the special assistance of a Senior Technical Officer who was thorough in specialised services. This separation of services from the Site Engineer was due to the complexity of handling a higher number of services types as indicated in the scope of work. All services were under the main Contract with a set of specialised subcontractors. None of the sub-contractors were nominated by the Client. Therefore, coordination of all specialised sub-contractors were indicated as a tedious task. As Project Coordinator was handling all contractual issues, quantity surveyors were set as to report to him. Therefore, authority of interim payment applications resided with the Project Coordinator.

6.3 Details of techniques used for data collection

Background details of interview panel - A total of 9 members were interviewed including three (3) members from each of the Client, Consultant and Contractor as details summarised in Table 6.1. More importantly, researcher paid attention to select members, who directly involved with day to day operations of the project and participated in progress review meetings regularly. Accordingly, researcher ensured that majority of the members interviewed were directly involved in decision making in Project A context, as planned in research methodology.

Meeting observations and other observations – Researcher attended the 32nd and 33rd progress review meetings held at Client's office. DG (Corporate Management) chaired all progress review meetings and taking minutes of the meeting was a responsibility of the Project Manager. A formal set up of taking seats, talking and record keeping was there at the meeting. All the interviewees were present for the meetings in both days, except the Consultant Project Quantity Surveyor, who was absent for the 32nd meeting. Apart from the interviewees, Electrical Engineer of Contractor, Senior Technical Officer (Services Installations), Resident Engineer and Project Electrical Engineer of the Consultant were available. An Assistant Quantity Surveyor participated from the Consultant's head office for the 32nd meeting, where Consultant Project Quantity Surveyor was absent. Other observations included site visit and visiting to contractor, consultancy and client organisations.

Documentation - Documentation included meeting minutes of 31st and 34th meetings, construction contract documents, consultancy contract document, organisation charts and correspondents (where necessary).

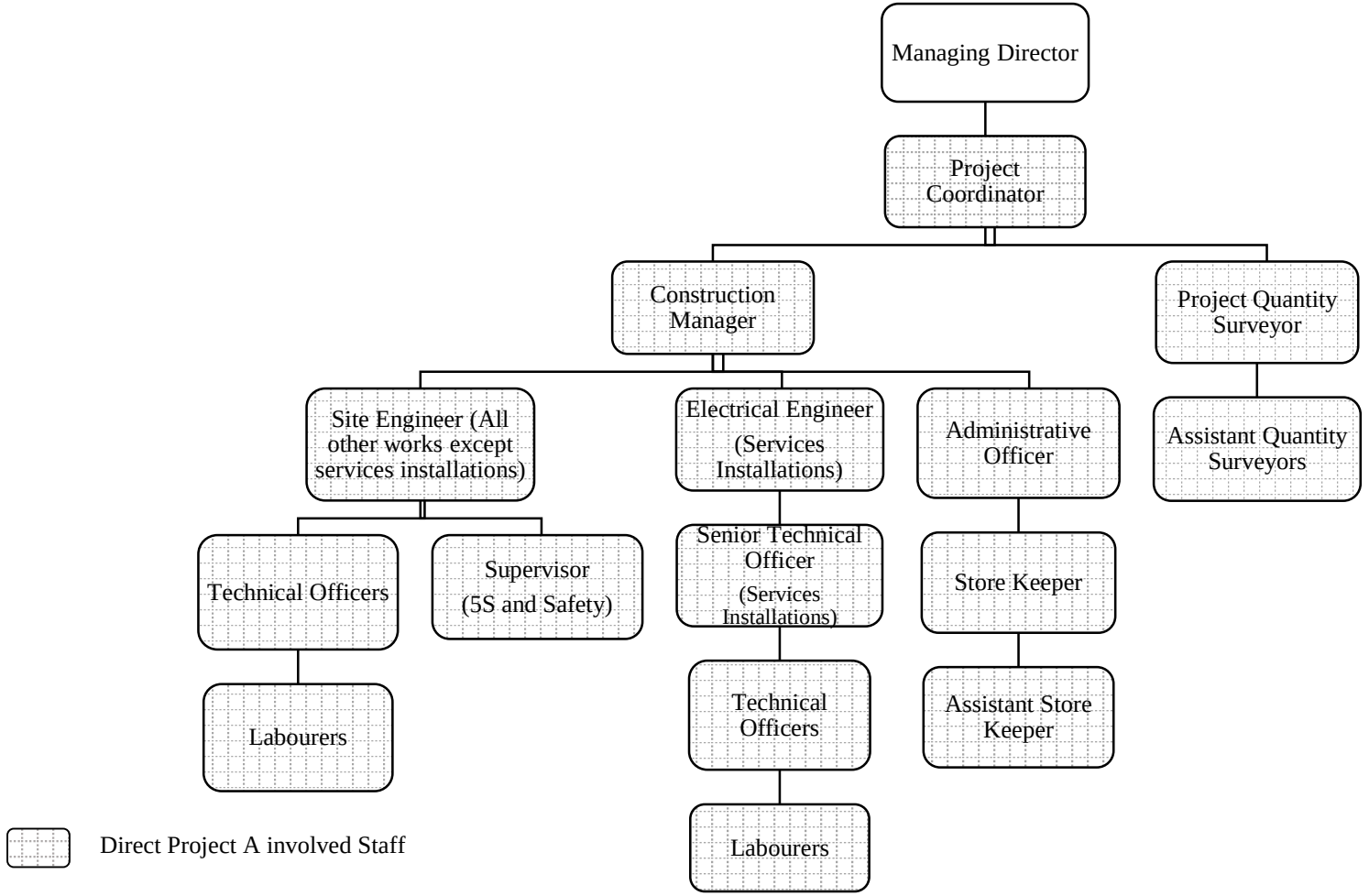


Figure 6.3: Organisation structure of the contractor's personnel of Project A

Table 6.1: Details of interview panel – Project A

Category	Interviewee (Designation)	Total Working Experience	Nationality	Presence within Project A team	Role within the Project A
Consultant	Project Manager	Total 30 years in construction industry working for clients in public sector. 6 years up-to-date at the semi-government consultancy organisation of project A	Sri Lankan	Since contractor selection	Engineer's representative to the construction contract
	Project Architect	Total 10 years in construction consultancy. 8 years up-to-date at the semi-government consultancy organisation of project A. Other 2 years at a private consultancy organisation	Sri Lankan	Since project initiation	Architectural design and supervision of construction works
	Project Quantity Surveyor	Total 31 years in construction consultancy. All years up-to-date at semi-government consultancy organisation of project A	Sri Lankan	Since tendering stage of the project	All consultant quantity surveying works
Contractor	Construction Manager	Total 34 years in construction works. 33 years up-to-date at the private contractor organisation of project A	Sri Lankan	Since beginning of construction stage	Planning and execution of construction works
	Site Engineer	Total 8 years in construction works. All years up-to-date in the private contractor organisation of project A.	Sri Lankan	Since beginning of construction stage	Physical execution of civil construction works
	Project Quantity Surveyor	Total 8 years in construction. 4 years up-to-date at the private contractor organisation of Project A and other 4 years at a different private contractor organisation.	Sri Lankan	Since beginning of construction stage	Interim payment application and assisting contractor's claims
Client	Assistant Director (Premises)	20 years of service in general administration in public sector.	Sri Lankan	Since construction stage	Project supervision and assist in client's approvals and instructions
	Technical Officer (Maintenance)	12 years in construction and building maintenance works. 11 years up-to-date at the client organisation of project A.	Sri Lankan	Since project initiation	Supervision of project, assist project documentation and liaising with local authorities
	Procurement Assistant	15 years of experience in accountancy and procurement works at client organisation of project A.	Sri Lankan	Since project initiation	Consultant and contractor selection and making interim payments

6.4 Overview of responses to internal integration and external adaptation problems

According to the working definition, construction project culture is "the patterns of underlying basic assumptions of the project team members demonstrated through the responses for internal integration and external adaption problems of the project". Problems of external adaptation and survival include: mission, goals, strategy; means of accomplishing goals; and, measuring performance and corrections. Problems of internal integration include: common language and concepts; group boundaries; power, status and intimacy; rewards and punishments; and, ideology. Number of basic assumptions were held within meaning making process of the construction project team members of Project A as described in the Sub Section 6.5., Sub Section 6.6 and Sub Section 6.7. These were found when questioning on how the team members responded for internal integration and external adaptation problems. A brief description of the key responses for such problems are as follows:

Mission, Goals, Strategy - The Client of Project A required to have the goal of constructing an extension building to match the exterior with the existing heritage building, but with luxurious interior. Quality of the building was the priority at the design stage of the project. During design stage, Client has had the necessity of making the Project A an exemplary project to the country as a well-controlled project, in terms of time and cost. This was by completing the project on time and being within the limit for cost variations. During execution of the project, time was given the priority. This was because, office space requirement increased within the ministry with a government change during the execution stage, Client needing to acquire the building fast.

Means of accomplishing goals – By the time of the case study being carried out, Contractor was about to exceed the last agreed time for completion and was working out for another request on the third extension of time. Thus, achievement of time was critical for the time being. In order to accelerate the work, Client had assisted the Contractor by allowing some work force from a civil security department to work in the project to supply labour. That labour force was mostly semi-skilled. Method of

payment to the Contractor in the construction contract was on measure and pay basis. Cost variation limit for government projects in Sri Lanka had a financial limit as 10% of the contract sum of the project. By the time of the case study, this limit was about to exceed and Client was hoping to request for additional funds.

Measuring performance and corrections – There was no separate system for the Client to track the performance of the Consultant. Contractor's performance was reviewed at the bi-weekly held progress review meeting. Client used to pay random visits to site.

Common language and concepts – Project correspondents were exchanged in the medium of English. Contractor had previous work experience with the consultancy organisation in a different project. Contractor had assigned the same staff worked for the pervious project to work for Project A, expecting Consultant would do the same. However, Consultant had assigned a different set of consultancy team for Project A. Neither Contractor, nor Consultant has had previous work experience with the Client of Project A.

Group boundaries – Apart from the bi-weekly progress review meeting held with the participation of Client, Contractor and Consultant, client had separate random meetings with the participation of Consultant only. Introducing new members to the Client happened during progress review meetings. Contractor and Consultant had the opportunity of meeting new members at respective organisations or at the construction site while executing the works. Consultant's team included many female team members including Project Architect, Project Design Engineer and Project Quantity Surveyor. Contractor's team included the Contractor's Project Quantity Surveyor a female. Client's team included Assistant Director (Premises) and the Technical Officer (Maintenance) as female members.

Power, status and intimacy – There was no clear leader, driving the whole project team. Project Manager, assigned from the consultancy organisation did a job of coordination. He was a full time appointment to the Project A stationed at the site.

Rewards and punishments – Rewards were not popular within the project team. Even verbal appreciations were rare. Punishments in terms of verbal expression of dissatisfactions were very popular with the Client. Even Contractor had received several letters from Client, through Consultant to express their dissatisfaction on time performance of the project.

Ideology – Client thought they could not get the Contractor to finish the project on time with whatever the strategies and tactics they initiated and it was totally out of their control. Consultant believed that this Client was a powerful ministry that Consultant could rarely disagree with them.

6.5 Basic assumptions of contractor's sub-cultural group of Project A

The most common underlying basic assumptions of Contractor's sub-cultural group of Project A were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Contractor's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Contractor's sub-cultural group. The basic assumptions included the powerful own basic assumptions of the Contractor (The Contractor's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Contractor's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumption. For example; "Cont A 1 01" for the first pattern of basic assumption of Contractor of Project A.

Basic assumptions of Project A are graphically presented in Figure 6.4. Patterns of basic assumptions together with basic assumptions of the Contractor are summarised in Table 6.2.

Cont A 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions on nature of human relationship of Contractor could be determined using three different perspectives. The initial perspective was on what the Contractor considered as the best authority system to be adopted within the project team: autocratic or participative. Contractor of Project A demonstrated a pattern of basic assumption that '**level of authority was critical in decision making (Cont A 1 01)**' (refer Annexure 3 – A1.1.1 for case evidences) and '**a powerful, impartial leader was essential to drive the project (Cont A 1 02)**' (refer Annexure 3 – A1.1.2 for case evidences), preferring basic assumptions on 'autocracy'.

All members from consultancy team had to refer to the heads of their respective departments and sometimes to the DGM (Consultancy) to make decisions. Contractor found it easy to work with professionals with higher authority in Consultant's team. They were fond of referring any problem to DGM (Consultancy) because, the decision making was fast due to his level of authority. Site engineer was disappointed about the Consultant's project staff because, they were not with the required level of authority to take decisions fast. For example, he mentioned about a situation where, Project Structural Engineer asking to test every single minor nail used in roof construction without considering the importance of testing to the given situation. This was solely because, Chief Structural Engineer had instructed to test all the nails before allowing for construction. The Contractor complained that these incidents were due to lack of authority for the project staff to carry out work properly, highlighting the importance of autocracy for decision making. In addition, it was apparent that the appointed Project Manager from consultancy organisation did not carry out a role of leader within the project. This was expressed by the Project Manager himself. He stated that he was able to provide only a coordination role within the project.

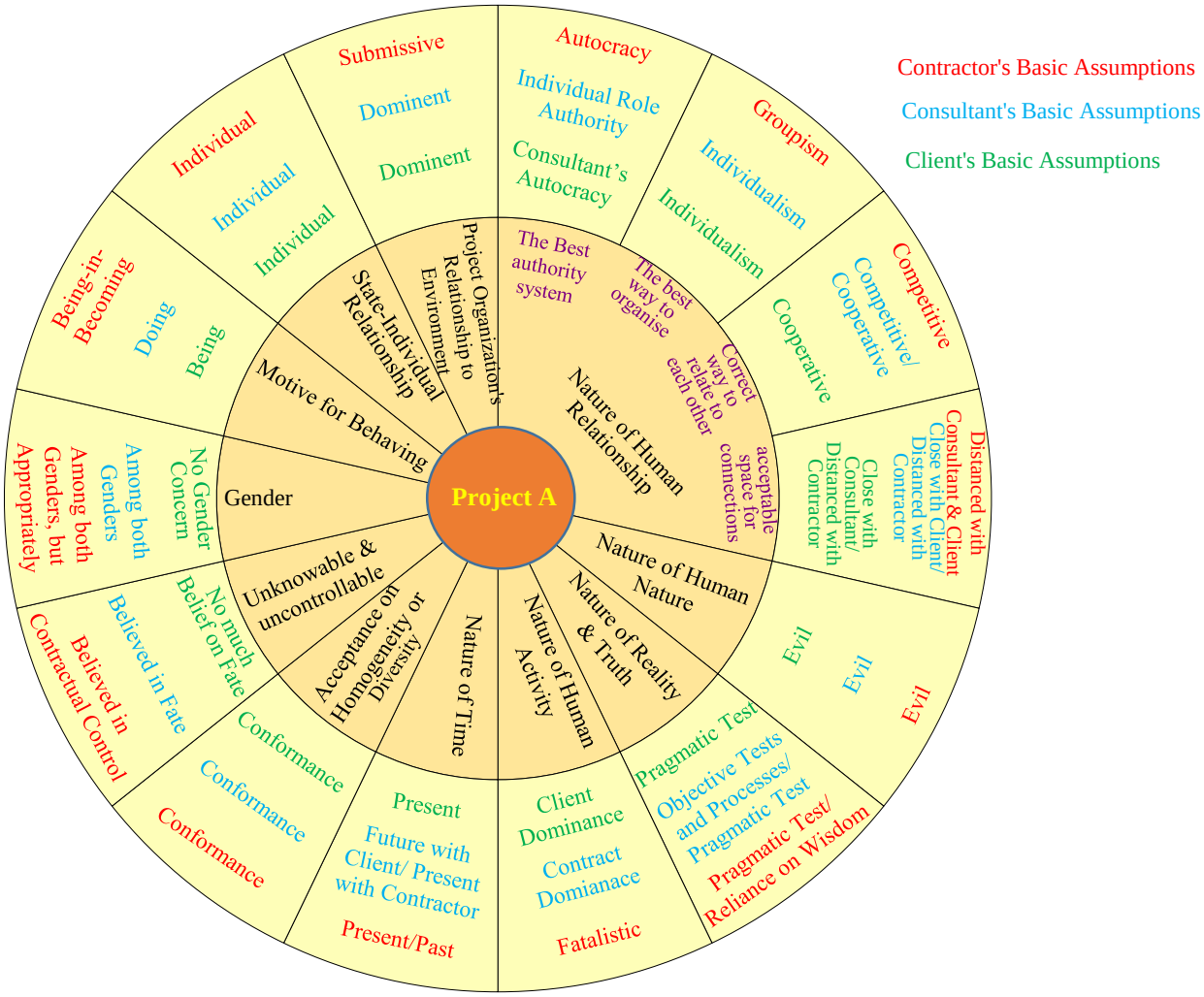


Figure 6.4: Basic Assumptions of Project A

Table 6.2: Basic assumptions of contractor sub-cultural group of Project A

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Contractor's Own World View	Contractor's View on Dominant World Views of Consultant	Contractor's View on Dominant World Views of Client
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Level of authority was critical in decision making (Cont A 1 01) 1.2 A powerful, impartial leader was essential to drive the project (Cont A 1 02)	Autocracy		
	A2 - What was the best way to organise project society?	1.3 Consultant lacked integration among different designers (Cont A 1 03) 1.4 Teamwork history was beneficial for project success (Cont A 1 04)	Groupism	Individualism	
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Consultant desperately attempted to win the Client (Cont A 1 05) 1.6 Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont A 1 06)	Competitive		
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.7 Close connections with team members were not a requirement for project matters (Cont A 1 07) 1.8 Continuing relationships with Client and Consultant were not essential and only professional working relationships were adequate (Cont A 1 08)	Distanced with Consultant and Client		

2. The nature of human nature	A4 - What was the nature of human nature?	2.1 No Appreciations and only constant highlighting of mistakes were available within the team (Cont A 2 01)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Level of experience was crucial in decision making in a construction project (Cont A 3 01) 3.2 Understanding construction sequence was critical for project success (Cont A 3 02) 3.3 Consultant was impractical in their decision making (Cont A 3 03) 3.4 Cause and effect governed every aspect in project context (Cont A 3 04)	Pragmatic Test/ Reliance on Wisdom	Objective Tests and Processes	
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 The correct way of behaving was being reactive, not proactive (Cont A 4 01) 4.2 Client assumed a higher power and tried to control the Contractor (Cont A 4 02)	Fatalistic		Client Dominance
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Continuing relationships with Client and Consultant were not essential and only professional working relationships were adequate (Cont A 1 08) 5.2 Teamwork history was beneficial for project success (Cont A 1 04)	Present/Past		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				

	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Not innovation, but conformance was rewarding in a construction project (Cont A 6)	Conformance		
7. Unknowable and uncontrollable	A10 - Did the Contractor tend to believe in fate/uncontrollability?	7.1 Decisions made by the Client were uncertain (Cont A 7 01) 7.2 Ultimate responsibility of time, cost and quality of the project resided with the Contractor (Cont A 7 02) 7.3 Formal instructions in black and white would protect the contractual rights of the Contractor (Cont A 7 03) 7.4 Contract was the biggest control and upholder of justice in a construction project (Cont A 7 04)	Believed in Contractual Control		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 Attitudes of females mattered in working for a construction project (Cont A 8 01)	Among Both Genders, but Appropriately		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Every project was just another job to bring profits to the organisation (Cont A 9 01) 9.2 Anything should be done if contractually entitled for a payment, since finance mattered at the end (Cont A 9 02) 9.3 Delivery of expected project quality was an organisational concern (Cont A 9 03)	Being-in-Becoming		

		9.4 Continuous improvement was a necessity (Cont A 9 04)			
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Every project was just another job to bring profits to the organisation (Cont A 9 01)' 10.2 Anything should be done if contractually entitled for a payment, since finance mattered at the end (Cont A 9 02) 10.3 Delivery of expected project quality was an organisational concern (Cont A 9 03)	Individual		
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	11.1 Continuous improvement was a necessity (Cont A 9 04) 11.2 Contractor should always be ready to have ultimate justice through Adjudication or Arbitration (Cont A 11 01)	Submissive		

His justification for such a behaviour was that as he had been appointed from Consultant's team therefore, he had happened to listen to his colleagues in the consultant's team including, Project Engineer, Project Architect, Project Quantity Surveyor and others. In addition, he had happened to obey his superiors in the consultancy organisational hierarchy. Thus, he had allowed for team decision making within the consultancy team. This was apparent during project progress review meeting too, where Project Manager was silent most of the times and individual members from the consultancy team spoke for the relevant issue. Given such a background, all the interviewees from Contractor's team complained that nobody from the Consultant's team led them, but just complained Contractor on not achieving the time targets without looking into real reasons for the delay. Construction Manager's main criticism was that Consultant never bravely fought for the unfair complaints from the Client for the delay of the project, which caused due to requirements of the Client. He stressed that there was nobody impartial to talk on behalf of Contractor or who was strong enough to put an argument in front of the Client. These complaints indicated their preference on adequate 'autocracy' for a leader to make decisions impartially within the project team.

The second perspective to determine the basic assumptions of the Contractor on nature of human relationship was by looking into what they believed as the best way to organise society: individualism or groupism. They held a pattern of basic assumption as '**Consultant lacked integration among different designers (Cont A 1 03)**' (refer Annexure 3 – A1.1.3 for case evidences) indicating their belief about the worldview of Consultant on 'individualism'. However, the pattern of basic assumption, '**teamwork history was beneficial for project success (Cont A 1 04)**' (refer Annexure 3 – A1.1.4 for case evidences) indicated the Contractor's preference on 'groupism' as the best way to organise. Contractor believed that the lack of integration among different designs produced by the Consultant had created a risk to the Contractor. The best example for this as quoted by the construction manager was about the failure in the structural design by the Consultant Project Structural Engineer. She had mistakenly designed the structural details for the external piers of the building in a square shape regardless of the round shape given in the architectural drawings.

However, due to the error in the structural design, Contractor had constructed square shaped piers as reinforcement details were in that shape. However, Contractor had been accused by the Consultant for not being able to identify the mistake prior to construction. This had resulted in a dispute over the cost of re-shaping to round piers. Contractor constantly complained over this individualistic behaviour of the Consultant. Contractor had previous work experience with the same Consultant in a past project. With regard to the Contractor's belief on team work history, Contractor tried to engage the same team of members from their organisation, who had previous work experience with the consultancy team. This was considering the benefits of past experience, when organised as a group to work. However, Consultant did not bear a similar assumption and disregarded a similar appointment for the consultancy team for Project A which, had led to a greater dissatisfaction of the contractor. Contractor complained that Consultant never valued team work.

The third perspective to determine the basic assumptions of the Contractor on nature of human relationship was by looking into what was regarded as the correct way for people to relate to each other to distribute power and affection: being competitive or cooperative. Contractor held a pattern of basic assumptions that '**Consultant desperately attempted to win the Client (Cont A 1 05)**' (refer Annexure 3 – A1.1.5 for case evidences) indicating Consultant held a dominant worldview about 'competition' as the correct way to relate to each other for affection and power. Construction contract of Project A included a clause for Engineer's impartiality. All consultants were required to perform an impartial duty. However, Contractor believed that Consultant was still biased to the Client in decision making. For example, Contractor's Project Quantity Surveyor pointed out a situation, where Consultant Project Quantity Surveyor refused to pay for the earth works and structural works pertaining to a varied work for fuel tank installation due to not incorporating such costs in the cost proposal. According to the Contractor's Project Quantity Surveyor's opinion, this was due to some attitude issue of Consultant Project Quantity Surveyor, who believed that rejecting claims and deducting the amounts in interim payment applications of Contractor would be a rewarding act to win the Client. Thus, Contractor believed that Consultant held the assumption of 'competition' as the correct way to

relate to each other. Further, Contractor held another pattern of basic assumptions as; '**Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont A 1 06)**' (refer Annexure 3 – A1.1.6 for case evidences) indicating their belief on 'competition' as the correct way to relate to each other. Contractor was never pleased, when they were getting highlighted for mistakes either by Client or Consultant. Contractor was very aggressive during meetings. Whenever a lapse of them was highlighted, they defended themselves mostly by highlighting the mistakes of the Consultant or the Client in return. For example, when Consultant pointed out a delay in their work, Contractor replied showing a delay in details, instruction or approval. When Client pointed out a delay, they highlighted about the variations initiated by the Client that required additional time. Thus, meetings were portrayed as a battle filed with cold fights among parties.

In addition to the three perspectives, another perspective could be identified for the determination of the nature of human relationship. This was about looking into what was the acceptable space for cognitive, emotional and behavioural connection. The acceptable space could be either close or distanced. It was observed that Contractor was holding distanced connections with both Consultant and Contractor. They demonstrated a pattern of basic assumptions '**close connections with members were not a requirement for project matters (Cont A 1 07)**' (refer Annexure 3 – A1.1.7 for case evidences). Although Contractor had previous work experience with the Consultant, Contractor was never close to them. All procedures were formal and much distanced with both Client and Contractor. Contractor was struggling to achieve time targets and was making losses on work accelerations. As explained by the Construction Manager, he personally knew the Secretary to the Ministry, however, he never wanted to use those relationships within Project A. They believed that they were delivering a high quality output to the Client and they never wanted to have the advantages of such close connections in their official works. They further held a pattern of basic assumptions as '**continuing relationships with Client and Consultant were not essential and only professional working relationships were adequate (Cont A 1 08)**' (refer Annexure 3 – A1.1.8 for case evidences) indicating they did not consider about long term relationships. Contractor of Project A was operating in the industry

winning contracts mostly through competitive tendering procedures and was a leading construction contractor delivering high quality construction out puts. Receipt of public sector projects through negotiations were very limited for a private contractor. Thus, they paid less attention to the relationships and built their success on quality output keeping distanced spaces with other team members.

Cont A 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions on nature of human nature was about the Contractor's deep belief, whether humans basically were good, neutral, or evil, or whether human nature was perfectible or fixed. Contractor held a pattern of basic assumptions that '**no appreciations and only constant highlighting of mistakes were available within the team (Cont A 2 01)**' (refer Annexure 3 – A1.2.1 for case evidences), indicating the team belief on human nature being 'evil'. Contractor complained that Client and Consultant only looked for mistakes. The Site Engineer criticised the monitoring works of both Client and Consultant highlighting they were only looking into delayed works and failed to monitor the key aspects in the project. Contractor's Project Quantity Surveyor mentioned that they had received a letter from the Consultant stating they would be charged liquidated damages from 20th January onwards, which they consider as a huge punishment. She further criticised the act of Client; complaining the Chairman of the Contractor's organisation for every mistake, where the project staff of Contractor used to get punished from the Chairman in return. Contractor regarded meeting room as a place to discuss issues and defend themselves. This was evident during the meeting observations too. No any direct appreciation for the Contractor from Client or Consultant was witnessed.

Cont A 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions on nature of reality and truth regarded how 'what was true' and 'what was not true' were determined in the physical and social context by the Contractor. Such a determination could be arrived at either by pragmatic test, reliance on wisdom or social consensus. It was evident that Contractor of Project A was mostly believing on 'pragmatic test' in determining the reality and truth within the project

context. This was supported by the patterns of basic assumptions '**level of experience was crucial in decision making in a construction project (Cont A 3 01)**' (refer Annexure 3 – A1.3.1 for case evidences), '**understanding construction sequence was critical for project success (Cont A 3 02)**' (refer Annexure 3 – A1.3.2 for case evidences) and '**Consultant was impractical in their decision making (Cont A 3 03)**' (refer Annexure 3 – A1.3.3 for case evidences).

Contractor always believed that experience was critical in making decisions in construction. However, consultancy team included many young professionals including Project Architect, Project Structural Engineer and Project Electrical Engineer. Further, Consultant too justified this assumption of the Contractor. As indicated by the Consultant's Project Quantity Surveyor, having a young project design engineer for electrical works created problems such as delay in response to Contractor's problems due to lack of experience. Thus, Contractor had started complaining directly in meetings asking for an experienced electrical engineer. Even Client had intervened to solve this problem and finally, a new appointment had been made with a more experienced one. Contractor's belief on pragmatic test was further highlighted by their consideration of construction sequence as critical for project success. As indicated by the Construction Manager and the Site Engineer, reasons for many conflicts among client and the contractor was due to the Client's improper understanding of the construction sequence in carrying out the construction works practically on site. Site Engineer pointed out an instance where, Client demanding the Contractor to carry out floor tiling work prior to the ceiling work to achieve a higher physical progress in work. According to Site Engineer, commencing ceiling work after floor tiling work could have damaged the tiling work, when labourers tend to on the finished tiles. This could have ultimately become a fault of Contractor, when Consultant to accept the tiling finished work. Thus, Site Engineer highlighted the difficulty in fulfilling all requests made by the Client who lacked understanding on construction sequence. Not only Client, Construction Manager pointed out that Consultant also lacked understanding on the sequence of work. He mentioned that they had happened to create a big hole through a timber ridge plate to draw an electrical wire since consultant did to finalise the heating, ventilation and air conditioning system

prior to finishing the ceiling works. In addition, Contractor complained that Consultant lacked practicality in their decisions and actions. According to their explanations, Consultant failed to understand the time consumption of work activities, while practically carrying out on site. This assumption could be linked to the Contractor's other two patterns of basic assumptions 'experience was critical on making decisions' and 'understanding construction sequence was critical for project success'. This was because, impracticality of Consultant could be due to lack of proper hands on experience in construction and interrelation of activities. A former General Manager of the consultancy organisation was still engaged in Project A time to time even after his retirement. He was not a permanent member of the consultancy team of Project A, but only attended when an issue arose within the project. He was considered as a respectable person within the team by both the Construction Manager and Site Engineer. When questioned about the reason for him being an important member, everybody mentioned him being more experienced and practical to make timely and justifiable decisions in critical situations, highlighting their belief on 'pragmatic test'.

Nevertheless, the pattern of basic assumptions; '**Consultant was impractical in their decision making (Cont A 3 03)**' (refer Annexure 3 – A1.3.3 for case evidences) indicated that Contractor assumed Consultant being preferred following 'objective tests and procedures', rather than depending on subjective means of pragmatic test, reliance on wisdom or social consensus. This was mostly highlighted through the complain of the Site Engineer for Consultant asking them to provide a test report for small brass nail, which was used to fix the tar sheet in roof.

With regard to the Contractor's basic assumptions on nature of reality and truth, they held another pattern of basic assumptions '**cause and effect governed every aspect in project context (Cont A 3 04)**' (refer Annexure 3 – A1.3.4 for case evidences), indicating they relied on wisdom to determine the truth, in addition to the pragmatic test. They believed that there was a reason for everything happening. The Procurement Assistant of the Client too complained that Contractor was always trying to justify excuses by reasoning out for every lapse they made. For example; when Contractor could not achieve the time target for handing over the building, initially they had

reasoned out bad weather and lack of labour availability as excuses. Finally, when those problems were sorted out, Contractor had come up highlighting their own internal problems such as; delays in their internal material procurements as valid reasons for the delay. When the Construction Manager was questioned on how they normally discovered that they were not achieving the goals and targets, he stated that they were not achieving targets because of reasons unforeseen or unforeseeable, not that they were deliberately setting targets that could not be achieved. Similarly, Site Engineer posed his disappointment about the Client and Consultant for only looking into delayed works and not really looking into the reasons for the delays. Thus, Contractor believed in logical reasoning, indicating their reliance on wisdom to determine the truth and reality in world.

Cont A 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions on nature of human activity was about the Contractor's belief on the "correct" way for humans to behave. Such a correct way could be either dominant, harmonising or fatalistic. Contractor held the pattern of basic assumptions '**the correct way of behaving was being reactive, not proactive (Cont A 4 01)**' (refer Annexure 3 – A1.4.1 for case evidences), indicating the basic assumption of correct way for humans to behave was being fatalistic. When Construction Manager was questioned how the Contractor's team reacted, if they discovered that some important goals were not being met or any error or mistake was detected, his answer was many of their team members understand mistakes only after committing them, which they knew as a negative behaviour. The same fact was evident with the explanations of other team members. When the Contractor's Project Quantity Surveyor was questioned about how Contractor discovered that they were not meeting goals and targets, she mentioned that mostly Consultant pointed out those for them and reacted quickly for any lapses of the Contractor. Further, Site Engineer, also mentioned that one of the duties of any consultant was to identify the mistakes and guide the contractor in a positive way. Further, Contractor held another pattern of basic assumptions that '**Client assumed a higher power and tried to control the Contractor (Cont A 4 02)**' (refer Annexure 3 – A1.4.2 for case evidences), as Client

believed dominance as the correct way to behave. Construction Manager mentioned that client was trying to bring in controls deviating from the construction contract and they had to argue during meetings to convince Client on their wrong behaviour. Contractor had felt this control as an unreasonable one. One reason for client assuming a higher power was due to being a powerful ministry of the government. Client was used to mention directly that it was risky to have bad terms with them since they had the power to assess government contracts within that specific ministry. Thus, Contractor had used to accept many requests from Client without any objections, since Contractor felt that Client would feel low if Contractor tried to disagree with their opinions. Site Engineer mentioned that once client threatened them saying they will blacklist the contractor if they wished for being behind the time schedule. Contractor was scared of getting any bad reputation and decided to take initiatives to catch up the schedule creating project budget deficits. Thus, Contractor believed that it was the dominance that Client believed as the correct way to behave.

Cont A 5 - Basic Assumptions on Nature of Time Units

The basic assumptions of the Contractor about the nature of time units looked into what kinds of time units were more relevant for the conduct of daily affairs within the project: past, present or future. Accordingly, Contractor held the pattern of basic assumptions that '**continuing relationships with Client and Consultant were not essential and only professional working relationships were adequate (Cont A 1 08)**' (refer Annexure 3 – A1.1.8 for case evidences), indicating their belief on 'present' as a more relevant time unit. Further, they demonstrated another pattern of basic assumptions that '**teamwork history was beneficial for project success (Cont A 1 04)**' (refer Annexure 3 – A1.1.4 for case evidences), which indicated their concerns on 'past' as relevant too. Thus, it was a mix of past and present that was regarded as relevant in terms of time for the Contractor of Project A.

All interviewees from Contractor denied the requirement of considering continuing relationship with the Client or the Consultant. Construction Manager indicated that the Chairman of the Contractor's organisation never advised the project staff on requirement of any such continuing relationship. Further, with a business background,

where the organisation earned mostly by projects won through competitive tendering, Contractor believed that it was very rare that they would get jobs from the same Client. Further, Contractor had previous experience with the same Consultant, but that had never helped them winning Project A or any potential future projects. Being a leading contractor in the Sri Lankan market, they believed that they won projects with their own strengths such as quality of the work done. Thus, they were not afraid to state their disagreements to the Client or Contractor, where essential and justifiable. This was evident during meeting observations too. Both Construction Manager and the Contractor's Project Coordinator posed their disagreements very straight forwardly in front of the Client and the Consultant, but with justifications. Thus, it was the 'present' that Contractor assumed as a more relevant time unit for the conduct of daily affairs.

Since Contractor had past experience in working with the same Consultant in a different project, Contractor had taken many strategic decisions based on those past experiences. These included, appointing the same team from past project to this team as well. As indicated by the Construction Manager, this appointment was made despite the losses of very senior staff from Contractor's organisation getting appointed for Project A, which was a small scale project, compared to their previous project. This was solely because, Contractor wanted to get the advantage of the previous experiences had with the same Consultant being used in Project A. Thus, such an intense necessity of getting the same team appointed to Project A indicated the belief of Contractor on 'past' as a more relevant time unit for decision making.

Cont A 6 - Basic Assumptions on Acceptance of Homogeneity or Diversity

The basic assumptions of the Contractor on acceptance on homogeneity or diversity could be identified by using two perspective. The first perspective was by looking into, whether the Contractor believed a group to be best off if it was highly diverse or if it was highly homogeneous. Next perspective was by looking into, whether Contractor believed individuals in a group should be encouraged to innovate or conform. No evidence was available to determine whether the Contractor believed a group to be best off being diverse or homogeneous. This may be because, construction project team inevitably being diverse in nature and team members had to anyway believe on

that as the best. In relation to the next perspective, Contractor held the pattern of basic assumptions that '**not innovation, but conformance was rewarding in a construction project (Cont A 6 01)**' (refer Annexure 3 – A1.6.1 for case evidences), indicating their belief on 'conformance'. As stated by the Contractor, they were not into massive scale innovations, but mostly into on the spot, sudden innovations, while doing construction. Their idea was that the time pressure in the project prevented them being innovative. They had mostly tried their best to deliver what was instructed by the Consultant. Contractor appeared to be more risk averse by requesting all instructions in black and white, since were always in dilemma whether payment applications were done according to the contract, which hindered innovations. Thus, conformance to the construction contract and instructions by the Consultant was popular with the Contractor.

Cont A 7 - Basic Assumptions on Unknowable and Uncontrollable

The basic assumptions on unknowable and uncontrollable considered to what extent the Contractor of Project A believed on fate or existence of phenomena in project context that were beyond their control and to what extent they were ready to embrace those, either willingly or unwillingly. Accordingly, Contractor held the patterns of basic assumptions that '**decisions made by the Client were uncertain (Cont A 7 01)**' (refer Annexure 3 – A1.7.1 for case evidences)' and '**ultimate responsibility of time, cost and quality of the project resided with the Contractor (Cont A 7 02)**' (refer Annexure 3 – A1.7.2 for case evidences), highlighting the uncertainties in construction projects. Construction manager indicated that there was no important member from the Client who could take firm decisions and finalise the scope right from the beginning of the project. Thus, Client had come up with numerous variations in project scope even at the beginning of the construction stage that could have finalised during design stage. Client had failed to freeze the design even after awarding the construction contract and kept on changing the design time to time as and when they realised any need. As identified by the contractor, decisions of public sector clients drastically changed with government changes. They had heavily experienced that in Project A. For example. The researcher could witness the discussions had among the team

members over the scope change over a transformer installed for three times. The Director General (Corporate Management), who was the Client's Representative directly involved with the project, extended his apologies for creating trouble asking to change the location of the transformer for the third time, which he mentioned happened beyond his total control. More importantly, this incident demonstrated that Client's representatives directly involved with the project were not the ultimate decision makers on the project. Client being a powerful ministry, Consultant too was afraid to talk against the Client and get certain decisions, since Consultant too was a government organisation and there could be negative consequences politically. However, Contractor believed that Contractor was liable for ultimate project delays, due to whatever the reasons the delay happened. They believed that the ultimate responsibility of time, cost and quality of any construction project was vested upon the Contractor. Construction Manager indicated that such responsibility was specifically bestowed to the person managing the contractor's team. As he explained, though the Consultant was monitoring their work, delivering the accepted quality was the Contractor's job.

As indicated by the Contractor's Project Quantity Surveyor, though the Contractor did whatever specified and instructed by the Consultant, the responsibility of proving a claim resided with the Contractor. If Contractor failed to prove a work done through documentation, Contractor happened to bear the cost incurred of his own. That was why documentation and formal communication methods were crucial in a project. Accordingly, Contractor held the pattern of basic assumptions, '**formal instructions in black and white would protect the contractual rights of the Contractor (Cont A 7 03)**' (refer Annexure 3 – A1.7.3 for case evidences). As Contractor had to embrace the uncertainties along the project life cycle, they tried their best to minimise those risks through maintenance of formal written communications, which they thought would remain as evidences during any matter. Project Manager criticised this behaviour of the Contractor as they were refusing a fast method of communication. Both Consultant Project Architect and Consultant Project Quantity Surveyor indicated a situation where, Contractor refused to accept a clarification for some rates sent by the consultant project quantity surveyor through emails and asked to send in hard

copies. Contractor firmly believed that '**contract was the biggest control and upholder of justice in a construction project (Cont A 7 04)**' (refer Annexure 3 – A1.7.4 for case evidences). They valued the role of the consultant quantity surveyor for a construction project, since he/she was the personnel, who interpreted the contract clauses best and justified rights and obligations of each party to the contract. Therefore, Contractor had the practise of referring any conflicting situation to the Consultant Project Quantity Surveyor before carrying out the work. Thus, they held the basic assumption that 'contractual control' brought certainty and control to the construction project environment.

Cont A 8 - Basic Assumptions on Gender

The basic assumptions of the Contractor about the gender was on their belief of how society should distribute roles, power and responsibilities between the genders: only among males, only among females or both. Contractor held the pattern of basic assumptions that '**attitudes of females matter in working for a construction project (Cont A 8 01)**' (refer Annexure 3 – A1.8.1 for case evidences). Thus, they believed that the attitudes should be considered in allocation of roles, power and responsibilities for females. The Construction Manager, who was a male member stated that it was the experience that he considered as important in any member; either a male or a female, working for a construction project. All interviewees from the Contractor's team indicated the nature of lacking practical experience with female members working in construction projects. Site Engineer, who was a male too, had a similar opinion to Construction Manager. According to him, practical experience was essential for any member working in construction project, however, females lacked this due to their attitudes of favouring working at offices environments than at sites. Majority of Contractor's team comprised of male members. Contractor's Project Quantity Surveyor was the only female member available in the project team at a higher level of authority. The opinion of the Contractor's Project Quantity Surveyor was that females take higher responsibility in the work assigned, but practical experience was low, as females were reluctant to work at the site due to insecurities at construction sites and being physically weak to work in hard construction activities. In summary,

the basic assumption of the Contractor of Project A was that roles, power and responsibilities should be allocated among both genders, but appropriately looking into their attitudes.

Cont A 9 - Basic Assumptions on Motive for Behaving

Motive for behaving looked into the Contractor's orientation in terms of; doing, being and being-in-becoming. If the Contractor's motive for behaving was 'doing', then they would merely take part in project activities, carrying individualistic organisational objectives. If Contractor's motive for behaving was 'being', then they should be willing to reflect on the project activities they did and be contented about their task delivery as a contractor. Thus, 'being' was more towards the collective thinking that Contractor should be happy that they tried to do their best for delivering what was expected by the Client/End-user. Finally, if the Contractor's motive for behaving was on 'being-in-becoming', then they should be ready to develop, grow, change and be better.

Contractor of Project A held the patterns of basic assumptions that '**every project was just another job to bring profits to the organisation (Cont A 9 01)**' (refer Annexure 3 – A1.9.1 for case evidences) and '**anything should be done if contractually entitled for a payment, since finance mattered at the end (Cont A 9 02)**' (refer Annexure 3 – A1.9.2 for case evidences). These indicated that they were more into 'doing'. It was apparent that though the Contractor was forced to achieve the time target, they were cautious to keep the losses to the minimum during accelerations, as this was just another job for the contractor's organisation. They were highly reluctant to bear additional costs such as; working overtime to achieve the time targets, though the Consultant was forcing them. Contractor had always thought and made decisions thinking about the construction organisation as a whole and they were not ready to sacrifice their organisational objectives just for one project. However, they demonstrated the pattern of basic assumptions '**delivery of expected project quality was an organisational concern (Cont A 9 03)**' (refer Annexure 3 – A1.9.3 for case evidences), which demonstrated their behaviour on 'being'. As a leading contractor in the market under the Grade 1 for contractors as per the categorisation of Construction

Industry Development Authority of Sri Lanka, their competitive advantage was to provide a better quality construction output to clients. Thus, they were always trying their best to deliver the best quality possible. Contractor complained that they worry over quality could be compromised due to the constant pressurising of the Client for timely completion of the project. In addition, they believed '**continuous improvement was a necessity (Cont A 9 04)**' (refer Annexure 3 – A1.9.4 for case evidences), raising up their motivation to 'being-in-becoming'. They had realised the weaknesses in their systems and processes and had better understood they had to consider continuous improvement to remain in the market. In summary, the motive of behaving of Contractor of Project A was more into 'being-in-becoming'.

Cont A 10 - Basic Assumptions on State-Individual Relationship

Basic assumptions on state-individual relationship was about the Contractor's inner belief whether precedent right and responsibility be accorded the nation, individual or both. No any dominant pattern of basic assumption was evident related to their considerations on 'nation', though they were working for a public sector construction project. The reason may be because Contractor was holding governing organisational objectives being a private organisation. They were holding all assumptions about profit maximisation and delivering a high quality to the client, indicating they were believing on precedent rights and responsibilities should be accorded the 'individual'. The patterns of basic assumptions confirming this included '**every project was just another job to bring profits to the organisation (Cont A 9 01)**' (refer Annexure 3 – A1.9.1 for case evidences), '**anything should be done if contractually entitled for a payment, since finance mattered at the end (Cont A 9 02)**' (refer Annexure 3 – A1.9.2 for case evidences) and '**delivery of expected project quality was an organisational concern (Cont A 9 03)** (refer Annexure 3 – A1.9.3 for case evidences).

Cont A 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions of the Contractor about the project organisation's relationship to its environment was looking into, whether project organisation perceived itself to

be dominant, submissive, harmonising, searching out a niche, while operating within its environment. The pattern of basic assumptions '**continuous improvement was a necessity (Cont A 9 04)**' (refer Annexure 3 – A1.9.4 for case evidences) indicated that Contractor believed project organisation being 'submissive' requiring improvements to its systems to survive in the environment. Further, this submissiveness to the environment was further strengthened by their pattern of basic assumptions '**Contractor should always be ready to have ultimate justice through Adjudication or Arbitration (Cont A 11 01)**' (refer Annexure 3 – A1.11.1 for case evidences). It demonstrated the dependency of the project organisation on external environment for resolving their project matters, making the project organisation weak in front of the external environment.

6.6 Basic assumptions of consultant's sub-cultural group of Project A

The most common underlying basic assumptions of Consultant's sub-cultural group of Project A were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Consultant's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Consultant's sub-cultural group. The basic assumptions included the Consultant's powerful own basic assumptions (The Consultant's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Consultant's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumption. For example; "Cnsl A 1 01" for the first pattern of basic assumption

of Consultant of Project A. Patterns basic assumptions together with basic assumptions of the Consultant are summarised in Table 6.3.

Cnsl A 1 - Basic Assumptions on Nature of Human Relationship

The three perspectives of determining basic assumptions of the Consultant about nature of human relationship included: what they regarded as the best authority system to be adopted within the project; what was considered as the best way to organise society and, what was regarded as the "correct" way for people to relate to each other and to distribute power and affection.

With regard to the best authority system, Consultant of Project A held the pattern of basic assumptions, '**Client believed that continuous pressuring could motivate the Consultant and Contractor (Cnsl A 1 01)**' (refer Annexure 3 – A2.1.1) for case evidences) indicating dominant Client's world view of 'Client's autocracy' as the best authority system. It was observed during the observations of the 32nd and 33rd progress review meetings, Director General (Corporate Management), who chaired starting the meeting saying; "We need the two floors (sectional completion) end December, hope you all will corporate." However, Consultant was a little disappointed with this behaviour of the Client. According to the Consultant Project Architect, this was amounted an unnecessary pressing, as this could had resulted in Contractor trying to compromise quality to achieve the speed up the work. It had been very difficult to convince the Client on such downsides of their unnecessary interventions. However, Project Architect indicated that Director General (Corporate Management) once personally told her that he was used to press the team in such a way, because he wanted to finish the project early and he believed it as a management style of motivating the team. However, her idea was that professionals comprising the Consultant and Contractor could get frustrated with this behaviour.

Table 6.3 – Basic assumptions of consultant sub-cultural group of Project A

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Consultant's Own World View	Consultant's View on Dominant World Views of Contractor	Consultant's View on Dominant World Views of Client
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Client believed that continuous pressuring could motivate the Consultant and Contractor (Cnsl A 1 01) 1.2 Perfect performances of individual roles would bring success in project performances (Cnsl A 1 02)	Individual Role Authority		Client's Autocracy
	A2 - What was the best way to organise project society?	1.3 Perfect performances of individual roles would bring success in project performances (Cnsl A 1 02) 1.4 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl A 1 03)	Individualism		
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Client was the most important member in the project team (Cnsl A 1 04) 1.6 Client depended on Consultant as the technical advisor (Cnsl A 1 05) 1.7 Formal methods of communication were important but, effectiveness and efficiency in communication resulted, when red tape for fast communication was overcome within the process (Cnsl A 1 06)	Competitive/ Cooperative	Competitive	Cooperative

		1.8 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl A 1 07) 1.9 Contractor attempted to pass all responsibilities and blames to the Consultant (Cnsl A 1 08)			
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.10 Close connections with the Client was important, but not with the Contractor (Cnsl A 1 09) 1.11 Continuing relationship was very much important with the client, but not with contractor (Cnsl A 1 10)	Close with Client/Distanced with Contractor		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 Contractor only believed in formal written methods of communication (Cnsl A 2 01) 2.2 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl A 2 02) 2.3 Contractor targeted for additional claims in every situation (Cnsl A 2 03)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Strict follow of contract clauses and strict control on cost induced Client's faith on Consultant (Cnsl A 3 01) 3.2 Difficult to convince the practical aspects of construction to the client (Cnsl A 3 02)	Objective Tests and Processes / Pragmatic Test		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Controls in a construction project were the contracts (Cnsl A 4 01) 4.2 Client assumed a higher power and tried to control the project (Cnsl A 4 02)	Contract Dominance		Client Dominance

5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Continuing relationship was very much important with the Client, but not with the Contractor (Cnsl A 5 01)	Future with Client, Present with Contractor		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl A 6 01)	Conformance		
7. Unknowable and uncontrollable	A10 - Did the Consultant tend to believe in fate/uncontrollability?	7.1 Decisions made by public sector clients were uncertain (Cnsl A 7 01)	Believed in fate		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 All genders were treated equally in construction projects (Cnsl A 8 01)	No Gender Concern		

9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Perfect performances of individual roles would bring success in project performances (Cnsl A 1 02) 9.2 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl A 1 03) 9.3 Contractor tried to deliver the quality as expected by the Consultant (Cnsl A 9 01)	Doing	Being	
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 As Client was the ultimate user of the new construction, satisfying Client's requirements should be given a priority (Cnsl A 10 01)	Individual		
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	11.1 Public sector clients received concessions in legal aspects (Cnsl A 11 01)	Dominant		

Further, Consultant Project Quantity Surveyor mentioned that Client had a habit of complaining to the higher management of the Contractor and Consultant, whenever a party was lagging behind any action. She indicated a situation, where the General Manager of the Consultant's organisation was called upon to the Client's office due to the post of Project Electrical Engineer getting vacant once. Her opinion was that it could damage to the career of some team members, since their respective superiors were getting bad impressions owing to this behaviour of the Client. Thus, Consultant believed that Client held a dominant basic assumption of 'Client's Autocracy' as the best authority system.

However, Consultant never believed a leader-centred authority system. They had appointed a project manager, who only did a coordination role within the project team. The pattern of basic assumptions of Consultant as '**perfect performances of individual roles would bring success in project performances (Cnsl A 1 02)**' (refer Annexure 3 – A2.1.2 for case evidences) demonstrated their belief on 'individual role authority' as the best authority within the project team. Project Manager stated that he could not take decisions within the team, rather individual professional within the team took a role leadership. It was observed during 32nd and 33rd progress review meeting observations that whenever an issue was raised, individual Consultant's Personnel attended to it and sorted it out, rather than Project Manager taking a lead to sort it out or Project Manager trying to inquire from the relevant professionals and facilitate participative decision making. Each professional in the Consultant's team had a role authority for decision making within the team. In addition, mostly Consultant expected the Contractor and Client also to attend to their individual role issues. As indicated by the Consultant, if Contractor was having an issue related to letter of credit pertaining to some goods procurement, it was regarded as a private issue of the Contractor only, where Contractor had to sort out those issues of their own without the knowledge of other team members. Thus, it was the role authority that Consultant believed as the best authority system within the project context.

With regard to the next perspective of what was considered the best way to organise society, Consultant held the patterns of basic assumptions '**perfect performances of**

individual roles would bring success in project performances (Cnsl A 1 02)' (refer Annexure 3 – A2.1.2 for case evidences) and '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl A 1 03)**' (refer Annexure 3 – A2.1.3 for case evidences) indicating their basic assumption on 'individualism' as the best way to organise society. Consultant believed that their role in a project was to do the design, monitor and provide instructions. When Contractor was delaying to achieve the sectional completion date, Consultant had remained advising the Contractor, but not practically involved and tried to sort out the problems of the Contractor. Consultant indicated that delays occurred due to internal problems of the Contractor such as; delays in material procurement and lack of labour, thus, Consultant did not want to engage in private matters of the Contractor. The only thing Consultant could do was advising on different options. As explained by the Consultant Project quantity Surveyor, the higher management of Consultancy Organisation never wanted to push the Contractor along the programme closely to the extent whether, Contractor had done the necessary procurements at least a month before the work started. They had considered that as an irrelevant monitoring according to the consultancy agreement and let the Contractor to monitor those functions of their own.

Further, small number of Consultant's staff was site based and assigned only for Project A. Majority of the staff of Consultant was working from head office and engaged in concurrent design works of several other projects. Site based staff included; Project Manager, Resident Civil Engineer, Site Quantity Surveyor and some Technical Officers only. Out of the interviewees, Consultant Project Architect and Consultant Project Quantity Surveyor were working from the head office of the Consultant's organisation. Consultant Project Quantity Surveyor elaborated that being a self-funded semi-government organisation, working on concurrent projects was unavoidable, considering huge overheads at organisational level and the motive for making profits. However, no much work pressure was available, when projects were at the beginning of design and construction phases. However, when the design and construction phases were moving towards the end, working on concurrent projects were stressful for the staff due to heavy workload. Considering the work load, they tend to demand proper documentation from the Contractors for certification of interim payments to ease the

process. This concurrent project works had limited the Consultant Project quantity Surveyor's visit to the site of Project A to several days of a month. Due to the same reason, Consultant Project Architect was disappointed about the double work she had happened to do with the Contractor of Project A, when sending re-drafted drawings for every single construction drawing being issued. Thus, it was 'individualism' that Consultant considered as the best way to organise within the project.

With regard to the correct way for people to relate to each other and to distribute power and affection, Consultant held patterns of basic assumptions highlighting their belief on both cooperation and competition. The patterns; '**Client was the most important member in the project team (Cnsl A 1 04)**' (refer Annexure 3 – A2.1.4 for case evidences) and '**Client depended on Consultant as the technical advisor (Cnsl A 1 05)**' (refer Annexure 3 – A2.1.5 for case evidences) indicated their Client centred behaviour with beliefs on 'cooperation'. All interviewees from Consultant's team mentioned that they considered the Client as the most important member in the construction project team. As stated by the Consultant Project Quantity Surveyor, the reason for this was due to the whole team was working for the client's needs. Thus, the main focus always was with the Client. According to the Consultant Project Architect, Client became the decision maker in many situations, thus considered the most important. Client was given priority during the bi-weekly Progress Review Meetings. Client decided on the time to start meeting and every other member participated accordingly. Further, Project Manager indicated that they had a practice of accepting the verbal instruction from the Client. His reasoning for the same was, Client was the most important member and Consultant trusted the Client as a superior member within the team. Although Client was a powerful member within the team and everybody was obeying the Client, Consultant believed that Client depended on the Consultant for technical matters. This was because Client was a layman. As indicated by the Consultant Project Architect, Client knew that Consultant decided what was best for the project. She brought in an example, where fire safety equipment supplier of the Client's existing building requested to handover the fire safety system installation to them. However, Client had openly declared that Consultant should decide what was best for the new building and it was not necessary to hand over the

fire safety system installation job to the existing supplier. Thus, Consultant had ended up selecting a better different supplier for that job for which, Client gave their approval without any hesitation. Such a cooperation between Client and Consultant was declared by the Consultant of Project A. In addition, Consultant held the pattern of basic assumptions that '**formal methods of communication were important but, effectiveness and efficiency in communication resulted, when red tape for fast communication was overcome within the process (Cnsl A 06)**' (refer Annexure 3 – A2.1.6 for case evidences), which strengthened their cooperative thinking further. Although Contractor highly believed in formal written communication modes, Consultant had identified that drawbacks of total dependence on formal methods, which hindered timely instructions and decision making. Consultant expected 'cooperation' of other team members to practice less formal modes of communication including telephone conversations and informal meetings.

However, Consultant still held a 'competitive' pattern of basic assumptions of '**Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl A 07)**' (refer Annexure 3 – A2.1.7 for case evidences). Further, they believed Contractor was also in competition with them with the pattern of basic assumptions '**Contractor attempted to pass all responsibilities and blames to the Consultant (Cnsl A 08)**' (refer Annexure 3 – A2.1.8 for case evidences). Sometimes, Project Manager, who was an appointment from the consultancy organisation had tried not to disclose reasons for lapses of Consultant to the Client or Contractor such as delays in designs, thinking they lose their power and integrity with the same. Consultant had tried their best not to let the other parties to point out any of their lapses always. Meeting room was appeared as a cold battle between the Contractor and Consultant trying to defend themselves from lapses highlighted by each other. In addition, Consultant complained that the Contractor was trying to find a way to pass their own responsibilities to the Consultant. Project Manager stated that Consultant tried their best not to delay the design works for services installations because, Contractor had brought in a big argument and refused to hand over the building on the date requested by the Client indicating a possible delay in designs for services installations. They further complained that Contractor had a practise of

sending letters indicating delays in drawings copying the same to the Client. As per their elaborations, Contractor was used to request drawings in this manner in much advance to a construction work to be carried out physically on site. According to the Consultant, Contractor had such a behaviour because, Contractor wanted to make the Consultant responsible for any delays in future, as they could request extension of time using these request letters. It was partially planning for claims in advance by passing the responsibility of any delay to the Consultant. Thus, all these evidences supported the basic assumption held by the Consultant as 'competitiveness' being the correct way for people to relate to each other and to distribute power and affection within the project team.

The fourth perspective identified related to the nature of human relationship with basic assumptions of the Contractor in previous Sub Section 6.5 was available with Consultant's basic assumptions too. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Consultant held the basic assumptions as 'close' space was important with the Client but, not important with the Contractor. This was supported by the patterns of basic assumptions, '**Close connections with the Client was important, but not with the Contractor (Cnsl A 1 09)**' (refer Annexure 3 – A2.1.9 for case evidences) and '**continuing relationship was very much important with the Client, but not with Contractor (Cnsl A 1 10)**' (refer Annexure 3 – A2.1.10 for case evidences). Consultant mostly had close connection with the Client. This was so powerful to the extent that, if Consultant could not convince something to the Client during the meeting, they could talk to the Client informally after meetings to convince better, resulting reverse-decisions from the Client. Further, Project Manager was close enough with the Client to expose Consultant's internal organisational matters privately, if such a disclosure had been a necessity to keep the integrity of the Consultant towards the Client, during a failure of the Consultant. Further, maintaining long term relationship with clients was regarded as a strategic requirement for the consultancy organisation, since they mostly found new work from clients through relationships. Consultant considered 'relationships with clients' as their competitive advantage in business environment. Thus, keeping

close connections with clients was important from the Consultant. However, there was no such requirement of a close connection with the Contractor. Strategically, they did not see any value in maintaining a long term relationship with a contractor in the market.

Cnsl A 2 - Basic Assumptions on Nature of Human Nature

Basic assumptions on nature of human nature was about identifying, whether Consultant believed humans basically as good, neutral, or evil, or whether human nature was perfectible or fixed. Consultant of Project A believed that all team members considered human nature as 'evil' in their work environment holding the patterns of basic assumptions; '**Contractor only believed in formal written methods of communication (Cnsl A 2 01)**' (refer Annexure 3 – A2.2.1 for case evidences) and '**rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl A 2 02)**' (refer Annexure 3 – A2.2.2 for case evidences). Further, they specifically believed the nature of Contractor being 'evil' with the pattern '**Contractor targeted for additional claims in every situation (Cnsl A 2 03)**' (refer Annexure 3 – A2.2.3 for case evidences).

Consultant held the assumption that Contractor only believed in formal methods of communication. As indicated by the Consultant Project Quantity Surveyor, this favour of Contractor for written instructions was because, it increased the certainty of their income, when producing interim payment application to the Consultant. Consultant Project Architect mentioned that Contractor had a practice of asking for material approvals for every single material in writing, starting from sanitary fittings to nuts and bolts, which was rare with other contractors in the industry. However, Consultant had realised this as a troublesome habit of the Contractor. Consultant Project Architect mentioned that Contractor was used to redraw all the construction drawings issued improving the detail and send for approval again, which increased her workload unnecessarily. Her idea was that this was an unnecessary effort going beyond drawing shop drawings. They believed this behaviour of Contractor was due to the Contractor's worldview of nature of human nature being 'evil'.

Consultant assumed that construction projects were popular with rare appreciations and constant highlighting of mistakes and punishments. It was observed during progress review meetings, Client openly expressing the dissatisfaction of the performance of Consultant and Contractor. Further, it was the same between the Contractor and the Consultant. No appreciation was noted from Consultant to the Contractor and only highlighting of issues and mistakes on each party. As indicated by the Consultant Project Architect, Consultant had never received any written appreciations from the Client. Instead, Client had sent letters to the Consultant indicating dissatisfaction about the amount of attention paid by the Consultant regarding slow rate of work by the Contractor. Similarly, Client and Consultant both had sent several letters indicating poor performance by the Contractor. Consultant Project Quantity Surveyor mentioned that Client expected to charge Liquidated Damages, if Contractor failed to handover the building on the stipulated date. Further, Client had the habit of complaining the higher management of the Consultant's and Contractor's organisation regarding poor performance of the Consultant and Contractor. Thus, no team member wanted to believe humans as 'good' and wanted to appreciate each one's effort in project environment.

Consultant constantly complained that Contractor targeted for additional claims in every situation. As indicated by the Consultant Project Architect, Contractor was used to send letters amounting to intention to claim for additional cost or additional time, well in advance during many project situations. She brought in an example indicating such a situation, when Contractor was given the first extension of time to complete the project by end of December that year. Soon the date was informed to the Contractor, they had informed the Client and Consultant in return about a possible delay in achieving that time target, highlighting a possible failure of the Consultant to finalise the designs of services early. This was because, there was a delay in appointing a team of external consultants for some specialised services by that time. This notice had been received well in advance to the start of any services in the building. Thus, Consultant Project Architect revealed her disappointment that Consultant happened to be cautious in their own actions always due to this behaviour of Contractor. In addition, Project Manager stated that Contractor was reluctant to start finishing works without finalising

the designs of some remaining three of the services, until Client agreed to pay for any possible damages to the finishes that could occur when installing those three services later. According to the Project Manager, Contractor had never missed any additional claim in terms of time or cost within Project A and they had a behaviour of planning for claims well in advance. Thus, Contractor held the nature of Contractor being more towards 'evil' in the project environment.

Cnsl A 3 - Basic Assumptions on Nature of Reality and Truth

Basic assumptions on nature of reality and truth looked into how Consultant ultimately determined truth, both in the physical and social world. This could be either by pragmatic test, reliance on wisdom, or social consensus. The pattern of basic assumptions, '**strict follow of contract clauses and strict control on cost induced Client's faith on Consultant (Cnsl A 3 01)**' (refer Annexure 3 – A2.3.1 for case evidences) demonstrated that Consultant did not believe on subjective means of determining reality and truth, rather they were believing more into objective means as such following contract documents and their contents. In addition, Contractor too stated that though the architect or engineers provided them with instructions to carry out different varied works, Consultant Project Quantity Surveyor rejected payments for those considering no contractual grounds for a variation. Consultant Project Quantity Surveyor descried a situation with lot of controversy where, Consultant Project Engineer had issued an instruction to vary to double the capacity of existing generator, where she rejected part of the payment considering some contract clauses indicating it not as a varied work. Project Manager himself indicated that Client had identified this strict behaviour of Consultant on project cost and asked to be lenient on payments to the Contractor, as contractors were usually with profit motives as business organisations. However, Consultant had realised that 'pragmatic test' was also contributing to the determination of reality of the world. This was highlighted by the pattern of basic assumptions '**Difficult to convince the practical aspects of construction to the Client (Cnsl A 3 02)**' (refer Annexure 3 – A2.3.2 for case evidences). For example, Consultant Project Architect mentioned, how difficult it was to convince the Client about the negative consequences, when Client suggested the

Contractor to start the finishing work prior to finish of the full structure and services installations as a mean of accelerating the project. Client was unable to understand that finishing work could get damaged once completed prior to the services installation. Finally, it had ended up paying the Contractor additional amounts on rework of finishing works that got damaged due to the services installations by following the Client's plan. Justifying this assumption of the Consultant, Technical officer [Maintenance], who was the only personnel knowledgeable on construction technology stated that she too had realised the difficulty of convincing practical aspects of construction to Client. Accordingly, Consultant held the basic assumption that reality was determined through 'objective tests and processes' combined with 'pragmatic test'.

Cnsl A 4 - Basic Assumptions on Nature of Human Activity

Basic assumptions on nature of human activity was looking into the Consultant's belief on the "correct" way for humans to behave: whether to be dominant, harmonising, or fatalistic. Consultant believed 'contract dominance' as the best way to bring in correct behaviour of construction project team members within the project environment by holding the pattern of basic assumptions that '**controls in a construction project were the contracts (Cnsl A 4 01)**' (refer Annexure 3 – A2.4.1 for case evidences). Consultant believed that the main control in a construction project was the contract and correct behaviour was doing the only things and all the things stipulated in the contract. Thus, role of the consultant quantity surveyors was considered very much important as the professionals dealing with contractual matters of the project. As indicated by the Project Manager, Consultant was reluctant carry out any work beyond the project scope stipulated in the contract. Bringing forward an example, he mentioned a situation where, Consultant avoided instructing the Contractor to have a sump pump in the generator room. This was because, it was not included in the original scope of the construction contract, thus, Client had to intervene and request to include the same. Until the request of Client, Consultant had refrained from issuing any instructions regarding the sump pump in the generator room. In addition, Consultant Project Quantity Surveyor mentioned that Contractor wanted the quantity surveyor to

decide upon every variation instruction from architect and other consulting engineers. This was because, whether it was really a variation or whether Contractor was entitled to a payment had to be decided contractually. However, Consultant believed that their assumptions on 'contract dominance' was violated by the Client holding the pattern of basic assumptions '**Client assumed a higher power and tried to control the project (Cnsl A 4 02)**' (refer Annexure 3 – A2.4.2 for case evidences). They assumed that Client believed about 'client dominance' as the correct way to behave within the project. As indicated by the Consultant Project Architect, Client assumed a higher power due to the ministry of the Client was one of the most powerful ministries in Sri Lanka related to finance matters of the country. Further she explained that Client was giving 'orders' to the Consultant and Contractor. Adding to the same fact, Consultant Project Quantity Surveyor mentioned that the Client was too demanding and frequently requested variations. However, the consultancy agreement of the Project A included a sub clause stating; "Nothing contained herein shall be construed as establishing or creating a relationship of master and servant or principal and agent." Thus, the expectations of the Consultant were at providing a professional service to the Client and too much interventions by the Client had made them more disappointed.

Cnsl A 5 - Basic Assumptions on Nature of Time Units

The basic assumptions on nature of time units considered the Consultant's orientation on the most relevant time unit for the conduct of daily affairs: whether it should be past, present or future. In relation to that Consultant of Project B held the pattern of basic assumptions that '**continuing relationship was very much important with the Client, but not with the Contractor (Cnsl A 5 01)**' (refer Annexure 3 – A2.5.1 for case evidences) indicating 'future' as the most relevant time unit with the Client and 'present' as the most relevant time unit with the Contractor. They have considered the continuing relationship as important since they were used find new projects to work on mainly based on contacts with clients. They had a history of handling several projects of same clients. Thus, continuing relationship was an organisational strategic intent for them. However, there was no such benefit for them in continuing relationship

with the Contractor. Thus, they were contented just with a good working relationship with the Contractor.

Cnsl A 6 - Basic Assumptions on Acceptance of Homogeneity or Diversity

The basic assumptions on acceptance on homogeneity or diversity looked into the Consultant's assumption on whether the project team was best off being highly diverse or being highly homogeneous and should individuals in the project team be encouraged to innovate or conform. There were no strong evidences to identify whether they believed project team to be best off being highly diverse or homogeneous. This may be because, construction project team was inevitably diverse in nature beyond the control of any member in the project team. However, the pattern of basic assumptions on '**not innovation, only conformance was practiced in a public sector construction project (Cnsl A 6 01)**' (refer Annexure 3 – A2.6.1 for case evidences) indicated that Consultant believed project team members to be encouraged to conform in project environment. Consultant believed that innovations were not much required and only conformance to standards and contracts was expected. As indicated by the Consultant Project Architect, Client of Project A wanted to design a building, interior with modern facilities and exterior matching to the existing building. Thus, she could not be innovative with any external finishes or external appearance. Since this was a government ministry building and government funding was involved, she had never thought of being innovative in the design considering the budget constraints. Further, the existing building was one of the heritage buildings in Sri Lanka and designing an extension to such building required her to be careful on the design when obtaining design approvals by the relevant authorities. Thus, she had carefully studied the existing building and the regulations for heritage buildings and conform to those, than trying to be innovative. As indicated by the Project Manager, Contractor too never tried to innovate considering the time pressure they were in. Further, this Contractor had always tried to construct exactly what was given in the construction drawings and what was described in specification by the Consultant. Contractor had always practised conformance by re-drafting the construction drawings and following the construction contract as much as possible.

Cnsl A 7 - Basic Assumptions on Unknowable and Uncontrollable

Basic assumptions on unknowable and uncontrollable looked in to the belief of Consultant on fate and the project phenomenon were beyond their control. Consultant of Project A held the pattern of basic assumptions, '**decisions made by public sector clients were uncertain (Cnsl A 7 01)**' (refer Annexure 3 – A2.7.1 for case evidences) indicating their belief on fate and uncontrollability of project affairs. The main reason for this was the change or transfer of the Client's personnel holding decision making capacities related to the Project A. Project Manager stated with much disappointment that many public sector decisions were not policy decisions and major decisions related to construction projects happened with government changes. Same situation had occurred with Project A too. When Secretary to the Ministry; who was the Client to the construction contract of Project A had officially changed after a government change, several decisions had been reversed causing number of disruptions to project works. In addition, Client failed to go ahead with the defined project objectives at the inception stage and changed the priority of project objectives time to time. For example, as indicated by the Consultant Project Architect, during the inception stage of Project A, Client had informed the Consultant that Project A had to be a critical example for other government building construction projects. Normally, most of the public sector building construction projects experienced cost overruns. However, Client wanted to complete Project A within the budgeted cost and be an example to other ministries. This was because, the ministry related to Project A was the government ministry entitled for proper allocation of funds for government construction projects. Thus, Consultant was asked to thoroughly study the project requirements and include everything within the project scope and incorporate them into the project Bill of Quantities, so as to avoid variations occurring during construction. However, Client themselves had initiated number of variations right after the award of contract to the Contractor. Thus, Consultant believed in fate and uncontrollability in public sector construction project environment.

Cnsl A 8 - Basic Assumptions on Gender

Basic assumptions on gender looked into how Consultant believed society should distribute roles, power and responsibilities between the genders. Consultant of Project A held the pattern of basic assumptions, '**all genders were treated equally in construction projects (Cnsl A 8 01)**' (refer Annexure 3 – A2.8.1 for case evidences) indicating equal distribution of roles, power and responsibilities among males and females. Consultant's team comprised of many female members at higher authority levels such as; Consultant Project Architect, Consultant Project Quantity Surveyor, Site Quantity Surveyor, Consultant Project Design Engineer, Assistant Project Design Engineer and Assistant Project Electrical Engineer. As stated by the Consultant Project Quantity Surveyor and Project Architect who were females, there had been no difference as of gender and they had been treated equally to males. They were able to argue and justify our ideas without any problem within the team. Thus, gender was not a concern for the Consultant of Project A during allocation of roles, power and responsibilities.

Cnsl A 9 – Basic Assumptions on Motive for Behaving

Basic assumptions of Consultant on motive for behaving could be either; doing, being or being-in-becoming. The patterns of basic assumptions '**perfect performances of individual roles would bring success in project performances (Cnsl A 1 02)**' (refer Annexure 3 – A2.1.2 for case evidences) and '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl A 1 03)**' (refer Annexure 3 – A2.1.3 for case evidences) indicated that Consultant's motive for behaving was more towards 'doing', i.e. to engage in a purposeful act only. They did not have much time to spare only on Project A, since Consultant's staff was assigned to other parallel projects with Project A. Thus, they mostly looked into finish off the given project role and move on to the next project work. However, they held a pattern of basic assumptions as '**contractor tried to deliver the quality as expected by the Consultant (Cnsl A 9 01)**' (refer Annexure 3 – A2.1.3 for case evidences) indicating they believed that Contractor's motive for behaving was more towards 'being', i.e. Contractor put forward a genuine effort to deliver the best they can to make the Client

and the Consultant satisfied. Consultant Project Architect highly appreciated the material approval process practiced by the Contractor saying, they send number of documents attaching technical literature to support decision making of the Consultant. Project Manager also appreciated the Contractor's efforts in maintaining the quality of construction. As he described, when quotations of specialised sub-contractors were sent (normally three quotations) to the Consultant for approval, Contractor always selected the sub-contractor given the highest rank by the Consultant.

Cnsl A 10 – Basic Assumptions on State-Individual Relationship

The assumptions on state-individual relationship was about Consultant's belief on whether precedent right and responsibility be accorded the nation or the individual, while carrying out the project tasks. The Consultant held the pattern of basic assumptions '**as Client was the ultimate user of the new construction, satisfying Client's requirements should be given a priority (Cnsl A 10 01)**' (refer Annexure 3 – A2.10.1 for case evidences), indicating their belief that precedent rights and responsibilities should accord the individual client mostly. Project A was government project with a massive number of varied works. Variations were initiated time to time with government changes as well. Some varied work included reworks such as changing the location of transformer room thrice, wasting public money massively. Although Consultant too was a government organisation, they did not try to act against those decisions. That may be due to Client being a powerful ministry in the country. Consultant tried their best to tolerate the disruptions caused by these variations. Design approvals were taken three times for the building design owing to design changes. Moreover, Consultant had re-designed part of the building on a land, where Client had not obtained the ownership back from a lessee too.

Cnsl A 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions on project organisation's relationship to its environment considered the Consultant's assumption on whether the project organisation perceived itself to be dominant, submissive, harmonising, searching out a niche. Consultant of

Project A held the pattern of basic assumptions that '**public sector clients received concessions in legal aspects (Cnsl A 11 01)**' (refer Annexure 3 – A2.11.1 for case evidences) indicating 'client dominance' in the relationship with its environment. Being a powerful government ministry, Client of Project A had received many concessions during legal approvals. Consultant highlighted two such incidents. First incident was about obtaining legal approval to locate the transformer room facing the lake, overruling the some planning restrictions of Colombo city area. The next incident was constructing partly on a land not fully owned by the Client of Project A, but by a lessee prior to the end of the lease period.

6.7 Basic assumptions of client's sub-cultural group of Project A

The most common underlying basic assumptions of Client's sub-cultural group of Project A were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Client's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Client's sub-cultural group. The basic assumptions included the Client's powerful own basic assumptions (The Client's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Client's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumptions. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumption. For example; "Cnsl A 1 01" for the first pattern of basic assumption of Client's of Project A. Patterns of basic assumptions together with basic assumptions of the Client are summarised in Table 6.4.

Table 6.4 – Basic assumptions of client sub-cultural group of Project A

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Client's Own World View	Client's View on Dominant World Views of Contractor	Client's View on Dominant World Views of Consultant
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Consultant had the legitimate control of the project, but never used (Clnt A 1 01) 1.2 The most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt A 1 02) 1.3 A strong project management was essential for project success (Clnt A 1 03)	Consultant's Autocracy		
	A2 - What was the best way to organise project society?	1.4 A construction project would never be a priority of a client's day-to-day work (Clnt A 1 04)	Individualism		
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Formal methods of Communication was important but, effectiveness and efficiency in communication resulted in, how much the red tape for fast communication was overcome within the process (Clnt A 1 05) 1.6 Consultant was the most important member in the project team as they were the technical advisors taking care of quality (Clnt A 1 06)	Cooperative	Competitive	Competitive

		1.7 Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt A 1 07)			
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.7 Close connections with the Consultant was advantageous, but nothing special with the Contractor (Clnt A 1 07)	Close with Consultant/Distanced with Contractor		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 No appreciations, only punishments were practised in construction projects (Clnt A 2 01) 2.2 Contractor only believed formal instructions in black and white (Clnt A 2 02)	Evil	Evil	
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Client learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt A 3 01)	Pragmatic Test		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Client was the most powerful member in the project team (Clnt A 4 01)	Client Dominance		
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Continuing relationships with Contractor or Consultant was not essential (Clnt A 5 01)	Present		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				

	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt A 6 01) 6.2 Not innovation, only conformance was expected from the project team (Clnt A 6 02)	Conformance		
7. Unknowable and uncontrollable	A10 - Did the Client tend to believe in fate/uncontrollability?	7.1 Uncertainties in decisions were unavoidable in public sector projects (Clnt A 7 01) 7.2 Variations were not an issue, as long as project had enough funding (Clnt A 7 02)	No much belief on fate		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 The ideal situation was to have a balance in genders for a construction project (Clnt A 8 01)	Among Both Genders		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 A construction project would never be a priority of a client's day-to-day work (Clnt A 9 01) 9.2 Client was liable to make timely payments to the Contractor (Clnt A 9 02)	Being		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Laws should be lenient on public sector clients (Clnt A 10 01) 10.2 Uncertainties in decisions were unavoidable in public sector projects (Clnt A 7 01)	Individual		
11. The organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	11.1 Laws should be lenient on public sector clients (Clnt A 10 01)	Dominant		

Clnt A 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions of the Client about the nature of human relationship could be derived using three perspectives: what Client believed as the best authority system; what Client considered as the best way to organise society and, what was the correct way for people to relate to each other, to distribute power and affection.

With regard to the best authority system, Client held the pattern of basic assumptions '**Consultant had the legitimate control of the project, but never used (Clnt A 1 01)**' (refer Annexure 3 – A3.1.1 for case evidences), '**the most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt A 1 02)**' (refer Annexure 3 – A3.1.2 for case evidences) and '**a strong project management was essential for project success (Clnt A 1 03)**' (refer Annexure 3 – A3.1.3 for case evidences), which indicated that Client preferred 'consultant's autocracy' within the project organisation. Client was disappointed that Consultant did not control the project for better project outcomes beyond the current level, in terms of time, cost and quality, especially controlling the Contractor, using the powers delegated to the Consultant through construction contract. This was because, Consultant had the appointment as the "Engineer" according to the construction contract, where Engineer had all the required authority to guide the project. Technical Officer (Maintenance) showed her disappointment that Contractor behaved aggressively trying to suppress the Consultant, which was due to the weakness of the Consultant not taking any initiatives to control the Contractor.

In addition, Client believed that work could be get done effectively, if monitored and pressurise constantly. Since, they felt such a monitoring and pressurising from Consultant on Contractor's work, Client used to put the same pressure on Consultant too. This could be an assumption stemming from the assumptions in the bureaucratic management in government organisation. The Assistant Director (Premises) explained that Director General (Corporate Management) used this constant pressuring as a management technique to motivate the project team. Further, she mentioned that Consultant Project Architect was complaining that the quality of the construction output could be compromised due to frequent pressurising to accelerate. However, it

was evident that Client had not given much attention to that complaining. In addition, they believed that the reason for the prevailed project delay and other issues were partially due to lack of a proper project management. Though there was an appointment as of a Project Manager was available from the Consultant's team, the required role of a Project Manager was had not delivered from this Project Manager to the satisfaction of the Client. All interviewees from Client's team highlighted this issue. Procurement Assistant indicated that since this role of project manager was poor, at least the Client would have appointed a person recruited for that position. She believed that, project would have not delayed this much and proper monitoring and controlling would have happened accordingly. Thus, all these were highlighting the belief of the Client on autocracy, and they specifically expected that autocracy from the Consultant.

The second perspective to determine the Client's assumptions on nature of human relationship, it was required to look into the Client's belief on the best way to organise the project society. Such an organisation could be either on the basis of individualism or groupism. Client held the pattern of basic assumptions, '**a construction project would never be a priority of a client's day-to-day work (Clnt A 1 04)**' (refer Annexure 3 – A3.1.4 for case evidences), indicating 'individualism' as the best way to organise the project society. Client's representatives of Project A were busy engaged in their normal job descriptions, rather than having too much attention on the Project A. They expressively stated the difficulty of having proper attention on the Project A, while engaging on their routine office works. There was no any Client's Representative appointed full time for Project A. Procurement Assistant of Project A indicated that they preferred having such an appointment, since she believed it could improve the project monitoring from Client, providing proper coordination between parties to overcome prevailing issues effectively and efficiently.

The third perspective to determine the Client's assumptions on nature of human relationship was about looking into, what was regarded as the correct way for people to relate to each other, to distribute power and affection within the project team. Accordingly, Client held the patterns of basic assumptions '**formal methods of**

Communication was important but, effectiveness and efficiency in communication resulted in, how much the red tape for fast communication was overcome within the process (Clnt A 1 05)' (refer Annexure 3 – A3.1.5 for case evidences) and '**Consultant was the most important member in the project team as they were the technical advisors taking care of quality (Clnt A 1 06)**' (refer Annexure 3 – A3.1.6 for case evidences), indicating their preference on 'cooperation' as the correct way for people to relate to each other. They knew that they had to depend on the Consultant for technical advice as laymen. Further, expected cooperation of team members to overcome the red tape in bureaucracy of government procedures to make timely decisions. As explained this by Technical Officer (Maintenance), sending information and decisions through letter had took long time and was not effective at all. This was because, a single letter mostly required the approval of both Director General (Corporate Management) and Assistant Director (Premises) and sometimes more parties than that. Thus, she preferred sending emails as it was a fast method of communication. Accordingly, Client had used emails to send information. However, Contractor was dissatisfied in receiving information and approvals through emails, though emails were indicated as a formal method of communication to the construction contract. However, Client believed that Contractor and Consultant assumed on 'competition' as the correct way to relate to each other, holding the pattern of basic assumptions, '**Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt A 1 07)**' (refer Annexure 3 – A3.1.7 for case evidences). They believed that Client was acting as a mediator during progress review meetings, since Consultant and Contractor were appeared to be openly arguing aggressively over their duties and roles. This was observed during the progress review meeting observations by the researcher too. Contractor and Consultant appeared to be failed in team work by the Client.

It was observed within the case that Client was maintaining more informal, close relationship with the Consultant during work than with the Contractor. This could be identified as a fourth perspective to determine the nature of human relationship as assumed by the Client. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable

space could be either close or distanced. Client held a pattern of basic assumptions '**close connections with the Consultant was advantageous, but nothing special with the Contractor (Clnt A 1 08)**' (refer Annexure 3 – A3.1.8 for case evidences) indicating their preference on 'close connections' with the Consultant. This close connection had induced with the Client being a layman and they preferred informal, fast communication for fast decision making. Further, Consultant too had showed a positive similar close response to the Client. This may be because Consultant valued continuing relationships with the Client. Assistant Director (Premises) was very much close to the Project Architect, where she indicated the Project Architect advising her unofficially about the pressurising of Director General (Corporate Management) as a disadvantage to realise expected project quality. However, no such close relationship was visible with the Contractor and Client.

Clnt A 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions of Client about the nature of human nature looked into whether they believed humans basically as good, neutral, or evil and/or whether human nature was perfectible or fixed. The pattern of basic assumptions of Client, '**no appreciations, only punishments were practised in construction projects (Clnt A 2 01)**' (refer Annexure 3 – B3.2.1 for case evidences) indicated their belief on human nature to be 'evil'. Client had never witnessed Consultant or Contractor too appreciating each other in the project context. In addition, another pattern of basic assumptions, '**Contractor only believed formal instructions in black and white (Clnt A 2 02)**' further confirmed that Contractor too believed the Consultant and Contractor was 'evil' in nature, requiring to defend themselves by depending on written evidence for everything.

Procurement Assistant stated that she did not see any value of sending appreciations to the Contractor and Consultant. As indicated by the Technical Officer (Maintenance), due to the all issues prevailed within the project with delays in handing over the project, no appreciation was possible either for the Consultant or the Contractor. Assistant Director (Premises) explained that the punishments given for Consultant and Contractor for poor performance included; verbal expression of

dissatisfaction during progress review meetings and complaining to the higher management of the respective organisations by calling upon them to the Client's office or through letters. In particular, a similar letter was pending for the Contractor to inform that no more extension would be granted and if failed, Liquidated Damages would be charged form them. Further, it was evident during observations of the progress review meetings that Client only discussed issues during meetings and no verbal appreciations were given.

As stated by Technical Officer (maintenance), whenever Contractor was asked to carry out a work directly by the Client, they had paused and delayed proceeding the work till the instruction came in writing through the Consultant. It was because, according to the contract, instructions to the contractor could be given only through the Engineer to the Contract by the means stipulated in the Contract. Apart from that Contractor had always doubted, whether Consultant would not approve the instructions given by the Client. According to the Client, Contractor was very much risk averse. Moreover, Assistant Director (Premises) indicated about the objections of the Contractor for using emails, though it was indicated as a formal mean of communication according to the construction contract. Thus, all these indicated the lack of trust between team members led by the assumption of nature of human nature to be 'evil'.

Clnt A 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions of Client about the nature of reality and truth was about how Client defined what was true and what was not. Such a definition could be reached either by pragmatic test, relying on wisdom or through social consensus. Although Client of Project A was a government organisation, more than depending on standard procedures and rules, they mostly attempted to think about practical means of getting done exactly what they desired. Being politically powerful ministry in the country, Client always believed on a reality acquired through power by over ruling the regulations. They were not worried to bring in any variation at any moment and demand on timely completion in turn, which created massive disruptions to project processes. They tried to justify both the necessity of the variations being ordered in ad-hoc manner and also the urgency in timely completion of the project. Accordingly,

they held the pattern of basic assumptions '**Client learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt A 3 01)**' (refer Annexure 3 – A3.3.1 for case evidences), indicating their belief on 'pragmatic test'. Client had learnt within the project life cycle about new requirements and tried their best to get all those fulfilled through the same construction contract of Project A.

Clnt A 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions of Client about the nature of human activity was looking into their belief on the "correct" way for humans to behave: either to be dominant, harmonising, or fatalistic. Client of Project A held the pattern of basic assumptions that '**Client was the most powerful member in the project team (Clnt A 4 01)**' (refer Annexure 3 – A3.4.1 for case evidences) indicating 'client dominance' as the correct way for humans to behave. All Client's representatives being interviewed used the term "Director General (Corporate Management) orders us, Director General (Corporate Management) orders the team". Client had created a very much bureaucratic environment within the team, expecting the Contractor and Consultant to do what they order. All these interviewees expressively indicated that Client was the most powerful member in the project team. More than team work, Client looked into the project as some work getting done by some hired employees. They have imitated those power mostly being a powerful ministry administering the government funds. Although this was a public sector project, Client did not worry about the cost.

In addition, Client had acquired a piece of adjacent land by force, which had been given to a different organisation on lease by the Client to construct another entrance for the new building with a car porch. Since they had acquired the land forcefully prior to the end of lease period, they had not received approvals for the designs from Colombo Municipal Council or Urban Development Authority for any of the constructions been carried out within the acquired land. More importantly, Consultant was reluctant to issue construction drawings to do any construction within that acquired land. However, they had happened to do it due to the pressure from the Client and could not refuse. By the time of case study, when the project was very much near its completion also Client had not received the approval. As indicated by the

Procurement Assistant, Client was sure of getting the design approval, being a powerful ministry and they had no anxiety over that. Though the consultancy agreement of the Project A clearly mentioned; "Nothing contained herein shall be construed as establishing or creating a relationship of master and servant or principal and agent", Client imposed lot of power and pressure to the Client and Consultant, considering them as a set of employees working under them assuming client dominance as the correct way to behave within the project context.

Clnt A 5 - Basic Assumptions on Nature of Time Units

The basic assumptions of Client about the nature of time units looked into what kinds of time units were the most relevant to conduct daily affairs: past, present or future. Accordingly Client of Project A held the pattern of basic assumptions that '**continuing relationships with Contractor or Consultant was not essential (Clnt A 5 01)**' (refer Annexure 3 – A3.5.1 for case evidences), which indicated that the Client assumed 'present' as the most relevant time unit in project affairs. All interviewees of Client's team mentioned that they had never considered continuing relationship with either Contractor or Consultant during any decision making regarding the Project A. As stated by the Technical Officer (Maintenance), Client's sole intention was to get the project done through Contractor and Consultant and Client was ready to bring in any criticism for the performance by Contractor or Consultant related to Project A. Further, this idea was confirmed by rest of the interviewees from Project A and further evident during progress review meeting observations. A similar idea was held by the Procurement Assistant. She further added to the aforementioned argument by stating there were plenty of contractors and consultants available in the industry and selecting another one for a new project would not be a problem for the Client. However, Assistant Director (Premises) mentioned that very recently Director General (Corporate Management) discussed about having the same Consultant for one of the new projects of the Client. This was considering the flexibility and quick response normally received by the Consultant to the requirement of Client during the project. Further, familiarity with the Consultant was also a consideration. Nevertheless, they had not regarded that for any decision making for Project A.

In addition, it was evident that the Client was making many other decisions only considering the 'present'. For example, Client changed the location of the transformer room for three times, wasting public funds, considering the requirements of each appointed governments within the project duration.

Clnt A 6 Basic Assumptions on Acceptance of Homogeneity or Diversity

Basic assumptions on acceptance on homogeneity and diversity was looking into whether Client assumed the project team to be best off if it is highly diverse or if it is highly homogeneous and should individuals in a project team to be encouraged to innovate or conform. No evidence was available within the case to determine whether the Client preferred the team to be highly diverse or highly homogeneous. This may be because, any construction project team being inevitably diverse in nature and it had to be accepted by all team members without any objection. However, evidences were available determine that Client assumed that individuals in a project team to be encouraged to conform. Such evidences comprised of the patterns of basic assumptions; '**Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt A 6 01)**' (refer Annexure 3 – A3.6.1 for case evidences) and '**not innovation, only conformance was expected from the project team (Clnt A 6 02)**' (refer Annexure 3 – A3.6.2 for case evidences). As indicated by the Procurement Assistant Contractor was bound to handover the building on the agreed date within an acceptable quality to the agreed price. When Contractor failed to hand over the building on the secondly extended date of completion and brought up the reason for the same as an internal problem with procuring marble for finishing works, Client had informed they could not accept an internal problem for extension of time. Hence, more than a team work, Client held individualistic characteristics, working on what was stipulated in the construction contract. Client expected strict adherence contract specifications by the project team. Assistant Director (Premises) mentioned that Client did not particularly concerned or encouraged for any innovation by Consultant or Contractor but, always checked on conforming to the contract and delivering the project accordingly. Procurement Assistant mentioned a reason for not having any major innovation because, Client did

not have any particular idea about how to encourage the team for innovation and getting the normal contract stipulated building was itself a challenge for this Client as a layman to the construction industry.

Clnt A 7 Basic Assumptions on Unknowable and Uncontrollable

The basic assumptions on unknowable and uncontrollable looked into the belief of Client on fate. They held the pattern of basic assumptions '**uncertainties in decisions were unavoidable in public sector projects (Clnt A 7 01)**' (refer Annexure 3 – A.7.1 for case evidences) indicated Client's belief on fate. Uncertainties of decisions had arisen mostly with the change of political parties of governments, owing to elections, which had resulted in appointing new personnel for higher authorities, who brought in reverse or new variations to the Project A. However, the pattern of basic assumptions, '**variations were not an issue, as long as project had enough funding (Clnt A 7 02)**' (refer Annexure 3 – A.7.2 for case evidences) indicated their faith on controllability of project aspects, even with varied project scopes. Since, Ministry pertaining to the Client of Project A was responsible for allocating funds for government projects, they were not afraid for cost variations in projects. Thus, in summary, Client of Project A did not have much belief on fate, since they were a politically powerful ministry in the country.

Clnt A 8 Basic Assumptions on Gender

Basic assumption on gender looked into, how Client assumed project team should distribute roles, power and responsibility between the genders: only for male, only for female or both. The pattern of basic assumptions held by the Client was that '**the ideal situation was to have a balance in genders for a construction project (Clnt A 8 01)**' (refer Annexure 3 – A.8.1 for case evidences) indicating the distribution of roles, power and responsibilities among both the genders equally. Majority of the Client's Representatives of Project A was females including; Assistant Director (Premises), Technical Officer (Maintenance) and the Procurement Assistant. All the interviewees from the Client's team indicated the advantages of having a proper mix in genders by highlighting the strengths and weaknesses of each gender. Assistant Director

(Premises) indicated the strengths of females as having good personal relations with other team members and absorbing arguments calmly. Similarly, Procurement Assistant mentioned that having a mix had really worked for Project A, since she preferred the Consultant Project Quantity Surveyor being a female; as she felt an ease of communicating and obtaining explanations from that quantity surveyor. However, Technical Officer (Maintenance) indicated that she had observed personality issues with females in the Project A, where some female members lacked in personality to make a point and defend an argument during meetings. However, according to her, females by nature were taking more responsibility than males and appreciated the female members in the position of quantity surveyor.

Clnt A 9 Basic Assumptions on Motive for Behaving

The basic assumptions of Client on motive for behaving looked into, whether their motivation for engaging with project matters was for doing, being or being-in-becoming. It was evident that Client of Project A was demonstrating a mix of both 'doing' and 'being' as their motive for behaving within the project. The pattern of basic assumptions; '**a construction project would never be a priority of a client's day-to-day work (Clnt A 1 04)**' (refer Annexure 3 – A.1.4 for case evidences) indicated their motive with 'doing' and '**Client was liable to make timely payments to the Contractor (Clnt A 9 01)**' (refer Annexure 3 – A.9.1 for case evidences) indicated their motive of 'being'.

Holding the pattern of basic assumption that a construction project would never be a priority of a Client's day-to-day work, demonstrated their inability to have continuous focus on the Project A. As indicated by the Procurement Assistant; normally, they had duties of other usual existing building renovation projects every day. They highlighted the importance of appointing a Works Engineer from Client's team to engage in project works on their behalf. They believed that the delays of projects would have been minimum, if such an appointment had been done. Assistant Director (Premises) mentioned that they were used to check on the progress and started pressurising the Contractor and Consultant, when Minister or Secretary to the Ministry started questioning and complaining on delays in occupying the new building only. Higher

management also had normally questioned and focused on the building, when space issues had arisen only. According her explanations, this was because, they were having other responsibilities to attend related to their normal working scenarios, apart from the Project A. Project Manager also complained on the same issue as; Client wanted to get the building done, but since it was not their priority of work, they did not pay much attention. Thus, 'doing' i.e. to engage in the Project A and somehow getting the building done was their motivation.

However, though they indicated a poor attention on project monitoring, they never fell behind their main responsibility as the Client, i.e. making timely payments to the Contractor and Consultant. Assistant Director (Premises) indicated that Director General (Corporate Management) usually summoned her personally, to ask whether all due payments were made to the Contractor. Further, Consultant Project Architect mentioned during interviews that Client expected the Contractor to handover the building on time, which was the obligation of the Contractor, since Client never made any lapses in payments, which was the major obligation of the Client in return. Procurement Assistant mentioned that Director General (Corporate Management) took necessary steps to make an advance payments to the Contractor for the second time during the end of previous year, as the allocated funds for that year had not been claimed fully by the Contractor due to lack of project progress to claim. This was a special payment beyond the normal regulations for financial payments related to government construction projects. Thus, this indicated their behaviour motivated through 'being'. Thus, in summary, the motive of behaviour for Client of Project A was 'being'.

Clnt A 10 Basic Assumptions on State-Individual Relationship

The basic assumptions on state-individual relationship looked into the Client's belief on whether the precedent right and responsibility of Client should be accorded the nation or the individual. The Client held the pattern of basic assumptions, '**laws should be lenient on public sector clients (Clnt A 10 01)**' (refer Annexure 3 – A.10.1 for case evidences), which indicated they were believing that the precedent rights and responsibilities to be towards 'individual'. Client received design approvals from a

local authority for a construction against the regulations. Client had started construction on part of a land of which they had not received the ownership back from the lessee. All these indicated that Client was considering their responsibilities not towards the nation but, only looking for their individual interests getting fulfilled. The pattern of basic assumptions '**uncertainties in decisions were unavoidable in public sector projects (Clnt A 7 01)**' (refer Annexure 3 – A.7.1 for case evidences) further strengthened this argument, as it demonstrated that Client was not always with policy decisions about the building requirements and changed the requirements once the political party of the government changed.

Clnt A 11 Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions on project organisation's relationship to its environment decided upon, whether Client perceived the project organisation itself to be dominant, submissive, harmonising or searching out a niche. The pattern of basic assumptions '**laws should be lenient on public sector clients (Clnt A 10 01)**' (refer Annexure 3 – A.10.1 for case evidences) indicated that Client believed the public sector project organisations should be having a 'dominance' over its environment. They practically held such dominance by obtaining design approvals out ruling the regulations, constructing on part of a land prior to obtaining ownership from lessee and making advance payments to the Contractor going beyond the normal government financial regulations. All these were pertaining to the Client of Project A being a politically powerful ministry in the country.

6.8 Summary

This chapter included the within case analysis of Project A. Basic Assumptions of Contractor, Consultant and Client sub-cultural groups were extracted, in relation to eleven cultural dimensions. These cultural dimensions included: the nature of human relationships; the nature of human nature; the nature of reality and truth; the nature of human activity; the nature of time; acceptance on homogeneity or diversity; unknowable and uncontrollable; gender; motive for behaving; the state-individual

relationship and the organisation's relationship to its environment. Pattern of basic assumptions were derived from the first level of analysis, and the basic assumptions were derived out of the patterns of basic assumptions derived earlier. A new perspective was derived from the case data to determine the nature of human relationship. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. There were both similar and differing basic assumptions among different sub-cultures within each case. Contractor of Project A believed in autocracy, groupism, competition, reliance on wisdom, conformance, pragmatic test, evilness, distanced space with consultant and client, fatalism, contractual control, being-in-becoming, submissiveness, treating both genders in equal but appropriately, precedent rights and responsibility be accorded the individual and the priority on present and past in decision making. Consultant of Project A believed in individual role authority, individualism, competition and cooperation, close relationships with client and distanced relationship with contractor, evilness, objective tests and processes, pragmatic tests, contract dominance, conformance, dominance and gender concerns being insignificant. Client of Project A believed in consultant's autocracy, individualism, cooperation, close space with Consultant, distanced relationships with contractor, evilness, pragmatic test, client dominance, conformance, faith on fate and treating both genders in equal. Within case analysis of Project B will be presented next.

CHAPTER 07: WITHIN CASE ANALYSIS OF PROJECT B

7.1 Introduction

This chapter presents the within case analysis of Project B in line with the 'Chapter 3: Method of Study' and the findings of the 'Chapter 5: Pilot Study' on testing the ability to extract basic assumptions from the data being collected and possibility of data triangulation. Initially, background details of Project B and project team, details of techniques used for data collection and overview of responses to internal integration and external adaptation problems are described. Next, analysis of patterns of basic assumptions and basic assumptions of contractor's, consultant's and client's sub-cultural groups of Project B are presented.

7.2 Background details of Project B and project team

Client of the project B was a Ministry in Sri Lanka, having the Secretary to the Ministry as the Client to the construction and consultancy contracts. The Project B was initiated to fulfil a building facility requirement of a hospital in Colombo area. Accordingly, hospital staff was identified as the End-users of Project B.

The scope of the Project B included construction of a five storied building for the administrative staff of the hospital and rest room areas for the doctors. Building works included construction of a pile foundation, concrete frame structure, brick masonry walls, wall plaster and painting and external wall claddings, floor tiling and vinyl flooring, steel suspended ceiling, Aluminium doors and windows, heating, ventilation and air-conditioning system, fire detection and protection system, and an electric elevator. However, project B was executed under the master plan activity of extending the Out Patients Department (OPD) of the hospital, which required the shifting of current office areas of administrative staff to this new building, in order to accommodate such OPD expansion. The background details of project team members are described as follows:

- **Client's Representatives -** Deputy Director General (DDG) (Logistics) was the main Client's Representative, delegated with final decision making

authority for Project B (refer Figure 7.1 for the organisation structure of the Client's personnel involved with Project B). Engineering Division of the Ministry operated under his direct authority. All the construction works related to hospitals around the country were monitored through the Engineering Division. Building requirement was taken by each hospital, who were supposed to be the End-users and Client funded, planned and executed the projects under their supervision. There were several Works Engineers, working under the Engineering Division to do all construction procurement works. The same procedure had been undertaken for Project B and there was one Works Engineer assigned for the Project B. She participated for all progress review meetings and reported the progress to the Ministry and handled all payments being made to the Consultant and Contractor.

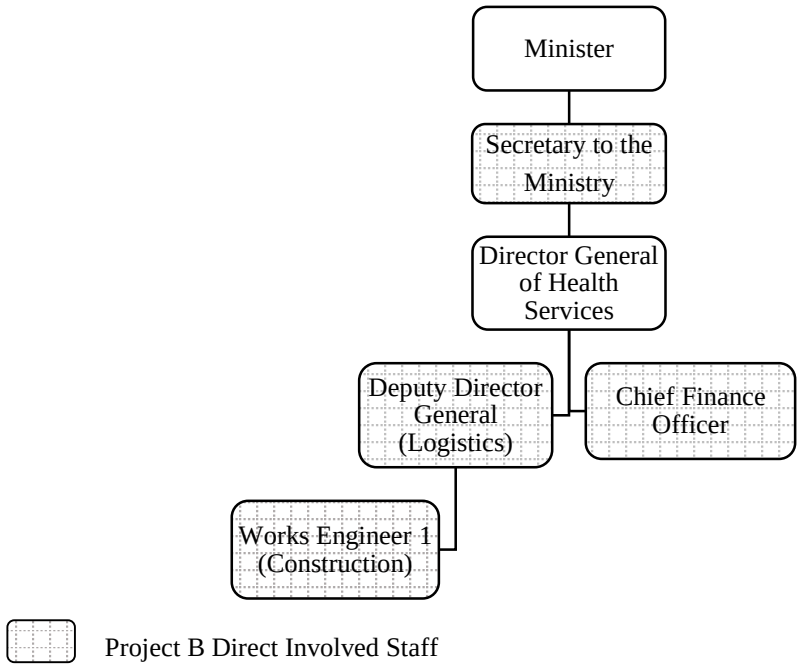


Figure 7.1: Organisation structure of the client's personnel of Project B

- **End-User's Personnel -** The head of the End-user was the Director-Hospital. (refer Figure 7.2 for organisation structure of the personnel from end-user involved with Project B). By the time the case study was carried out, Director-Hospital had retired and no new appointment had been made. Thus, Deputy-Director-Hospital was taking care of the project matters. A quality circle had

been appointed during the finishing works stage of the project, in order to monitor, whether the project quality and requirements were fulfilled as per the End-user's expectations.

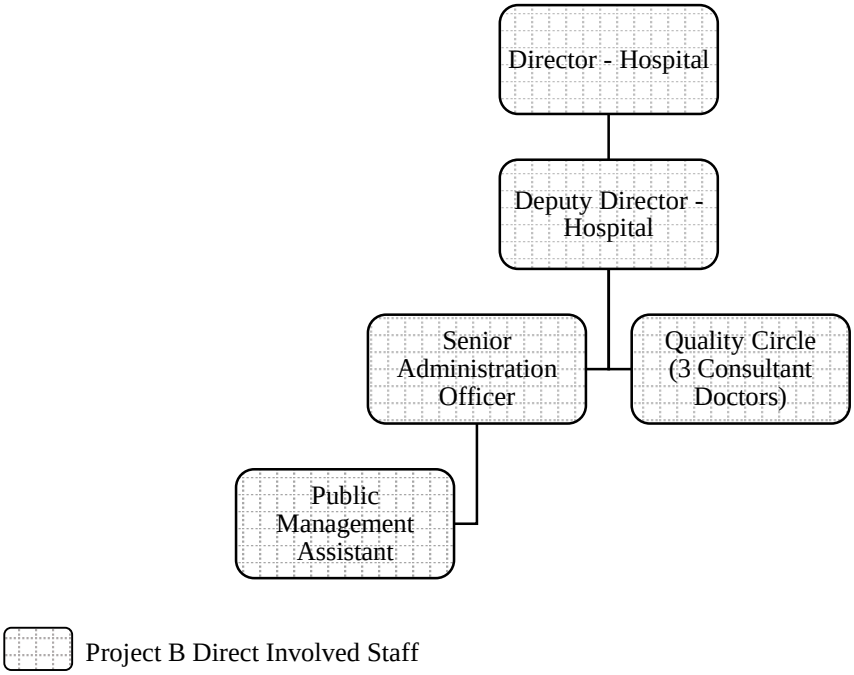


Figure 7.2: Organisation structure of the personnel from end-user of Project B

- **Consultant's Representatives** - The Consultant of Project B was a leading semi-government consultancy organisation operating in Sri Lanka. This consultant had been nominated and selected by the Client through negotiation as per the directions of the higher authorities of the Ministry, as a government best practice of obtaining consultancy service for government projects through government consultancy organisations to retain the project related funds within the government system. This Consultancy Organisation had previous working relationship with the same Client and End-user in a building maintenance work, but the Consultant's Personnel involved were a different team in previous project. This consultancy organisation had a separate consultancy division undertaking consultancy works related to hospital construction, renovation and maintenance, under which the Project B was undertaken. General Manager was the Engineer to the construction contract of Project B. Additional General

Manager (Hospital-Works) had the highest delegated authority for decision making related to Project B. The project staff of the Consultant for the Project B organised under a matrix structure (refer Figure 7.3 for organisation structure of the Consultant's personnel involved with Project B). There was a separate design staff for the Hospital Works Division. However, they were working as Sub-Divisions within the Division, under separate chief designers. Whenever a design professional was not available for a given design work of a Project, Hospital Works Division had obtain the support of the other divisions of the same organisation, such as for heating, ventilation and air-conditioning system, fire detection system and fire protection system design works. Project Manager was not a full-time project staff member and only the Resident Engineer and the subordinate Technical Officers were the only full time employees of Project B.

- **Contractor's Personnel -** Contractor of project B was registered under the C1 grade of the Construction Industry Development Authority in Sri Lanka, thus considered as a major construction contracting firm in Sri Lanka. They had been selected under an open tendering process. The organisation structure of the contractor's personnel working for the project B is indicated in Figure 7.4.

7.3 Details of techniques used for data collection

Background details of interview panel - A total of 9 members were interviewed including three (3) members from each of the Client, Consultant and Contractor as details summarised in Table 7.1. When selecting the interview panel, researcher paid attention to select members, who directly involved with day to day operations and who participated in progress review meetings regularly. Accordingly, researcher ensured that majority of the members interviewed were directly involved in decision making in Project B context as planned in the research methodology.

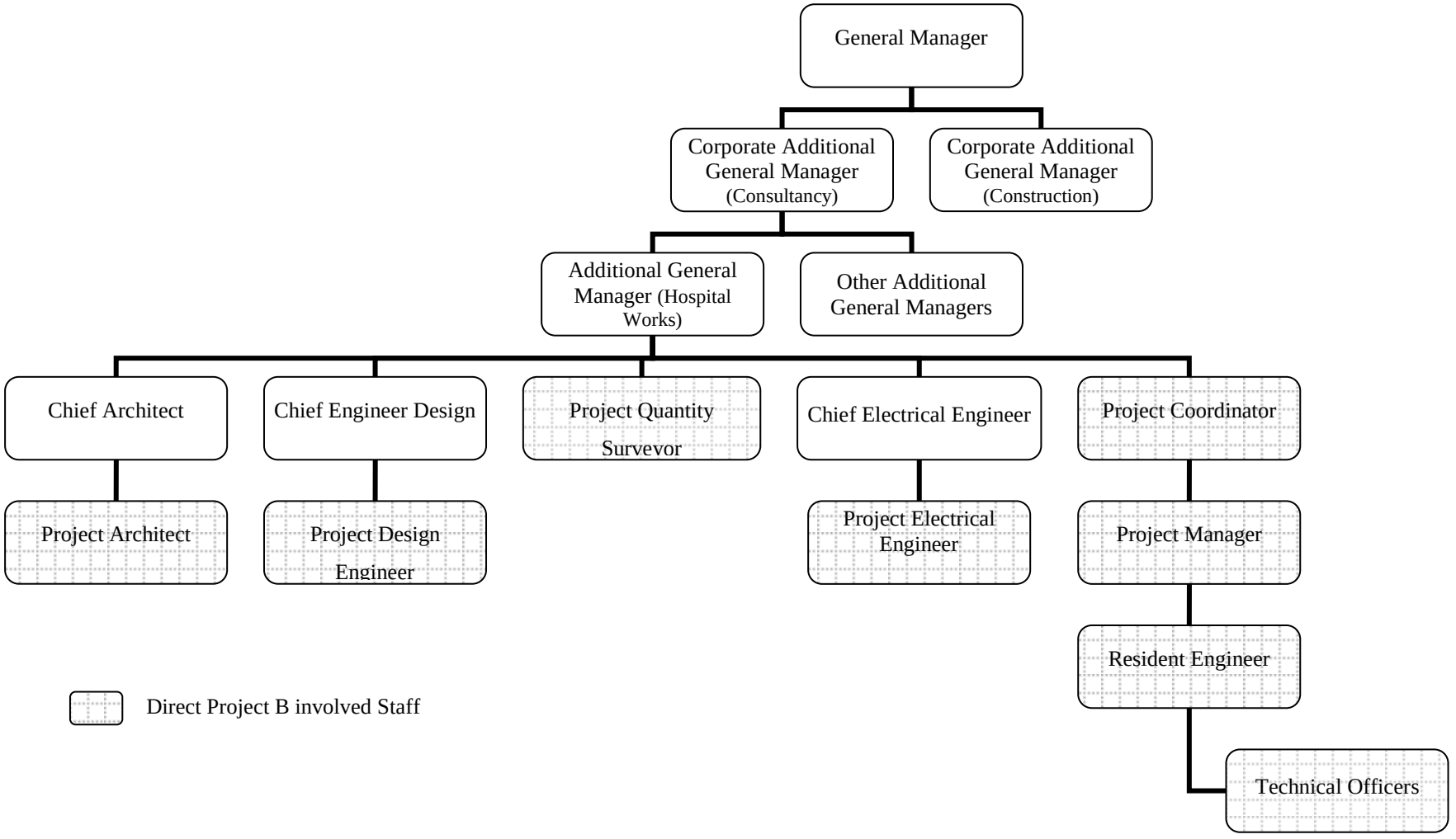


Figure 7.3: Organisation structure of the consultant's personnel of Project B

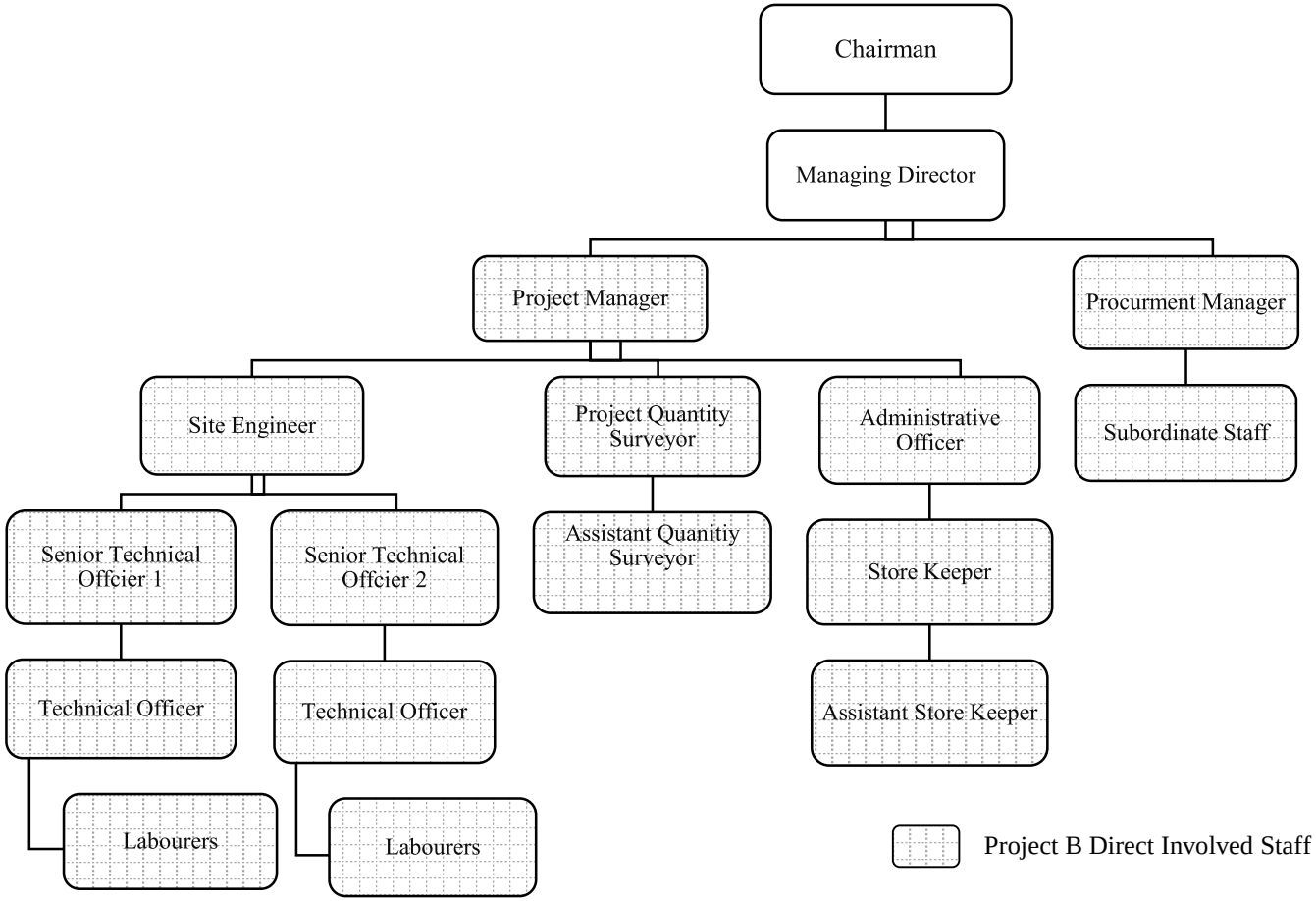


Figure 7.4: Organisation structure of the contractor's personnel of Project B

Table 7.1: Details of interview panel – Project B

Category	**Interviewee (Designation)**	**Total Working Experience**	**Nationality**	**Presence within Project B team**	**Role within the Project B**
Consultant	Project Manager	Total 18 years in construction industry working for consultancy organisations. All years of service at semi-government consultancy organisation of Project B and rest at private sector	Sri Lankan	Since tendering stage of the project	Engineer's representative to the construction contract
	Project Architect	Total 23 years in construction consultancy. All years up-to-date at the semi-government consultancy organisation of Project B, other 2 years at non-government organisation	Sri Lankan	Since project initiation	Architectural design and supervision of construction works
	Resident Engineer	Total 33 years in construction consultancy. All years up-to-date at semi-government consultancy organisation of Project B	Sri Lankan	Since contractor selection	Engineer's representative to the construction contract
Contractor	Contractor's Project Manager	Total 25 years in construction works. 15 years at private consultancy organisations and 10 years at private contractor organisation of Project B	Sri Lankan	Since initiation of construction	Planning and execution of construction works
	Site Engineer	Total 15 years in construction works. All years up-to-date in the private contractor organisation of Project B.	Sri Lankan	Since initiation of construction	Physical execution of civil construction works
	Project Quantity Surveyor	Total 9 years in construction works. 5 years up-to-date at the private contractor organisation of Project B and other 4 years were at a different private contractor organisation	Sri Lankan	Since beginning of construction stage	Interim payment application and cost monitoring and controlling
Client	Senior Administrative Officer	32 years of service in general administration in public sector at End-user organisation of Project B	Sri Lankan	Since project initiation	Project supervision and assist in Client's approvals and instructions
	Works Engineer	10 years in construction works. All years up-to-date at the Client organisation of Project B	Sri Lankan	Since project initiation	Consultant and contractor selection and making interim payments
	Public Management Assistant	9 years of experience in procurement works at End-user organisation of Project B.	Sri Lankan	Since project initiation	Assist project documentation and liaising with local authorities

Meeting observations and other observations – The researcher attended the 24th and 25th progress review meetings held at Client's office. Director-Hospital was normally chairing all progress review meetings, but during the period case study was conducted, Deputy-Director Hospital chaired the meeting, since Director-Hospital had retired and no appointment had been made to the position. Meeting minutes were taken by the Project Manager. A formal seating arrangement and a record keeping procedure was used during the meeting. All the interviewees were available on all two days at the meeting, except the Works Engineer, who was absent for the 24th meeting. Other observations included two site visits on the dates researcher attended the two progress review meetings and visiting the organisations of Contractor, Consultant and Client.

Documentation - Documentation included meeting minutes of 23rd and 26th meetings, construction contract documents, consultancy contract document, organisation charts and correspondents (where necessary).

7.4 Overview of responses to internal integration and external adaptation problems

The basic assumptions identified in Project B (Described in Sub Section 7.5, Sub Section 7.6 and Sub Section 7.7) were derived out of the responses adapted by the project for the internal integration and external adaptation problems faced within the project environment. Details of such responses are described as follows:

Mission, Goals, Strategy – The Client of Project B as a Ministry was catering for the requirements of the hospital staff, who were the ultimate End-users of the building. Thus, goals were set by the ministry on behalf of the end user or the Client's representative. End user requirement was to construct a new building for the administrative staff and move them out from the existing building and expand the Out Patient's Department (OPD). The consultant together with the end user had put lot of effort to convince this construction requirement to the ministry. Cost was the priority at the design stage, due to lack of fund allocation for construction of administrative work related buildings in government hospital sector. However, during construction, hospital staff had increased their concerns on quality of the finishes of the building

coming up with alternative finishing requirements resulting in increased cost, time and quality variations. In addition, they were pushing behind time, to get the building done on the extended date of completion approved.

Means of accomplishing goals – By the time of the case study being carried out, Contractor was closing the extended date of completion. Consultant and Client's Representatives were pushing the Contractor behind the schedule. Contractor was asked to increase their number of labour gangs working at the site. Contractor was having problems with extent of labour and staff employed with the project closer to the project completion and delays in procuring goods and materials within their organisational system. However, Contractor was expecting another extension of time, complaining over schedule disruptions occurred due to variations initiated by the Client. In addition, Contractor and Consultant were having hidden thoughts that Client was having their own delays in procuring the furniture for the new building, which was out of this construction contract. Thus, Contractor can use that delay for the delayed construction activities.

Measuring performance and corrections – Client had a separate personnel appointed from the ministry headquarters to monitor the project, who was a civil engineer held the title Works Engineer. She was paying random visits to the site and participated the monthly progress review meeting with the Contractor and reported the progress to the ministry. End-user as the Client's Representative had Director of Hospital chairing the monthly progress review meetings and several other hospital staff including few doctors to monitor the project. However, none of them were with any construction knowledge.

Common language and concepts – Project correspondents were exchanged in the medium of English. Consultant had previous work experience with the end-user, the hospital staff in a different renovation project of the hospital. However, the team of consultants participated for that project was completely different from this project. Contractor had no previous experience with the consultant.

Group boundaries – Apart from the usual monthly progress review meeting held with the participation of Client, End-User (Client's Representative), Contractor and Consultant, special meetings were held if requested by the Consultant. In addition, Consultant had separate random technical meetings with the participation of Contractor only. Introduction of new members to the Client/End-user happened during progress review meetings. Contractor and consultant had the opportunity of meeting new members at the construction site or during meetings. Consultant's team included many female team members including Project Manager and Project Architect. Contractor's team included the Contractor's Project Quantity Surveyor a female. Client's team included Works Engineer and End-User included Senior Administration Officer and one of the members of the quality checking team, who was a doctor as female members.

Power, status and intimacy – There was no clear leader driving the whole project team. Deputy Director General (Logistics) was the ultimate decision maker within the team. Director of Hospital chaired the progress review meetings with the Contractor. Project manager assigned from the consultancy organisation did a job of coordination only. She was not stationed at site, but at head office of the consultancy organisation.

Rewards and punishments – Rewards were not popular within the project team. Even verbal appreciations were rare. Punishments in terms of verbal expression of dissatisfactions were very popular with the Client and Consultant.

Ideology – End-user was very demanding that they came up with several variations in finishes and spaces within the building which, Consultant could not refuse and had tolerated within the process. However, this had disrupted the smooth execution of project by the Contractor.

7.5 Basic assumptions of contractor's sub-cultural group of Project B

The most common underlying basic assumptions of Contractor's sub-cultural group of Project B were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Contractor's sub-cultural group and the third level of coding was

used to derive 'basic assumptions' of the Contractor's sub-cultural group. The basic assumptions included the powerful Contractor's own basic assumptions (The Contractor's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Contractor's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumption. For example; "Cont B 1 01" for the first pattern of basic assumption of Contractor's of Project B.

Basic assumptions of Project B are graphically presented in Figure 7.5. Patterns basic assumptions together with basic assumptions of the Consultant are summarized in Table 7.2.

Cont B 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions on nature of human relationship of Contractor could be determined using three different perspectives. Initially, this could be done by being informed about what the Contractor considered as the best authority system to be adopted within the project team; was it autocratic or participative? Contractor of Project B held the pattern of basic assumptions that '**level of authority was critical in decision making (Cont B 1 01)**' (refer Annexure 4 – B1.1.1 for case evidences). Contractor believed that having adequate authority was contributing to fast decision making. They thought their work got disturbed with delayed decision making due to lack of authority of the project staff involved from Client and Consultant.

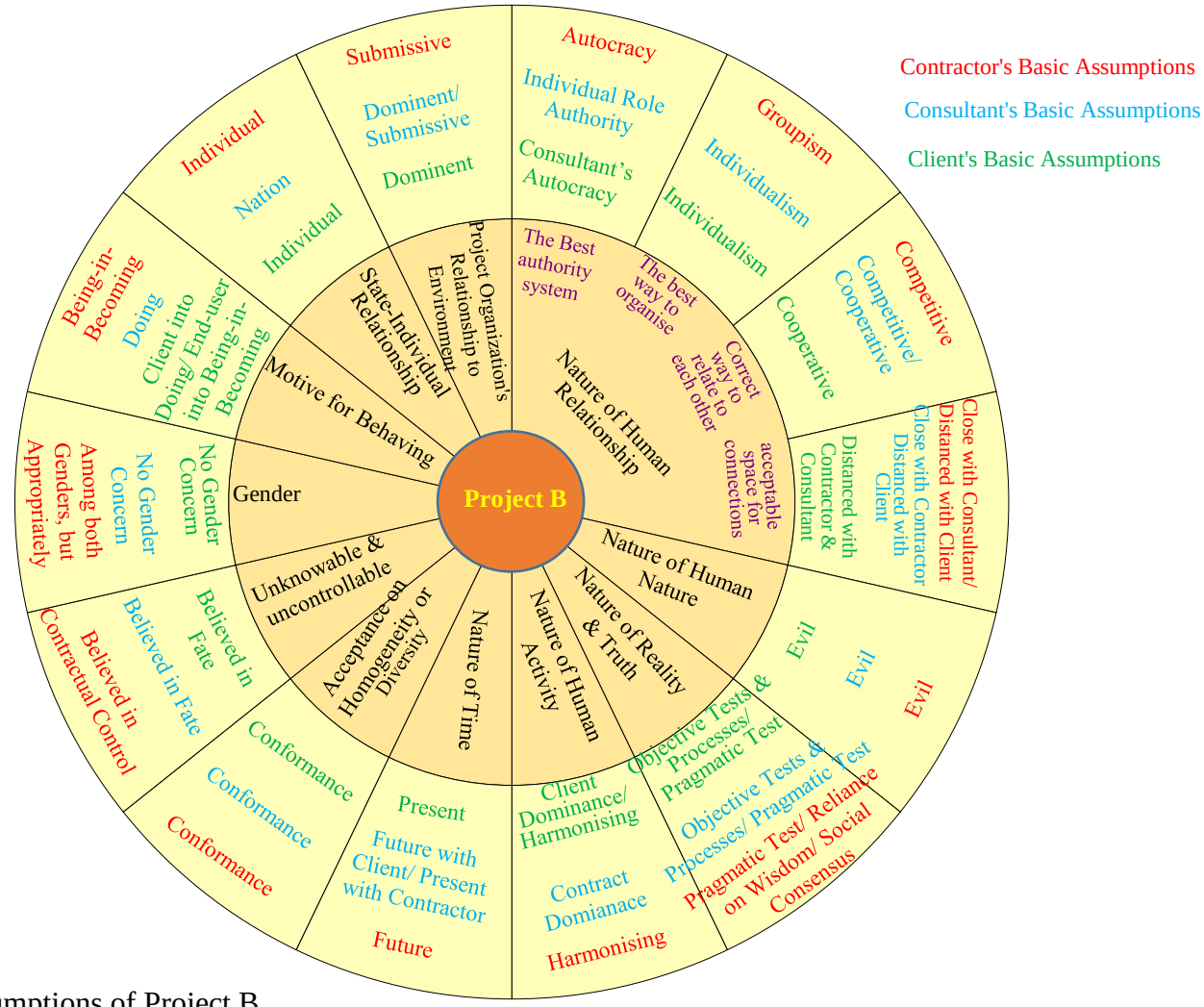


Figure 7.5: Basic assumptions of Project B

Table 7.2: Basic assumptions of contractor sub-cultural group of Project B

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Contractor's Own World View	Contractor's View on Dominant World Views of Consultant	Contractor's View on Dominant World Views of Client/End-User
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Level of authority was critical in decision making (Cont B 1 01) 1.2 A powerful leader was essential to drive the project (Cont B 1 02)	Autocratic		
	A2 - What was the best way to organize project society?	1.3 Consultant lacked integration among different designers and Contractor put special effort to bring in integration (Cont B 1 03) 1.4 Client involved if there were cost related issues only (Cont B 1 04) 1.5 End-user was not concerned on cost or time, but project scope and quality only (Cont B 1 05)	Groupism	Individualism	Individualism
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.6 Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont B 1 06)	Competitive		
	N1 - What was the acceptable space for	1.7 Close connections with Consultant was advantageous, but normally unacceptable in project context (Cont B 1 07)	Close with Consultant/		

	cognitive, emotional and behavioural connections?	1.8 Maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont B 1 08)	Distanced with Client		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 No appreciations and only constant highlighting of mistakes were available within the team (Cont B 2 01)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 level of experience was crucial in decision making in a construction project (Cont B 3 01) 3.2 Understanding construction sequence was critical for project success (Cont B 3 02) 3.3 Logical reasoning worked for decision making (Cont B 3 03) 3.4 Discussions gave results (Cont B 3 04)	Pragmatic Test/ Reliance on Wisdom/ Social Consensus		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Client/End-user assumed a higher power in the project team (Cont B 4 01) 4.2 Contractor was placed with the least power in the project team (Cont B 4 02)	Harmonising	Client and Consultant Dominance	Client Dominance
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont B 5 01)	Future		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Strict conformance to standards was expected (Cont B 6 01)	Conformance		

7. Unknowable and uncontrollable	A10 - Did the Contractor tend to believe in fate/uncontrollability?	7.1 Ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont B 7 01) 7.2 Decisions with public sector clients were uncertain (Cont B 7 02) 7.3 Not everything could be claimed from the Client contractually (Cont B 7 03) 7.4 formal instructions/approvals in black and white would protect the contractual rights of the Contractor (Cont B 7 04)	Believed in Contractual Control		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 Different genders had different capabilities to perform project tasks (Cont B 8 01)	Among Both Genders, but Appropriatel y		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 A better quality should be delivered to the client (Cont B 9 01) 9.2 Continuous improvement was a necessity (Cont B 9 02)	Being-in-Becoming		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Better quality should be delivered to the Client (Cont B 9 01)	Individual		
11. The project organization's relationship to its environment	A14 - Did the project organization perceive itself to be dominant, submissive, harmonizing or searching out a niche?	11.1 Continuous improvement was a necessity (Cont B 9 02)	Submissive		

They viewed Client and Consultant being government organisations partly contributed to this. Contractor's Quantity Surveyor admired the authority system practiced at the Contractor's organisation, which was helpful for fast decision making. This convinced that they preferred the basic assumption 'autocracy' for decision makers within the team. In addition, Contractor assumed that '**a powerful leader was essential to drive the project (Cont B 1 02)**' (refer Annexure 4 – B1.1.2 for case evidences). Contractor had realised that Client and Consultant were not monitoring and motivating them adequately. They were naturally feeling, there should be a powerful individual, either from Client or Consultant to lead them. Client and End-user were complained to be not paying much attention to project, as it was not their everyday work. In addition, the staff of Consultant was criticised to be not projectised adequately to have a proper monitoring of Project B. These concerns of the Contractor pinpointed their belief that best authority system to be adopted within the project team be 'autocratic'.

The next perspective on determining the basic assumption of Contractor about nature of human relationship was by looking into their assumption on the best way to organize society; i.e. is it either on the basis of individualism or groupism. Contractor held the pattern of basic assumptions that '**Consultant lacked integration among different designers and Contractor put special effort to bring in integration (Cont B 1 03)**' (refer Annexure 4 – B1.1.3 for case evidences), indicating 'individualism' being preferred and practised among the members of the Consultant, but Contractor believed in 'groupism'. Contractor criticised the lack of integration among designers because it had caused a massive disruption for smooth execution of their works. This issue was worse due to fact that consultant being a bigger government organisations with separate divisions for different design areas, such as architectural, structural engineering, electrical, mechanical, and heating, ventilation and air-conditioning. Contractor indicated that Project Manager was not actively trying to bring in the coordination among the divisions. Thus, it was the Contractor who had happened to do it themselves by reaching out each division at Consultant's head-office. However, Contractor had purposely tolerated the situation, since they wanted to avoid any problem occurring between them and Consultant due to the same reason and desperately looked for maintaining a good relationship with the Consultant. Further,

they have put special effort to bring in coordination among different departments with their belief on 'groupism'. In addition, Contractor held the patterns of basic assumptions that '**Client involved if there were cost related issues only (Cont B 1 04)**' (refer Annexure 4 – B1.1.4 for case evidences), and '**End-user (Hospital Staff) was not concerned on cost or time, but project scope and quality only (Cont B 1 05)**' (refer Annexure 4 – B1.1.5 for case evidences). End-user was trying to get their requirements fulfilled within a cost budget of the Client. However, they had not realised any responsibility over the cost of the project. Client had been more vigilant over the cost, since they were answerable to the government treasury. Accordingly, though the Client and End-user represented a single party, Contractor had realised them as two separate entities holding two different objectives within the same project. Consultant had been the party linking the two parties and brought in integration. Thus, it was the 'individualism' that Contractor had assumed as the existing basic underlying assumption of the Client and End-User. However, this disintegration had created problems time to time, during approvals. As indicated by the Contractor's Project Quantity Surveyor, decision making got delayed, since End-user had to be pushed behind to obtain approvals from the Client, as they two were not working together for the project. This demonstrated that Contractor viewed individualism' as the dominant basic assumption within the team.

The third perspective to determine the Contractor's assumptions on nature of human relationship was by looking into their belief on correct way for team members to relate to each other, to distribute power and affection, this was either by being competitive or cooperative. Contractor held the pattern of basic assumptions that '**they lost power with their mistakes and they gained power with mistakes of other team members' mistakes (Cont B 1 06)**' (refer Annexure 4 – B1.1.6 for case evidences). During progress review meeting observation it was observed Client insisted the building to be handed over by early February by the Contractor. However, once the Contractor and Consultant highlighted that furniture would be arriving at the site only during end March due to the procurement delays of End-user's organisation, Client took a silent approach over the completion date, since they too were having delays in their processes. It was apparent during the meeting that Contractor and Consultant tried to

highlight the mistakes of each other. It was not highlighted to an extent of a cold fight between the parties. However, it was obvious that once a party mentioned about a mistake of the other, more than trying to accept the mistake, they tried to defend by highlighting a mistake of the other. When Consultant mentioned any delay, Contractor answered back with some pending instructions or material approval by the Consultant or the Client and vice versa. Thus, 'competition' was the basic assumption held by the Contractor as the correct way for team members to relate to each other, to distribute power and affection.

In addition to the three perspectives, another perspective could be identified for the determination of the nature of human relationship. This was about looking into what was the acceptable space for cognitive, emotional and behavioural connection. The acceptable space could be either close or distanced. It was observed that Contractor was holding close connections with Consultant, but not with Client. They held the pattern of basic assumptions '**close connections with Consultant was advantageous, but normally unacceptable in project context (Cont B 1 07)**' (refer Annexure 4 – B1.1.7 for case evidences). Contractor mentioned how helpful Consultant was during project work. Contractor's Project Manager expressively stated that being close to a consultant was not acceptable in our practise and such a close relationship could be criticised for Consultant being bias to the Contractor. The pattern of basic assumptions '**maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont B 1 08)**' (refer Annexure 4 – B1.1.8 for case evidences) would have strengthened this assumption on maintaining close connections with the Consultant.

Cont B 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions on nature of human nature was about determining the Contractor's deep belief about, whether humans basically were good, neutral, or evil, or whether human nature was perfectible or fixed. Contractor held the pattern of basic assumptions that '**no appreciations and only constant highlighting of mistakes were available within the team (Cont B 2 01)**' (refer Annexure 4 – B1.2.1 for case evidences). Contractor mentioned that no appreciation was available in writing or at

least verbally. They had to absorb many ill-treats by the Client and Consultant considering the maintenance of good relationship among the team members. No notion of any appreciation was available in any meeting minute referred by the researcher or witnessed during any progress review meeting observation. All meetings and meeting minutes were full of problems, issues and lapses and indications on who was responsible and what actions to be taken to overcome those. Contractor's Project Manager mentioned that one reason for lack of appreciations by the Consultant may be because, it could be misunderstood by the Client as Consultant being bias to the Contractor. Accordingly, Contractor believed that the powerful basic assumption about the nature of human nature held among team members was that humans were 'evil'.

Cont B 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions on nature of reality and truth regarded how 'what was true' and 'what was not true' were determined in the physical and social context by the Contractor. Such a determination could be arrived at either by pragmatic test, reliance on wisdom or social consensus. The Contractor of Project B held a strong pattern of basic assumptions that '**level of experience was crucial in decision making in a construction project (Cont B 3 01)**' (refer Annexure 4 – B1.3.1 for case evidences). Contractor considered lack of proper experience in the field of construction as a major disadvantage for successful project execution, which hindered fast decision making. They criticised the Consultant's Personnel with less experience and admired the Consultant's Personnel with high experience, due to higher practicality of latters' decisions and ability to rely on such decisions without any doubt. They expected the Consultant's Personnel being more experienced since them being the people giving instructions and major decision makers within the project. This indicated the belief of Contractor on 'pragmatic test' in decision making. This argument could be further strengthened by another pattern of basic assumptions of them that '**understanding construction sequence was critical for project success (Cont B 3 02)**' (refer Annexure 4 – B1.3.2 for case evidences). Contractor had a concern about practical difficulties of organising and carrying out work, when changes being requested by a

Client in an ad hoc manner in a complex project environment, which stemmed out from their nature of believing on 'pragmatic test' in decision making. Moreover, Contractor tried their best to bring in justifications for every suggestion, refusal or request they presented to the team. They held the strong pattern of basic assumptions that '**logical reasoning worked for decision making (Cont B 3 03)**' (refer Annexure 4 – B1.3.3 for case evidences) within the construction project context, demonstrating their 'reliance on wisdom' for determining nature of reality and truth. Contractor's Project Manager mentioned that logical reasoning worked well because, end-users were hospital staff, who were professionals. However, Contractor of Project B looked for 'Social Consensus' to a certain extent too. They carried the pattern of basic assumptions that '**discussions gave results (Cont B 3 04)**' (refer Annexure 4 – B1.3.4 for case evidences). They looked for the consensus of Client and/or Consultant as appropriately through discussions to arrive at decisions. They believed that due to the positive relationship they have maintained with the Client/End-user and Consultant might have contributed heavily to the discussions being successful. In summary, Contractor of Project B relied much on pragmatic test for determining the nature of reality and truth, while the nature of team members supported them to rely on wisdom and social consensus for such determinations.

Cont B 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions on nature of human activity was about the Contractor's belief on the "correct" way for humans to behave. Such a correct way could be either dominant, harmonising or fatalistic. Contractor of Project B held the pattern of basic assumptions that '**Client/End-user assumed a higher power in the project team (Cont B 4 01)**' (refer Annexure 4 – B1.4.1 for case evidences) and '**Contractor was placed with the least power in the project team (Cont B 4 02)**' (refer Annexure 4 – B1.4.2 for case evidences). They assumed that it was the Client/End-user who possessed the highest power within the project team. This was because, Client/End-user had influenced all major decision making within the team. Moreover, Contractor believed that Consultant too had no control over the demands of the Client. Client wanted to fulfil their requirements despite the practical difficulties being faced by the

other members within the team. Further, Contractor assumed that there was no equal power distribution within the project team between the Client/End-user, Consultant and Contractor placing the Contractor with a very low power. Contractor sensed that Client, End-user and Consultant were trying to make Contractor responsible for all lapses and tried to control them constantly. Further, Contractor required strong justifications, evidences and arguments to prove a suggestion or any fact than any other party was doing. Contractor believed that they were ill-treated with these power levels existed within the project team. Accordingly, Contractor indicated 'domination' as the overriding basic assumption within the team, Client assuming 'client dominance' as the correct way to behave and Consultant assuming 'client and consultant dominance' as the correct way of behaving. However, this existing culture on 'domination', was constantly criticised by the Contractor. Both Contractor's Project Manager and Site Engineer mentioned that they preferred equal rights/power being practised within the project indicating 'harmonising' to be the correct way of human behaviour. They indicated that being at the growth stage of organisational development, struggling to create a position in the market place, they were better off trying to be harmonising with other team members in the project context.

Cont B 5 - Basic Assumptions on Nature of Time Units

The basic assumptions of the Contractor about the nature of time units could be identified by looking into what kinds of time units were the most relevant for the conduct of daily affairs within the project: past, present or future. Accordingly, Contractor held the pattern of basic assumptions that '**maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont B 1 08)**' (refer Annexure 4 – B1.1.8 for case evidences). Contractor's interviewees mentioned that they put an extra effort to maintain a good relationship with the Client and Consultant within the project expecting to reserve a good long-term relationship. This was because, they had realised that they could get future projects by positive referrals of this Consultant and Client. They had worked as not to have any issues on quality, never fought against all additional claims in the project and absorbed many integration problems of the Consultant to preserve the good relationship with both

Client and Consultant. Accordingly, the basic assumption of the Contractor of Project B regarding the most relevant time unit for the conduct of daily affairs within the project for 'future'.

Cont B 6 - Basic Assumptions on Acceptance of Homogeneity or Diversity

The basic assumptions of the Contractor on acceptance on homogeneity or diversity could be identified by using two perspective. The first perspective was by looking into, whether the Contractor believed a group to be best off if it was highly diverse or if it was highly homogeneous. Next perspective was by looking into, whether Contractor believed individuals in a group should be encouraged to innovate or conform. No evidence was available to determine whether the Contractor believed a group to be best off being diverse or homogeneous. This may be because, contraction project team inevitably being diverse in nature and team members had to anyway believe on that as the best. In relation to the next perspective, Contractor held the pattern of basic assumptions that '**strict conformance to standards was expected (Cont B 6 01)**' (refer Annexure 4 – B1.6.1 for case evidences), which indicated that they believed in conformance within the project environment. It was highlighted during interviews, the difficulties faced by the Contractor due to the requirement of strictly adhering to standards given by the Client and the Consultant such as importing a special brand of vinyl flooring, procuring a very high quality reinforcement, waterproofing material etc. However, Contractor was always ready to satisfy the Client and Consultant by conforming to their specifications. Thus, Contractor held the powerful basic assumption that team was encouraged to 'conform' to achieve project success.

Cont B 7 - Basic Assumptions on Unknowable and Uncontrollable

The assumptions explained under this sub-section included to what extent the Contractor of Project B believed on fate or existence of phenomena in project context that were beyond their control and whether they were ready to embrace those, either willingly or unwillingly. Accordingly, Contractor held the pattern of basic assumptions that '**ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont B 7 01)**' (refer Annexure 4 – B1.7.1 for case

evidences). Contractor's opinion was that though all three parties should be liable for project outcomes, in Sri Lankan context, public opinion was that Contractor was liable for every project aspect. Both Contractor's Project Manager and Site Engineer indicated that means of achieving project goals and objectives were completely under the responsibility of the Contractor. No any special support had been given by the Client/End-user or Consultant, though the project was getting delayed and both of them were partly liable for causing disruptions with ad-hoc variations. Further, Contractor assumed that '**decisions with public sector clients were uncertain (Cont B 7 02)**' (refer Annexure 4 – B1.7.2 for case evidences). Contractor believed that the gradual change in staff of hospital (End-user) brought in changes in project decisions, which they could not avoid since they wanted to satisfy the Client/End-user somehow and end the project keeping a good relationship with the Client and Consultant. Those decisions had created project variations resulting in disruptions for smooth project executions and additional expenditures to the Contractor, which could not be claimed from the Client at times. Contractor strongly accepted the uncontrollability of project aspects with the pattern of basic assumptions '**not everything could be claimed from the Client contractually (Cont B 7 03)**' (refer Annexure 4 – B1.7.3 for case evidences). All interviewees from Contractor constantly indicated how much disruptions happen due to End-user coming up with variations time to time and not all additional time and cost could be practically claimed from the Client contractually. The reasons indicated by them included: number of small scale variations together amounting to a huge time and cost variations but, inability to justify and claim practically; Consultant regarded most of the varied activities could be carried out parallel to other activities, but labour issues prevented the Contractor working parallel to other activities and, more importantly, coming up with claims time to time had a high probability of damaging the relationship between the Contractor with Client and Consultant, which Contractor was highly reluctant to let happen. Considering all the aforementioned reasons, Contractor had purposely absorbed many loses with regard to time and cost both expecting they would be able to maintain a good relationship with the Client and Consultant, which could be beneficial in long-term. However, Contractor had been vigilant by holding the pattern of basic assumptions '**formal instructions/approvals in black and white would protect the contractual rights of**

the Contractor (Cont B 7 04)' (refer Annexure 4 – B1.7.4 for case evidences). Contractor tried their best to accept all instructions and approvals in writing with proper documentation to reduce any risk of a due payment from the Client. Further, they identified proper documentation making each party responsible on their decisions/roles adequately and appropriately. Thus, in summary, Contractor of Project B held the assumption that project aspects were uncontrollable and unknowable to a greater extent for them and 'contractual control' was the only thing they could rely on.

Cont B 8 - Basic Assumptions on Gender

The basic assumptions of the Contractor about the gender could be arrived at by analysing their belief on how roles, power and responsibilities should be distributed between the genders: was it only among males, only among females or both. Accordingly, Contractor held the pattern of basic assumptions that '**different genders had different capabilities to perform project tasks (Cont B 8 01)**' (refer Annexure 4 – B1.8.1 for case evidences). The site staff of Contractor consisted of Project Quantity Surveyor, Assistant Quantity Surveyor and one Technical Officer as females. As highlighted by the three interviewees of the Contractor of Project B, there were tasks females could perform better than males, such as documentation related works. There were practical difficulties for females to work at sites surrounding labourers lacking discipline, working during nights and working at heights. Such difficulties included problems related to safe working conditions and lack of personality to control labourers. Thus, the basic assumption of the Contractor of Project B was that society should distribute roles, power and responsibility between both genders, but appropriately.

Cont B 9 - Basic Assumptions on Motive for Behaving

Motive for behaving looked into the Contractor's orientation in terms of; doing, being and being-in-becoming. If the Contractor's motive for behaving was "doing", then they would merely take part in project activities, carrying individualistic organisational objectives. If Contractor's motive for behaving was 'being', then they should be willing to reflect on the project activities they did and be contented about their task

delivery as a contractor. Finally, if the Contractor's motive for behaving was on 'being-in-becoming', then they should be ready to develop, grow, change and be better. Contractor of Project B had recently acquired grade 1 for contractors, as per the categorisation of Construction Industry Development Authority of Sri Lanka. Thus, they were always looking for maintaining their grade and looked for growth. They did not hold strong assumptions on 'doing'. They held the pattern of basic assumptions that '**a better quality should be delivered to the Client (Cont B 9 01)**' (refer Annexure 4 – B1.9.1 for case evidences), which was more towards "being". As indicated by the Contractor's Project Manager, they considered delivering the best quality as much as possible although Client/End-user was constantly changing their quality requirements time to time, causing disruptions to the construction activities. Moreover, according to his explanations, some disruptions were not able to be claimed back from the Client/End-user too. Still, they were happy about their efforts to fulfil the Client/End-user's expectations and maintaining relationship. Moreover, that assumption could be towards 'being-in-becoming' as well, because, they were eager to retain their current grade and work for growth of the organisation. Their belief on "being-in-becoming" was further justified by the pattern of basic assumptions **'continuous improvement was a necessity (Cont B 9 02)**' (refer Annexure 4 – B1.9.2 for case evidences). Unlike the Consultant, all interviewees from the Contractor constantly highlighted the identified problems and issues in their systems and processes during the interview such as issues in planning, monitoring and procuring material, labour and staff. They indicated that they were prone to the uncertainties such as scarcity of labour in the market, for which they should have planned better within their organisational level, but failed. They stressed that they were required to improve their systems from the current level to perform better in future. Consultant Project Architect too praised the Contractor's this behaviour of looking for improvement. However, concern of the Project Manager was that Contractor could not deliver the best quality for the project. In contrast, none of the interviewees from Consultant was revealing the lapses in their systems in a similar nature and they were more trying to convince that they had done things right and there was no much avenue for learnings in this project. In summary, the motive for behaviour of Contractor of Project B is more towards, 'being-in-becoming'.

Cont B 10 - Basic Assumptions on State-Individual Relationship

Basic assumptions on state-individual relationship was about the Contractor's inner belief whether precedent right and responsibility be accorded the nation, individual or both. No any dominant pattern of basic assumption was evident related to their considerations on nation, though they were working for a public sector construction project. The reason may be because, Contractor being a private organisation, holding governing private-organisational objectives. They were holding all assumptions about improving their own organisation or satisfying the Client and Consultant despite a major positive or negative concern on the nation or the country in specific, indicating 'individual' as the major concern during state-individual relationship. Such a basic assumption was included in the pattern of basic assumptions; '**a better quality should be delivered to the Client (Cont B 9 01)**' (refer Annexure 4 – B1.9.1 for case evidences) related to the motive for behaving.

Cont B 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

Basic assumptions on relationship to the environment was about determining whether Contractor perceived themselves to be dominant, submissive, harmonizing, searching out a niche while operating within its environment. No dominant pattern of basic assumptions was highlighted related this assumption. However, the pattern of basic assumptions '**continuous improvement was a necessity (Cont B 9 02)**' (refer Annexure 4 – B1.9.2 for case evidences), as described at the discussion of their motive for behaving indicated about their assumption on relationship to the environment was more of 'submissive'. This was because, they had realised that they required to improve their systems and processes since industrial factor such as lack of labour scarcity had heavily affected their project performances.

7.6 Basic assumptions of consultant's sub-cultural group of Project B

The most common underlying basic assumptions of Consultant's sub-cultural group of Project B were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of

basic assumptions' of the Consultant's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Consultant's sub-cultural group. The basic assumptions included the Consultant's powerful own basic assumptions (The Consultant's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Consultant (The Consultant's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumptions. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumption. For example; "Cnsl B 1 01" for the first pattern of basic assumption of Consultant's of Project B.

Patterns of basic assumptions together with basic assumptions of the Consultant are summarized in Table 7.3.

Cnsl B 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions of the Consultant about the nature of human relationship could be derived using three perspectives. It was about finding answers of the Consultant to: (1) what was the best authority system? – autocratic or participative; (2) what was the best way to organise society? – on the basis of individualism or groupism, and (3) what was regarded as the "correct" way for people to relate to each other and to distribute power and affection? – is it competition or cooperation.

Table 7.3: Basic assumptions of consultant sub-cultural group of Project B

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Consultant's Own World View	Consultant's View on Dominant World Views of Contractor	Consultant's View on Dominant World Views of Client/End-User
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Client/End-user was too demanding owing to their governing profession (Cnsl B 1 01) 1.2 Perfect performances of individual roles would bring success in project performances (Cnsl B 1 02)	Individual Role Authority		Client's Autocracy
	A2 - What was the best way to organise project society?	1.3 When Client and End-user became different authorities, it was about designing/constructing for someone within the budget and control of someone else (Cnsl B 1 03) 1.4 Client's concerns were on time and cost only (Cnsl B 1 04) 1.5 Perfect performances of individual roles would bring success in project performances (Cnsl B 1 02) 1.6 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl B 1 05)	Individualism		Individualism
	A3 - What was the correct way to relate to each other, to	1.7 Client depended on Consultant as the technical advisor (Cnsl B 1 06)	Competitive/ Cooperative	Cooperative/ Competitive	Cooperative

	distribute power and affection within project context?	1.8 Contractor did not fight back and tried to maintain relationship (Cnsl B 1 07) 1.9 Formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl B 1 08) 1.10 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl B 1 09) 1.11 Contractor attempted to pass responsibilities to Consultant tactfully (Cnsl B 1 10)			
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.12 Contractor attempted for close connections with the Consultant (Cnsl B 1 011) 1.13 Contractor did not attack back and tried to maintain relationship (Cnsl B 1 07)	Close Connection with Contractor/ Distanced with Client		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1Contractor only believed in formal written methods of communication (Cnsl B 2 01) 2.2 Rare appreciation and constant highlighting of mistakes and punishments were available in construction projects (Cnsl B 2 02)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Proper detail documentation was a strength for a government consultant (Cnsl B 3 01)	Objective Tests and Processes / Pragmatic Test		

		3.2 Convincing the Client/End-User on practical aspects was very difficult (Cnsl B 3 02) 3.1 Changes were inevitable since Client/End-user learnt along the project life cycle (Cnsl B 3 03)			
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Controls in a construction project were the contracts (Cnsl B 4 01)	Contract dominance		
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Long term relationship with the Client was more important than with the Contractor (Cnsl B 5 01)	Future with Client, Present with Contractor		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl B 6 01)	Conformance		
7. Unknowable	A10 - Did the Consultant tend to	7.1 Decisions made by public sector clients were uncertain (Cnsl B 7 01)	Believed in fate		

and uncontrollable	believe in fate/uncontrollability?				
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 All genders were treated equally in construction projects (Cnsl B 8 01)	No Gender Concern		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 perfect performances of individual roles would bring success in project performances (Cnsl B 1 04)' 9.2 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl B 1 05)	Doing		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl B 10 01)	Nation		
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	11.1 Public sector clients received concessions in legal aspects (Cnsl B 11 01) 11.2 Project and contractor's internal organisational issues were significantly inseparable (Cnsl B 11 02)	Dominant/ Submissive		

With regard to the best authority system, Consultant of Project B believed that Client held a dominant basic assumption as 'client's autocracy' being the best authority system. A separate Client's Representative as the Works Engineer had been appointed to monitor and control the project and report to the higher management of the Client. Moreover, Consultant held a pattern of basic assumptions as '**Client/End-user was too demanding owing to their governing profession (Cnsl B 1 01)**' (refer Annexure 4 – B2.1.1) for case evidences). This was because, End-user and many staff of Client's staff of the Project B were doctors.

Especially, End-user included the hospital staff comprising doctors at higher authority levels, to who the new construction was done. Doctors had been a very demanding profession, who wanted their facilities to be special compared to other areas of the hospital. They had changed the initially approved designs by the Client to luxury types of finishes and facilities. Resident Engineer mentioned that he has had the same experience with other projects in the health sector. This behaviour had amounted to the doctors being not listening to the instructions given by the Project Architect too. They complained this unnecessary interventions of the End-user on changing decisions and requesting variations had disrupted the smooth work execution of the Contractor. Despite the difficulties, Consultant had always tried to obey the change requirements of the End-user, since Client and End-user were the priority in decision making, with 'client's autocracy'. In contrast, Consultant believed 'individual role authority' as the best authority system to be adopted within the construction project context. This assumption could be supported by the pattern of basic assumptions; '**perfect performances of individual roles would bring success in project performances (Cnsl B 1 02)**' (refer Annexure 4 – B2.1.2 for case evidences). Although, a Project Manager had been appointed from the Consultant, a leader-centred control was not practices. Project Manager was not a full time appointment to the Project B and she only did a coordination role within the team. As indicated by the Project Manager, every team member had a specified role within the team and each one was authorised and further expected to perform those individual roles, taking the full control and responsibility of such roles. According to their explanations, this was applicable to all

the team members of Client, Contractor and Consultant. Requirement of a single point of authority was not expected by the Consultant.

With regard to the best way to organise the project team, Consultant of Project B held the patterns of basic assumptions; '**when Client and End-user became different authorities, it was about designing/constructing for someone within the budget and control of someone else (Cnsl B 1 03)**' (refer Annexure 4 – B2.1.3 for case evidences)' and '**Client's concerns were on time and cost only (Cnsl B 1 04)**' (refer Annexure 4 – B2.1.4) for case evidences)'. It was the Ministry as the Client, who had funded for Project B and planned all time and resources of the project appointing the Consultant and Contractor, in order to fulfil the requirements of the End-user; the hospital staff.

However, these two entities had not integrated and coordinated properly. Project Manager complained that though all the approvals regarding the project matters had to be taken by the Ministry, they did not respond timely to those matters. It was the Consultant who had taken an extra effort to coordinate the two parties. Moreover, Ministry as the Client was chasing behind the cost and time of the project objectives, while the End-user was behind the project requirements. Accordingly, these two patterns of basic assumptions of the Consultant indicated that from their perspective, 'individualism' had governed the project organisation. Surprisingly, though the Consultant was complaining over the individualistic behaviour of the Client and End-user, they too held some patterns of basic assumptions indicating 'individualism' as the best way to organise the society. These included; '**perfect performances of individual roles would bring success in project performances (Cnsl B 1 02)**' (refer Annexure 4 – B2.1.2 for case evidences) and '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl B 1 05)**' (refer Annexure 4 – B2.1.5 for case evidences). Consultant held the idea that every project participant including Client, Consultant and Contractor had a role to be performed agreed within the agreements signed. Thus, their idea was that a specific individual to monitor their work constantly and drive or motivate accordingly was not required. They did not expect the Project Manager to do this role inevitably. They believed that if everybody

could perform their role perfectly, then project would ultimately achieve success. In addition, Consultant was automatically prevented being dedicated to Project B, since majority of Consultant's Representatives worked for Project B were handling other parallel projects at their organisational level. Accordingly, this might have got prevented them believing in 'groupism' and they might have put effort on performing and expecting others to perform the specified individual role holding the basic assumption of 'individualism' as the best way to get organised within the team.

With regard to the "correct" way for people to relate to each other to distribute power and affection, Consultant held several patterns of basic assumptions, which indicated they were fully aware that other team members were believing on 'cooperation' within the project team. These included; '**Client depended on Consultant as the technical advisor (Cnsl B 1 06)**' (refer Annexure 4 – B2.1.6 for case evidences) and '**Contractor did not attack back and tried to maintain relationship (Cnsl B 1 07)**' (refer Annexure 4 – B2.1.7 for case evidences)'. Ministry as the Client had many other projects all over the country to handle. Thus, they could pay a very little attention to this project. This had resulted in Client being depending a lot on quality aspects and technical matter on Consultant by giving them the enough autonomy to take technical decisions. Consultant knew Client trusted them a lot in technical matters and worked cooperatively. In addition, Consultant had realized that the Contractor was very much keen on maintaining the relationship with the Consultant because, Contractor could get good recommendation from them to acquire future projects. In addition, Consultant held the pattern of basic assumptions '**formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl B 1 08)**' (refer Annexure 4 – B2.1.8 for case evidences). This was also about their belief on 'cooperation' as the correct way to related to each other. Consultant viewed Contractor being tough on receiving instructions in black and white. However, through understanding developed between the parties over the time, they had worked through informal modes of communication until such instructions got confirmed through formal modes. Further, Consultant had realised, Client was more responsive in decision making only when they went directly to meet them and talk to them in person

and not just by sending letters asking for decisions. Nevertheless, Consultant held very strong patterns of basic assumptions, which supported a 'competitive' behaviour as the correct way to relate to each other to distribute power and affection such as; '**Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl B 1 09)**' (refer Annexure 4 – B2.1.9 for case evidences) and '**Contractor attempted to pass responsibilities to Consultant tactfully (Cnsl B 1 10)**' (refer Annexure 4 – B2.1.10 for case evidences). It was observed that Consultant always attempted to maintain a higher power by being correct in all situations. It was observed during progress review meetings that most Consultant's Representatives were trying to highlight the lapses of the Contractor in front of the Client and possessed a stance of proud. Further, though they had realised that Contractor was trying to maintain a good relationship with them, they suspected that Contractor was tactfully trying to pass all responsibilities to the Consultant, especially during selection of sub-contractors and suppliers. Further, it was observed during progress review meeting that Consultant highlighted the mistakes of the Client too, such as delay in procuring the furniture and attempted to make the Client silent, when demanding the Contractor on early completion of the project. Accordingly, though the Consultant believed that other team members were believing more on 'cooperation', Consultant themselves believed in 'competition' as the correct way to related to each other to distribute power and affection within the team.

The fourth perspective identified related to the nature of human relationship with basic assumptions of the Consultant was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Consultant held a pattern of basic assumptions as '**Contractor attempted for close connections with the Consultant (Cnsl B 1 011)**' (refer Annexure 4 – B2.1.11 for case evidences) indicating close connections with the Contractor and no such speciality with the Client. The pattern of basic assumptions, '**Contractor did not fight back and tried to maintain relationship (Cnsl B 1 07)**' (refer Annexure 4 – B2.1.7 for case evidences) further strengthened this assumption. Consultant had got to know the internal problems of the Contractor through these close

connections. Further, they believe project did not face any serious issues due to such close relationship with the Contractor.

Cnsl B 2 - Basic Assumptions on Nature of Human Nature

Basic assumptions on nature of human nature was about identifying, whether Consultant believed humans basically as good, neutral, or evil, or whether human nature was perfectible or fixed. Consultant of Project B held the pattern of basic assumptions; '**Contractor only believed in formal written methods of communication (Cnsl B 2 01)**' (refer Annexure 4 – B2.2.1 for case evidences), which indicated that they believed Contractor held the basic assumption of nature of human nature as 'evil'. Accordingly, they refused to accept and verbal or any other informal mode of communication. Further, emails too were being rejected since it had not been mentioned as a formal mode of communication in the construction contract. They looked for written proof for every instruction or approval being granted by the Consultant. This had restricted the effectiveness and efficiency of communication within the project too. In addition, Consultant held another pattern of basic assumptions that '**rare appreciation and constant highlighting of mistakes and punishments were available in construction projects (Cnsl B 2 02)**' (refer Annexure 4 – B2.2.2 for case evidences)'. They had never expected to convey any appreciation to other team members or accept any such appreciations. As indicated by the Project Architect, appreciations were very rare in Public Sector projects. All meetings were conducted to discuss about lapses and issues. Thus, Contractor of Project B held the assumption that nature of human nature was 'evil'.

Cnsl B 3 - Basic Assumptions on Nature of Reality and Truth

Basic assumptions on nature of reality and truth looked into how Consultant ultimately determined truth, both in the physical and social world; was it by pragmatic test, reliance on wisdom, or social consensus. The pattern of basic assumptions '**proper detail documentation was a strength for a government consultant (Cnsl B 3 01)**' (refer Annexure 4 – B2.3.1 for case evidences) pointed out that Consultant did not believe on subjective means based on personal or social construct of the determination

of truth such as pragmatic test, reliance on wisdom, or social consensus. They looked for 'objective tests and processes' for determining the reality and truth. Going in line with that they believed proper quality could be achieved when proper documentation of specifications and drawings were done right at the beginning of the project more than by chasing behind the Contractor monitoring time to time. Further, believed that they; as a government consultant, had a competitive advantage over other private sector consultants by having all contract documentation done informatively. However, they complained on Client being too impractical holding the pattern of basic assumptions '**convincing the Client/End-User on practical aspects was very difficult (Cnsl B 3 02)**' (refer Annexure 4 – B2.3.2 for case evidences).). All interviewees indicated their efforts on doing presentations and discussions to convince the Client about waste of funds and resources for a pile foundation just for a five storied building, when it could hold a ten storied building easily. They all worried that they could not make Client agree to keep allowances for further raise, at least in future. This assumption raised some concerns of the Consultant relying on pragmatic test for determining what was true, while they depended on 'objective tests and processes'. Strengthening this argument Consultant held the pattern of basic assumptions '**changes were inevitable since Client/End-user learnt along the project life cycle (Cnsl B 3 03)**' (refer Annexure 4 – B2.3.3). Consultant held ideas more on practical sense that they tolerated the disruptive behaviour of Client/End-user coming up with variations time to time and helped the Client/End-user to incorporate all possible changes as much as possible. They believed that clients as laymen tended to learn about the construction aspects along the project life cycle and it was fair for them to allow to do changes to their initial requirements. Thus, in summary, Consultant heavily believed on 'objective tests and processes' together with 'pragmatic test' in determining the reality and truth and witnessed Client too holding on to 'objective tests and processes' in determining the reality and truth in project environment.

Cnsl B 4 - Basic Assumptions on Nature of Human Activity

Basic assumptions on nature of human activity was looking into the Consultant's belief on the "correct" way for humans to behave: whether to be dominant, harmonising, or

fatalistic. Consultant carried the pattern of basic assumptions that '**Controls in a construction project were the contracts (Cnsl B 4 01)**' (refer Annexure 4 – B2.4.1 for case evidences). It was apparent that they had been following the contract terms in construction contract and consultancy agreement thoroughly. Consultant had deducted the amount in preliminary bill item for safety from the Contractor, since they had not adhered to the relevant safety standards and rejected samples not adhering to the contract specifications. In addition, they had insisted the Client to send all the instruction in writing as per the consultancy agreement. This indicated that Consultant believed, the correct way for the team members to behave was as per the contract terms in all project activities. Thus, it was the 'contract congruence' that could be considered as the basic assumption of the Consultant with regard to the nature of human activity.

Cnsl B 5 - Basic Assumptions on Nature of Time Units

The basic assumptions on nature of time units considered the Consultant's orientation on the most relevant time unit for the conduct of daily affairs: whether it should be past, present or future. In relation to that Consultant of Project B held the pattern of basic assumptions that '**long term relationship with the Client was more important than with the Contractor (Cnsl B 5 01)**' (refer Annexure 4 – B2.5.1 for case evidences), which demonstrated that Consultant considered 'future' as the most relevant time unit within the project context. This was because, Consultant considered this Client as a strategic client, where the staff involved with Project B mostly carried out projects related to this same Client. They had past working experience with this Client but with different End-users. Further, they expected many new projects in future from the same Client too. Accordingly, Consultant had been biased with their decisions towards the Client. For example, when Client had requested for a variation in flooring material in third floor, despite the practical disruptions to the project schedule and to the Contractor's work, Consultant had allowed the variation considering the maintenance of relationship. However, no such expectations on future relationship was existed with the Contractor.

Cnsl B 6 - Basic Assumptions on Acceptance of Homogeneity or Diversity

The basic assumptions on acceptance on homogeneity or diversity looked into the Consultant's assumption on whether the project team was best off being highly diverse or being highly homogeneous and should individuals in the project team be encouraged to innovate or conform. There were no strong evidences to identify whether they believed project team to be best off being highly diverse or homogeneous. This may be because, construction project team was inevitably diverse in nature, which was beyond control of any participant within the project team. However, the pattern of basic assumptions on '**not innovation, only conformance was practiced in a public sector construction project (Cnsl B 6 01)**' (refer Annexure 4 – B2.6.1 for case evidences) indicated that it was the 'conformance' to standards and contract was believed as the best way by the Consultant. They complained that budget restrictions by the Client avoided them being innovative in design development, while they expected the Contractor to be conforming to their developed design and specifications avoiding the Contractor to be innovative in construction. However, construction contract document included a provision for value engineering if they wished to apply.

Cnsl B 7 - Basic Assumptions on Unknowable and Uncontrollable

Basic assumptions on unknowable and uncontrollable looked in to the belief of Consultant on fate and the project phenomenon were beyond their control. Consultant of Project B held the pattern of basic assumptions, '**decisions made by public sector clients were uncertain (Cnsl B 7 01)**' (refer Annexure 4 – B2.7.1 for case evidences), which indicated that project was filled with uncertainties due to lack of strait forward decision making by the Client and End-user. The reason for this was because, after the retirement of the Director-Hospital, who the head of the End-user, the Deputy-Director Hospital who over took that vacant role could not bring in consensus among different personnel in the hospital in decision making. This had resulted in decisions getting changed and project schedules getting disrupted constantly, which was beyond the control of the Consultant and the Contractor. Thus, Consultant had acted upon 'fate' to a certain degree.

Cnsl B 8 - Basic Assumptions on Gender

Basic assumptions on gender looked into how Consultant believed society should distribute roles, power and responsibility between the genders. Consultant of Project B held the pattern of basic assumptions, '**all genders were treated equally in construction projects (Cnsl B 8 01)**' (refer Annexure 4 – B2.8.1 for case evidences). Many female members were working for Project B, including the major roles by the Project Manager and Project Architect. All interviewees indicated that gender was not a concern in they consultancy role, as long as they were with the required qualifications and experiences. Thus, their assumption was that gender was not a concern in distribution of roles, power and responsibilities and both the genders were considered without favouring any.

Cnsl B 9 – Basic Assumptions on Motive for Behaving

Basic assumptions of Consultant on motive for behaving could be either; doing, being or being-in-becoming. The pattern of basic assumptions; '**perfect performances of individual roles would bring success in project performances (Cnsl B 1 04)**' (refer Annexure 4 – B2.1.4 for case evidences) as described with basic assumptions of nature of human relationship indicated that Consultant of Project B basically motivated to do their specific role only. They did not hold much concern on 'being'; i.e. having a great self-satisfaction by providing a valued service to the Client or Contractor. This was proved by the pattern of basic assumptions on '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl B 1 05)**' (refer Annexure 4 – B2.1.5 for case evidences) as described with nature of human relationship. Further no specific interest was shown on improvement or continuous improvement to hold the patterns of basic assumptions on 'becoming'. Consultant always believed themselves to be doing right and wanted the Contractor to conform to their instructions and specifications. Thus, it could be argued that the Consultant's motive for behaving was 'doing'; i.e. taking part in a purposeful activity only.

Cnsl B 10 – Basic Assumptions on State-Individual Relationship

Consultant being a government consultancy organisation, their assumptions on state-individual relationship was very much highlighted. This was about their belief on whether precedent right and responsibility be accorded the nation or the individual. The Consultant held the pattern of basic assumptions '**satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl B 10 01)**' (refer Annexure 4 – B2.10.1 for case evidences) indicating that they believed precedent right and responsibility should be accorded the 'nation' and not the individual Client needs. Consultant was disappointed due to end-user requesting for high quality facilities and finishes, which the Consultant in their perspective considered waste of public funds. Further, Project Manager firmly stated that they were not reluctant to recommend what was right for the government despite the individual Client/End-user needs.

Cnsl B 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions on project organisation's relationship to its environment considered the Consultant's assumption on whether the project organization perceived itself to be dominant, submissive, harmonising, searching out a niche. Consultant of Project B held the pattern of basic assumptions that '**public sector clients received concessions in legal aspects (Cnsl B 11 01)**' (refer Annexure 4 – B2.11.1 for case evidences) indicating the basic assumption that a public sector project organisation perceived itself to be dominant. This was evident from the opinion of the Consultant over a design approval that was pending from a local authority, which lacked the compulsory parking space allocation. They have executed the project with pending approval, expecting design approval would be received, even without the parking spaces since it was a government project. However, there were aspects over which the project could not have a proper control according to the Consultant. The pattern of basic assumptions of '**project and contractor's internal organisational issues were significantly inseparable (Cnsl B 6 02)**' (refer Annexure 4 – B2.6.2 for case evidences) indicated that Consultant's belief on the uncontrollability of Contractor's

organisational affairs affecting the project matters. Such Contractor's internal organisational issues included, working capital problems, lack of autonomy and power for Contractor's site staff and material procurement issues. Thus, in summary, Consultant of Project B, held the basic assumption that relationship of project organisation to its environment was partly dominant and partly submissive.

7.7 Basic assumptions of client's sub-cultural group of Project B

The most common underlying basic assumptions of Client's sub-cultural group of Project B were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Client's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Client's sub-cultural group. The basic assumptions included the Client's own powerful basic assumptions (The Client's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Client (The Client's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumption, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumptions. For example; "Clnt B 1 01" for the first pattern of basic assumptions of Client's of Project B.

Patterns of basic assumptions together with basic assumptions of the Client are summarized in Table 7.4.

Table 7.4: Basic assumptions of client sub-cultural group of Project B

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Client's Own World View	Client's View on Dominant World Views of Contractor	Client's View on Dominant World Views of Consultant
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Consultant had the legitimate control of the project (Clnt B 1 01)	Consultant's Autocracy		
	A2 - What was the best way to organize project society?	1.2 Client was responsible for fulfilling End-user requirements (Clnt B 1 02) 1.3 Cost was a Client's matter, not End-user's (Clnt B 1 03)	Individualism		
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.4 Client/End-user depended on the Consultant as the technical advisor (Clnt B 1 4) 1.5 Formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt B 1 5) 1.6 Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt B 1 6)	Cooperative	Competitive	Competitive
	N1 - What was the acceptable space for cognitive, emotional and	1.7 Close connections with the Consultant or Contractor were not essential for project matters (Clnt B 1 07)	Distanced with Contractor and Consultant		

	behavioural connections?				
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 Rare appreciations and contractually agreed punishments were practiced in construction projects (Clnt B 2 01)	Evil		
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Following systems, processes and procedure produce results (Clnt B 3 01) 3.2 End-user learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt B 3 02)	Objective Tests and Processes/Pragmatic Test		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Client was the most powerful member in the project team (Clnt B 4 01) 4.2 Things could be sorted out in discussions (Clnt B 4 02)	Client Dominance/ Harmonizing		
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Continuing relationship was not a concern with Contractor or Consultant (Clnt B 5 01)	Present		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt B 6 01) 6.2 Not innovation, only conformance was expected from the project team (Clnt B 6 02)	Conformance		

7. Unknowable and uncontrollable	A10 - Did the Client tend to believe in fate/uncontrollability?	7.1 Satisfying all End-user's staff was impossible within this project (Clnt B 7 01)	Believed in Fate		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 Gender was not a concern to work in a construction project (Clnt B 8 01)	No Gender Concern		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Client was responsible for fulfilling End-user requirements (Clnt B 1 02) 9.2 End-user learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt B 3 02) 9.3 Satisfying all End-user's staff was impossible within this project (Clnt B 7 01)	Client into Doing, End-user into Being-in-Becoming		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 The objective of the project was to fulfil the requirements of the hospital staff as much as possible (Clnt B 10 01)	Individual		
11. The organization's relationship to its environment	A14 - Did the project organization perceive itself to be dominant, submissive, harmonizing or searching out a niche?	11.1 Laws should be lenient on public sector clients (Clnt B 11 01)	Dominant		

Clnt B 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions of the Client about the nature of human relationship could be derived using three perspectives: by looking into what Client believed as the best authority system; what Client considered as the best way to organise society and, what was the correct way for people to relate to each other, to distribute power and affection.

With regard to the best authority system, Client held the pattern of basic assumptions that '**Consultant had the legitimate control of the project (Clnt B 1 01)**' (refer Annexure 4 – B3.1.1 for case evidences). Both Client and End-user believed that Consultant had been given all powers and authorities to monitor and control the project, especially the works of the Contractor. They considered it as the responsibility of the Consultant. End-user expressively stated that Client was not monitoring the project on regular basis because, Consultant had made liable through the contracts to get the required monitoring and controlling work done for them. Thus, the assumption held by the Client/End-user was the 'consultant's autocracy' as the best authority system within Project B.

With regard to the best way to organise the society, End-user always operated with individualism. This was evident through the pattern of basic assumptions; '**Client was responsible for fulfilling End-user requirements (Clnt B 1 02)**' (refer Annexure 4 – B3.1.2 for case evidences) and '**cost was a Client's matter, not End-user's (Clnt B 1 03)**' (refer Annexure 4 – B3.1.3 for case evidences). There was a strong separation as the Client and End-user. End-user believed that it was the Client's responsibility to get the required facility done for the End-user to their expected quality, funding as appropriately. None of the End-users had an idea about the cost of the project and they purposely disregarded such concerns. This was highlighted by the Contractor and Consultant both, indicating poor coordination between the Client and End-user. It had been identified as a hindrance to the smooth project execution as well.

With regard to the correct way for people to relate to each other to distribute power and affection, Client and End-user believed in cooperation to a considerable extent. This was mainly because, End-user was a complete layman and Client was unable to

pay all attention to Project B, since Project B was just one project out of number of other projects carried out all over the country. Thus, both of them happened to depend on the Consultant with cooperation for successful project execution and expressively stated about their dependence on Consultant as the technical advisor. Further they had realised that merely following the formal methods of communication such as letter writing had hindered the fast flow of information and fast decision making. Thus, always looked into means of overcoming red-tape created through these formal methods of communication. The End-user constantly looked for discussions over any project matter and tried to depend on meeting minutes developed by the Consultant than trying to write a contractual letter of their own. The reason could be because they were laymen with poor knowledge on project matters. This assumptions on 'cooperation' was highlighted by the patterns of basic assumptions '**Client/End-user depended on the Consultant as the technical advisor (Clnt B 1 4)**' (refer Annexure 4 – B3.1.4 for case evidences and '**formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt B 1 5)**' (refer Annexure 4 – B3.1.5 for case evidences). However, Client witnessed a 'competitive' environment among Contractor and Consultant. Client held the pattern of basic assumptions that '**Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt B 1 6)**' (refer Annexure 4 – B3.1.6 for case evidences). Open discussions during progress review meetings had allowed the Client to witness, how Contractor and Consultant were in a battle in highlighting lapses of each party and passing responsibilities. Nevertheless, Contractor had been more enduring and silent compared to the Consultant. This was clearly visible during progress review meeting observations too. Client had sometimes happened to act as the mediator for the matters of the Contractor and Consultant. Thus, in summary, Client assumed 'cooperation' as the correct way to relate to each other to distribute power and affection, but assumed that Consultant and Contractor believed in 'competition' in contrast.

A fourth perspective to determine the nature of human relationship as assumed by the Client was about looking into their preference on acceptable space for cognitive,

emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Client/End-user held a pattern of basic assumptions '**close connections with the Consultant or Contractor were not essential for project matters (Clnt B 1 07)**' (refer Annexure 4 – B3.1.7 for case evidences) indicating distanced connections with Contractor and Consultant. Though Consultant was directly working for the Client and the End-user, Senior Administrative Officer stated that Consultant was not allowed to have official telephone conversations with her and all such communications should happen through the Director (Hospital) only. Thus, their relationship was that much distanced in nature. Further, Works Engineer mentioned that she told about blacklisting the Contractor directly to their face, if the work was not done properly. She would have not made such a serious comment, if close connections were there with the Contractor. During progress review meetings, it was observed by the researcher that Client and End-user were mostly demanding things very officially from the Contractor.

Clnt B 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions of Client about the nature of human nature looked into whether they believed humans basically as good, neutral, or evil and/or whether human nature was perfectible or fixed. The pattern of basic assumptions of Client, '**rare appreciations and contractually agreed punishments were practiced in construction projects (Clnt B 2 01)**' (refer Annexure 4 – B3.2.1 for case evidences) indicated that Client was not necessarily interested in appreciating either Contractor or the Consultant to motivate for the work. They believed that Consultant and Contractor could be motivated through the contractually agreed punishments for non-performance of the work. They wanted to remind the team members about backlisting, liquidated damages to motivate. Thus, the basic assumption of the Client about the nature of human nature was 'evil'.

Clnt B 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions of Client about the nature of reality and truth was about how Client defined what was true and what was not. Such a definition could be reached

either by pragmatic test, relying on wisdom or through social consensus. Being a government organisation, Client of Project B strictly believed that '**following systems, processes and procedure produce results (Clnt B 3 01)**' (refer Annexure 4 – B3.3.1 for case evidences). This indicated that they could not believe on subjective means of determining reality and truth such as pragmatic test, relying on wisdom or through social consensus, instead believed on 'objective tests and processes'. They believed they were acting right on project matters, since they were strictly following the master plan for infrastructure development of the hospital, government procurement guidelines and the clauses of construction and consultancy clauses. However, since End-user (Hospital Staff) was a complete layman to the construction industry, they had realised that they could not completely hold on to 'objective tests and processes'. Carrying the pattern of basic assumptions; '**End-user learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt B 3 02)**' (refer Annexure 4 – B3.3.2 for case evidences), indicated their concerns on relying on wisdom for determining the truth in physical and social world. With such an assumption, they had realised the difficulty of working with the systems, processes and procedures they had set in the first instance and looked for lenience in the set red tapes. This was because, they had started experiencing objections from the Consultant and Contractor for coming up with constant variations to the initial project requirements, hence to the contract. It was due to massive disruptions that had occurred to the smooth project execution due to such variations. Thus, in summary, Client/End-user of Project B was in constant battle between 'objective tests and processes' and 'pragmatic test' for determining the truth of the world.

Clnt B 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions of Client about the nature of human activity was looking into their belief on the "correct" way for humans to behave: either to be dominant, harmonizing, or passive. Client of Project B held the pattern of basic assumptions that '**Client was the most powerful member in the project team (Clnt B 4 01)**' (refer Annexure 4 – B3.4.1 for case evidences) indicating Client dominance as the correct way to behave. Works Engineer expressively stated that Client had the responsibility

of managing the project and it was the Works Engineer who was in charge of it. However, other team members expressed their dissatisfaction over the involvement of the Client on project matters. Further, all decisions had been finally approved by the Deputy Director General (Logistics) [DDG (Logistics], who was the Client's Representative. For example, thought the Consultant approved the extension of time for the Contractor, final decision on granting the time extension relied on the DDG (Logistics). However, due to the inability of the Client to pay the full attention to Project B, which was only one project out of many other projects all around the country and End-user being a layman, they held the pattern of basic assumptions '**things could be sorted out in discussions (Clnt B 4 02)**'(refer Annexure 4 – B3.4.2 for case evidences). They always looked for arranging meetings and discussions to sort out problems since they had realised that decision making required the input of Consultant and Contractor too. Consultant to get the technical advice and Contractor to know about the constructability and their issues mainly. Thus, Client assumed 'Client dominance' as the correct way to behave within the construction project team, however it got diluted with the requirement of 'harmonising' to make decisions within the team.

Clnt B 5 - Basic Assumptions on Nature of Time Units

The basic assumptions of Client about the nature of time units looked into what kinds of time units were the most relevant to conduct daily affairs: past, present or future. Accordingly Client of Project B held the pattern of basic assumptions that '**continuing relationship was not a concern with Contractor or Consultant (Clnt B 5 01)**' (refer Annexure 4 – B3.5.1 for case evidences), which indicated their basic assumption of 'present' as the relevant time unit for the conduct of daily affairs. The Consultant of Project B had previous work experience with this Client to develop their master plan and for some renovation works of the existing building. According to the Works Engineer, the same Consultant was appointed to this project according to a decision of the higher authorities, considering government money get circulated within the government, since this Consultant was also another government organisation. However, Client considered the relationship based on the performance of the Consultant only. They believed, if Consultant performed well, there can be chances

for continuing future working relationships with the Consultant and if they failed to perform up to the satisfaction of the Client, future working relationship might not be considered. Thus, they considered Consultant was performing their due service to the government and only considered about the present working relationship with the Consultant. Further, they did not consider any continuing relationship with the Contractor, since there is very less chance the same contractor being appointed for a future project, since they work on open tendering for contractor selection.

In addition, Client took most of other decisions considering the present context only. This was evident with the rejection of the Client to allow for provisions in structural design to raise the building to five more stories in future, with the same pile foundation. Only strengthened column design was required as the provisions for future raise of the building. Despite the massive insist of the Consultant, Client instructed to do the design only for five stories indicating allocated funds to be used only for the five stories and not for strengthening columns for future raise of building.

Clnt B 6 Basic Assumptions on Acceptance of Homogeneity or Diversity

Basic assumptions on acceptance on homogeneity and diversity was looking into whether Client assumed the project team to be best off if it is highly diverse or if it is highly homogeneous and should individuals in a project team to be encouraged to innovate or conform. No evidence was available within the case to determine whether the Client preferred the team to be highly diverse or highly homogeneous. This may be because, any construction project team being inevitably diverse in nature and it had to be accepted by all team members regardless of any objections. However, evidences were available to determine that Client assumed that individuals in a project team to be encouraged to conform. Such evidences comprised of the patterns of basic assumptions; '**Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt B 6 01)**' (refer Annexure 4 – B3.6.1 for case evidences) and '**not innovation, only conformance was expected from the project team (Clnt B 6 02)**' (refer Annexure 4 – B3.6.2 for case evidences). Client viewed Contractor and Consultant as bound by the construction and consultancy contracts to deliver the agreed building output. Client did not long for excuses for non-

performance. Strict conformance to the contract was always expected. In addition, Client believed that it was difficult to do innovative work, whit the limited government funds. Further, they required the Contractor to construct the Client approved design developed by the Consultant. All these thoughts of the Client supported the basic assumptions on 'conformance'.

Clnt B 7 Basic Assumptions on Unknowable and Uncontrollable

The basic assumptions on unknowable and uncontrollable looked into the belief of Client on fate. They held the pattern of basic assumptions '**satisfying all End-user's staff was impossible within this project (Clnt B 7 01)**' (refer Annexure 4 – B.7.1 for case evidences). Client's representatives of project had faced a massive pressure from the hospital staff to get all their requirements fulfilled, since some were requesting new or modified facilities. However, Client had understood that all their requirements cannot be fulfilled within the limited space of the building and limited funds. Although some of their requirements were not fulfilled, they had learnt to be contented with what they finally received through the project. This indicated their acceptance on 'fate'.

Clnt B 8 Basic Assumptions on Gender

Basic assumption on gender looked into, how Client assumed project team should distribute roles, power and responsibility between the genders: only for male, only for female or both. The pattern of basic assumptions held by the Client was that '**gender was not a concern to work in a construction project (Clnt B 8 01)**' (refer Annexure 4 – B.8.1 for case evidences). There were many female members working for the Project B from Client/End-user including Senior Administration Officer and the Works Engineer. Further, there were many female members from Contractor and Consultant too. Client/End-user's assumption was that gender had no effect for achieving better project out-comes. As per their belief, it was the knowledge and the ability to perform a given role were the considerations, which were free form concerns on gender.

Clnt B 9 Basic Assumptions on Motive for Behaving

The basic assumptions of Client/End-user on motive for behaving looked into whether their motivation for engaging with project matters was for doing, being or being-in-becoming. It was evident that Client was more into 'doing' since, End-user expressed their dissatisfaction that the sometimes the involvement of Client on project matters were not enough [refer the pattern of basic assumptions; '**Client was responsible for fulfilling End-user requirements (Clnt B 1 02)**' (refer Annexure 4 – B.1.2 for case evidences) for details]. However, End-user as the ultimate owner to be of the building out-put showed a great enthusiasm on project matters. They proposed variations and tried their best to get their requirements fulfilled [refer the patterns of basic assumptions; '**End-user learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt B 3 02)'** (refer Annexure 4 – B.3.2 for case evidences) and '**satisfying all End-user's staff was impossible within this project (Clnt B 7 01)**' (refer Annexure 4 – B.7.1 for case evidences) for further details]. End-user's effort to satisfy their staff indicated 'being' as the motivation for behaving, while their learning efforts indicated 'being-in-becoming' as their motivation for behaving. Thus, in summary, motive for behaviour of Client was mostly 'doing', while motive for behaviour of End-user was more into 'being-in-becoming'.

Clnt B 10 Basic Assumptions on State-Individual Relationship

The basic assumptions on state-individual relationship looked into the Client's belief on whether the precedent right and responsibility of Client should be accorded the nation or the individual. The Client held the pattern of basic assumptions; '**the objective of the project was to fulfil the requirements of the hospital staff as much as possible (Clnt B 10 01)**' (refer Annexure 4 – B.10.1 for case evidences) and '**laws should be lenient on public sector clients (Clnt B 10 02)**' (refer Annexure 4 – B.10.2 for case evidences). These indicated that they were more into fulfilling their own requirements beyond the national policies and regulations. They had initiated the project under the contract name of extension of the Out Patients Department of the Hospital, but their prime objective was to improve the facilities for the administrative staff. They were looking for loopholes in regulations to achieve their objectives. Thus,

the held the basic assumption that precedent right and responsibility of Client should be accorded the 'individual' mostly.

Clnt B 11 Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions on project organisation's relationship to its environment decided upon, whether Client perceived the project organization itself to be dominant, submissive, harmonising or searching out a niche. The pattern of basic assumptions '**laws should be lenient on public sector clients (Clnt B 10 02)**' (refer Annexure 4 – B.10.2 for case evidences), indicated that Client assumed that the project organisation to be 'dominant' over the environment due to Project B being a public sector project. They had executed the Project B with pending design approvals from the local authority due to this assumption only. They had decided that they will somehow get the approval for the design even without the mandatory parking space requirement for a design approval.

7.8 Summary

This chapter included the within case analysis of Project B. Basic Assumptions of Contractor, Consultant and Client sub-cultural groups were extracted, in relation to eleven cultural dimensions. A new perspective was derived from the case data to determine the nature of human relationship. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. There were both similar and differing basic assumptions among different sub-cultures within each case. Contractor believed in autocracy, groupism, competition, close space with Consultant, distanced space with Client, evilness, pragmatic test, reliance on wisdom, social consensus in decision making, harmony, conformance, contractual control, gender equality but with appropriately as required and being-in-becoming. Consultant believed in individual role authority, individualism, competition and cooperation as appropriately, close connection with contractor and distanced space with client, evilness, objective tests and processes, pragmatic tests, contract dominance,

conformance and belief in fate. Further, client believed in consultant's autocracy, individualism, cooperation, distanced space with contractor and consultant, evilness, objective tests and processes, pragmatic test, client dominance, conformance and belief in fate. Within case analysis of Project C will be presented next.

CHAPTER 08: WITHIN CASE ANALYSIS OF PROJECT C

8.1 Introduction

This chapter presents the within case analysis of Project C in line with the 'Chapter 3: Method of Study' and the findings of the 'Chapter 5: Pilot Study' on testing the ability to extract basic assumptions from the data being collected and possibility of data triangulation. Initially, background details of Project C and project team, details of techniques used for data collection and overview of responses to internal integration and external adaptation problems are described. Next, analysis of patterns of basic assumptions and basic assumptions of contractor's, consultant's and client's sub-cultural groups of Project C are presented.

8.2 Background details of Project C and project team

Client of the project C was one of the powerful Commissions in Sri Lanka, having the Secretary to the Commission as the Client to the construction and consultancy contracts. The Project C was initiated to design and construct a head office building for the Commission.

The scope of the Project C included construction of a five storied building with general office areas. Building works included construction of a pile foundation, concrete frame structure, two concrete ramps, brick masonry walls, wall plaster and painting, concrete/cement moulding works, floor tiling, steel suspended ceiling, Aluminium doors and windows, Calicut roof with cover with a steel trussed roof frame, heating, ventilation and air-conditioning system, fire detection and protection system, an electric elevator, data networking system, sewer treatment plant, and a closed-circuit television system. The background details of the project team members are presented as follows:

- **Client's Representatives -** The main Client's Representative, delegated with final decision making authority for Project C was the Additional Secretary to the Commission (refer Figure 8.1 for the organisation structure of the Client's personnel involved with Project C). There was no separate personnel or a

Works Engineer to do regular supervision of Project C on behalf of the Client. All the Client's personnel involved were non-technical laymen.

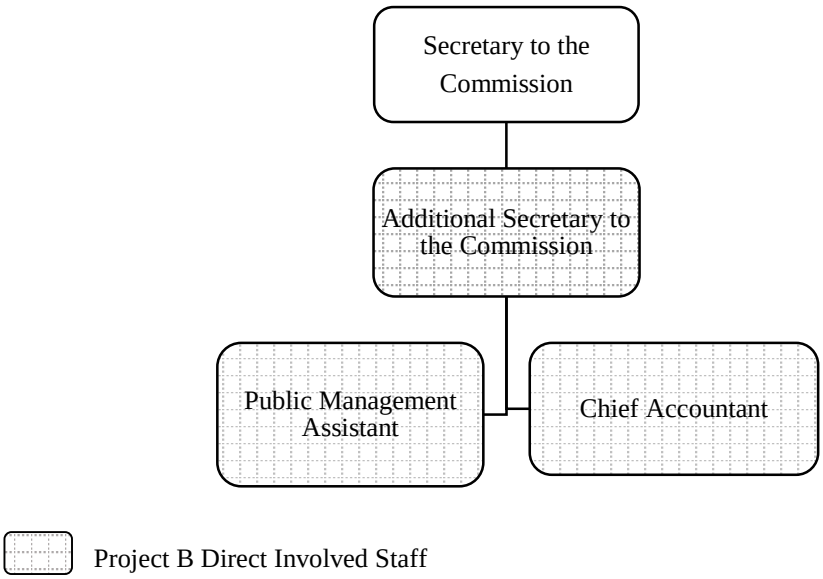


Figure 8.1: Organisation structure of the client's personnel of Project C

- **Consultant's Representatives** - The Consultant of Project C was a leading government consultancy organisation operating in Sri Lanka. This Consultant had been appointed by the Client, following government regulations of assigning the same consultancy organisation for all building construction and maintenance works procured by the Commission. This consultancy organisation consisted of separate divisions namely; architectural, structural, water supply, electrical and mechanical, estimate, contracts, planning at head office with a chief officer in-charge for each division. Direct General was the Engineer to any construction contract undertaken by the organisation. After award of the construction contract, all the projects would be handed over to the regional office for project management, where the Chief Engineer of the regional office would be with the highest delegated authority for routine decision making of the project afterwards. Since Project C was located at Colombo area, Regional Chief Engineer (Zone 1 - Construction) undertook the project since the award of construction contract for monitoring and controlling.

He had to do a coordination role for the consultancy staff involved at the head office who had been organised in a matrix structure for Project C works (refer Figure 8.2 for the organisation structure of the Consultant's personnel involved with Project C). However, Regional Chief Engineer (Zone 1 - Construction) was not a full time appointment for Project C. Only the Resident Engineer and the subordinating two Technical officer were the only full time appointments to the Project C from the consultancy organisation.

- **Contractor's Representatives** - Contractor of project C was a leading construction contracting organisation in Sri Lanka, registered under the C1 grade of the Construction Industry Development Authority in Sri Lanka. However, it was an established organisation, who provided both construction and consultancy service to the Sri Lankan construction industry, but did only the construction works for the Project C. They had been selected under an open tendering process. The organisation structure of the contractor's personnel working for the Project C is indicated in Figure 8.3. Senior Operations Engineer was not a full time appointment to Project C and rest of the staff below him were full time project staff. He was taking care of several project undertaken by their organisation within the Colombo area. Duties and authorities of the Operations Engineer was similar to a construction manager and the duties and authorities of the Assistant Operation Engineers were similar to that of a Site Engineer

8.3 Details of techniques used for data collection

Background details of interview panel - A total of 9 members were interviewed including three (3) members from each of the Client, Consultant and Contractor as details summarised in Table 8.1. When selecting the interview panel, researcher paid attention to select members who directly involved with day to day operations and who participated in progress review meetings regularly. Accordingly, researcher ensured that majority of the members directly involved in decision making in Project C context as planned in research methodology.

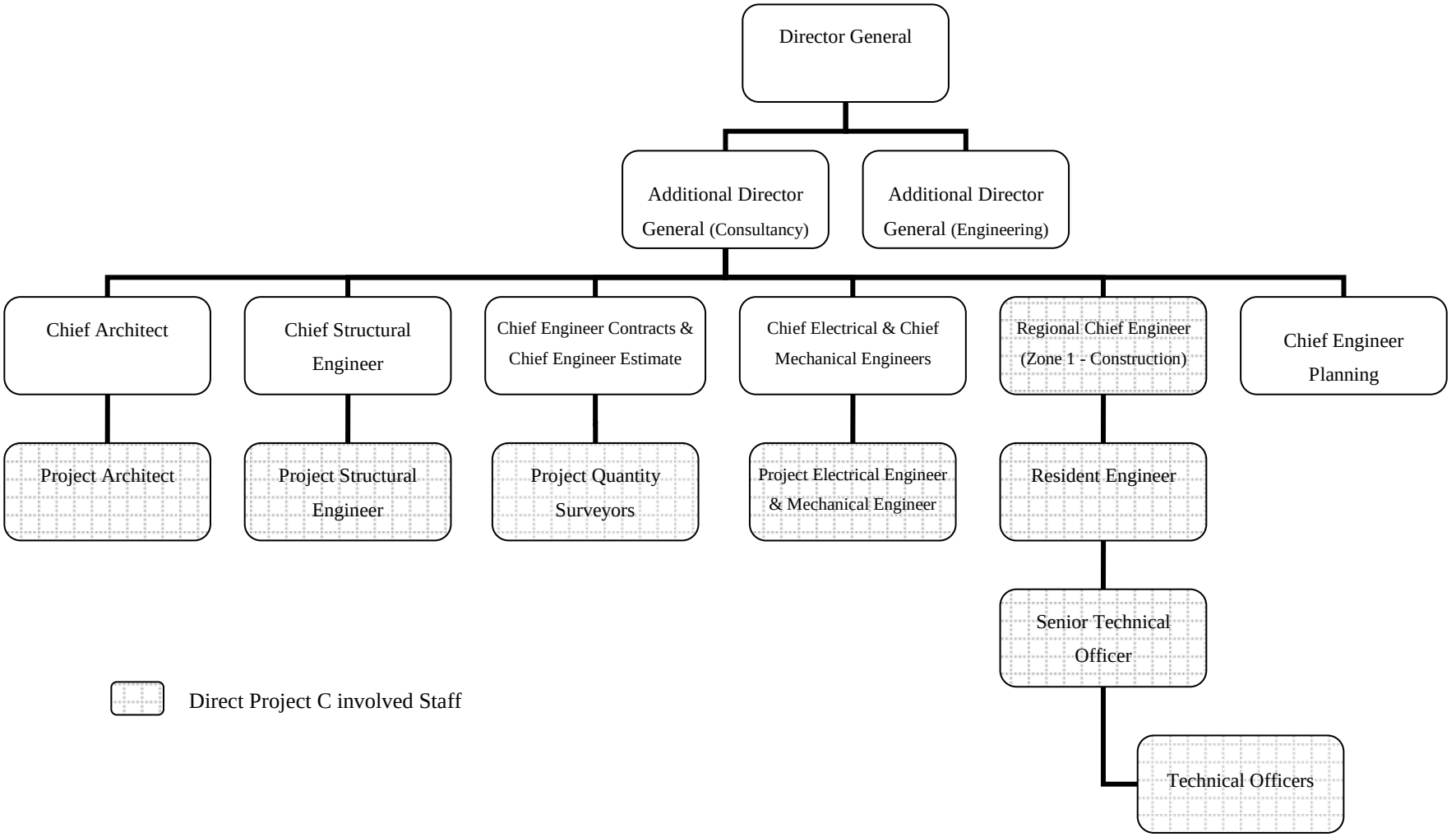


Figure 8.2: Organisation structure of the consultant's personnel of Project C

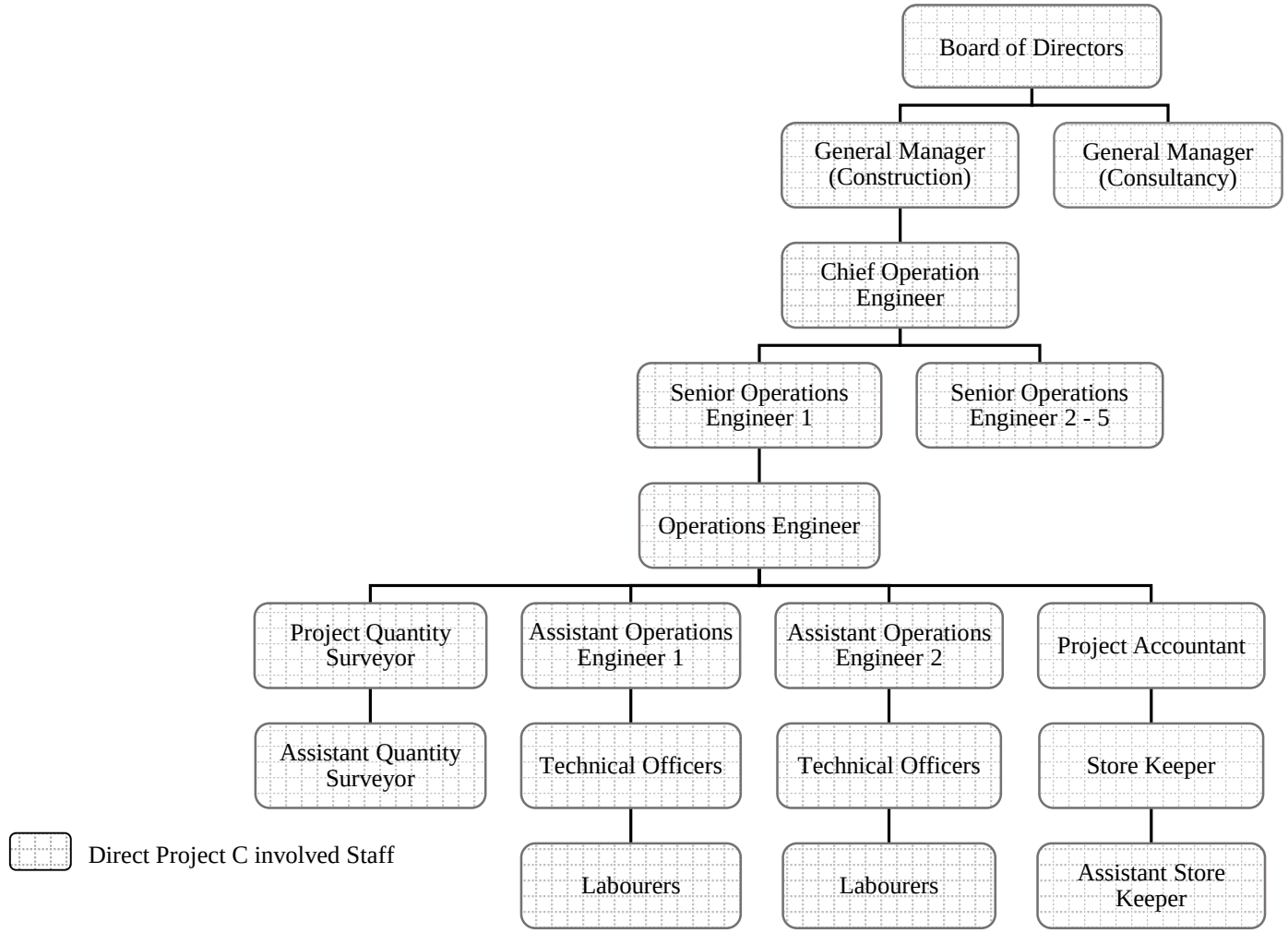


Figure 8.3: Organisation structure of the contractor's personnel of Project C

Table 8.1: Details of interview panel – Project C

Category	Interviewee (Designation)	Total Working Experience	Nationality	Presence within Project C team	Role within the Project C
Consultant	Regional Chief Engineer (Zone 1 - Construction)	Total 15 years in construction industry working for consultancy organisations. 14 years of service at semi-government consultancy organisation of Project C and 1 year in a foreign country	Sri Lankan	Since tendering stage of the project	Engineer's representative to the construction contract and project management works
	Project Architect	Total 20 years in construction consultancy. 11 years up-to-date at the semi-government consultancy organisation of Project C, other 9 years at private sector	Sri Lankan	Since project initiation	Architectural design and supervision of construction works
	Project Structural Engineer	Total 13 years in construction consultancy. 7 years up-to-date at semi-government consultancy organisation of Project B and rest of the 6 years at private sector	Sri Lankan	Since project initiation	Structural design works
Contractor	Senior Operations Engineer	Total 18 years in construction works. All years up-to-date in the private contractor organisation of Project C.	Sri Lankan	Since beginning of construction stage	Project coordination with head-office and contract administration works
	Operations Engineer	Total 15 years in construction works. All years up-to-date in the private contractor organisation of Project C	Sri Lankan	Since beginning of construction stage	Planning and execution of construction works
	Assistant Operations Engineer	Total 10 years in construction works. All years up-to-date in the private contractor organisation of Project C	Sri Lankan	Since beginning of construction stage	Physical execution of civil construction works
Client	Additional Secretary to the Commission	33 years of service in general administration in public sector at Client organisation of Project C	Sri Lankan	Since project initiation	Project supervision, providing instructions to Consultant and Client's approvals
	Chief Accountant	Total 14 years of service in public sector. 6 years up-to-date at the Client organisation of Project C	Sri Lankan	Since project initiation	Consultant and contractor selection and making interim payments
	Public Management Assistant	10 years of experience in procurement works at public sector and 4 years up to date at Client organisation of Project C	Sri Lankan	Since project initiation	Assist project documentation and liaising with local authorities

Meeting observations and other observations - Attended the 26th and 27th progress review meetings held at Site office. Regional Chief Engineer (Zone 1 - Construction) chaired all progress review meetings, and minutes were taken by the Resident Engineer. A formal set up was there at the meeting. All the interviewees were available on all two days. Other observations included two site visits on the days researcher attended the two progress review meetings and visitation of the organisations of Contractor, Consultant and Client.

Documentation - Documentation included meeting minutes of 25th and 28th meetings, construction contract documents, consultancy contract document, organisation charts and correspondents (where necessary).

8.4 Overview of responses to internal integration and external adaptation problems

The basic assumptions identified in the construction project culture of Project C (Described in Sub Section 8.5, Sub Section 8.6 and Sub Section 8.7) were derived out of the responses of the project for the internal integration and external adaptation problems, which were faced during project execution. Details of such responses are described as follows:

Mission, Goals, Strategy – The Client of Project C as a powerful commission in Sri Lanka, they had required their head office building done to represent the grand appearance of a building from British colonial era in Sri Lanka. They believed this building would become the next most important public sector building after the parliament building of Sri Lanka. Thus, during design stage, design team had been focused on bringing in such a higher building quality requirement within the limited budget of the Client. However, during construction stage, Client was mostly behind timely completion of the building, since they were currently located in a building rented in Colombo urban area, paying a very high rent.

Means of accomplishing goals – During the case study was carried out, the project was at the stage of finishing works and Contractor had remaining 6 months of the

initially agreed contract duration for project completion. Piling stage of the building had consumed one year out of the contract duration due to an issue with the Sub-Contractor did piling works, which had delayed the set time target for piling works from 5 months. However, Contractor had overcome this delay during concrete structural works of the building. Project team had a concern that the remaining 6 months would not be adequate for the completion of all services installation and remaining finishing works and would require a time extension. Contractor complains such delay would result in only due to the prevailing delay in design details from the Consultant, which had occurred due to lack of design staff at the consultancy organisation. Accordingly, Client was pushing behind the Contractor and Consultant by holding progress review meetings expecting for a timely completion of the project.

Measuring performance and corrections – All Client's representatives were laymen, thus they were heavily depended on Contractor and Consultant for technical advice on project progress. Progress Review Meetings were held bi-weekly and whenever there was any urgent requirement for decision making, Client had always called upon special meetings with the project team. The Client's Representative in charge of monitoring the project progress was the Additional Secretory to the Commission, who paid weekly visits to the construction site to check the progress.

Common language and concepts – Project correspondents were exchanged in the medium of English. Client had previous working history with the same Contractor in one of the building maintenance works of the building they were currently locating. Contractor had appointed the majority of their senior project staff from the previous project to work on Project C.

Group boundaries – Introduction of new members to the Client happened during progress review meetings. Contractor and consultant had the opportunity of meeting new members at the construction site or during meetings. Team included female member: Resident Engineer and Project Design Engineer from Consultant, Project Quantity Surveyor from Contractor and Chief Accountant from Client.

Power, status and intimacy – Regional Chief Engineer (Zone 1 - Construction) was into project management, trying his best to lead and coordinate the project participants. He chaired the progress review meetings with the Contractor. Consultant led the project team, since the Client was a layman.

Rewards and punishments – Rewards were not popular within the project team. Even verbal appreciations were rare. Punishments in terms of verbal expression of dissatisfactions were very popular with the Client and Consultant. In addition, lapses and dissatisfactions were communicated through letters too.

Ideology – Several design and construction variations had come up due to unforeseen situations and conditions during design development. Accordingly Consultant had to be vigilant over the project cost, which had resulted in reducing many frills in the building design, resulting the dissatisfaction of the Project Architect. Since most of the services had not been designed by the time of tendering, most of the cost of services had been included as provisional sums in the bill of quantities. Thus team was under pressure that these items would result in time overruns with design efforts and cost overruns due to price uncertainty.

8.5 Basic assumptions of contractor's sub-cultural group of Project C

The most common underlying basic assumptions of Contractor's sub-cultural group of Project C were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Contractor's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Contractor's sub-cultural group. The basic assumptions included the Contractor's powerful own basic assumptions (The Contractor's own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Contractor's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive the basic assumptions. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the

features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge an basic assumption. A code was given for each pattern of basic assumptions, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumptions. For example; "Cont C 1 01" for the first pattern of basic assumptions of Contractor's of Project C.

Basic Assumptions of Project C are graphically presented in Figure 8.4. Patterns of basic assumptions together with assumptions of the Consultant are summarised in Table 8.2.

Cont C 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions on nature of human relationship of Contractor of Project C could be determined using three different perspectives: the best authority system believed by the Contractor, the best way to organise society as believed by the Contractor and the correct way for people to relate to each other to distribute power and affection.

With regard to the best authority system, Contractor held the pattern of basic assumptions that '**level of authority was critical in decision making (Cont C 1 01)**' (refer Annexure 5 – C1.1.1 for case evidences) and '**a powerful project manager was essential for a construction project (Cont C 1 02)**' (refer Annexure 5 – C1.1.1 for case evidences). They had realised that the level of authority delegated to the full time site staff such as the Resident Engineer of Consultant was very less that they referred all matters to head office or Regional Chief Engineer (Zone 1 - Construction) to take decisions. This slow decision making of Consultant had affected the speed of work of the Contractor. Worsening this, Contractor had noted that the Regional Chief Engineer (Zone 1 - Construction), who was supposed to be the Project Manager to the team was also struggling to make quick decisions. Within the matrix project organisational structure of the Consultant, Regional Chief Engineer (Zone 1 - Construction) struggled to coordinate other design staff with lack of authority.

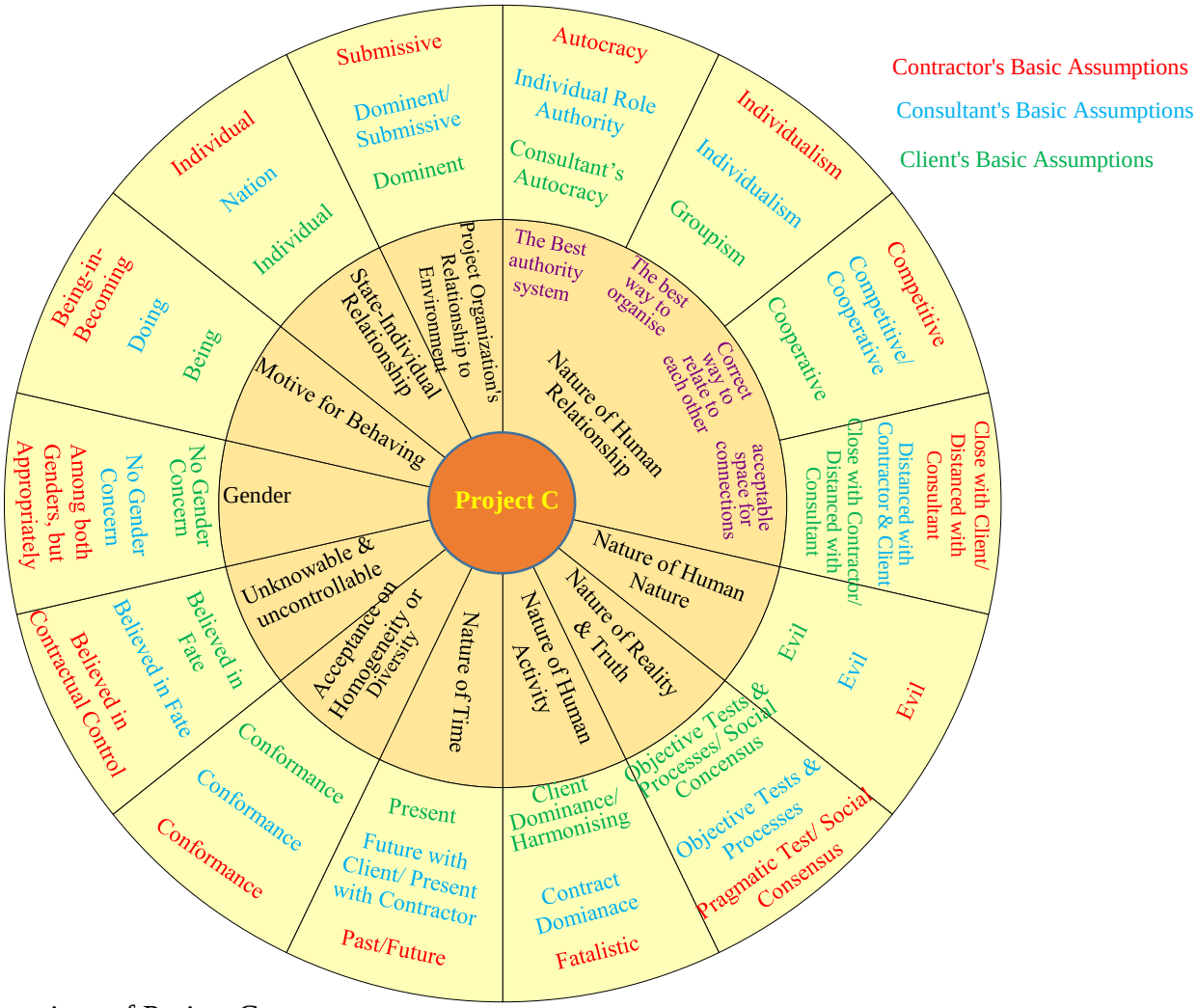


Figure 8.4: Basic Assumptions of Project C

Table 8.2: Basic assumptions of contractor sub-cultural group of Project C

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Contractor's Own World View	Contractor's View on Dominant World Views of Consultant	Contractor's View on Dominant World Views of Client
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Level of authority was critical in decision making (Cont C 1 01) 1.2 A powerful project manager was essential for a construction project (Cont C 1 02)	Autocratic		
	A2 - What was the best way to organize project society?	1.3 Design and quality were Consultant's responsibility (Cont C 1 03) 1.4 Consultant lacked integration among different designers (Cont C 1 04)	Individualism	Individualism	
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont C 1 05)	Competitive		
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.6 Close connections with Client was important, but not acceptable in project context (Cont C 1 06) 1.7 Maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 1 07)	Close with Client/ Distanced with Consultant		

2. The nature of human nature	A4 - What was the nature of human nature?	2.1 Rare appreciations and only constant highlighting of mistakes were available within the team (Cont C 2 01) 2.2 Good to have a consultant as a whistle blower (Cont C 2 02)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Level of experience was critical in decision making (Cont C 3 01) 3.2 Consultant was impractical in their decision making (Cont C 3 02) 3.3 Discussions gave results (Cont C 3 03)	Pragmatic Test/Social Consensus	Objective Tests and Processes	
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 The correct way for Contractor and Consultant to behave was being reactive, not proactive (Cont C 4 01) 4.2 Consultant was the most powerful in the project team (Cont C 4 02) 4.3 Contractor was placed with the least power in the project team (Cont C 4 03)	Fatalistic	Consultant Dominance	Client and Consultant Dominance
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont C 1 07) 5.2 Previous work history was advantages (Cont C 5 02)	Future/Past		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be	6.1 Not innovation, but conformance was rewarding in the construction project (Cont C 6 01)	Conformance		

	encouraged to innovate or conform?	6.2 Formalities should be conformed to the procurement method (Cont C 6 02)			
7. Unknowable and uncontrollable	A10 - Did the Contractor tend to believe in fate/uncontrollability?	7.1 Ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont C 7 01) 7.2 formal instructions/approvals in black and white would protect the contractual rights of the Contractor (Cont C 7 02)	Believed in Contractual Control		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 Attitudes of females mattered in assigning roles and responsibilities (Cont C 8 01)	Among Both Genders, but Appropriately		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Anything should be done if contractually entitled for a payment and time (Cont C 9 01) 9.2 Continuous improvement was a necessity (Cont C 9 02) 9.3 Maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 5 01)	Being-in-Becoming		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 5 01)	Individual		
11. The project organization's relationship to its environment	A14 - Did the project organization perceive itself to be dominant, submissive, harmonizing or searching out a niche?	11.1 Continuous improvement was a necessity (Cont C 9 02)	Submissive		

They complained that due to the short organisational structure of the Consultant, there was no accessible senior staff member to refer a matter if Regional Chief Engineer (Zone 1 - Construction) was not available. Contractor looked for more dedication and authority for Consultant's representatives. These indicated that the Contractor held the basic assumption of 'Autocracy' as the best authority system for a construction project.

Contractor held the basic assumption of 'individualism' as the best way to organise the society. This was demonstrated by the pattern of basic assumptions they held '**design and quality were Consultant's responsibility (Cont C 1 03)**' (refer Annexure 5 – C1.1.3 for case evidences). The project team assigned by the Contractor for Project C had previous working experience in contracts undertaken through design and build contracts only, where both the design and construction responsibilities lied with the Contractor. However, Project C was undertaken through traditional method, where they were held only with the construction responsibility. Thus, they always attempted to compare the two different methods of procurement and stick to their scope of responsibility in the Contract. Contractor believed that the party who did the design had already determined the quality standards for the construction, for which they had no liability.

Accordingly, since design responsibility was with the Client and it was the Consultant who did the design on behalf of the Client, Consultant was held responsible for both the design and the quality of the project. They could not believe quality should be achieved as a team effort. Contractor expressively limited their role and responsibilities within the project organisation as construction, holding individualistic beliefs. In addition, Contractor assumed that Consultant also holding 'individualistic' assumptions within their own team of consultant's personnel. This was demonstrated through their pattern of basic assumptions of '**Consultant lacked integration among different designers (Cont C 1 04)**' (refer Annexure 5 – C1.1.4 for case evidences). Contractor indicated that they have happened to waste their own time looking into design integration issues, due to no proper coordination that had happened at the design office among architectural, structural and mechanical design staff. They have

identified that each designer trying to perform his/her own role in isolation, creating trouble to the Contractor.

With regard to the correct way for people to relate to each other to distribute power and affection, Contractor of Project C held the basic assumption of 'competition' as the correct way. This was demonstrated the pattern of basic assumptions '**Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont C 1 05)**' (refer Annexure 5 – C1.1.5 for case evidences). It was observed that Contractor was tactfully highlighting the mistakes of the Consultant, whenever Consultant highlighted any of the lapses of the Contractor. Consultant was more aggressive in this compared to the Contractor. Contractor constantly worried over a delay in piling works occurred due to a failure of selecting a proper sub-contractor with adequate resources for the job. It was because, this incident had weakened the Contractor's position within the team due to such major lapse.

In addition to the three perspectives, another perspective could be identified for the determination of the nature of human relationship. This was about looking into what was the acceptable space for cognitive, emotional and behavioural connection. The acceptable space could be either close or distanced. It was observed that Contractor was holding close connections with Client, but not with Consultant. They held the pattern of basic assumptions '**close connections with Client was important, but not acceptable in project context (Cont C 1 06)**' (refer Annexure 5 – C1.1.6 for case evidences), indicating close connections with Client and distanced connections with Consultant. Contractor's previous work relationships with the same Client had contributed much to this close relationship. Contractor was comfortable to convey any lapse of the Consultant to Client informally, so as to make Client alert on project affairs and for their necessary actions. However, Consultant expressively stated that they never disturbed the formal contractual path of communication from Contractor to Consultant or attempted to by-pass Consultant in communication to Client. In addition, Consultant held another pattern of basic assumptions, '**maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont C 1 07)**' (refer Annexure 5 – C1.1.7 for case evidences). As this Contractor was more

interested in design and build type of contracts with design capacity at organisational level, maintaining such close connections with Client would have been identified as more advantageous for the Contractor to obtain future projects than with the Consultant.

Cont C 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions on nature of human nature of Contractor looked into, whether they assumed basically humans as good, neutral, or evil, or whether human nature was perfectible or fixed. The pattern of basic assumptions of '**rare appreciations and only constant highlighting of mistakes were available within the team (Cont C 2 01)**' (refer Annexure 5 – C1.2.1 for case evidences) indicated the Contractor's belief on basic assumption of the team members as human nature as 'evil'. No any appreciation noted during observation of any of the progress review meetings or in any of the meeting minutes reviewed. Only project issues were discussed during meetings. Contractor had not received any written or verbal appreciation for the work. However, they had received letters of dissatisfaction from Client pertaining to the delay in piling works during the initial stage of the project. Further, Client and Consultant had openly discussed about the lapses of the Contractor during meetings. In addition, Contractor held another pattern of basic assumptions that '**good to have a consultant as a whistle blower (Cont C 2 02)**' (refer Annexure 5 – C1.2.2 for case evidences), which confirmed their own world view of human nature as 'evil'. Since the team assigned for Project C from the Contractor had previously worked for design and build projects only, where involvement of the consultant was very limited, they felt having a consultant to overlook their work thoroughly as in traditional procurement method was better comparatively. It was because, Contractor happened to be more alert on the quality of work and technical aspects in traditional method due to Consultant's involvement.

Cont C 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions on nature of reality and truth looked into how Contractor believed as the truth was ultimately determined both in the physical and social world:

by pragmatic test, reliance on wisdom, or social consensus. It was evident that the Contractor of Project C mostly 'pragmatic test' for determining what was true and what was not. This could be justified by the pattern of basic assumptions '**level of experience was critical in decision making (Cont C 3 01)**' (refer Annexure 5 – C1.3.1 for case evidences). Contractor witnessed that the majority of site staff from Consultant lacking experience and it had hindered fast and accurate decision making. They believed having a thorough experience on construction aspects was a must to work, otherwise impractical decisions were made within the process. They highlighted an incident, where initiation of pile socketing was held by the Resident Engineer due to inexperience of the piling process and ultimately affecting the practical execution of works. Further, Contractor assumed that Consultant was not believing in the subjective means of determining reality and truth such as; pragmatic test, reliance on wisdom, or social consensus with personal or social construct. Instead, Consultant preferred 'objective tests and processes' in determination of truth in social and physical world, which was not practical within the construction process. Accordingly, Contractor held a pattern of basic assumptions that '**Consultant was impractical in their decision making (Cont C 3 02)**' (refer Annexure 5 – C1.3.2 for case evidences). It was evident during a progress review meeting observation, Senior Operations Engineer was arguing with the Director General of the consultancy organisation over the practicality of asking for a completion date for the construction of a concrete ramp, for which they had not received a design yet. Contractor further held the pattern of basic assumptions that '**discussions gave results (Cont C 3 03)**' (refer Annexure 5 – C1.3.3 for case evidences), which indicated their concern on 'social consensus' on determining what was true and what was not. They always preferred making decisions through discussion with the Consultant and Client. This assumption was so strong to the extent that Contractor inevitably followed the instructions of the Consultant if they could not arrange a discussion with them to sort out any problems. Thus in summary, Contractor of Project C relied on pragmatic test and social consensus on determining the reality and truth and witnessed Consultant believing on objective tests and processes.

Cont C 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions on nature of human activity looked into what Contractor believed as the "correct" way for humans to behave: was it to be dominant, harmonizing, or passive. Contractor held the pattern of basic assumptions that '**the correct way for Contractor and Consultant to behave was being reactive, not proactive (Cont C 4 01)**' (refer Annexure 5 – C1.4.1 for case evidences), which indicated that Contractor believed on the "correct" way for humans to behave as being 'fatalistic'. Further, they believed Consultant too think the same. Both Contractor and Consultant were aware that the safety conditions at the site was not adequate. However, both of them did not reacted proactively on it. Similarly, both parties knew that delay in provision of design details could lead to a delay in services installation resulting a delay in project completion. However, Contractor believed that Consultant did not show any proactive response to sort out the issue. Further, Contractor was not try to steadily adhere to the plans they prepared for work activities. They had the assumption that there could be a high probability of not adhering to the plan they prepared at the first instance. They never believed on daily monitoring of work and had some consideration on weekly monitoring the progress. As realised by the Contractor, Consultant was heavily depending on the interim payment application submitted by the Contractor to check the progress of work. All these pointed out the fatalistic belief of the Contractor about themselves and about the Consultant.

In addition, Contractor held a basic assumption about the world view of Client and Contractor about 'dominance' as the correct way for humans to behave. This was indicated through the pattern of basic assumptions; '**Consultant was the most powerful in the project team (Cont C 4 02)**' (refer Annexure 5 – C1.4.2 for case evidences) and '**Contractor was placed with the least power in the project team (Cont C 4 03)**' (refer Annexure 5 – C1.4.3 for case evidences). Contractor believed that Consultant as the main decision maker was the most powerful within the project team. Even Client in Project C was a layman and was totally depending on Consultant for technical decision making. Moreover, it was observed during the progress review meeting observations that Consultant was more aggressive compared to Consultant.

As indicated by the Contractor, they were made responsible ultimately for the project outcomes, even with many lapses of the Consultant. As indicated by the Senior Operations Engineer, Contractor being an established firm within the industry, they felt the pressure and discrimination they were getting in Project C was a little less. Accordingly, Contractor believed that other team members regarded Client and Consultant dominance as the correct way for humans to behave.

Cont C 5 - Basic Assumptions on Nature of Time

The basic assumptions on nature of time units looked into what kinds of time units were most relevant for the conduct of daily affairs by the Contractor. Contractor held the pattern of basic assumptions that '**maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 1 07)**' (refer Annexure 5 – C1.5.1 for case evidences), considering 'future' as a more relevant time unit to conduct daily affairs. In addition, Contractor held another pattern of basic assumptions that '**previous work history was advantages (Cont C 5 02)**' (refer Annexure 5 – C1.5.2 for case evidences), which indicated that they further considered 'past' also as significant in decision making. Thus, it was a mix of 'past and future' was regarded as the most relevant in terms of decision making for the Contractor in Project C.

Contractor considered long term relationships with Clients and Contractors as the competitive advantage of their business organisation. They had received majority of projects through relationships with Clients and Consultants. They had carried out small scale renovation projects for clients apart from the main contract spending their own money, in order to maintain continuous relationships. This assumption heavily reflected in their daily affairs by Contractor designing missing small scale design details and obtaining Consultant's approval for the same to speed up the work, rather than waiting for the Consultant. In addition, Contractor was never portrayed aggressive with the Consultant or the Client during meetings and tried their best to be cordial in their conduct. Even a refusal of a proposal from Client or Consultant was always with ample justifications. Thus, Contractor held the basic assumption of 'future' as the most relevant time unit.

With regard to the past as a relevant time unit, Contractor had previous work history with the same Client in a different project. Thus, they had appointed the same senior staff from the previous project for Project C. This was about considering the ease of working with knowing personnel and to pass the advantages of that in terms of better service provisions to the Client. Thus, Contractor consider 'past' also as relevant in their decision making.

Cont C 6 - Basic Assumptions on Acceptance of Homogeneity and Diversity

The basic assumptions on nature of time units looked into whether Contractor believed the project team was best off if it was highly diverse or if it was highly homogeneous and should the individuals in the project team be encouraged to innovate or conform. No evidences were available on any consideration of Contractor about the project team was best off to being highly diverse or homogeneous. This could be because, construction project team was inevitably a diverse team with different professional, which they had happened accept beyond any of their control. However, the patterns of basic assumptions '**not innovation, but conformance was rewarding in the construction project (Cont C 6 01)**' (refer Annexure 5 – C1.6.1 for case evidences), '**formalities should be conformed to the procurement method (Cont C 6 02)**' (refer Annexure 5 – C1.6.2 for case evidences) giving notions of 'conformance' as best off in a construction project. Contractor strongly believed that they would not get paid if they work differently to the given specifications and drawings. Operations Engineer indicated an incident, where they did not get paid for a different construction method for a staircase, which was much better than the specified method, was not get paid. Contractor believed that Consultant being a government organisation and the project itself being government, Consultant strictly adhered to the approved methods and specifications. Further, Contractor indicated that they could not attempt for innovations considering the time constraints too. In addition, Contractor was adhering to the formalities of having every instruction in writing and more concern on quality since they were working for a construction contract procured under traditional method. According to their explanations, comparatively, they had not been very much concerned on instructions and quality requirements, when they were working for

projects procured under design and build procurement method. Thus, it was the 'conformance' that contractor believed as rewarding in a construction project.

Cont C 7 - Basic Assumptions on Unknowable and Uncontrollable

The basic assumption on unknowable and uncontrollable regarded whether Contractor believed in fate or not. The pattern of basic assumptions of Contractor that '**ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont C 7 01)**' (refer Annexure 5 – C1.7.1 for case evidences) indicated the Contractor's belief on uncontrollability. They had realised that even though Consultant had lapses such as delay in instructions and details, still blame for any delay would come to them. Thus, making Contractor responsible for project comes was mostly out of their control. Accordingly, Contractor tried their best to reduce such risk by acting upon the pattern of basic assumptions '**formal instructions/approvals in black and white would protect the contractual rights of the Contractor (Cont C 7 02)**' (refer Annexure 5 – C1.7.2 for case evidences). They be careful to have all verbal instructions converted to the written form, at least as a mean of log note. They strongly believed that design was the Consultant's responsibility and Contractor was only there to construct accordingly. They had realised that Consultant was trying to pass some design responsibilities to them. Therefore, as a shield, they always used communications done in written form or only during progress review meetings, which was recorded in meeting minutes. All this was due to their belief on 'contractual control' upon which they can rely on within the uncertain project environment.

Cont C 8 - Basic Assumptions on Gender

The basic assumption on gender looked into the Contractor's belief on how society should distribute roles, power and responsibilities between the genders: among males only, among females only or both. Contractor of Project C held the pattern of basic assumptions that '**attitudes of females mattered in assigning roles and responsibilities (Cont C 8 01)**' (refer Annexure 5 – C1.8.1 for case evidences). Contractor believed that females were appropriate for office based documentation related works mostly since working at construction sites might be unsafe for them at

times. However, they strongly believed that behaviour of females were affected by their attitudes, where there could be females who could outperform males at site works too. Thus, the basic assumption of Contractor of project C was that roles, power and responsibilities should be distributed among both genders, but appropriately.

Cont C 9 - Basic Assumptions on Motive for Behaving

The basic assumption on motive for behaving regarded Contractor's belief on what should be the motive for behaving: doing, being or being-in-becoming. Contractor of Project C held the pattern of basic assumptions that '**anything should be done if contractually entitled for a payment and time (Cont C 9 01)**' (refer Annexure 5 – C1.9.1 for case evidences), which indicated they held patterns of basic assumptions on 'doing'. They had been more vigilante to carry out Work that was specified only in the Contract. Further, as indicated by the Operations Engineer, Consultant had been avoided paying them the cost, when they changed the design of the staircase in a better way with good faith. These experiences had made them holding the aforementioned assumption to a great extent. However, Contractor had always in a battle between with this assumption and the pattern of basic assumptions '**maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 5 01)**' (refer Annexure 5 – C1.5.1 for case evidences). They were ready to hold on to that assumption to the extent by doing any other additional renovation works or new constructions at Client's and Consultant's organisations freely, without claiming any cost, if they were on small scale. Contractor had acted accordingly with their previous project too, which had improved their relationships with the Clients and Consultants. Thus, Contractor's motive for behaving was in a dilemma between 'doing' and 'being'. However, Contractor strongly held the pattern of basic assumptions of '**continuous improvement was a necessity (Cont C 9 02)**' (refer Annexure 5 – C1.9.2 for case evidences), which was more towards 'being-in-becoming'. Unlike the Consultant, who always believed that they were having the right systems and processes set in, Contractor always held the assumption, they were lacking and needed improvement. They indicated that they were required to improve their systems of safety, procurement and technology to par with industry competitors. They objectively analysed and

suggested about avenues they required improvement, which supported towards their assumption on 'being-in-becoming'. Thus, in summary, motive for behaving of Contractor of Project C was more towards 'being-in-becoming'.

Cont C 10 - Basic Assumptions on State-Individual Relationship

The basic assumption on state individual relationship looked into the belief of Contractor, whether their precedent right and responsibility be accorded the nation or the individual. Being a private organisation with profit motive, it was evident that Contractor solely acted on developing their relationship with Client and Consultant looking for future projects holding the pattern of basic assumptions, '**maintaining long-term relationships with the Client and Consultant was an organisational concern (Cont C 5 01)**' (refer Annexure 5 – C1.5.1 for case evidences). They were ready to spend money today for extra renovation works of Client and Consultant, expecting for potential future projects. No evidences were available within the case that indicated any consideration on 'nation' though they were involved in a public sector project. Contractor was solely into satisfying the Client and Consultant demonstrating precedent right and responsibility be accorded the 'individual'.

Cont C 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumption on project organisation's relationship to its environment considered the belief of Contractor, whether project organization perceived itself to be dominant, submissive, harmonising or searching out a niche. Holding the pattern of basic assumptions, '**continuous improvement was a necessity (Cont C 9 02)**' (refer Annexure 5 – C1.9.1 for case evidences), Contractor demonstrated that they perceived themselves to be submissive to the environment. They felt they required to be improving themselves to remain successful in the construction industry.

8.6 Basic assumptions of consultant's sub-cultural group of Project C

The most common underlying basic assumptions of Consultant's sub-cultural group of Project C were identified and categorised by a process of constant comparison,

coding, and theme building. Second level of coding was used to derive the ‘patterns of basic assumptions’ of the Consultant’s sub-cultural group and the third level of coding was used to derive ‘basic assumptions’ of the Consultant’s sub-cultural group. The basic assumptions included the Consultant’s powerful own basic assumptions (The Consultant’s own worldview) and powerful existing basic assumptions of other team members, which may/may not be preferred by the Contractor (The Consultant’s belief on other team members’ worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive the basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge an basic assumption. A code was given for each pattern of basic assumptions, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumptions. For example; “Cnsl C 1 01” for the first pattern of basic assumptions of Consultant’s of Project C. Patterns basic assumptions together with basic assumptions of the Consultant are summarised in Table 8.3.

Cnsl C 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions of the Consultant about the nature of human relationship could be derived using three perspectives: (1) what was considered as the best authority system; (2) what was considered the best way to organise society, and (3) what was regarded as the "correct" way for people to relate to each other and to distribute power and affection.

Table 8.3: Basic assumptions of consultant sub-cultural group of Project C

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Consultant's Own World View	Consultant's View on Dominant World Views of Contractor	Consultant's View on Dominant World Views of Client
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Client allowed the Consultant to work with full authority without monitoring (Cnsl C 1 01) 1.2 Perfect performances of individual roles would bring success in project performances (Cnsl C 1 02)	Individual Role Authority		
	A2 - What was the best way to organize project society?	1.3 Perfect performances of individual roles would bring success in project performances (Cnsl C 1 02) 1.4 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl C 1 03)	Individualism		
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Client depended on Consultant for quality (Cnsl C 1 04) 1.6 Client was the most respectable person in the team (Cnsl C 1 05) 1.7 Formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl C 1 06)	Competitive/ Cooperative	Competitive	Cooperative

		1.8 Contractor was placed with the least power in the project team (Cnsl C 1 07) 1.9 Contractor attempted to pass all blames and responsibilities to the Consultant (Cnsl C 1 08) 1.10 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl C 1 09)			
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	1.11 Close connections with the Client and Contractor were not essential (Cnsl C 1 10)	Distanced with Client and Contractor		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 Contractor only believed in formal written methods of communication (Cnsl C 2 01) 2.2 Contractor targeted for additional claims in every situation (Cnsl C 2 02) 2.3 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl C 2 03)	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Proper detail documentation was a strength was for the consultant (Cnsl C 3 01)	Objective Tests and Processes		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Controls in a construction project were the contracts (Cnsl C 4 01)	Contract dominance		

5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Long term relationship with the Client was more important than with the Contractor (Cnsl C 5 01)	Future with Client, Present with Contractor		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl C 6 01)	Conformance		
7. Unknowable and uncontrollable	A10 - Did the Consultant tend to believe in fate/uncontrollability?	7.1 Decisions made by public sector clients were uncertain (Cnsl C 7 01) 7.2 Consultant was responsible for the ultimate time, cost and quality of the project (Cnsl C 7 02)	Believed in fate		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 All genders were treated equally in construction projects (Cnsl C 8 01)	No Gender Concern		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Perfect performances of individual roles would bring success in project performances (Cnsl C 1 02)	Doing		

		9.2 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl C 1 03)			
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl C 10 01)	Nation		
11. The organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	11.1 Government clients -received concessions in legal aspects (Cnsl C 11 01) 11.2 Contractor's organisational management system was directly affecting on project matters (Cnsl C 11 02)	Dominant/Sub missive		

With regard to the best authority system, Consultant of Project C held the pattern of basic assumptions that '**Client allowed the Consultant to work with full authority without monitoring (Cnsl C 1 01)**' (refer Annexure 5 – C2.1.1 for case evidences). Client had no knowledge to monitor the Consultant. They completely depended on the Consultant for all decisions related to Project C. Client's normal behaviour included informing the Consultant their requirement with a date they expected the output and check on achieving the mile stone. Consultant believed that Client had not identified the requirement of monitoring the Consultant's work. Further, Consultant's failures were absorbed by the Client without any chaos.

Consultant supposed that Client held the idea of appointing a consultant was to monitor the Contractor's work and get the construction output done for them. They trusted the Consultant as would be doing the best possible to achieve the objectives of the Client. Thus, allowed the Consultant to work with full authority. However, Consultant was not believing on 'Consultant's Autocracy', rather believed in 'individual role authority' as the best authority system within the project context. This belief was supported by their pattern of basic assumptions, '**perfect performances of individual roles would bring success in project performances (Cnsl C 1 02)**' (refer Annexure 5 – C2.1.2 for case evidences). Although a Project Manager had been appointed for Project C by the designation Regional Chief Engineer (Zone 1 – Construction), it was not a fulltime appointment. Further, this Project Manager was mostly doing a coordination role only. As indicated by the Project Structural, they had the full authority to take decisions and do the design within their role. It was apparent during the interview that Regional Chief Engineer (Zone 1 – Construction) had some criticism over too much of moulding works in the architectural design of the Project C, however, did not intend to convey it to the Project Architect considering those moulding works were a decision taken within the role of architect.

With regard to the second perspective for determining the nature of human relationship, Consultant of Project C held the sbasic assumption of 'individualism' to be the best way to organise project society. This could be justified through the patterns of basic assumptions; '**perfect performances of individual roles would bring**

success in project performances (Cnsl C 1 02)' (refer Annexure 5 – C2.1.2 for case evidences) and '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl C 1 03)**' (refer Annexure 5 – C2.1.3 for case evidences). Although all professionals of Consultant were from the same organisation, they had carried out their individual role in isolation. Regional Chief Engineer (Zone 1 – Construction) had concerns on Project Architect's design features such as moulding works but, he was reluctant to express it to the Project Architect considering it not within his role of job performance. In addition, majority of design staff were not full time staff of the Project C. More importantly, Regional Chief Engineer (Zone 1 – Construction), who was supposed to be the Project Manager of Project C was not a full time project staff too. They expressed that government consultancy organisations could not afford to have many full time project dedicated staff due to high number of projects being assigned to a given such organisation. However, they believed that they had capacity to work in parallel projects and it would be a waste working for one project too. Accordingly, they tended to justify lack of dedication to Project C works. Thus, it was 'individualism' that the assumed to be the best way to organise within the project team.

With regard to the "correct" way for people to relate to each other and to distribute power and affection, Contractor assumed Client was trying to be more cooperative with them, holding the pattern of basic assumptions, '**Client depended on Consultant for quality (Cnsl C 1 04)**' (refer Annexure 5 – C2.1.4 for case evidences). Consultant believed that the project team was Client centred and tried their best to satisfy Client. Everybody wanted to listen to Client, as everybody was trying to fulfil Client's requirements. As a layman Client did not have any idea about how they could monitor the quality of the project. Every letter Client sent had indicated only about time and cost only. Accordingly, Client expected Consultant to look after the quality as they appointed Consultant for the same. Thus, Consultants work towards delivering the quality to their best, taking it as their utmost responsibility. Moreover, the thoughts on corporation was strengthened by the Consultant's belief that Client became the most respectable person within the project team since everybody was listening to Client's requirements and working towards fulfilling those. Thus Client held the pattern of

basic assumptions '**Client was the most respectable person in the team (Cnsl C 1 05)**' (refer Annexure 5 – C2.1.5 for case evidences) embracing basic assumptions towards cooperation. In addition, Consultant understood the importance of formal methods of communication. However, they had realised the obstacles of relaying completely on formal methods and the importance of finding out ways to maintain informal communication paths to make fast and timely decisions. This was highlighted by the pattern of basic assumptions '**formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl C 1 06)**' (refer Annexure 5 – C2.1.6 for case evidences).

Although Consultant had cooperative thoughts, and viewed Client was also towards cooperation to distribute power and affection, Consultant held several patterns of basic assumptions demonstrating a strong 'competitive' nature. Two of the patterns of basic assumptions were; '**Contractor was placed with the least power in the project team (Cnsl C 1 07)**' (refer Annexure 5 – C2.1.7 for case evidences) and '**Contractor attempted to pass all blames and responsibilities to the Consultant (Cnsl C 1 08)**' (refer Annexure 5 – C2.1.8 for case evidences), which indicated their competitive assumptions specifically relating to Contractor. Consultant assumed they were assigned with high powers and authority to monitor and control the Contractor, otherwise Contractor would misbehave. According to the Contractor's opinion, this power distance was created with Contractor's lapses and misinterpretations. If Contractor was maintaining high standards, such power distances could be lowered or mitigated. Consultant further complained that Contractor always looked for means of passing the risks of project activities to the Consultant. For example, they indicated an incident, where Contractor refused to appoint an engineer for quality assurance since Consultant had missed such requirement in the initial contract. Further, the 'competitive' nature of the Consultant was further strengthened by the pattern of basic assumptions '**Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl C 1 09)**' (refer Annexure 5 – C2.1.9 for case evidences). Consultant often attempted to highlight the mistakes of the Contractor. Sometimes it appeared as a cold fight between the two. Both were highlighting

mistakes of each other during meetings defending themselves. Consultant was too aggressive compared to the Contractor. The interviewees of the Consultants expressively indicated their displeasure over getting their lapses highlighted to the Contractor. Thus, in summary, Consultant held on a mix of 'cooperative' and 'competitive' assumptions, while they believed Client was having a 'cooperative' nature towards them.

The fourth perspective identified related to the nature of human relationship with basic assumptions of the Consultant was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Consultant held a pattern of basic assumptions as '**Close connections with the Client and Contractor were not essential (Cnsl C 1 10)**' (refer Annexure 5 – C2.1.10 for case evidences) indicating distanced connections with both the Contractor and Client. They were requiring to provide the righteous service in whatever the role they worked in and they never consider close relationships are essential to provide such service. They held more individualistic assumptions that prevented them from admiring close relationships with other team members.

Cnsl C 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions of the Consultant about the nature of human nature looked into the Consultant's assumptions whether humans were basically good, neutral, or evil, or whether human nature was perfectible or fixed. As per the patterns of basic assumptions of '**Contractor only believed in formal written methods of communication (Cnsl C 2 01)**' (refer Annexure 5 – C2.2.1 for case evidences), '**Contractor targeted for additional claims in every situation (Cnsl C 2 02)**' (refer Annexure 5 – C2.2.2 for case evidences) and '**rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl C 2 03)**' (refer Annexure 5 – C2.2.3 for case evidences), Consultant believed that the nature of humans was 'evil' and Client and Contractor too held a similar assumption to them. Consultant had happened to issue all instructions in writing. They believed otherwise Contractor might not work, if they were not provided with a written evidence to claim the work done. It demonstrated a lack of trust between the

Consultant and the Client. Further, Consultant believed that Contractor was more vigilant over loopholes of the contract to apply for additional time and cost claims. Thus, Consultant had be careful with their work to avoid the same, assuming an evil nature of the Contractor. In addition, Consultant believed that none of the team members appreciated each other for the work done and only lapses were discussed and complained among the members. Consultant believed that Client as a government organisation regarded the Consultant's service as fulfilling a compulsory duty and not as a service for appreciation, because Consultant was also a government organisation.

Cnsl C 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions of the Consultant about the nature of reality and truth regarded how truth was ultimately determined both in the physical and social world: by pragmatic test, reliance on wisdom, or social consensus. Consultant did not believe in subjective means of determining what was true and what was not. They held the pattern of basic assumptions '**proper detail documentation was a strength was a strength for the consultant (Cnsl C 3 01)**' (refer Annexure 5 – C2.3.1 for case evidences), which indicated that they believed in 'objective tests and processes' in determining the truth in physical and social world. Consultant indicated how they faced difficulties within Project C due to lapses in proper documentation. For example, how they faced difficulty to demand the requirement of a quality assurance engineer from Contractor due to lack of proper contract conditions stated and how they found it difficult to control cost due to lapses in measured items of the bill of quantities.

Cnsl C 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions of the Consultant about the nature of human activity looked into the "correct" way for humans to behave, as regarded by the Consultant: to be dominant, harmonising, or fatalistic. Consultant held the pattern of basic assumptions that '**Controls in a construction project were the contracts (Cnsl C 4 01)**' (refer Annexure 5 – C2.4.1 for case evidences), which indicated the basic assumption of 'contract dominance' being the correct way to behave. Consultant believed that construction contract and the consultancy contract were the most effective ways for

aspects such as to push the Contractor to achieve project objectives and to set correct paths of communication to avoid confusion.

Cnsl C 5 - Basic Assumptions on Nature of Time

The basic assumptions of the Consultant about the nature of time regarded what was the most relevant time unit to conduct daily affairs of the Consultant. They held the pattern of basic assumptions that '**long term relationship with the Client was more important than with the Contractor (Cnsl C 5 01)**' (refer Annexure 5 – C2.5.1 for case evidences), which indicated that they considered the 'future' as the most relevant time unit with the Client for daily affairs. As a government consultancy organisation, since they had happened to heavily depend on public sector projects, continuing relationship with public sector clients were a major concern for their organisation.

Cnsl C 6 - Basic Assumptions on Acceptance of Homogeneity or Diversity

The basic assumptions of the Consultant about acceptance of homogeneity or diversity looked into the beliefs of Consultant, whether the team was best off if it was highly diverse or if it was highly homogeneous and was the individuals in the team encouraged to innovate or conform. No evidence was available to decide upon whether the team was best off it was highly diverse or homogeneous. It may be because, the construction project team was inevitably a diverse set up. However, Consultant held the pattern of basic assumptions that '**not innovation, only conformance was practiced in a public sector construction project (Cnsl C 6 01)**' (refer Annexure 5 – C2.6.1 for case evidences), which indicated that the team was encouraged to 'conform'. Limited budget in Government projects was identified as the main restriction for innovation. In addition, requirement to follow building construction standards and the nature of shared responsibility with tall structures for consultants within their government consultancy organisation were other factor restricting innovation. It was observed that Project Architect and the Regional Chief Engineer (Zone 1 – Construction) were in conflicting ideas about innovation. While Project Architect desired for frill works in the building, the latter expressed negatives about

those. Project Architect indicated innovation had become a restriction for architects due to the limited knowledge of structural design consultants in Sri Lankan context.

Cnsl C 7 - Basic Assumptions on Unknowable and Uncontrollable

The basic assumptions of the Consultant about the unknowable and uncontrollable regarded the extent of Consultant's belief on fate. The patterns of basic assumptions '**decisions made by public sector clients were uncertain (Cnsl C 7 01)**' (refer Annexure 5 – C2.7.1 for case evidences), '**Consultant was responsible for the ultimate time, cost and quality of the project (Cnsl C 7 02)**' (refer Annexure 5 – C2.7.2 for case evidences), indicated that Consultant happened to embrace uncertainties in the project, hence happened to believe in 'fate'. Change in the head of Client's representative was the major factor contributing to uncertainties in decision in public sector projects. This was because, change in the personal with the highest authority for the project would definitely bring in change in project requirements initially set. The same issue had occurred in Project C as well, with the change of Secretary to the Commission. The new Secretary had requested changes in space layouts and more importantly, had not shown much enthusiasm on following the initial building design concept on British colonial era. New secretary instructed to compromise the frill works from such a design concept for the budget requirements of the variations occurred in the building. This had contributed to much dissatisfaction of the Project Architect. In addition, Client being a layman and since Client had given full authority for the Consultant to make decisions on time, cost and quality of the project, Consultant had become responsible for the ultimate project outcomes. More importantly, Consultant believed that all blames for cost overruns in the project would definitely come to the consultant in public sector projects.

Cnsl C 8 - Basic Assumptions on Gender

The basic assumptions of the Consultant about gender considered how they believed society should be distributing roles, power and responsibility between the genders. The pattern of basic assumptions; '**all genders were treated equally in construction projects (Cnsl C 8 01)**' (refer Annexure 5 – C2.8.1 for case evidences) indicated that

Consultant believed that roles, power and responsibilities should be distributed equally among both genders, as there was no difference among genders and adequate knowledge was there to perform. No any difference on gender they had experienced within the design team specifically.

Cnsl C 9 - Basic Assumptions on Motive for Behaving

The basic assumptions of the Consultant on motive for behaving looked into what was the motive for the Consultant to behave: was it being, being-in-becoming, doing. The patterns of basic assumptions; '**perfect performances of individual roles would bring success in project performances (Cnsl C 1 02)**' (refer Annexure 5 – C2.1.2 for case evidences) and '**dedication to the project work was difficult with parallel projects at organisation level (Cnsl C 1 03)**' (refer Annexure 5 – C2.1.3 for case evidences) reflected that the Consultant of Project C was mostly into 'doing', i.e. to engage in a useful activity only. They were too busy working for parallel projects and they looked for means of performing their individual task to their best and finish the project. They never wanted to believe they were with any lapses. They believed they were doing only what was right since they assumed they were appointed to overlook, instruct and guide the work of Contractor. Thus, no assumptions on 'being' and 'being-in-becoming' were reflected from them.

Cnsl C 10 - Basic Assumptions on State-Individual Relationship

The basic assumptions of the Consultant on state individual relationship looked into whether the precedent right and responsibility of the Consultant should accord the nation or the individual. The pattern of basic assumptions '**satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl C 10 01)**' (refer Annexure 5 – C2.10.1 for case evidences) indicated that Consultant held the assumption of right and responsibility of the Consultant should accord the nation. As indicated by the Project Architect and Regional Chief Engineer (Zone 1 – Construction), they were not reluctant to speak against the Client's ideas if different from achieving the right quality of the project outcomes. They indicated that they always expressed the right recommendations in

writing to the Client either Client was not ready to accept those. Thus, it indicated that being engaged in a public sector project and being a public sector consultancy organisation, they strongly believed that they were working for the Government, not for an individual Client.

Cnsl C 11 - Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions of the Consultant on project organisation's relationship to its environment looked into whether the project organisation perceived itself to be dominant, submissive, harmonising or searching out a niche. The pattern of basic assumptions '**Government clients received concessions in legal aspects (Cnsl C 11 01)**' (refer Annexure 5 – C2.11.1 for case evidences) indicated that Consultant believed the project organisation being 'dominant' over its environment as being a public sector project. Client of Project C could overcome the restrictions on height for the new building pertaining to the site location, due to being a government project. As reflected from the Project Architect, they had done the design exceeding the permitted height, without any reluctance with pending approval, due to the certainty they had about obtaining the legal approval somehow. However, they had realized some 'submissiveness' with the pattern of basic assumptions '**Contractor's organisational management system was directly affecting on project matters (Cnsl C 11 02)**' (refer Annexure 5 – C2.11.2 for case evidences). Consultant believed that systems such as quality management should have developed within the organisational culture and difficult to expect the Contractor to maintain high standards only for this project.

8.7 Basic assumptions of client's sub-cultural group of Project C

The most common underlying basic assumptions of Client's sub-cultural group of Project C were identified and categorised by a process of constant comparison, coding, and theme building. Second level of coding was used to derive the 'patterns of basic assumptions' of the Client's sub-cultural group and the third level of coding was used to derive 'basic assumptions' of the Client's sub-cultural group. The basic assumptions included the Client's own powerful basic assumptions (The Client's own worldview)

and powerful existing basic assumptions of other team members, which may/may not be preferred by the Client (The Client's belief on other team members' worldview).

Categorisation of patterns of basic assumptions according to the cultural dimensions was done in order to derive basic assumption. However, there could be patterns of basic assumptions grouped under one cultural dimension, demonstrating the features of another cultural dimension too. This is because, patterns of basic assumptions as cognitions, could be operated giving combined effects to emerge a basic assumption. A code was given for each pattern of basic assumptions, providing a notation for Sub-Cultural Group, Project Name, Cultural Dimension Number, Number of Pattern of Basic Assumptions. For example; "Clnt C 1 01" for the first pattern of basic assumptions of Client's of Project C.

Patterns of basic assumptions together with basic assumptions of the Client are summarised in Table 8.4.

Clnt C 1 - Basic Assumptions on Nature of Human Relationship

The basic assumptions of the Client about the nature of human relationship could be derived using three perspectives by looking into: what Client believed as the best authority system; what Client considered as the best way to organise society and, what was the correct way for people to relate to each other, to distribute power and affection.

With regard to the best authority system, Client held the patterns of basic assumptions that '**Consultant had the legitimate control of the project (Clnt C 1 01)**' (refer Annexure 5 – C3.1.1 for case evidences), '**a strong project management was essential for project success (Clnt C 1 02)**' (refer Annexure 5 – C3.1.2 for case evidences) and '**the most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt C 1 03)**' (refer Annexure 5 – C3.1.3 for case evidences). These indicated that Client preferred 'consultant's autocracy' as the best authority system. Client believed that Consultant was powered through the contract to control and guide the Contractor towards better project outcomes, but never used it appropriately.

Table 8.4: Basic assumptions of client sub-cultural group of Project C

Cultural Dimension	Questions to be Answered	Patterns of Basic Assumptions	Basic Assumptions		
			Dominant Client's Own World View	Client's View on Dominant World Views of Contractor	Client's View on Dominant World Views of Consultant
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	1.1 Consultant had the legitimate control of the project (Clnt C 1 01) 1.2 A strong project management was essential for project success (Clnt C 1 02) 1.3 The most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt C 1 03)	Consultant's Autocracy		
	A2 - What was the best way to organize project society?	1.4 Discussions gave results (Clnt C 1 04)	Groupism		
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	1.5 Formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt C 1 05) 1.6 Client depended on Consultant as the technical advisor (Clnt C 1 06) 1.7 Contractor and Consultant always tried to defend themselves by passing responsibilities to each other (Clnt C 1 07)	Cooperative	Competitive	Competitive
	N1 - What was the acceptable space for cognitive, emotional	1.8 Contractor had close connections with the Client as a Client selected party to work for them (Clnt C 1 08)	Close with Contractor/		

	and behavioural connections?		Distanced with Consultant		
2. The nature of human nature	A4 - What was the nature of human nature?	2.1 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Clnt C 2 01)	Evil		
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	3.1 Procedures were a priority for public sector clients (Clnt C 3 01) 3.2 Discussions gave results (Clnt C 3 02)	Objective Tests and Processes/Social Consensus		
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	4.1 Client was the most powerful member in the project team (Clnt C 4 01) 4.2 Discussions gave results (Clnt C 3 02)	Client Dominance/ Harmonizing		
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	5.1 Continuing relationship was not a concern with Contractor or Consultant (Clnt C 5 01)	Present		
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be	6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt C 6 01)	Conformance		

	encouraged to innovate or conform?	6.2 Not innovation and only conformance was expected from the project team (Clnt C 6 02)			
7. Unknowable and uncontrollable	A10 - Did the Client tend to believe in fate/uncontrollability?	7.1 Uncertainties were unavoidable in public sector projects (Clnt C 7 01)	Believed in Fate		
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	8.1 Gender was not a concern to work in a construction project (Clnt C 8 01)	No Gender Concern		
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	9.1 Client was liable to make timely payments to the Contractor (Clnt C 9 01)	Being		
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	10.1 Laws should be lenient on public sector clients (Clnt C 10 01) 10.2 Uncertainties were unavoidable in public sector projects (Clnt C 7 01)	Individual		
11. The organization's relationship to its environment	A14 - Did the project organization perceive itself to be dominant, submissive, harmonizing or searching out a niche?	11.1 Laws should be lenient on public sector clients (Clnt C 10 01)	Dominant		

Thus, Client was always into checking the project progress since they assumed monitoring done by the Consultant was not enough. Since Client was a layman and they did not have an appointment such as a Works Engineer to monitor the work on them behalf, Chief Accountant had to do the monitoring work. Thus, they always believed the necessity of a strong project manager.

The second perspective to determine the basic assumptions of the Client about nature of human relationship was by looking into what they regarded as the best way to organise project society. Client believed in 'goupism' by holding the pattern of basic assumptions '**discussions gave results (Clnt C 1 04)**' (refer Annexure 5 – C3.1.4 for case evidences). They believed that Client, Contractor and Consultant should get together to make major decisions regarding the project.

One reason for this can be the client of Project C being a layman, who had very little knowledge of construction aspects to make decisions. In addition, they did not have any appointment of a separate personnel from the Client as a 'Works Engineer', who could have had technical knowledge to look after the project matters. Despite the daily responsibilities they had, Additional Secretary, Chief Accountant and the Public Management Assistant had dedicated their time over project matters without any hesitation to keep up the team work in Project C. Client held the pattern of basic assumptions such as '**formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt C 1 05)**' (refer Annexure 5 – C3.1.5 for case evidences)' and '**Client depended on Consultant as the technical advisor (Clnt C 1 06)**' (refer Annexure 5 – C3.1.6 for case evidences)', which indicated 'cooperation' as the correct way for people to relate to each other. Being a government organisation, Client had maintained all communicated information in writing with proof. However, they had realised that the construction process was getting slow without fast communication if informal methods were not used in parallel. Use of informal methods of communication such as giving an instruction over the telephone and Consultant or Contractor adhering to it solely depended on trust, which demonstrated the cooperation between the parties. Further, Client as a layman, they could not take decisions solely

of their own. They had always depended on Consultant's technical advice on decision making. Although Client preferred 'cooperation' Client assumed that other team members were in 'competition' to relate to each other. This was by Client holding the pattern of basic assumptions '**Contractor and Consultant always tried to defend themselves by passing; responsibilities to each other (Clnt C 1 07)**' (refer Annexure 5 – C3.1.7 for case evidences)'. Client had always acted as the mediator between the two parties, calling upon special meetings to sort out problems between the two.

It was observed within the case that Client was maintaining more informal, close relationship with the Contractor during work than with the Consultant. This could be identified as a fourth perspective to determine the nature of human relationship as assumed by the Client. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Client held a pattern of basic assumptions; '**Contractor had close connections with the Client as a Client selected party to work for us (Clnt C 1 08)**' (refer Annexure 5 – A3.1.8 for case evidences) indicating their preference on 'close connections' with the Contractor. Moreover, this Contractor had previous working relationships with the Client and they mention about an attempt by the Client to appoint this Contractor for Project C, which had failed. However, in coincidence, the same Contractor had been the lowest bidder in selective tendering for Project C. It was more apparent that Client had more trust over Contractor than the Consultant. Client had considered that looking into the problems of the Contractor was a liability of Client, as Contractor being a party selected by them through bidding. However, Consultant had no complains over this close connections of Client and Contractor.

Clnt C 2 - Basic Assumptions on Nature of Human Nature

The basic assumptions of Client about the nature of human nature looked into whether they believed humans basically as good, neutral, or evil and/or whether human nature was perfectible or fixed. The pattern of basic assumptions of Client, '**rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Clnt C 2 01)**' (refer Annexure 5 – C3.2.1 for case

evidences). Assistant Secretary stated that they believed Consultant and Contractor could be motivated through indication of their mistakes. This could be an assumption developed with bureaucracy in government systems as Client being a government organisation.

Clnt C 3 - Basic Assumptions on Nature of Reality and Truth

The basic assumptions of Client about the nature of reality and truth was about how Client defined what was true and what was not. Such a definition could be reached either by pragmatic test, relying on wisdom or through social consensus. Being a government organisation, Client of Project C strictly believed that '**Procedures were a priority for public sector clients (Clnt C 3 01)**' (refer Annexure 5 – B3.3.1 for case evidences). Client had realised that the only way to get what they wanted was to follow the government regulations, systems and processes. Client indicated the difficulties they faced due to government procedures in selecting a preferred contractor for them, but still they were forced to follow those. Further, Client had realised a conflict between the developed new concepts and ideas of the Contractor with the old government standards, while carrying out the project. Accordingly, more than subjective means such as pragmatic tests, relying on wisdom or social consensus, Client had believed on 'objective tests and processes' including government systems and procedures working well for the project. However, they had some concern on 'social consensus' by holding the pattern of basic assumptions '**discussions gave results (Clnt C 1 04)**' (refer Annexure 5 – B3.1.4 for case evidences). Client had the habit of calling upon meetings for most decisions they made within the meeting. Apart from the bi-weekly progress review meeting, they had called upon number of special meetings with Contractor and Consultant.

Clnt C 4 - Basic Assumptions on Nature of Human Activity

The basic assumptions of Client about the nature of human activity was looking into their belief on the "correct" way for humans to behave: either to be dominant, harmonising, or fatalistic. Client of Project C held the pattern of basic assumptions that '**Client was the most powerful member in the project team (Clnt C 4 01)**' (refer

Annexure 5 – C3.4.1 for case evidences) holding basic assumptions on Client dominance. Client believed that Consultant was a third party appointed for the Contract between them and the Contractor, since Client did not have a technical knowledge to carry out a construction project. Thus, they assumed Consultant was there to get the work done for them only, indicating their dominative thoughts. Further, being a powerful commission within Sri Lanka, Client expressively stated their powers over the Consultant, who was a government organisation too. However, as a layman, Client could not survive with their dominance solely. They had realised the necessity of 'harmonising' for all major decision making, holding the pattern of basic assumptions '**discussions gave results (Clnt C 1 04)**' (refer Annexure 5 – B3.1.4 for case evidences).

Clnt C 5 - Basic Assumptions on Nature of Time Units

The basic assumptions of Client about the nature of time units looked into what kinds of time units were most relevant for the conduct of daily affairs: past, present or future. Client of Project C held the pattern of basic assumptions that '**continuing relationship was not a concern with Contractor or Consultant (Clnt C 5 01)**' (refer Annexure 5 – C3.5.1 for case evidences), which indicated that they were focusing on 'present' as the relevant time unit for project matters. Being a government organisation, Client was under regulations to refer to the same Consultant, which was another government organisation for all present and future construction activities, but no such requirement with the Contractor. However, Client had no specific concern on any future relationship, but cordially worked with everyone maintaining a good working relationship.

In addition, Client took most of other decisions considering the present context only. For example, Client's request to remove the Building Management System from the new building, considering the difficulty of managing a new technology owing to their unfamiliarity with such technology was such a decision taken disregarding the future developments in building management.

Clnt C 6 Basic Assumptions on Acceptance of Homogeneity or Diversity

Basic assumptions on acceptance on homogeneity and diversity was looking into, whether Client assumed the project team to be best off if it is highly diverse or if it is highly homogeneous and should individuals in a project team to be encouraged to innovate or conform. No evidence was available within the case to determine, whether Client preferred the team to be highly diverse or highly homogeneous, but evidences were available determine that Client assumed individuals in a project team to be encouraged to conform. Such evidences comprised of the patterns of basic assumptions; '**Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt C 6 01)**' (refer Annexure 5 – C3.6.1 for case evidences) and '**not innovation and only conformance was expected from the project team (Clnt C 6 02)**' (refer Annexure 5 – C3.6.2 for case evidences). Client believed that as Contractor was agreed for 900 days, they should somehow achieve the time target, since Client was also bound to Treasury Department of Sri Lanka for timely completion of the project, considering the annual budget schedules. Further, Client assumed that they could not afford innovative methods and processes in a project, since they and the Consultant were bound to follow the standard government procedures. Client had realised a conflict between the Contractor and Consultant for the same reason, as private Clients were more towards practising and trying out innovative methods naturally.

Clnt C 7 Basic Assumptions on Unknowable and Uncontrollable

The basic assumptions on unknowable and uncontrollable looked into the belief of Client on fate. They held the pattern of basic assumptions '**Uncertainties in decisions were unavoidable in public sector projects (Clnt C 7 01)**' (refer Annexure 5 – C.7.1 for case evidences), and believed on fate. This was because, though Client was able to get the preferred contractor for the project coincidently through open tendering, the same procedure made the decision of who would get in uncertain all the time. In addition, change in the Secretary to the Commission, who was the head of the Client, created uncertainties in project requirements. This had resulted in changes in partition

layouts creating variations to the scope in electrical and data cabling and networking works.

Clnt C 8 Basic Assumptions on Gender

Basic assumption on gender looked into, how Client assumed project team should distribute roles, power and responsibility between the genders: only for male, only for female or both. The pattern of basic assumptions held by the Client was that '**gender was not a concern to work in a construction project (Clnt C 8 01)**' (refer Annexure 5 – B.8.1 for case evidences), indicating no effect of gender on project works or outcomes. They believed that if the required knowledge was there, anybody could work in a construction project regardless of gender.

Clnt C 9 Basic Assumptions on Motive for Behaving

The basic assumptions of Client on motive for behaving looked into whether their motivation for engaging with project matters was for doing, being or being-in-becoming. It was evident that Client was more into 'being' since Client held the pattern of basic assumptions; '**Client was liable to make timely payments to the Contractor (Clnt C 9 01)'** (refer Annexure 5 – C.9.1 for case evidences). Client indicated their enthusiasm on project matters with dedication to fulfil their obligations timely.

Clnt C 10 Basic Assumptions on State-Individual Relationship

The basic assumptions on state-individual relationship looked into the Client's belief on whether the precedent rights and responsibilities of Client should be accorded the nation or the individual. The Client held the patterns of basic assumptions; '**laws should be lenient on public sector clients (Clnt C 10 01)**' (refer Annexure 5 – B.10.1 for case evidences) and '**uncertainties were unavoidable in public sector projects (Clnt C 7 01)**' (refer Annexure 5 – B.7.1 for case evidences), which indicated that Client did not have much consideration on nation, rather attempted to fulfil their individual requirement somehow. Client experienced changes in their decisions with the change of Client's Personnel in higher authorities. If policy decisions were made,

requirements of the Client might not get changed with the change of the head of the Client's Representative rapidly. Further, looking for loopholes in laws of the country indicated their attempt to get the individual interests satisfied through the project.

Clnt C 11 Basic Assumptions on Project Organisation's Relationship to its Environment

The basic assumptions on project organisation's relationship to its environment decided upon whether the Client perceived the project organization itself to be dominant, submissive, harmonising or searching out a niche. The pattern of basic assumptions '**laws should be lenient on public sector clients (Clnt C 10 01)**' (refer Annexure 5 – B.10.1 for case evidences) indicated that Client assumed the project organisation to be dominant over the environment. Client being a powerful government commission, Client had been able to take all legal approvals easily including some approvals obtained through loopholes in law of the country.

8.8 Summary

This chapter included the within case analysis of Project C. Basic Assumptions of Contractor, Consultant and Client sub-cultural groups were extracted, in relation to eleven cultural dimensions. Pattern of basic assumptions were derived from the first level of analysis, and the basic assumptions were derived out of the patterns of basic assumptions derived earlier. A new perspective was derived from the case data to determine the nature of human relationship. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. There were both similar and differing basic assumptions among different sub-cultures within each case. Contractor in Project C believed in autocracy, individualism, competition, close connections with Client and distances space with Consultant, evilness, pragmatic test, social consensus in decision making, fatalism, conformance, contractual control, being-in-becoming and submissiveness. Consultant of Project C believed in individual role authority, individualism, competition and cooperation as appropriately, distanced connections with Client and Contractor, evilness, objective tests and processes,

contract dominance, conformance and belief in fate. Client of Project C believed in consultant's autocracy, groupism, cooperation, close connections with Contractor and distanced space with consultant, evilness, objective tests and processes, social consensus in decision making, client dominance and belief in fate. The cross case analysis of the three cases will be presented next.

CHAPTER 09: CROSS CASE ANALYSIS

9.1 Introduction

This chapter presents the cross case analysis of the multiple-case evidences. Initially, basic assumptions of the three dominant sub-cultural groups; contractor, consultant and client are discussed reasoning out the variations across the three cases of Projects A, B and C. Next, an analysis of the basic assumptions from the integration, differentiation and fragmentation perspectives is carried out. Thereafter, a guide to determine the cultural basic assumptions of public sector building construction projects in Sri Lanka is developed mapping the basic assumptions with the key features of external cultural setting of the project. Finally, a discussion in comparing and contrasting the cross case findings with the existing literature is presented.

9.2 Existence of dominant sub-cultures in construction projects

Clear evidences for the existence of dominant sub-cultures as; contractor's sub-culture, consultant's sub-culture and client's sub-culture were available within Projects A, B and C. These evidences were tracked both during interviews and during progress review meeting observations. Such evidences were related to the existence of group boundaries in each sub group such as each party trying to defend themselves as a group and having matters, which they thought not suitable disclosing to other parties. These behaviours had created the insiders and outsiders to each sub-group of client, contractor and consultant.

For example, when the Construction Manager of the Contractor of Project A was questioned during the interview about any differences among the parties in treating project team members, he mentioned that he felt everybody in the project team was trying to defend each party in every occasion. This was clearly observed by the researcher during progress review meetings in Project A too. During 32nd progress review meeting of Project A, Consultant Project Design Engineer was asked by the Client about the date the design of connection bridge from existing building to new building was given to the contractor. By that time, even Consultant Project Architect

joined explaining about the dates and the adequacy of the details given in favour of the Consultant Project Design Engineer. A similar situation was observed in Contractor's group of Project B where, Project Coordinator and Construction Manager both added to the answer of the Contractor's Electrical Engineer over a matter about material approvals for data cabling. Progress review meetings were considered by the team members as a place to raise issues and defend themselves as sub-groups of the project team. This strong division as client, contractor and consultant could clearly develop unique values, which could later turn into basic assumptions of each sub-group.

Further, it was evident that there were matters related to the project that each party kept away from the other parties. In all three cases, contractor and consultant had kept their weaknesses hidden from others creating major boundaries between the groups. As explained by the Project Manager of Project A, who was a member of the Consultant's group mentioned that Consultant was having delays in the design works due to lack of staff. However, initially they were reluctant to give this reason to Client, but later they had explained it when they felt things getting worse if not revealed to the Client. As explained by the Project Manager, sometimes he was in a very uncomfortable situation as he could not explain some weaknesses of Consultant to the Client directly. This was because, he was positioned with a dual responsibility to his organisation and the Client in communicating project progress and issues in Project A.

Similarly, Operations Engineer of the Contractor of Project C specifically mentioned that they tried to keep their internal matters away from the rest of the project team. Both Consultant Project Architect and Project Manager of Project C mentioned that the internal problems of contractor due to lack of labour force and issues of sub-contractors were kept hidden until such matter become obvious to both Client and Consultant. The most popular related example from Project C was about an incident where Contractor was hiding away the issue of lack of resources with the piling sub-contractor resulting in a massive delay in the project. Both contractors of Project A and C had gone to an extent of keeping formal written communication modes with Consultant and Client considering them as outsiders to their sub group and less formal communication modes such as emails and telephone conversations with their domestic

specialised sub-contractors, considering them as insiders. Accordingly, there were such strong evidences for the existence of professional sub-cultural groups in construction projects as contractor, consultant and client.

9.3 Basic assumptions of contractor-consultant-client sub-cultural groups in a public sector building construction project

The similarities and differences of the basic assumptions across the three cases; Projects A, B and C for each of the contractor, consultant and client sub-cultural groups are analysed in this section using a fourth level coding. Further, the reasons for such variations of basic assumptions were derived through a combination of third level analysis of the patterns of basic assumptions derived during the within case analysis and another first level analysis of interview, observation and documentation data. Contractor, Consultant and Client of each of Project A, Project B and Project C were indicated as Contractor A, Contractor B, Contractor C, Consultant A, Consultant B, Consultant C, Client A, Client B and Client C respectively.

9.3.1 Basic assumptions of contractor's sub-cultural group

The similarities and differences of the basic assumptions across the three cases; Cases A, B and C for contractor sub-cultural group are analysed in this sub-section and summarised in Table 9.1.

Cont 1 Basic Assumptions of nature of human relationships – Contractors in all three cases held the basic assumption of **'autocracy'** as the best authority system within the construction project, where they preferred one individual with absolute power for decision making within construction project context. They did not specifically concern about, whether such autocracy should be with the client or the consultant. However, they preferred an autocracy of an unbiased and dedicated leader. It was apparent from all cases contractor getting demotivated in the project context due to project set up going against this basic assumption of the contractor in the absence of an unbiased and dedicated leader.

Table 9.1: Basic assumptions of contractor's sub-cultural group of public sector construction projects in Sri Lanka

Cultural Dimension	Questions to be Answered	Basic Assumptions of Contractor			Reasons for Variations in Basic Assumptions
		Dominant Own World View	View on Dominant World Views of Consultant	View on Dominant World Views of Client/End-User	
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	Autocracy of unbiased and dedicated leader			
	A2 - What was the best way to organise project society?	Groupism (Contractor A,B) Individualism* (Contractor C)	Individualism	**Individualism (Contractor B)	*Having most of previous experience in working for design and build contracts ** Coordination issues, due to client and end-user being two different organisations and lack of dedication of client for project matters
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	*Competitive			*This could be Competitive/Cooperative, if close connections were available
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	Distanced with Consultant and Contractor (Contractor A) Close with Consultant/ Distanced with Client (Contractor B)			No apparent strong reasons. Individual organisational preferences

		Close with Client/ Distanced with Consultant (Contractor C)			
2. The nature of human nature	A4 - What was the nature of human nature?	Evil	Evil	Evil	
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	Pragmatic Test *Reliance on Wisdom (Contractor A,C) **Social Consensus (Contractor B,C)	***Objective Tests and Processes (Contractor A,C)		*Ability to bring in strong arguments due to the maturity in industry ** Belief on organisational competitive strategic advantage as strong human relationships *** Personal disbelief in objective means of defining reality and truth being criticised by the contractor with the maturity in industry
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	*Fatalistic (Contractor A,C) **Harmonising (Contactor B)	***Client and Consultant Dominance (Contractor B) ****Consultant Dominance (Contractor C)	*****Client Dominance (Contractor A,B) ***Client and Consultant Dominance (Contractor C)	*With maturity in the industry they learnt to accept and obey external pressures/forces **At the growth stage of organisational development, contractor trying harmonise with other team members , until they position themselves in the market *** Contractor was considered possessing the least power ****Client C being a layman and heavily depending on consultant *****Client A being politically powerful, Client B being more demanding due to professional nature

5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	*Past (Contractor A,C) **Present (Contractor A) ***Future (Contractor B,C)			* Previous work relationships with team members **Organisational competitive strategic advantage being quality of output only ***Organisational strategic competitive advantage being long term relationships with clients and consultants
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	Conformance			
7. Unknowable and uncontrollable	A10 - Did the Contractor tend to believe in fate/uncontrollability?	Believed in Contractual Control			
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	Among Both Genders, but Appropriately			
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	Being-in-Becoming with profit motive			
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	Individual			
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	Submissive			

Contractors A and B held the basic assumption of **'groupism'** as the best way to organise the project society. In contract, Contractor C assumed **'individualism'** as the best way to organise the project society. Contractor C having most previous experience in working for design and build contracts, where they held both design and construction responsibilities. However, in Project C with a contract in traditional method, they were trying to strictly adhere only to construction responsibility demonstrating individualist assumptions. However, when organising the teams, both the Contractors A and C considered their previous experience with Consultant A and Client C respectively, demonstrating notions on their belief on **'groupism'** too. All contractors believed that consultants assumed **'individualism'** as the best way to organise the project society. Specifically, Contractor B assumed that Client and End-user of Project B demonstrated **'individualism'** with massive coordination issues, due to client and end-user being two different organisations and client lacking much dedication to the project works.

All contractors assumed **'competition'** as the correct way to relate to each other, to distribute power and affection within project context. This was due to the power structure existed in construction projects within Sri Lankan construction industry, placing the contractor in the lowest position in terms of power. Thus, contractor constantly attempted to defend themselves from the suppressions of consultant and client and gain some power within the project team. This amounted to the competition, when contractor tried to relate to each other.

There was no apparent reason for the contractor's preference for the acceptable space for cognitive, emotional and behavioural connections among team members. Contractor A **'did not prefer any close'** connection with consultant or client, Contractor B preferred **'close'** connections with the consultant and Contractor C preferred **'close'** connections with the client. Although, Contractors A and C had previous work relationships with their respective consultant and client, only Contractor C wished to maintain a close connection, indicating no effect of previous work experience contributing for developing close connections. In addition, there was no relationship of strategic competitive advantage of contractor organisation affecting the

development of close connections too. For example, Contractor of Project B considered the strategic competitive advantage as long term relationships with the clients and consultants, but never had any close connections with the client of Project B. Contractor B, who had a close connection with the Consultant B indicated that having such a connection was advantageous but, not acceptable in the industry practice. This was because, it was suspected that such a close connection could affect the impartial behaviour expected from a consultant. Further, Contractor C, who had a close relationship with Client C mentioned that though having such a close connection was advantageous, it was not much acceptable in the industry. This was because, if consultant was appointed as the 'Engineer' to the construction contract, it could affect the formal instruction and communication flows indicated in standard construction contracts as consultant to/from contractor and consultant to/from client only. Thus, assumption on close or distanced space was solely based on contractor's personnel preferences. Necessity, preference and mutual trust of both parties at the same time contributed for a close connection.

Notably, when close connections existed, contractor demonstrated some cooperative beliefs on relating to each other, to distribute power and affection. However, they could not completely refrain from the competitive assumptions. Power struggle, still kept them busy in competition.

Cont 2 Basic Assumptions of nature of human nature – Contractors in all three cases held a strong basic assumption of nature of human nature being **'evil'**. Contractor rarely received appreciations or rewards and complaints, punishments and criticisms were common in the project setting. Further, contractor lacked trust with other team members too. Contractor regarded meeting room as a place to discuss issues and defend themselves. This was evident during the meeting observations of all three cases. No any direct appreciation for the Contractor from Client or Consultant was witnessed by the researcher during meeting observations of any case. All meetings and meeting minutes were full of problems, issues and lapses and indications on who was responsible and what actions to be taken to overcome those. Contractor's Project Manager of Project B mentioned that they absorbed many ill-treats by the Client and

Consultant considering the maintenance of good relationship among the team members. He further elaborated that one reason for lack of appreciations by the Consultant may be because, it could be misunderstood by the Client as Consultant being bias to the Contractor.

Cont 3 Basic Assumptions of nature of reality and truth – Contractor preferred more subjective means of determining the reality and truth in project context. All contractors of Projects A, B and C commonly agreed **'pragmatic tests'** (Practical thinking) as the best way to define what was true and what was not in project matters. In addition, Contractors A and C **'relied on wisdom'** (reliance on knowledge) too, pertaining to their ability to bring in strong arguments in the expert area due to the maturity in industry and being established organisations with sound accumulated knowledge. Moreover, Contractors B and C looked for **'social consensus'**, in addition to the other means, due to their organisational competitive strategic advantage being strong human relationships. They preferred the consensus of the consultant and client for making decisions as it improved the relationships. However, Contractors A and C believed that consultant assumed 'objective tests and processes' as the best way of determining the reality and truth in project context constantly pressurising to adhere to specifications, guidelines and standards even during impractical situations to adhere to those. This was more of a criticism by the contractor about consultant, owing to the wisdom of Contractors A and C had developed with maturity in industry.

Cont 4 Basic Assumptions on nature of human activity – Contractors A and C, held the basic assumption that being **'fatalistic'** as the correct way for humans to behave within project context. The reason for this was because passing the maturity stage of their organisational development, they had learnt well to accept and obey pressures and forces from the project environment. They were appeared to be more reactive than proactive in nature too. However, Contractor B, who was at the growth stage of organisational development, tried to **'harmonise'** with other team members, until they position themselves in the market. The general power structure in a typical construction project in Sri Lankan construction industry existed in the order of contractor constantly placed with a very low power compared to client and consultant.

This too had contributed to contractor refrain from being dominant and remain as either harmonising or fatalistic. The power order of client and consultant depended on client being the most powerful if, client was politically powerful or highly professional with educated background or consultant being the most powerful, when client was a layman, depending on consultant.

Cont 5 Basic Assumptions on nature of time – Contractors A and C, who had previous work experience with the consultant and client respectively, based their decisions regarding current project on such past experiences. Both the contractors had considered appointing the project staff for the current project, especially including the senior staff from the previous project as a strategic decision. This was to use the advantages of learned lessons in past relationships with clients and consultants to the current projects. This indicated the contractor's basic assumption of **'past'** as a relevant time unit for the conduct of daily affairs in the project. In addition, Contractor A based most of other decisions on **'present'** too. This was because, they did not see any advantage of considering future in their decisions, as the organisational competitive strategic advantage of Contractor A was on quality of output only. They never felt a necessity of considering relationships with clients or the contractors in decision making other than being goal oriented. They believed that clients would come to them considering their differentiated work output and service and not based on relationships. However, in contrast, Contractors B and C considered **'future'** as a more relevant time unit for other decisions. This was mainly because, organisational strategic competitive advantage of Contractors B and C was long term relationships with clients and consultants, where they tried to safeguard relationships built within the project with clients and contractors to win new, future projects. Thus, they were compelled to keep continuing relationships with other team members.

Cont 6 Basic Assumptions on Acceptance on Homogeneity or Diversity – Since construction project teams were inevitably diverse in nature, whether team should be highly diverse or homogeneous was not a concern in construction project context. However, contractors in all three cases strongly believed that individuals in the public sector construction project team were encouraged to **'conform'** and not to innovate.

Contractor A brought in reasons for strict belief on conformance as time pressure and consultant/client preferring adherence to contract conditions including specification and drawings. However, there was less focus on innovations to accelerate the project works and they still followed complex and time-consuming documentation procedures with shop drawings. Contractors B and C too indicated that consultant and client required strict conformance to project specifications and did not tolerate any deviations. They indicated the difficulty of getting payments done, when not adhering to contract specifications. Construction contracts in all three projects included a contract clause for value engineering, which gave some provision for innovation for contractor. However, none of the contractors had used this condition for any value engineering option.

Cont 7 Basic Assumptions on Unknowable and Uncontrollable – With regard to unknowability and uncontrollability, all contractors in three cases, never solely depended on fate. They always believed on **'contractual control'** in the uncertain project environment. They believed that decisions made by public sector clients were mostly uncertain and variations were unavoidable to a greater extent. However, adherence to construction contract by following contract clauses and maintaining evidences in black and white had always reduced negative implications with uncertainties. All contractor's held the idea that the ultimate responsibility of time, cost and quality of the project resided with the contractor. Contractor of Project B indicated that ultimately not everything could be claimed from the Client. They specifically highlighted that considerable number of small scale disruptions happen from the Client, which could not get compensated from the Client practically.

Cont 8 Basic Assumptions on Gender – Contractors in all three cases held the basic assumption that distribution of roles, power and responsibilities should be **'among both genders, but appropriately'**. Contractors A and C believed that it was the attitudes that mattered in allocation of responsibilities to any gender. They were specifically concerned on attitudes of females since, they believed females lacked interest on obtaining practical construction experience by working on sites, which was essential for any employee working under a contractor. However, Contractor B

specifically mentioned that females had different capabilities and talents such as documentation, compared to males, which could be effectively considered in team selection. It was noted that quantity surveying task of Projects A and B was mainly done by females, may be due to the said reason.

Cont 9 Basic Assumptions on Motive for Behaving – The motive for behaving of contractors in all cases were more of **'being-in-becoming'** as they strived to develop, change, grow and be better. All contractors indicated the signs on necessity for continuous development by identifying the lapses in their systems and processes. Unlike the consultants, contractors constantly highlighted the identified problems and issues in their systems and processes during the interviews such as issues in planning, monitoring and procuring materials, labour and staff. All three contractors indicated that they were prone to uncertainties such as scarcity of labour in the market during their respective project durations, which was a major learning improve project planning for future projects. They stressed that they were required to improve their systems from the current level to perform better in future. However, all contractors were having the urge to make profits due to being profit oriented commercial organisations. Thus, the motive for behaving of the contractor was into **'being-in-becoming with profit motive'**.

Cont 10 Basic Assumptions on State-Individual Relationship – All contractors in the three cases believed that the precedent rights and responsibilities should be accorded the **'individual'**, despite they were working for public sector construction projects. This was mainly because, contractors were from private sector organisations with profit motives, where they were more concerned on satisfying the clients' individual interests and making a profit, rather than believing on delivering a product to the nation. The strategic competitive advantage of Contractors B and C being long term relationships with clients, it was evident that those contractors were putting in a specific effort to satisfy the client even though the client's requirements were not reflecting the best for a public building with regard to the public funds being spent and the expected functionality of the building. For example, in Project B, doctors being end-users, requested for luxury types of finishes for their rest room areas, for which

contractor attended providing the same without any hesitation, though consultant criticised such client requirement as not fitting for a public building.

Cont 11 Basic Assumptions on Project Organisation's Relationship to its Environment – All contractors in the three cases believed that the project organisation's relationship to its external environment was **'submissive'**. This was because, contractor was in a constant battle with the external environment in procuring labour, plant, good, works and services for the project functions, facing financial issues, lack of resources and consequences of poor systems and process, which had rooted into their minds that the project organisation was submissive to the external environment. Many of the project level issues stemmed out from the issues at contractor's organisational level, which they were unable to control of their own.

9.3.2 Basic assumptions of consultant's sub-cultural group

The similarities and differences of the basic assumptions across the three case; Cases A, B and C for consultant sub-cultural group are analysed in this sub-section and summarised in Table 9.2.

Cnsl 1 Basic Assumptions of nature of human relationships – Consultants in all three cases held the basic assumption of **'individual role authority'** as the best authority system within the construction project. They did not believe in a leader-centred, single point of authority. They believed that everybody, including contractor, client and consultant were under obligations to perform different tasks as per the construction and consultancy contracts thus, nobody was required to overlook the work of others and guide accordingly. They believed that perfect performance of individual roles would bring project success. This could be an assumption, stemming out from their role performance as professionals. They expected everybody to work as professionals, who could take the responsibility of their assigned roles. None of the construction or consultancy agreements identified a role as a Project Manager to lead, monitor, and control. Nevertheless, each case had an appointment as a Project Manager from consultants' personnel. In all three cases, Project Manager's role was restricted to coordination only. In addition, they had been authorised as 'Engineer's Representative' in each project.

Table 9.2: Basic assumptions of consultant's sub-cultural group of public sector construction projects in Sri Lanka

Cultural Dimension	Questions to be Answered	Basic Assumptions of Consultant			Reasons for Variations in Basic Assumptions
		Dominant Own World View	**View on Dominant World Views of Contractor**	**View on Dominant World Views of Client/End-User**	
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	Individual Role Authority		*Client's Autocracy (Consultant A,B)	*Client A trying to control the team being politically powerful and Client B being more demanding due to professional nature
	A2 - What was the best way to organise project society?	Individualism		*Individualism (Consultant B)	*Coordination issues of client and end-user, due to being two different organisations
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	Competitive/ Cooperative	Competitive (Consultant A,C) *Cooperative/ Competitive (Consultant B)	Cooperative	*Contractor B having close connections developed with the Consultant B
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	Close with Client/ Distanced with Contractor (Consultant A) Close Connection with Contractor/ Distanced with			No apparent strong reasons. Individual organisational preferences

		Client (Consultant B) Distanced with Client and Contractor (Consultant C)			
2. The nature of human nature	A4 - What was the nature of human nature?	Evil	Evil	Evil	
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	Objective Tests and Processes *Pragmatic Test (Consultant A,B)			* This assumption was not dominant in Project C because, Client C was a layman, who let the Consultant C to control the things on behalf of them as appropriately
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	Contract dominance		*Client Dominance (Consultant A)	*Client A being a politically powerful client, tried to control the project unnecessarily
5. The nature of time	A7 - What kinds of time units were the most relevant for the conduct of daily affairs within the project?	*Future with Client, Present with Contractor			*Most relevant time unit depended on the organisational strategic competitive advantage
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?	Conformance			

7. Unknowable and uncontrollable	A10 - Did the Consultant tend to believe in fate/uncontrollability?	Believed in fate			
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	Not Gender Concern			
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	*Doing	**Being (Consultant A)		*Organisational structure being less projectised and more matrix ** Contractor A operated with the organisational strategic competitive advantage of providing quality output to Client, which was had been recognised by the Consultant A
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	*Individual (Consultant A) Nation (Consultant B,C)			*Consultant A, which was a government consultancy organisation, was massively controlled by the politically powerful Client A
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	Always Dominant for Client's aspects *Dominant for Contractor's aspects (Consultant A) **Submissive for Contractor's aspects			* Consultant A did not feel project organisation holding a submissiveness to the external environment, due to the Client A being a politically very powerful client in the country, which was a special scenario **Submissiveness occurred due to the organisational issues of contractor or consultant, which were not under their proper control

However, this authorisation was carried out in formal documentation only. Project Manager did not have full authority over all the works being carried out in the project. Individual consultant's personnel such as, architect, quantity surveyor, structural engineer, electrical engineer had the relevant authority within their area of work. Moreover, consultant witnessed client's autocracy was governing in Projects A and B giving negative outcomes. This amounted to the disappointment of the consultant, since it was against their belief on 'individual role autocracy'. Consultant considered it as an unnecessary intervention of the client, which led to demotivation as professionals. This behaviour was evident only with the politically powerful and highlight professional clients only. In Project C, where client was a layman depended on consultant's advice, did not demonstrate such client's domination.

Consultants in all three cases assumed **'individualism'** as the best way to organise project society. This was mostly due to the project organisation structures of consultants in all three being less projectised and more matrix in set-up. Majority of consultants' personnel were not engaged fulltime in the project work and they worked in other parallel projects undertaken by the respective consultancy organisations. Contractors and clients complained over the lack of dedication of consultant's personnel due to this part time involvement with matrix project organisation structure.

Consultant held a mix of **'competitive and cooperative'** assumptions on the correct way to relate to each other, to distribute power and affection within project context. They were mostly in competition with the contractor and mostly in cooperation with the client. Client mostly tried to be cooperative with the consultant by depending on them as the technical advisor. However, there were situations in all three cases, where consultant was in some competition with the client, such as when highlighting mistaking of each other during progress review meetings. All the competitive assumptions had resulted due to power struggles within the team. Consultant tried to control the client, when client acted in too much domination over the team by indicating lapses of the client. A similar approach was taken towards the contractor also, to keep the contractor under their control. However, this competitive nature with the contractor was reduced when consultant had developed close connections with the

contractor in terms of sharing privacy between the two. Consultant further believed that it was difficult to solely depend on formal methods of communication with the contractor and client, if communication was to happen effectively and efficiently. Mostly, architects indicated the difficulty in conveying their designs to contractors only based on formal written communication modes, thus expecting some cooperation from team members to adopt informal communication modes.

The preference of the consultant over close or distanced connections with other team members for cognitive, emotional and behavioural connections was unpredictable in all three cases. Consultant A had a **'close'** connection with the Client A and Consultant B had a **'close'** connection with the Contractor B. As per the three cases, such close connections were free from the effects of previous work experiences together and organisational strategic competitive advantages on long term relationship building. Consultant C had no close connections with the Client C, although they had the organisational strategic competitive advantages on long term relationship building. It could be argued that such connections had occurred solely due to personnel preferences of the two parties engaged in.

Cnsl 2 Basic Assumptions of nature of human nature – Consultants in all three cases held a strong basic assumption of nature of human nature as **'evil'**. Consultant had no practice of appreciating the work of the contractor. Appreciations were very rare. Lapses of contractor were notified by the consultant in writing. Meeting minutes were full of issues and lapses. Since consultant was mostly in competition with the contractor, consultant and contractor were portrayed as enemies in a cold battle in most occasions. This was apparent during progress review meeting observations by the researcher. A lack of trust between consultant and contractor was highlighted. For example, consultant believed that contractor was requesting all instructions in black and white due to lack of trust over consultant.

Cnsl 3 Basic Assumptions on the Nature of Reality and Truth – Consultants in all three cases mostly believed in 'objective tests and processes' as the means of determining reality and truth in construction project context. They believed better quality of construction output could be achieved, when documentation of contract

conditions, specifications and drawings were done right at the beginning of the project than by chasing behind the contractor, monitoring time to time. Further, they believed that government consultants had a competitive advantage over other private sector consultants due to having all contract documentation done informatively. However, they had realised that solely depending on objective means did not work and assumed **'pragmatic tests together with objective tests and processes'** as the way reality and truth to be defined in the project context.

Cnsl 4 Basic Assumptions on the Nature of Human Activity – Consultants in all three cases assumed **'contract dominance'** as the "correct" way for humans to behave within project context. They believed that the ultimate controls in a construction project was the contracts and everybody happened to obey the construction and consultancy contracts. Consultant A experienced Client A overriding the contract dominance with client's dominance due to being a politically powerful client. Expectation of the Consultant was at providing a professional service to the client and too much interventions by the Client had made them more disappointed.

Cnsl 5 Basic Assumptions on Nature of Time – With regard to the assumptions on nature of time unit, **'past'** was not an important time unit for the consultant. Consultant A and Consultant B had past experience with the Contractor A and Client B respectively. However, Consultants A or B did not consider using the previous experience in any decision making of the current projects. For example, both Consultants A and B had ended up appointing a completely a new team to work with Contractor A and Client B respectively, regardless of using the previous teams again for the Projects A and B. In contrast, it was evident that Contractor A appointed the same previous team for the Project A in order to use the learnings from past team work. Thus, 'past' was not a relevant time unit for the consultant and they did not consider past learnings through socialisations having any advantage for their design efforts and subsequent construction supervisions.

Consultant considered either **'future'** or **'present'** as the most relevant time unit for the conduct of daily affairs within the project context. Their selection of a time unit as relevant in decision making mostly based on the consultant's organisational strategic

competitive advantage. If strategic competitive advantage was long term relationships with clients or contractors, consultant had the tendency to consider **'future'** as the relevant time unit for daily affairs with clients and contractors. If consultant found no relevance of any team member supporting their strategic competitive advantage of long term relationships, **'present'** was considered as the relevant time unit with those. In Projects A, B and C, consultants held the organisational strategic competitive advantage as long term relationship building with clients only. Therefore, they always behaved to strengthen the continuing relationships with clients in their daily affairs. However, they found contractors had no such advantage for them. Therefore, **'present'** was the relevant time unit to conduct daily affairs with contractors.

Cnsl 6 Basic Assumptions on Acceptance on Homogeneity or Diversity - Construction project teams were inevitably diverse in nature. Therefore, team member had to accept the diversity of team composition without any hesitation. However, consultants in all three cases assumed that project team members were encouraged to **'conform'** in public sector construction projects. Interview participants indicated two reasons why they failed to do innovations within the project such as fund restrictions in public sector projects and time restrictions. However, in Project A, which had no restriction for funding and in Project B, where time was not a restriction had no practice of innovation. As indicated by the Project Architect of Project C, innovations were deterred in public sector consultancy organisations, since the risks of such innovations happened to be borne by their superiors along the tall hierarchies in such organisations. Further, there were knowledge gaps in public sector structural design practices in Sri Lankan context to make all fabulous architectural designs a reality. Clients A and B indicated how much they were scared of getting adopted to new building services and systems such as Building Management Systems in new public sector buildings in Sri Lanka, having the maintenance of existing buildings and the related services were a challenge for them with existing staff. It was observed the project team deciding to omit the Building Management System of Project C, considering the difficulty for the Client C to adopt it. Accordingly, innovation had been restricted in Sri Lankan public sector building construction projects, when government consultancy organisations were involved and due to fear of adopting to

new systems by clients. Further, strict adherence to given contract specifications as approved by the client was expected from the contractors by the consultants, which was the most risk averse for the consultants.

Cnsl 7 Basic Assumptions on Unknowable and Uncontrollable – With regard to unknowability and uncontrollability, all consultants in three cases highly believed in **"uncontrollability and fate"**. They considered decisions made by public sector clients were mostly uncertain and they had embraced that uncertainty in their behaviour and thinking too. According to case evidences, change of decision makers in client's representatives made the project environment uncertain with changed decisions mostly. Such situations were experienced in all three cases. There were evidences from all three cases on failed efforts of consultants trying to freeze the designs at early stages of the project to reduce such uncertainties. Thus, consultants naturally believed on fate and uncontrollability and had a tendency to help clients along changed decisions for better client's satisfaction, without much objections. This behaviour of consultant was criticised by the contractor, indicating consultant could not control the change initiatives by client disrupting the smooth execution of project.

Cnsl 8 Basic Assumptions on Gender – Consultants in all three cases **'did not consider gender'** in distribution of roles, power and responsibilities in project society. They held the belief that knowledge and ability were the major considerations for the involvement in a construction project and gender was insignificant. Consultants' teams in all three cases comprised of many female members at higher authority levels of each project. According to the explanations of many female team members of consultants, they were able to argue and justify their ideas without any difficulty among male members of the team.

Cnsl 9 Basic Assumptions on Motive for Behaving – The dedication for project work was restricted for the consultant, when the project organisation structure was more matrix and less projectised. Majority of the consultant's personnel were not fulltime project staff and they had parallel other project works at the organisation too. Thus, when the organisation structure was less projectised, only focus of the consultant's personnel was to carry out the individually assigned tasks mostly individually

indicating **'doing'** as the motive for their behaviour. They were always in a hurry to finish off work and move on to the nest project work. However, when the dedication of the consultant's personnel for the project work was high with a more projectised structure, they were more into **'being'** by trying to provide a better service to the client and the contractor, taking time to reflect and appreciate the meaning and value in what they were doing.

Cnsl 10 Basic Assumptions on State-Individual Relationship – Being a government consultancy organisation and moreover, working for public sector construction projects, Consultants B and C indicated that they considered the precedent rights and responsibilities should be accorded the **'nation'** always. They wanted to deliver the right quality for the public sector construction product, rather than satisfying individual client interests. However, Consultant A, who worked under a politically powerful client indicated following the precedent rights and responsibilities to be accorded the **'individual client'**. This was because, they were was massively controlled by the client. More importantly, these public sector clients in all three cases could influence the consultant more than the contractor, since consultants were from public sector organisations.

Cnsl 11 Basic Assumptions on Project Organisation's Relationship to its Environment – All consultants in the three cases believed that the project organisation's relationship to its external environment was **'dominant'**, with regard to the aspects under the control of the client. They experienced public sector clients getting legal concessions in design and construction approvals. However, with regard to the aspects under the control of the contractor or consultant, project organisation's relationship to the environment was mostly **'submissive'**, if contractor's or consultant's organisational issues were not under proper control. Such contractor's organisational issues included lack of resources, poor systems and processes, finance issues and procurement issues etc. Similarly, consultant's organisational issues included lack of staff, poor systems and processes etc. However, there was a speciality when the client was politically powerful. For example, in Project A, consultant did not feel any submissiveness of any project aspect to its external environment, since all

aspects were under the client's control. The lack of labour for the contractor was also sorted out by this client by providing labour from a government security force. Nevertheless, that was a very special scenario occurring in a project.

9.3.3 Basic assumptions of client's sub-cultural group

The similarities and differences of the basic assumptions across the three case; Cases A, B and C for client sub-cultural group are analysed in this sub-section and summarised in Table 9.3.

Clnt 1 Basic Assumptions of nature of human relationships – Clients in all three cases held the basic assumption of **'consultant's autocracy'** as the best authority system within the construction project. However, client complained that the consultant did not exercise their autocracy properly to control the project. Thus, client had to exercise client's autocracy in most scenarios.

Clients A and B assumed that the best way to organise project society was on **'individualism'**. Dedication for the project work of Client A was very poor since client's representatives were busy with their usual client's organisational affairs. There was no any special fulltime appointment such as a 'Works Engineer' from client's representatives to overlook project matters. Therefore, they always tried to stick to their main project obligations only, such as making timely payments to the contractor, demonstrating their beliefs on individualism. Project B had different organisations as client and end-user. Therefore, there was lack of coordination between the two organisations, passing responsibilities among the two parties, mainly due to client being not dedicated to the project as much as the end-user. Client was responsible for cost, time and quality, while end-user was responsible for providing the project requirements and scope. This indicated their belief on individualism. Even Project B had a special appointment of a Works Engineer to overlook the project matters too. Still, Works Engineer failed to be dedicated to the Project B to bring in proper coordination between the client and the end-user. In contrast, Client C was very much dedicated to the project, even without having any project specific appointment to overlook project matters. Client was always took care of all project matters as it was a building to be got done for them.

Table 9.3: Basic assumptions of client's sub-cultural group of public sector construction projects in Sri Lanka

Cultural Dimension	Questions to be Answered	Basic Assumptions of Client			Reasons for Variations in Basic Assumptions
		Dominant Own World View	View on Dominant World Views of Contractor	View on Dominant World Views of Consultant	
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	Consultant's Autocracy			
	A2 - What was the best way to organise project society?	*Individualism (Client A, B) Groupism (Client C)			*Individualism (Client A) – Lack of dedication of client *Individualism (Client B) – Coordination issues of Client and End-user, due to being two different organisations
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	Cooperative	Competitive	Competitive	
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	Close with Consultant/Distanced with Contractor (Client A) Distanced with Contractor and Consultant (Client B) Close with Contractor/			No apparent strong reasons, may be following individual organisational preferences

		Distanced with Consultant (Client C)			
2. The nature of human nature	A4 - What was the nature of human nature?	Evil	*Evil (Client A)		* Contractor A was suspicious on team members due to client being a politically powerful client, who tried to control the project as per their wishes
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	*Pragmatic Test (Client A) **Objective Tests and Processes/Pragmatic Test (Client B) ***Objective Tests and Processes/Social Consensus (Client C)			*Being a politically powerful client, Client A always preferred their own reality be determined situationally, than determining through objective tests and processes ** Being a highly professional client with educated thinking, Client B wanted to think more practically, while following objective tests and processes *** Client C being a layman heavily depending on the consultant and contractor, preferred looking for social consensus to determine the truth and reality, than solely depending on objective tests and processes
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	*Client Dominance Harmonising (Client B,C)			*Client A being a politically powerful client preferred having the project under their control with client dominance, without harmonising
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	Past, Present			
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				

	A9 - Should individuals in the project team be encouraged to innovate or conform?	Conformance			
7. Unknowable and uncontrollable	A10 - Did the Client tend to believe in fate/uncontrollability?	*No much Belief in Fate (Client A) Believed in Fate (Client B,C)			*Client A being politically powerful, many internal project aspects were under their control such as, enough funding, therefore did not believe much on fate
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	No Gender Concern (Client B,C) *Among Both Genders (Client A)			* Majority of actively engaged client's personnel of Project A being female, preferred the gender composition of project team being equal
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	Being-in-becoming (Client A,C) *Client into Doing, End-user into Being-in-Becoming (Client B)			*Due to Client C and end-user being two different organisations and client's dedication on project being minimum resulted in 'doing' and end-user looking for learning avenues and initiating variations within project context demonstrated 'being-in-becoming'
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	Individual			
11. The organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	Dominant			

Further, they were ready to hold discussions with other team members and sort out project matters often demonstrating their belief on **'groupism'**.

Clients in all three cases assumed that **'cooperation'** was the correct way to relate to each other, to distribute power and affection within project context. This was mainly because, all clients lacked technical knowledge for decision making and depended on consultant and the team. However, they belied that consultant and contractor were in believing in competition to relate to each other to distribute power and affection. Thus, client mostly acted as the mediator for the two.

The preference of the client over close or distanced connections with other team members for cognitive, emotional and behavioural connections was unpredictable in all three cases. Client A had a **'close'** connection with the Consultant A and Client C had a **'close'** connection with the Contractor C. As per the three cases, such close connections were free from previous work experience together. Client B had **'no close connections'** with the Consultant B, although they have had previous work experience together. It could be argued that such connections had occurred solely due to personnel preferences of the two parties engaged in.

Clnt 2 Basic Assumptions of nature of human nature – Clients in all three cases held a strong basic assumption of nature of human nature as **'evil'**. Client had no practice of appreciating the work of the consultant or the contractor. Appreciations were very rare at least verbally. Mistakes were notified in writing by client to consultant and contractor. They believed that consultant and contractor were not taking their responsibilities seriously and could be motivated through indication of their mistakes and the available penalties only. Clients A and B were into reminding the contractor about blacklisting, liquidated damages and so on. This could be an assumption developed with bureaucracy in government systems as client being a government organisation.

Clnt 3 Basic Assumptions on the Nature of Reality and Truth – Clients believed in both objective and subjective means of determining reality and truth in construction project context. Client A, being politically powerful always preferred their own reality

be determined situationally (**'pragmatic test'**), than determining through objective tests and processes. Client B, being highly professional with educated thinking, wanted to think more practically (**'pragmatic test'**), while following **'objective tests and processes'**. Client C being a layman heavily depending on the consultant and contractor, preferred looking for **'social consensus'** to determine the truth and reality, than solely depending on objective tests and processes.

Clnt 4 Basic Assumptions on the Nature of Human Activity – Clients in all three cases preferred **'client dominance'** as the "correct" way for humans to behave within project context. However, without having proper technical knowledge, they happened to depend on consultant and contractor for decision making. Thus, they were compelled to have discussions to sort out matters indicating **'harmonising'**. Therefore, a mix of client dominance and harmonising were portrayed from clients time to time. However, when a client was politically powerful, they preferred behaving with client's dominance only than trying out for harmonising.

Clnt 5 Basic Assumptions on Nature of Time – Clients in all three cases only considered **'present'** as the most relevant time unit for daily affairs with both consultant and contractor. This was because, client had no any strategic requirement of continuing any relationship with the consultant or the contractor. Therefore, client never took any decision thinking about the 'future' with team members. Since market had plenty of contractors and consultants, client considered only the current performance with the consultant and contractor. However, if available, they considered **'past'** also in their decision making, to continue or to end the future relationships with other two members.

Clnt 6 Basic Assumptions on Acceptance on Homogeneity or Diversity - Construction project teams were inevitably diverse in nature. Therefore, Client had to accept the diversity of team composition without any hesitation. With regard to the conformance and innovation, client always believed that contractor and consultant were bound to deliver what was agreed under the construction and consultancy contracts, regardless of any difficulties. This indicated their strong assumption that team should be encouraged to **'conform'**. Clients in all three cases, had no much

knowledge on the necessity of innovation within the team, to demand on such an aspect. As laymen to the construction context, all the three clients blindly expected the contractor to deliver the design done by the consultant under the pre-determined specifications.

Clnt 7 Basic Assumptions on Unknowable and Uncontrollable – With regard to unknowability and uncontrollability, Clients B and C highly believed in **'uncontrollability and fate'**. Surprisingly, more than external matters, internal project matters were beyond their control. They knew decisions made by public sector clients were mostly uncertain due to change in governments and change in decision making client's representatives time to time. Client A being politically powerful, many internal project aspects were under their control such as, enough funding, therefore **'did not believe much on fate'**. They easily initiated project variations without much restrictions compared to other types of clients, since they could easily get permission for time and cost overruns.

Clnt 8 Basic Assumptions on Gender – Clients B and C **'did not consider gender'** in distribution of roles, power and responsibilities in project society. They held the belief that knowledge and ability were the major considerations for the involvement in a construction project and gender was insignificant, if the required work got delivered by any personnel. However, Client A considered that roles and responsibilities should be distributed among both genders equally. This was portrayed as a rare situation. The reason being majority of actively engaged client's personnel of Project A being females, who preferred getting more females in by having an equal gender composition in the project team compared to the current level of composition.

Clnt 9 Basic Assumptions on Motive for Behaving – The motive for behaving of Clients A and C was **'being-in-becoming'** by looking for changes and improvements. This mostly resulted from the client's urge to learn within the project lifecycle and initiating variations. In addition, they held the pattern of basic assumption that client was liable to make timely payments to the contractor and consultant and acting accordingly to support project changes and improvements without a delay. However, in Project B, where client and end-user were different organisations, client's motive

for behaving was **'doing'**, while the end-user's motive for behaving was **'being-in-becoming'**. Client's dedication on project being minimum resulted in 'doing' and end-user looking for learning avenues and initiating variations within project context demonstrated 'being-in-becoming'.

Clnt 10 Basic Assumptions on State-Individual Relationship – Although all clients were government organisations, they considered the precedent rights and responsibilities should be accorded the **'individual'** with regard to the project work. Clients were eager to get their individual specific requirements fulfilled through the projects, rather than discerning about the construction output as a public facility. They had a very less care about funds as received from public sources. For example, Project B End-user required luxury, costly finishes for the doctor's rest room areas and Project A client changed the transformer room three times wasting public funds on re-work.

Clnt 11 Basic Assumptions on Project Organisation's Relationship to its Environment – All clients in the three cases believed that the project organisation's relationship to its external environment was **'dominant'**. This was mainly because, public sector clients usually got legal concessions such as in design and construction approvals and other regulations. For example, Client A had obtained design approvals out ruling the regulations, constructed on part of a land prior to obtaining ownership from lessee and made advance payments to the Contractor going beyond the normal government financial regulations. In addition, Client B had executed the Project B with pending design approvals from the local authority due to this assumption only. They had decided that they will somehow get the approval for the design even without the mandatory parking space requirement for a design approval. With regard to Project C, being a powerful government commission, Client C had been able to take all legal approvals easily including some approvals obtained through loopholes in law of the country.

Next, these basic assumptions of public sector construction projects are analysed using the integration, differentiation and fragmentation perspectives.

9.4 Integration, differentiation and fragmentation perspectives of basic assumptions of public sector construction projects

Integration, differentiation and fragmentation perspectives of the basic assumptions of the public sector building construction projects are presented within this section. Further, the popular 'responses' across the three cases for internal integration and external adaptation problems are also described. It was apparent that the 'pattern of basic assumptions' and in turn the 'basic assumptions' were 'demonstrated' through these 'responses' of the project for internal integration and external adaptation problems (Refer Figure 9.1). Thus, the variations in the patterns of basic assumptions and basic assumptions were demonstrated through the variations in these responses. Accordingly, responses were shaped from the basic assumptions of the project.

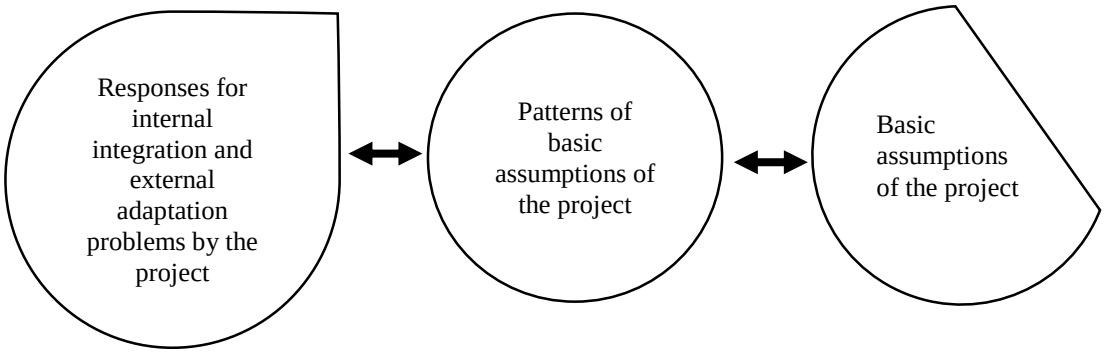


Figure 9.1: Relationship between responses, patterns of basic assumptions and basic assumptions

A fifth level analysis and coding of project basic assumptions were followed to identify the popular integrated, differentiated and fragmented basic assumptions across the three cases. Further, a third level analysis and coding of patterns of basic assumptions were followed to derive the popular responses for internal integration and external adaptation problems for the popular integrated, differentiated and fragmented basic assumptions. Table 9.4 summarises such dominant integrated, differentiated and fragmented basic assumptions across the contractor, consultant and client sub-cultures of Projects A, B and C (refer Annexure 6 for an extended version of the summary).

Table 9.4: Integration, differentiation and fragmentation perspectives of basic assumptions of public sector construction projects in Sri Lanka

Legend for the Colour Code used for Basic Assumptions
Fragmented
Integrated
Differentiated
Integrated and Differentiated

Cultural Dimension	Questions to be Answered	Integration /Differentiation/Fragmentation Perspectives of Basic Assumptions of Construction Project		
		Contractor's Own World View	Consultant's Own World View	Client's Own World View
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	Autocracy of Unbiased and Dedicated Leader	Individual Role Authority	Autocracy of Consultant
	A2 - What was the best way to organise project society?	Individualism Groupism	Individualism	Individualism Groupism
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	Competitive Competitive/ Cooperative	Competitive/ Cooperative	Cooperative
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	Close or Distanced	Close or Distanced	Close or Distanced
2. The nature of human nature	A4 - What was the nature of human nature?	Evil	Evil	Evil
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	Pragmatic Test/ Reliance on Wisdom/ Social Consensus	Objective Tests and Processes/ Pragmatic Test	Objective Tests and Processes/ Pragmatic Test/ Social Consensus

4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	Fatalistic Harmonising	Contract dominance	Client Dominance/Harmonising Client Dominance
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	Past/Future Past/Present	Future/Present	Past/Present
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?			
	A9 - Should individuals in the project team be encouraged to innovate or conform?	Conformance	Conformance	Conformance
7. Unknowable and uncontrollable	A10 - Did the team members tend to believe in fate/uncontrollability?	Believed in Contractual Control	Believed In Fate	Believed in Fate No much Belief on Fate
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	Among Both Genders, but Appropriately	No Gender Concern	No Gender Concern
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	Being-in-Becoming with Profit Motive	Doing	Being-in-Becoming
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	Individual	Nation Individual	Individual
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?	Submissive	Dominant for Aspects Under Client's Control Submissive for Aspects Under Contractor's/Consultant's Control	Dominant

9.4.1 Integration perspective of basic assumptions of public sector construction projects

Integrated basic assumptions have a collective consensus across all or several sub cultural groups. These integrated assumptions, shared among all or some members demonstrated both positive and negative signs in responses for internal integration and external adaptation problems of the project organisation. All the findings discussed within this sub-section are summarised in Figure 9.2. It presents the popular responses for internal integration and external adaptation problems for popular integrated basic assumptions in public sector building construction projects in Sri Lanka. These include responses and integrated assumptions existed across the three cases and some predicted integrated assumptions and relevant responses too.

Basic Assumptions of Nature of Human Relationships

[*Integration 01 - Contractor and client both assumed the best way to organise project society as groupism (Int 01)*] Contractor normally believed the best way to organise project society as 'groupism', unless they had the influence of the previous dominant work experience in design and build projects. They believed that construction projects required proper integration of functions and duties of all members to achieve project success. Similarly, a client too, whose dedication to project work was high, believed 'groupism' as the best way to organise project society. This belief on groupism by both client and contractor was a positive sign in project context. This was demonstrated through effective coordination among team members and their functions and looking for discussions to sort out matters.

[*Integration 02 - Consultant and client both assumed on cooperation as the correct way to relate to each other, to distribute power and affection (Int 02)*] Any type of client (politically powerful, highly professional or a layman) believed 'cooperation' as the correct way to relate to each other, to distribute power and affection within project context. Similarly, consultant too situationally assumed cooperation as a correct way to relate to each other apart from the competitive thoughts they held.

*** Colour code used is to help readability and does not represent any specific grouping**

Basic Assumptions of Construction Project		Responses for Internal Integration and External Adaptation Problems
1. Acceptance on homogeneity or diversity		
1.1 Individuals in the project team are encouraged to:	**Contractor/Consultant/Client** Conform	(Int 11) Strictly adhere to the signed contracts, Poor attempt for innovation
2. The nature of human nature		
2.1 The nature of human nature is:	**Contractor/Consultant/Client** Evil	(Int 05) Rare appreciations, Constant highlighting of mistakes, Mistrust among team members
3. Gender		
3.1 Project society should distribute roles, power and responsibilities:	**Contractor** Among both genders, but appropriately **Consultant/Client** Without gender concern	(Int 13) Consider knowledge and ability in assigning roles and responsibilities
4. The nature of human relationships		
4.1 The best authority system for the construction project is:	**Contractor** Autocracy of unbiased & dedicated leader **Consultant** Individual Role Authority **Client** Autocracy of consultant	(Int 04) Power struggles, Poor teamwork
4.2 The correct way to relate to each other, to distribute power and affection within project context is being:	**Contractor** Competitive Competitive/Cooperative **Consultant** Competitive/Cooperative **Client** Cooperative	(Int 02) A strong bond between parties, Believe in informal communication modes between the parties
4.3 The acceptable space for cognitive, emotional and behavioural connections is:	**Contractor/Consultant/Client** Close Distanced	(Int 03) Poor teamwork, Working to rules
4.4 The best way to organise project society is on the basis of:	**Contractor** Individualism Groupism **Consultant** Individualism Groupism **Client** Individualism Groupism	(Int 01) Effective coordination among team members, Prefer discussions
5. Motive for behaving		
5.1 The motive for behaving within the project context is:	**Contractor** Being-in-becoming with profit motive **Consultant** Doing Being **Client** Being-in-becoming Doing Being **End-User** Being-in-becoming	(Int 14) Client/End-user learns within the project environment to demand for a better construction output, Contractor absorbs the disruptions of variations to satisfy the client and practice continuous improvement
6. The nature of time		
6.1 The most relevant time unit/s for the conduct of daily affairs within the project is/are:	**Contractor** Past Present Future **Consultant** Present Future **Client** Past & Present	(Int 08) Prefer evidence based decision making (Int 10) Do not consider creating strong bonds with each other, No hesitation for criticising each other's performances gaps, Goal-oriented teamwork (Int 09) Relationship oriented team work, Try to satisfy the members with whom the continuing relationship is regarded
7. The nature of reality and truth		
7.1 Reality and truth are defined within the project context by:	**Contractor** Pragmatic test Relying on wisdom Social consensus **Consultant** Objective tests & processes Pragmatic test **Client** Pragmatic test Objective tests & processes Social consensus	(Int 06) Improved integrity of all decisions being made, but delay in decision making
8. The nature of human activity		
8.1 The "correct" way/s for humans to behave within project context is/are:	**Contractor** Fatalistic Harmonising **Consultant** Contract dominance **Client** Client dominance Harmonising	(Int 07) Effective team work, Improved client satisfaction, Prefer discussions in problem solving (Int 12) Ready to accept the uncertainties of decision making of government clients
9. Unknowable and uncontrollable		
9.1 Believe in:	**Contractor** Contractual control **Consultant** fate **Client** fate No much belief in fate	(Int 15) Work towards satisfying the specific individual client interests despite the consideration over utilising public finds
10. The state-individual relationship		
10.1 The precedent right and responsibility be accorded the:	**Contractor** Individual **Consultant** Individual Nation **Client** Individual	(Int 17) Believe organisational issues of contractor/consultant and the project matters are massively inseparable
11. The project organisation's relationship to its environment		
11.1 Project organisation's relationship to its environment is:	**Contractor** Submissive **Consultant** Dominant for Client's aspects Dominant for Contractor's/Consultant's aspects Submissive for Contractor's/Consultant's aspects **Client** Dominant	(Int 16) Expect legal concessions for public sector project matters

Figure 9.2: popular responses for internal integration and external adaptation problems for popular integrated basic assumptions in public sector building construction projects in Sri Lanka

Moreover, consultant was aware about these cooperative thoughts of the client, as client depended on the consultant as the technical advisor being laymen to construction industry. This shared basic assumption was demonstrated in a strong bond between the client and consultant, believing in informal communication between the two parties, as a positive sign in project context, in contrast to the energy losses occurred in competition.

[*Integration 03 – Consultant, contractor and client assumed the best way to organise project society as Individualism (Int 03)*] Consultant believed on individualism, when consultant's organisational structure was less project led and more towards functional matrix. They became busy with other parallel projects at the organisation as not being fulltime appointments to the given project. Further, they concentrated only to their specified task, not contributing towards team work and holding individualistic thoughts. In addition, there could be a contractor too holding individualistic thoughts of strictly adhering to construction responsibility only, due to heavy influence of previous work experiences engaged in design and build projects. They would never want to contribute to the design efforts of client. Further, making the situation worse, there could be a client, who would be not much dedicated to the project work, holding the same individualistic assumptions. This probable combination of having a shared belief on individualism would indicate negative signs in project context such as poor teamwork and working to rules.

[*Integration 04 – Consultant and contractor assumed on competition as the correct way to relate to each other, to distribute power and affection (Int 04)*] Both Contractor and consultant held competition as the correct way to relate to each other to distribute power and affection. This was demonstrated through power struggles, poor teamwork among and dissolved the positive energies among consultant and contractor.

Basic Assumptions of Nature of Human Nature

[*Integration 05 - Consultant, contractor and client assumed nature of human nature as evil (Int 05)*] Contractor, consultant and client believed the nature of human nature as evil. They rarely appreciated any team member within the project context and

constantly highlighted mistakes. This was demonstrated in mistrust among team members and demotivation of team members.

Basic Assumptions of Nature of Reality and Truth

[*Integration 06 – Consultant and client assumed that objective tests and processes to be used as the mean of determining reality and truth (Int 06)*] Consultant and client both being public sector organisations, they believed on objective tests and processes in determining reality and truth. They wanted to adhere to standard processes and contract clauses in making decisions. This was demonstrated through improved integrity of all decisions being made, but delay in decision making.

Basic Assumptions of Nature of Human Activity

[*Integration 07 – Contractor and client assumed 'harmonising' as that the correct way for humans to behave within project context (Int 07)*] A contractor at the growth stage of organisational development would mostly try to harmonise with other team members in behaviour until they position themselves in the market and create a better competitive advantage. Similar behaviour was evident with the contractor in Project B. Any public sector client, except a politically powerful client would assume 'harmonising' as that the correct way for humans to behave within project context, since they lack technical knowledge in decision making. The urge of controlling the project towards their preferred goals, a politically powerful client would not believe much on harmonising, over client dominance. Accordingly, such harmonising behaviours of client and contractor in a project environment would be demonstrated through effective team work and improved client satisfaction. They would prefer discussions in problem solving and decision making would be effective.

Basic Assumptions of Nature of Time

[*Integration 08 – Contractor and client assumed 'past' as a relevant time unit (Int 08)*] Client and contractor mostly based past in decision making. They considered learnings from any past working history for the decisions in current project. This was

demonstrated in their evidence based decision making, which gave more positive effects on the project outcomes.

[*Integration 09 – Consultant and contractor assumed 'future' as a relevant time unit (Int 09)*] Consultant and contractor considered future as a relevant time unit, when they considered continuing relationships had some strategic advantage for them only. Such future considerations were demonstrated through the team members' attempts in maintaining good working relationships and trying to satisfy the members with whom the continuing relationship was regarded. However, this integration brought in a relationship oriented team work to the project.

[*Integration 10 – Consultant, contractor and client assumed 'present' as a relevant time unit (Int 10)*] A consultant and contractor mostly considered present as the relevant time unit for the conduct of daily affairs, when they did not realise any strategic advantage of having future relationships with other team members. A client always based present as the relevant time unit within a project, since they believed in performance based relationships and was considered the most powerful member within the team. When consultant, client and contractor all assumed present as a relevant time unit to make decisions, they did not consider creating strong bonds with each other. They were not afraid to criticise each other's performances. Goal-oriented teamwork was demonstrated.

Basic Assumptions on Acceptance on Homogeneity or Diversity

[*Integration 11 – Contractor, consultant and client assumed that team members in a project team should be encouraged to conform (Int 11)*] Client, contractor and consultant commonly believed that project team should be encouraged to conform. They wanted to strictly adhere to the signed contracts. They never attempted for innovation within the team.

Basic Assumptions on Unknowable and Uncontrollable

[*Integration 12 – Consultant and client believed on fate and uncontrollability (Int 12)*] Client and consultant commonly believed on fate. They believed decisions made by

public sector clients were mostly uncertain, beyond their control and was ready to accept the uncertainties despite the massive complaints from the contractor.

Basic Assumptions on Gender

[*Integration 13 – Consultant and client did not believe on gender (Int 13)*] Client and consultant commonly believed that gender should not be a concern in distribution of roles, power and responsibilities. This was demonstrated through their belief on considering knowledge and ability only in assigning roles and responsibilities.

Basic Assumptions on Motive for Behaving

[*Integration 14 – Motive for behaving for client and contractor was being-in-becoming (Int 14)*] Client and contractor held a common motive for behaving towards being-in-becoming. Both of them was ready to learn, change and grow. Contractor knew they required continuous improvement to remain in the dynamic market place. Client as layman, attempted to learn within the project environment to demand for a better construction output. This assumption of client and contractor was demonstrated through the continuous project variations initiated within the project environment and contractor attempting to absorb the disruptions of those variations and satisfy the client.

Basic Assumptions on State-Individual Relationship

[*Integration 15 – Client, consultant and contractor assumed the precedent right and responsibility should be accorded the individual (Int 15)*] Despite engaged in a public sector project, client and contractor assumed the precedent right and responsibility should be accorded the individual and not the nation. When working for a politically powerful client, consultant too tended to hold the same assumption. In such a scenario, all team members were working towards satisfying the specific individual client interests, without considering they were developing a public facility utilising public finds.

Basic Assumptions on Project Organisation's Relationship to its Environment

[*Integration 16 – Client and consultant assumed that the project organisation's relationship to its environment was dominant in relation to the project aspects under the control of client (Int 16)*] Client and consultant commonly assumed that the project organisation's relationship to its environment was dominant in relation to the project aspects under the control of client. They highly believed that public sector clients were getting legal concessions for project matters.

[*Integration 17 – Consultant and contractor assumed that the project organisation's relationship to its environment was submissive in relation to the project aspects under the control of consultant and contractor (Int 17)*] Contractor and consultant commonly assumed that the project organisation's relationship to its environment was submissive in relation to the project aspects under the control of contractor and consultant. They highly believed that organisational issues of contractor and consultant and the project matters were massively inseparable.

9.4.2 Differentiation perspective of basic assumptions of public sector construction projects

Differentiation perspective identified the existence of sub-cultural groups and the ambiguities among the sub-cultures, which help defining the group boundaries between the sub-cultures. Table 9.4 summarises such differentiated basic assumptions across the contractor, consultant and client sub-cultures of Project A, B and C. Differentiated assumptions demonstrated both positive and negative signs in internal integration and external adaptation solutions of the project organisation. All the findings discussed within this sub-sections are summarised in Figure 9.3.

*** Colour code used is to help readability and does not represent any specific grouping**

Basic Assumptions of Construction Project		
1. Acceptance on homogeneity or diversity		
1.1 Individuals in the project team are encouraged to:	**Contractor/Consultant/Client**	Conform
2. The nature of human nature		
2.1 The nature of human nature is:	**Contractor/Consultant/Client**	Evil
3. Gender		
3.1 Project society should distribute roles, power and responsibilities:	**Contractor**	Among both genders, but appropriately
	Consultant/Client	Without gender concern
4. The nature of human relationships		
4.1 The best authority system for the construction project is:	**Contractor**	Autocracy of unbiased & dedicated leader
	Consultant	Individual Role Authority
	Client	Autocracy of consultant
4.2 The correct way to relate to each other, to distribute power and affection within project context is being:	**Contractor**	Competitive
		Competitive/Cooperative
	Consultant	Competitive/Cooperative
	Client	Cooperative
4.3 The acceptable space for cognitive, emotional and behavioural connections is:	**Contractor/Consultant/Client**	Close
		Distanced
4.4 The best way to organise project society is on the basis of:	**Contractor**	Individualism
		Groupism
	Consultant	Individualism
		Groupism
	Client	Individualism
		Groupism
5. Motive for behaving		
5.1 The motive for behaving within the project context is:	**Contractor**	Being-in-becoming with profit motive
	Consultant	Doing
		Being
	Client	Being-in-becoming
		Doing
		Being
	End-User	Being-in-becoming
6. The nature of time		
6.1 The most relevant time unit/s for the conduct of daily affairs within the project is/are:	**Contractor**	Past
		Present
		Future
	Consultant	Present
		Future
	Client	Past & Present
7. The nature of reality and truth		
7.1 Reality and truth are defined within the project context by:	**Contractor**	Pragmatic test
		Relying on wisdom
		Social consensus
	Consultant	Objective tests & processes
		Pragmatic test
	Client	Pragmatic test
		Objective tests & processes
		Social consensus
8. The nature of human activity		
8.1 The "correct" way/s for humans to behave within project context is/are:	**Contractor**	Fatalistic
		Harmonising
	Consultant	Contract dominance
	Client	Client dominance
		Harmonising
9. Unknowable and uncontrollable		
9.1 Believe in:	**Contractor**	Contractual control
	Consultant	fate
	Client	fate
		No much belief in fate
10. The state-individual relationship		
10.1 The precedent right and responsibility be accorded the:	**Contractor**	Individual
	Consultant	Individual
		Nation
	Client	Individual
11. The project organisation's relationship to its environment		
11.1 Project organisation's relationship to its environment is:	**Contractor**	Submissive
	Consultant	Dominant for Client's aspects
		Dominant for Contractor's/Consultant's aspects
		Submissive for Contractor's/Consultant's aspects
	Client	Dominant

Responses for Internal Integration and External Adaptation Problems

(Diff 06) Contractor's negative concerns over practicality of female members appointed for consultant's team

(Frag 01) Contractor's belief on 'autocracy of unbiased and dedicated leader', Consultant's belief on 'individual role authority' and client's belief on 'autocracy of consultant' as the best authority system for the construction project, but survived without any of the said types of authorities

(Diff 01) Reduced power struggles within the team

(Diff 02) Frustrations/demotivation of contractor due to lack of integration and coordination among team members

(Frag 02) Consultant's praise of 'cooperation' with informal/non-contractual behaviours of team members as contributing to project success, while assuming 'contract dominance' as the correct way for humans to behave within project context

(Frag 03) Dilemma of the client, contractor and consultant about the acceptable space for cognitive, emotional and behavioural connections among two of the parties without being bias and losing trust of the third party

(Diff 07) Consultant being not ready to tolerate the lapses of consultant and constantly criticises them, but contractor being much understanding on consultant's lapses and ready to learn and grow

(Diff 03) Consultant and client are identified as impractical in project affairs by contractor, Consultant believing following proper detailed documentation with procedures is a strength for them

(Diff 04) Project undertakings being more reactive than proactive, Client's complain over lack of proper control and monitoring in a project

(Diff 05) Contractor strictly adhering to the formal instructions in black and white to reduce the risks in project

(Diff 08) Conflicts among client and consultant over what was essential or not for a public funded project

(Diff 04) Consultant's dilemma of satisfying the public sector client to continue relationship verses duty of serving the government/nation

(Diff 09) Client's complain over consultant and contractor being careless and lack of proper involvement on project affairs

Figure 9.3: Popular responses for internal integration and external adaptation problems for popular differentiated and fragmented basic assumptions in public sector building construction projects in Sri Lanka

It presents popular responses for internal integration and external adaptation solutions for popular differentiated basic assumptions in public sector building construction projects in Sri Lanka. These include responses and differentiated assumptions existed across the three cases and some predicted differentiated assumptions and relevant responses too.

Basic Assumptions of Nature of Human Relationships

[*Differentiation 01 - Contractor and consultant both believing on competition vs. client believing on cooperation (Diff 01)*] Contractor and consultant both assumed competition as a correct way to relate to each other. They were always in a power struggle due to this reason. However, client could bring in peace to this environment by holding 'cooperation' as the correct way to relate to each other to distribute power and affection. For example; Additional Secretary of Project C, who was a client's representative mentioned that though client had the power i.e. the ability to influence the beliefs and actions of other team members, they always wanted to work in cooperation. This was indicated by his statement; "It is like everybody is equal. It is something we have built up within the team by practising friendship. I get the work done in that manner. Though different individuals are coming from different organisations with different designations and levels, I treat all the same, and they too behave like that. Otherwise it is very difficult to get the work done. It is easy to work in this manner."

[*Differentiation 02 – Contractor's assumption on groupism vs. Consultant's assumption on individualism (Diff 02)]* Contractor mostly believed on groupism as the best way to organise within the project team. This was when there was no influence from past experiences on heavy involvement in design and build projects requiring contractor to strictly adhere to construction responsibility with traditional method contracts as for the contractor in Project C. However, consultant held the assumption individualism as the best way to organise. Consultant believed that perfect performance of individual roles would bring project success and lacked much

integration among their team too. This contradiction between the assumptions of contractor and consultant was demonstrated through the frustration of the contractor owing to lack of integration and coordination among team members. Moreover, consultant disregarded the efforts of contractor in Project A organising contractor's team to support effective team work with prior experience in past project.

Basic Assumptions of Nature of Reality and Truth

[*Differentiation 03 - Contractor believing on subjective means of defining reality and truth vs. consultant and client believing on objective means of defining reality and truth (Diff 03)*] Contractor believed on subjective means of determining truth and reality such as pragmatic tests, reliance on wisdom and social consensus. In contrast, consultant and contractor believed mostly on objective tests and processes in determining reality and truth. This contradiction was demonstrated through contractor's perspective of identifying consultant and client as impractical in project affairs. However, consultant believed following proper detailed documentation with procedures was a strength for them as a consultant.

Basic Assumptions of Nature of Human Activity

[*Differentiation 04 - Contractor believing on fatalistic behaviour vs. consultant believing on contract dominance vs. client believing on client dominance as the correct way to behave (Diff 04)*] Contractor was more reactive than being proactive due to the belief of being fatalistic. Consultant was ready to endure this behaviour since they believed correct way to behave within the project context was in 'contract dominance'. Thus, whatever the behaviour contractor indicated, consultant believed contractor would ultimate receive the rewards or punishments according to the contract inevitably. However, client believing on the correct way to behave within the project context in 'client dominance' was not pleased to see contractor being fatalistic and consultant being silent over such fatalistic behaviour keep waiting the contract to play the role of controlling. Thus, client constantly complained over lack of proper control and monitoring in the project.

Basic Assumptions on Unknowable and Uncontrollable

[*Differentiation 05 – Contractor's belief on contractual control vs. consultant's and client's belief on fate (Diff 05)*] Consultant and client believed on uncontrollability and fate over project matters. They considered project internal matters such as decisions of public sector clients were uncertain mostly pertaining to changes in governments and decision making personnel. In such an environment, contractor tried their best to reduce the risks by strictly adhering to the formal instructions in black and white with the belief on contractual control over project uncertainties.

Basic Assumptions on Gender

[*Differentiation 06 – No gender concern of client and consultant vs. contractor's belief on distribution of roles, power and responsibilities should be among both genders but, appropriately (Diff 06)*] Consultant and client did not have any concern over gender in distribution of roles, power and responsibilities. In contrast, Contractor believed roles, power and responsibilities should be distributed appropriately among genders. This appropriateness was based on the attitudes. Further, they believed that many females lacked the attitude of gaining practical site experiences, which resulted in female counterparts being impractical in their respective roles assigned. Since, consultant did not have such concerns, consultant and client had many females assigned to the project team. Noticeably, Project Architect of Projects A and B and Project Structural Engineer of Projects A and C were females too. It was evident, interviewees such as Construction Manager of Project A, Site Engineer of Project B and Assistant Operations Engineer of Project C were complaining on assigning female team members from consultants' teams without considering the practical knowledge of them. Thus, due to the differentiated basic assumptions held by the parties over roles, power and responsibilities among genders, contractor was unsatisfied by the team appointment of consultant.

Basic Assumptions on Motive for Behaving

[*Differentiation 07 – Contractor's motive for behaving being 'being-in-becoming' vs. Consultant's motive for behaving being 'doing' (Diff 07)*] Contractor's motive for

behaving was 'being-in-becoming', where they constantly looked for continuous improvement. This looked for the avenues to grow and learn. They were ready to identify the lapses in their systems and processes and improve those. However, in contrast, consultant's motive for behaving was 'doing', when they were attached to a function-matrix structure in the consultancy organisation. They were busy with other projects at the consultancy organisation and regarded perfect performance of individual roles assigned would bring project success. Accordingly, they were not much concerned on learning grounds as per the contractor and always looked for finishing off the work and moving on to the nest assignment in another project soon. Majority of the interviewees from consultant's team in Projects A, B and C indicated that they had no specific learnings by working for their respective project. Thus, consultant's thinking was much of a perfectionist, who constantly criticised the work of contractor as faulty and defective. They were not ready to tolerate the contractor's lapses. However, contractor never criticised the works of the consultant to that extent, even though with number of lapses such as in Project C due to lack of staff. In contrast, contractor was much understanding about the lapses of the consultant. In the same project, consultant highlighted the lack of labour force of the contractor massively.

Basic Assumptions on State-Individual Relationship

[*Differentiation 08 – Consultant's belief on precedent right and responsibility be accorded the 'nation' vs. contractor and client's belief on 'individual' (Diff 08)*] Although involved in a public sector project, contractor as a private organisation, focused only in satisfying individual client interests only and not identified it as an involvement in developing a public facility. Client too focused on fulfilling their individual needs despite it being a public funded project. However, in contrast, if consultant was not under the influence of a politically powerful client, always believed that the precedent rights and responsibilities should be accorded the 'nation'. As indicated by the Project Architect, "in public sector, once the work is given to us, we do not offer things to the client's say. We always depend all our decisions on quality even though client is against us. We send letters saying and justifying the correct thing and always try our best to initiate what is best for the quality." Thus, there were

conflicts among client and consultant over what was correct or not for the project, as a public funded project. This was evident in Project B, where consultant was against the luxury finishes demanded by the end-user.

Basic Assumptions on Project Organisation's Relationship to its Environment

[*Differentiation 9 – Consultant's and contractor's belief on project organisation's relationship to its environment consisting aspects under consultant's and contractor's pursue as 'submissive' vs. client's belief on project organisation's relationship to its environment consisting aspects under client's pursue as 'dominant' (Diff 09)*] Consultant's and contractor's believed that the relationship of environmental aspects under the perusal of consultant and contractor to project organisation was 'submissive'. In contrast, client believed that the relationship of environmental aspects under the perusal of client to project organisation was dominant. This differentiation gave a stance that client could control the external environmental aspects and contractor and consultant failed to bring in such control. Thus, client realised the differentiation as consultant and contractor being careless and lack of proper involvement on project affairs. This was evident through the statements of client's representatives of all three cases. For example, they complained that contractors were not involving enough labour staff, not procuring goods on time to state few.

9.4.3 Fragmentation perspective of basic assumptions of public sector construction projects

Fragmentation perspective includes ambiguous interpretations of basic assumptions by members in a cultural context. Such basic assumptions create ambiguities and paradoxes among sub-cultural groups of a project. Table 9.4 indicates such fragmented basic assumptions across the contractor, consultant and client sub-cultures of Projects A, B and C. All the findings discussed within this sub-sections are summarised in Figure 9.3. It presents popular responses for internal integration and external adaptation problems for popular fragmented basic assumptions in public sector building construction projects in Sri Lanka.

Basic Assumptions of Nature of Human Relationships

[*Fragmentation 01 – Contractor's belief on 'autocracy of unbiased and dedicated leader', Consultant's belief on 'individual role authority' and client's belief on 'autocracy of consultant' as the best authority system for the construction project but survived without any of the said types of authorities (Frag 01)*] Contractor normally believed on autocracy of a dedicated and an unbiased leader. They always complained over the level of authority of the project manager assigned, who was supposed to be the leader. This was because, they expected the leadership of a single person, either from client's personnel or consultant's personnel, who was authorised to make fast decisions suitably. Client believed consultant had the legitimate authority to provide such a leadership, but complained that consultant never used such authority to control the project appropriately. However, in reality, client did not allow to provide such a leadership by the consultant with a dominant client's autocracy, which was always biased to client's own interests. Contractors in all projects complained that clients' personnel who had no relevant knowledge in construction tried to exercise their power and control project. Consultant complained over excessive, unnecessary dominance of client in Project A and Project B, which had a politically powerful client and a highly professional client respectively. However, even though consultant had the necessary authority to provide an unbiased, dedicated leadership as in Project C, they believed, the best authority system within a construction project was the 'individual role authority'. Thus, still both the contractor in Project C who expected the 'autocracy of unbiased and dedicated leader' and the client of Project C, who expected the 'consultant's autocracy' were not satisfied in Project C too. Consultant believed that perfect performance of individual roles by each team member would bring in project success and there was no necessity of monitoring and controlling them excessively. They believed professionals involved with legally binding contracts would perform each assigned role accordingly, without a supervisor. However, none of the client, contractor or consultant was satisfied within public sector construction projects in Sri Lanka, in terms of the best authority system, since assumed or preferred system of authority of each party was different from the existed system of authority.

[*Fragmentation 02 – Consultant appraised 'cooperation' with informal/non-contractual behaviours of team members as contributing to project success, while assuming 'contract dominance' as the correct way for humans to behave within project context (Frag 02)*] Consultant was very strict in monitoring, whether the contractor was going in line with the contract and was strict on payments to the contractor, but at the same time expected contractor to work informally beyond the contractual terms. Strict patterns of basic assumptions of the consultant included; "control in a construction project was the contract", "having a tough control on project cost induced the client's faith on consultant" and "perfect performance of individual roles would bring project success". Having such grounds, consultant also held the contradictory patterns of basic assumption that "effectiveness and efficiency in communication resulted in, how much the red tape for fast communication was overcome within the process" and complained that contractor for believing only in formal written methods of communication as hindering the project progress. For example, Project A was lagging behind due to concurrent reasons of client, contractor and consultant. Yet, consultant had massive complaints that contractor did not take necessary initiatives for acceleration such as; increasing the number of labourers, working both day and night shifts, working at least with 50% of workers during New Year festive season. However, working night shifts was not stated within the contract of Project A and there were legal restrictions to work during night by local authorities due to possible disturbances to the dwellers around the area of construction too. Further, when the consultant was questioned on whether they were ready to pay any additional costs such as overtime for workers who worked night shifts, they refused such payments, indicating acceleration was required due to contractor's own faults and client was not entitled to pay any extra to the agreed contract sum. Whenever the contractor put forward any additional claim, Consultant had looked down on it, holding another pattern of basic assumption that; "Contractor targeted for additional claims in every situation" and indicated it as a disturbing behaviour requiring the consultant to be careful all the time to avoid such claims. Thus, consultant requiring the contractor to be less formal and treating them formally by themselves was ambiguous within the project culture.

[*Fragmentation 03 – Dilemma of the client, contractor and consultant about the acceptable space for cognitive, emotional and behavioural connections among any of the two parties without being bias and losing trust of the third party (Frag 03)*] It was evident in all three cases that there were close connections among the contractor, consultant and client. Consultant and client in Project A, consultant and contractor in Project B and client and contractor in Project C. These connections brought them the advantage of sharing their privacy with trust so that the parties received special attention and care during project matters. For example, contractor of Project C could talk to the client anytime about the lapses of consultant and easily persuaded to arrange meetings to gather the consultant's personnel to sort out problems. In return, contractor made the client aware about the project matters, which were ignored by the consultant and client could not notice due to being a layman. Thus, contractor was considered as a strength for the client in Project C. However, how much these connections were acceptable was a dilemma for all parties. It was not a worry for the client and consultant to declare about close connections openly, however, at the same time consultant claimed that they remained unbiased to the contractor and client in project matters. Consultant Project Quantity Surveyor of Project A stated that she was unbiased to contractor and client, but contractor declared that she was trying to win the client being too bias during evaluation of claims. In contrast, close connections between contractor and consultant were regarded as unethical. Contractor's Project Manager of Project B stated that consultant was afraid to praise the contractor in front of the client, since client could think that consultant was biased to contractor. However, still the close connections between the consultant and contractor of Project B existed and both parties benefited from it, such as consultant was ready to understand the lapses of the contractor and be lenient during issues. Similarly, close connections between the contractor and client was also not much acceptable. Senior Operations Manager of Project C, who was a contractor's representative stated that they tried their best, not to leave the formal communication channels according to the contract (instructions and information flow from consultant to contractor or vice versa, and consultant to client or vice versa only) getting affected from their close connections with the client. However, contractor always maintained informal communication channels with client, sometimes to deliver sensitive information against consultant too. Thus, all project

participants had a dilemma about the acceptable and ethical space for cognitive, emotional and behavioural connections among the three parties without being bias and losing trust of the other party.

Basic Assumptions on State-Individual Relationship

[*Fragmentation 04 –Consultant's dilemma of satisfying the public sector client verses duty of serving the government/nation (Frag 04)*] It was evident that if not working for a politically powerful client, government consultants always believed precedent right and responsibility be accorded the 'nation'. However, when the consultant's organisational strategic competitive advantage was long term relationships with clients, consultant was compelled to make sure client was satisfied in terms of their project objectives, so that the continuing relationship was guaranteed. However, such maintenance of continuing relationship was challenged, once the consultant was trying to have the righteous behaviour of trying to fulfil the interests of public at large through the project rather than fulfilling the individual client interests. Thus, their basic assumption of future to be the most relevant time unit considering long term relationship was constantly in contradiction of precedent right and responsibility be accorded the 'nation'.

9.5 A guide to determine the cultural basic assumptions of public sector construction projects in Sri Lanka

A guide to determine the cultural basic assumptions of public sector construction projects in Sri Lanka was designed, incorporating the basic assumptions of client, contractor and consultant sub-cultural groups derived in Sub Section 9.3 with some key features of external cultural setting as presented in Figure 9.4. These key features of external cultural setting are some signals to predict the basic assumptions indicated in the guide. Those features were identified through the analysis of the reasons for variations of basic assumptions among the three cases of Projects A, B and C as discussed in Sub Section 9.3. Only the variations in dominant own worldviews were considered to identify these key features. Analysis of these reasons are presented in Table 9.5.

*** Colour code used is to help readability and does not represent any specific grouping**

Key Features of External Cultural Setting		Basic Assumptions of Construction Project	
		1. Acceptance on homogeneity or diversity	
		Contractor/Consultant/Client Conform	1.1 Individuals in the project team are encouraged to:
		2. The nature of human nature	
		Contractor/Consultant/Client Evil	2.1 The nature of human nature is:
		3. Gender	
		Contractor Among both genders, but appropriately **Consultant/Client** Without gender concern	3.1 Project society should distribute roles, power and responsibilities:
1.Organisational preference of sharing privacy with selected client/ contractor/ consultant is:	High Low	**4. The nature of human relationships**	
		Contractor Autocracy of an unbiased & dedicated leader Individual Role Authority **Consultant** Autocracy of consultant **Client**	4.1 The best authority system for the construction project is:
2. Previously most experienced type of contract of contractor is:	Design & Build Traditional Method	Competitive **Contractor** Competitive/Cooperative Competitive/Cooperative **Consultant** Cooperative **Client**	4.2 The correct way to relate to each other, to distribute power and affection within project context is being:
		Contractor/Consultant/Client Close Distanced	4.3 The acceptable space for cognitive, emotional and behavioural connections is:
3. Consultant's project organisation structure is:	More Functional Matrix More Project-led	Individualism **Contractor** Groupism Individualism **Consultant** Groupism Individualism **Client** Groupism	4.4 The best way to organise project society is on the basis of:
		5. Motive for behaving	
4.End-user and client being:	Separate Organisations Same Organisation	Being-in-becoming with profit motive **Contractor** Doing **Consultant** Being Being-in-becoming **Client** Doing Being Being-in-becoming **End-User**	5.1 The motive for behaving within the project context is:
		6. The nature of time	
5.Dedication of client is:	High Low	Past **Contractor** Present Future Present **Consultant** Future Past & Present **Client**	6.1 The most relevant time unit/s for the conduct of daily affairs within the project is/are:
		7. The nature of reality and truth	
6.Contractor's organisational strategic competitive advantage is:	Long Term Relationships with Client/Consultant Quality of Output	Pragmatic test **Contractor** Relying on wisdom Social consensus Objective tests & processes **Consultant** Pragmatic test Pragmatic test **Client** Objective tests & processes Social consensus	7.1 Reality and truth are defined within the project context by:
		8. The nature of human activity	
7.Consultant's organisational strategic competitive advantage is:	Long Term Relationships with Client/Contractor Quality of Service	Fatalistic **Contractor** Harmonising Contract dominance **Consultant** Client dominance **Client** Harmonising	8.1 The "correct" way/s for humans to behave within project context is/are:
		9. Unknowable and uncontrollable	
8.Contractor's stage of organisational development is:	Maturity Growth	**Contractor** Contractual control Fate **Consultant** Fate **Client** No much belief in fate	9.1 Believe in:
		10. The state-individual relationship	
9.Type of Client is:	Politically Powerful Highly Professional Layman	Individual **Contractor** Individual **Consultant** Nation Individual **Client**	10.1 The precedent right and responsibility be accorded the:
		11. The project organisation's relationship to its environment	
10.Contractor's or Consultant's organisational issues are:	Heavily Affecting the Project Under their Proper Control	Submissive **Contractor** Dominant for Client's aspects **Consultant** Dominant for Contractor's/Consultant's aspects Submissive for Contractor's/Consultant's aspects Dominant **Client**	11.1 Project organisation's relationship to its environment is:

Figure 9.4: A guide to determine the cultural basic assumptions of public sector building construction projects in Sri Lanka

Table 9.5: Reasons for variations in basic assumptions (dominant own worldview) of sub-cultural groups of public sector construction projects in Sri Lanka

Cultural Dimension	Questions to be Answered	Reasons for Variations in Basic Assumptions Contractor (adapted from Table 9.1)	Reasons for Variations in Basic Assumptions Consultant (adapted from Table 9.2)	Reasons for Variations in Basic Assumptions Client (adapted from Table 9.3)	Key Features of External Cultural Setting
The nature of human relationships	A1 - What was the best authority system for the construction project?				
	A2 - What was the best way to organise project society?	• Having most previous experience in working for design and build contracts		• Lack of dedication of client • Coordination issues of Client and End-user, due to being two different organisations	✓ Previously most experienced type of contract of contractor ✓ Dedication of client ✓ End-user and client being separate or the same organisation
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	• This could be Competitive/Cooperative, if close connections were available			✓ Organisational preference of sharing privacy with selected client/ contractor/ consultant.
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	• No apparent strong reasons. Individual organisational preferences	• No apparent strong reasons. Individual organisational preferences	• No apparent strong reasons, may be following individual organisational preferences	✓ Organisational preference of sharing privacy with selected client/ contractor/ consultant.
2. The nature of human nature	A4 - What was the nature of human nature?				
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	• Ability to bring in strong arguments due to the maturity in industry • Belief on organisational competitive strategic advantage as strong human relationships	• This assumption was not dominant in Project C because, Client C was a layman, who let the Consultant C to control the things on behalf of them as appropriately	• Being a politically powerful client, Client A always preferred their own reality be determined situationally, than determining through objective tests and processes • Being a highly professional client with educated thinking, Client B wanted to think more practically, while following objective tests and processes • Client C being a layman heavily depending on the consultant and contractor, preferred looking for social consensus to determine the truth and reality, than solely depending on objective tests and processes	✓ Contractor's stage of organisational development ✓ Contractor's organisational strategic competitive advantage ✓ Type of client
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	• With maturity in the industry they learnt to accept and obey external pressures/forces • At the growth stage of organisational development, contractor trying harmonise with other team members , until they position themselves in the market		• Client A being a politically powerful client preferred having the project under their control with client dominance, without harmonising	✓ Contractor's stage of organisational development ✓ Type of client

5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	• Previous work relationships with team members • Organisational competitive strategic advantage being quality of output only • Organisational strategic competitive advantage being long term relationships with clients and consultants	• Most relevant time unit depended on the organisational strategic competitive advantage		✓ Contractor's organisational strategic competitive advantage ✓ Consultant's organisational strategic competitive advantage
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?				
	A9 - Should individuals in the project team be encouraged to innovate or conform?				
7. Unknowable and uncontrollable	A10 - Did the Contractor tend to believe in fate/uncontrollability?			• Client A being politically powerful, many internal project aspects were under their control such as, enough funding, therefore did not believe much on fate	✓ Type of client
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?			• Majority of actively engaged client's personnel of Project A being female, preferred the gender composition of project team being equal	✓ No justifiable major reason
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?		• Organisational structure being less projectised and more matrix	• Due to Client C and end-user being two different organisations and client's dedication on project being minimum resulted in 'doing' and end-user looking for learning avenues and initiating variations within project context demonstrated 'being-in-becoming'	✓ Consultant's project organisation structure ✓ End-user and client being separate or the same organisation
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?		• Consultant A, which was a government consultancy organisation, was massively controlled by the politically powerful Client A		✓ Type of client
11. The project organisation's relationship to its environment	A14 - Did the project organisation perceive itself to be dominant, submissive, harmonising or searching out a niche?		• Consultant A did not feel project organisation holding a submissiveness to the external environment, due to the Client A being a politically very powerful client in the country, which was a special scenario • Submissiveness occurred due to the organisational issues of contractor or consultant, which were not under their proper control		✓ Type of client ✓ Contractor's or consultant's organisational issues

How to use the guide: First, determine the relevant key features of the given external cultural setting. Next, select the appropriate basic assumptions based on the cultural features identified. For example; when deciding the basic assumptions of contractor, if organisational preference of sharing privacy with selected contractor is **'high'**, then the contractor holds the basic assumption that the correct way to relate to each other, to distribute power and affection within project context is being **'competitive'** and the acceptable space for cognitive, emotional and behavioural connections is **'close'**. Similarly, if organisational preference of sharing privacy with selected contractor is **'low'**, then the contractor holds the basic assumption that the correct way to relate to each other, to distribute power and affection within project context is being **'competitive/cooperative'** and the acceptable space for cognitive, emotional and behavioural connections is **'distanced'**. This example is graphically presented in Figure 9.5.

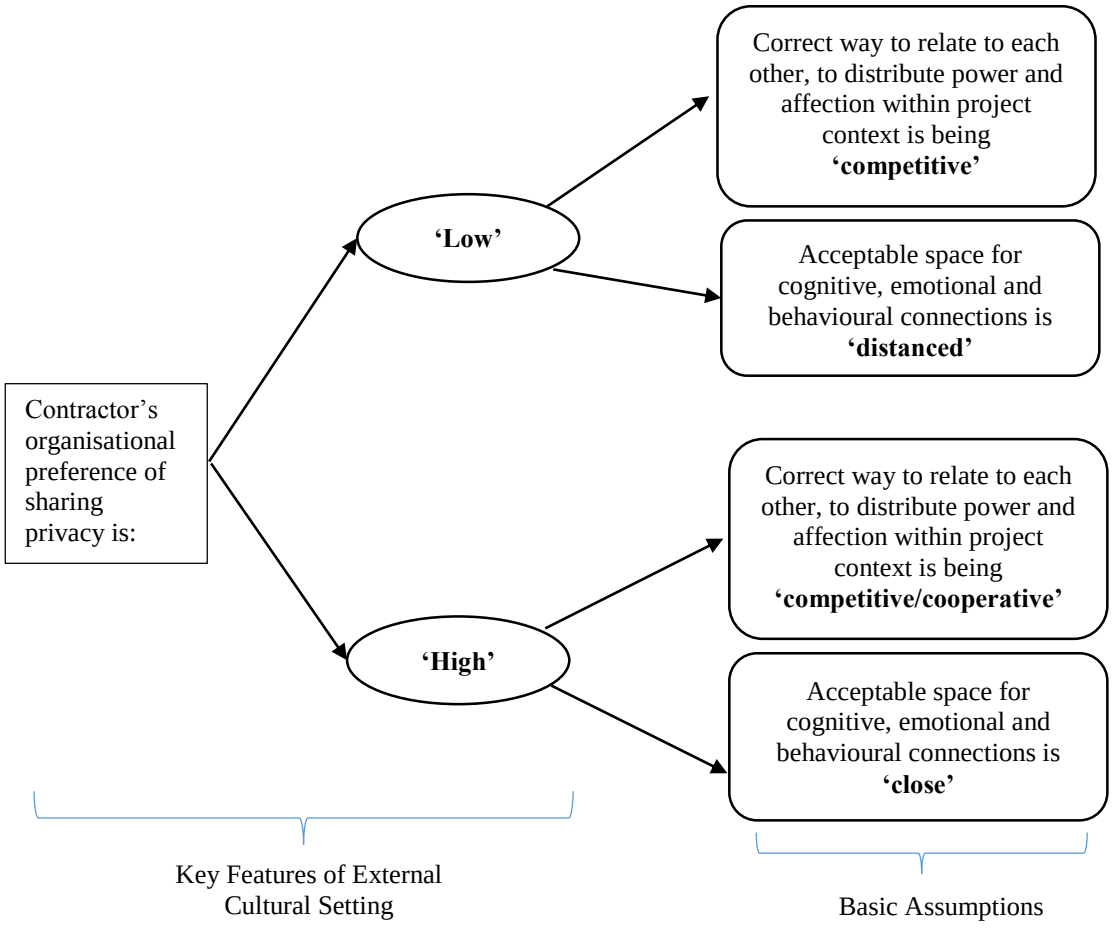


Figure 9.5: Example on how to use the guide

These key features of external cultural setting includes organisational characteristics of respective organisations of client, contractor and consultant and project characteristics of previously experienced projects. These key features identified through the three cases are describes as follows:

a) **Organisational preference of sharing privacy with selected client/contractor/consultant** – Organisational preference for sharing privacy can be either high or low. What contributes to the decision of such personal preference was complex in nature. More than the preference of the team members appointed from each organisation of client, contractor and consultant, close connections mostly depended on the urge and permission of higher authority levels of each organisation. This was apparent in all three cases. Close connections were clearly apparent at higher authority levels more than the lower authority level project participants. This may be due to the reason of such close connections were considered not acceptable in the industry, thus, lower level project participants were a little reluctant to demonstrate such close behaviours, if no support available from the higher authority levels. For example, Deputy General Manager (Consultancy) from consultant of Project A, Contractor's Project Manager of Project B, Senior Operations Engineer of Project C, Assistant Secretary to the Commission of Project C, Assistant Director General (Premises) openly declared about the close connections than the rest of the project participants of each case. All those individuals were from higher authority level of each party. It had no relationship to the previous work experience with the members and mostly depended on the personnel preference and trust between the two parties. This feature assisted in determining the basic assumptions on the correct way to relate to each other, to distribute power and affection within project context and the acceptable space for cognitive, emotional and behavioural connections.

b) **Previously most experienced type of contract of contractor –** The types of contracts considered in the guide were limited to the two most popular types of construction contracts in Sri Lankan context such as traditional method and design and build contracts. The type of contract demonstrated the sharing of construction

and design responsibilities among client and contractor i.e. both design and construction responsibilities were held by the contractor in design and build contract, while design responsibility was resided with the client and construction responsibility resided with the contractor in traditional method contracts. When the contractor was more experienced in design and build contracts and once they joined a new project in traditional method, then they had a tendency to find the limits of their construction responsibility as in witnessed with Contractor of Project C. This Contractor was reluctant to help the Client with design efforts, assuming it was not necessary to involve with designing in traditional method contracts. All the interviewees from Contractor of Project C indicated that they did not want to help client with design matters, and questioned what difference would be there in traditional method contracts in contrast to design and build, if they started involving with design. This demonstrated their assumptions on individualism, with the effect of previously most experienced type of contract. However, both the other contractors in Projects A and B, who had previous experience in traditional method projects only were ready to help their clients with the design matters to help accelerate the project. Thus, previously most experienced type of contract of contractor was a key feature assisted in determining the basic assumptions of the best way to organise project society.

c) **Consultant's project organisation structure -** Consultant's project organisation structures were limited to the most popular type of project organisation structure in consultancy organisations in Sri Lankan context, i.e. matrix type of project organisation structure. Matrix type could be either more of a functional matrix or more of project-led. In functional matrix, functional managers, who were the heads of each division in consultancy organisation (e.g. head of quantity surveying division, head of architectural division, head of structural engineering division) had more control over the respective functions than the project manager appointed. When the project organisation structure became more project-led, project manager had more control over the functions than the heads of the divisions. Accordingly, consultant's personnel in project-led matrix would be more dedicated to project works than the functional matrix. All the consultants in

the three cases were attached to project organisations with more functional matrix structures. Predictions of basic assumptions for project-led matrix project organisations were done through the comments made by the consultant's personnel and contractor's personnel being interviewed in all three cases. This feature assisted in determining the basic assumptions of the best way to organise project society and the motive for behaving within the project context.

d) **End-user and client being separate or the same organisation –** Some public sector building construction projects were available with end-user and client being separate organisations such as in Project B. However, the most common scenario was both the end-user and client being the same organisation as in Projects A and C. When end-user and client became separate organisations, client funded and managed the project on behalf of the end-user and end-user would pay more attention on getting their functional requirements fulfilled. Thus, mostly, the two organisations would be having different objectives leading towards individualistic behaviours and thinking. A similar situation was evident in Project B too. Thus, this feature assisted in determining the basic assumptions of the best way to organise project society and what was considered the motive for behaving within the project context.

e) **Dedication of client –** Dedication of client was another feature that signalled about the basic assumptions in a cultural setting. Dedication of the client could be either high or low. Appointing client's representative such as a 'Works Engineer' did not necessarily contributed to the client's dedication. Project B with a separate appointment of a Works Engineer to overlook the project had no adequate client's dedication. However, Project C without any fulltime appointment of a client's personnel to overlook the project had a high dedication to project affairs. In all three cases, all the clients had the urgency and necessity to finish the project on time, within the agreed budget and quality. However, dedication to project works differed owing to their individual organisational routine works and situations. A project with separate client and end-user with a highly dedicated client was not available within the three cases. Predictions for this combination was done using

the comments made by the consultant's personnel of Project B. This feature too assisted in determining the basic assumptions of the best way to organise project society and the motive for behaving within the project context.

f) **Contractor's organisational strategic competitive advantage –** The most popular strategic competitive advantages of private sector contractors working for public sector projects were long term relationships with clients or consultants and quality of output. It was observed through Project B that even the contractors carrying the cost leadership as the strategic competitive advantage had to consider maintaining relationships with clients and consultants. This was because, even for open tendering, clients depended on referrals from previous clients and consultants of the bidders during contractor selection. Contractors maintaining long term relationships as the competitive advantage were more futuristic and looking for social consensus in decision making. This was evident in Project B and C too. In contrast, when quality of output was considered as the competitive advantage, contractor's focus was more into the present job only. Such contractors were more goal-oriented and did not consider relationships much in the project affairs. Thus, knowledge on contractor's organisational strategic competitive advantage assisted in determining the basic assumptions on the most relevant time unit/s for the conduct of daily affairs within the project and how reality and truth were defined within the project context.

g) **Consultant's organisational strategic competitive advantage –** The most popular strategic competitive advantages of public sector consultants working for public sector were long term relationships with clients/contractors and quality of output. It was observed through the case studies that public sector consultants were not mostly having profit motive. Thus, consideration of cost leadership as a strategic competitive advantage had no much popularity in the industry. None of the consultants of Projects A, B or C worked with a considerable profit motive compared to the contractor. Consultant was more futuristic in their decision making, when the organisational competitive advantage was on maintaining long term relationships with clients/contractors. Further, when the quality of service

was considered as the competitive advantage, consultant was more goal-oriented and focused on present. This feature of consultant's organisational strategic competitive advantage assisted in determining the basic assumptions on the most relevant time unit/s for the conduct of daily affairs within the project.

h) **Contractor's stage of organisational development –** The contractor's stage of organisational development could be either maturity or growth. When the contractor was on the stage of 'maturity', they had a tendency to become more fatalistic and practical in their decision making as witnessed in Projects A and C. In contrast, when the contractor was on 'growth' stage, they tended to become more harmonising, looking for social consensus in decision making, because, contractor lacked experience to deal with both consultant and client at growth stage. This situation was evident in Project B. Accordingly, this feature of external cultural setting assisted in determining the basic assumptions on how reality and truth were defined within the project context and on what the "correct" way/s for humans to behave within project context.

i) **Type of client –** The type of client in a public sector building construction project could be either a politically powerful, highly professional or a layman. These three types of clients were available in the three cases selected in Project A, Project B and Project C respectively. Politically powerful clients tried to dominate project matters, while professional clients tended to be more objective in their decisions. Laymen mostly depended on the consultant and contractor in decision making following social consensus mostly. This feature of external cultural setting assisted in determining the basic assumptions on how reality and truth were defined within the project context, the "correct" way/s for humans to behave within project context, on what the precedent right and responsibility be accorded and the belief on fate and uncontrollability.

j) **Contractor's or consultant's organisational issues –** Contractor's or consultant's organisational issues could be either heavily affecting the project without adequate control of contractor/consultant or under their proper control. However, such a control or loss of control affected for the basic assumptions of

the consultant only. When the contractor's/consultant's organisational issues were under their proper control, consultant believed that project organisation's relationship to its environment was dominant. This was evident in Project A. In contrast, when the contractor's/consultant's organisational issues were not under their proper control, consultant believed that project organisation's relationship to its environment as submissive as in Projects B and C. However, without a difference, in both situations, contractor believed that project organisation's relationship to its environment as submissive.

It was evident from the case study findings that basic assumptions of contractor, consultant and client as indicated in Figure 7.4 and the actual behaviour of the parties were identical in all situations, except with the basic assumptions on the best authority system for the construction project. According to the basic assumptions of the best authority system, contractor assumed 'autocracy of an unbiased and dedicated leader', consultant assumed 'individual role authority' and client assumed 'autocracy of consultant' as the best authority system for the construction project. However, it was the client's autocracy and the obedience on client's autocracy by consultant and contractor were what existed as the actual behaviour within the construction project context.

Limitations and pragmatic application of the guide – The guide in Figure 9.4 can be used to determine the cultural basic assumptions of public sector building construction projects, procured under the traditional procurement method. Contractor and consultant selection methods for such projects could be either negotiations or open tendering, since case study sample included a mix of both methods. The applicability of this guide to construction projects procured under other procurement methods such as design and build or relational type of contracts would be very limited. This is because, case study data does not represent these settings and guide itself provides evidences for the demonstration of varied cultural basic assumptions for different types of procurement methods. This is due to having 'previously most experienced type of contract of the contractor' as a determinant of external project cultural setting. In addition, the applicability of this guide to private sector projects too would be very

limited because, guide includes type of public sector client as a determinant of external project cultural setting, providing evidences for the demonstration of varied cultural basic assumptions for different types of clients, even among different public sector clients. However, the findings could be applicable to other similar national cultures such as India and Bangladesh in South Asian region to name a few.

9.6 Discussion of case study findings

There were only limited number of attempts in the construction literature developing guides and models to identify the construction project culture. Such popular attempts included the project culture model developed by Kumaraswamy et al. (2002) based on sub-cultures and a project cultural model proposed for relationship contracting by Zuo (2008) (refer Sub Section 2.8).

The model proposed by Zuo (2008) included five cultural orientations such as; integrative, cooperative, goal-oriented, flexible and people oriented. These five orientations were related to some basic assumptions (cultural orientations) in the guide to determine the basic assumptions of construction projects as presented in Figure 7.4. A map between such basic assumptions (cultural orientations) from the guide and the five cultural orientations of proposed project culture model by Zuo (2008) is presented in Table 9.6.

Table 9.6: Pattern matching of project culture model by Zuo (2008) and basic assumptions of public sector construction projects in Sri Lanka

Project Cultural Model by Zuo (2008) for Relational Contracting Projects		**Related Basic Assumptions from the Guide to Determine the Project Culture of Traditional Method Contracts (Cultural Orientations)**
Cultural Orientation	**Description**	
Integrative	Inputs of various contributing parties (e.g. design, construction, consultant etc.) are encouraged in the early stage of project process	The best way to organise project society is on the basis of individualism or groupism
Cooperative	There are few conflicts during the course of projects. Emphasis is placed on aligning the objectives of different participants and organisations to a common goal -	The correct way to relate to each other, to distribute power and affection within project context is being competitive or cooperative

	the objectives of the project. Teamwork is popular. The project participants collaborate with each other	
Goal-oriented	More attention is given to getting the job done. The process of the project tends to be tolerated	The motive for behaving within the project context is being or doing or being-in-becoming The "correct" way/s for humans to behave within project context is/are being fatalistic or contract dominance or client dominance or harmonising
Flexible	The way a project is processed is very flexible and easy to change. Innovative approaches, which include risk-taking, are encouraged and rewarded in the project process	Individuals in the project team are encouraged to conform
People-oriented	It is high priority to develop team members' skills. No blame and celebrating achievements	The nature of human nature is evil The acceptable space for cognitive, emotional and behavioural connections is close or distanced

According to Table 9.6, all the cultural orientations included in the proposed model by Zuo (2008) for relational contracting projects are included in the proposed guide to determine the basic assumptions (cultural orientations) for projects procured under traditional method in this research. For example, the cultural orientation of ‘integrative’ addresses the same cultural dimension of the best way to organise project society and ‘cooperative’ addresses the same cultural dimension of the correct way to relate to each other. Further, the proposed guide includes a variation of possible orientations for a given basic assumption, in relations to the key features of external cultural setting. For example, the best way to organise project society could be on the basis of individualism or groupism depending on previous most experienced type of contract, consultant’s organisational structure, end user and client being separate/same organisation or client’s dedication. Further, the proposed guide addresses more cultural dimensions and related cultural orientations than the proposed model by Zuo (2008) that would be essential to understand the cultural context such as; the best authority

system for the construction project, how reality and truth are defined within the project context, the most relevant time unit/s for the conduct of daily affairs within the project to name few. Moreover, it includes, specific basic assumptions for public sector construction projects such as should the precedent rights and responsibilities be accorded the nation or individual. In addition, the proposed guide provides the cultural orientations of client, contractor and consultant separately and comprehensively to understand the project culture better.

Kumaraswamy et al. (2002) indicated that principle elements coming together to evolve the construction project culture as organisational, operational, individualistic and professional sub-cultures. When developing the guide for determining basic assumptions in construction projects, the organisational, operational and some professional sub-cultural components as described by Kumaraswamy et al. (2002) were considered to identify the patterns of basic assumptions. However, patterns of basic assumptions demonstrated within individualistic sub-cultures and some specific professional sub-cultures were disregarded considering generalisation of the patterns to the client, consultant and contractor sub-cultures. Such disregarded patterns from professional sub-cultures were mainly from the architects in the three projects.

According to Rameezdeen and Gunarathna (2003), organisational culture of consultants in Sri Lanka valued teamwork, encouraged discussions, participative decision-making and open communication. However, their basic assumptions in project cultural context are more of individualistic with functional matrix organisational structure, which is the most popular organisation structure in Sri Lankan context. They believed the correct way to relate to each other as being either competitive or cooperative as per the occasion. More than being harmonising, they believed the correct way for humans to behave within the project context as being contract dominance. Further, according to Rameezdeen and Gunarathna (2003), organisational culture of contractors in Sri Lankan context valued output maximisation, encouraged a competitive work environment and emphasised goal accomplishment. However, according to the case study findings, within project

cultural context, contractors are more collective in project organisation, competitive in relating to other members and fatalistic in behaviour.

The identified basic assumptions of client, contractor and consultant can be further explained using the national cultural dimensions of Sri Lanka. For example, Freeman (1997) indicated that the expansion of urban-industrial development and rising incomes in Sri Lanka made a national cultural shift from collectivism towards more individualism among Sri Lankan nationals. Popular integrated assumptions as presented in Figure 9.2, clients and consultants in Sri Lankan context believe in individualism as the best way to organise the project society. Further, contractors and consultants believe on competition as the correct way to relate to each other in order to distribute power and affection within project context. Both these popular integrated assumptions could be stemming from the national cultural beliefs on individualism. In addition, Ali, Weerakkody and El-Haddadeh (2009) indicated that Sri Lankans were more risk averse and operated with high power distance. Accordingly, Sri Lankans were reluctant to try out new technologies and they were scared of losing power in working environment due to use of these new technologies, especially the public sector employees. This is more in line with the belief of the clients, contractors and consultants on conformance over innovation in Sri Lankan construction project context. Public sector clients are very much reluctant to try out innovations in construction projects, and it is worse to an extent, they are scared of new building services being introduced to buildings too. Further, Sri Lankan contractors and consultants follow conformance, when there are adequate resources in projects for innovations, owing to this risk averse nature stemming from national culture.

Available extent literature gave some notions of the ten key features of external cultural setting discussed in the guide to determine basic assumptions of public sector building construction projects in Sri Lanka (refer Sub Section 7.5). The feature, ‘organisational preference of sharing privacy with the appointed client or contractor or consultant’ is in line with the elaborations of the Zuo (2008) about the interpersonal relationships (Guanxi) preferred by Chinese practitioners in the context of relational contracting. As described by Ling and Li (2011), when two parties form such an

interpersonal relationship of Guanxi, they establish a connection between the two to benefit from personal or social transactions. The dimensions of Guanxi included instrumentalism, personal relationship, trust, mutual exchange and prolonged existence. Further, Guanxi was able to enhance reputation, power, and influence, for effective business relationships. Similarly, high organisational preference of sharing privacy with the appointed client or contractor or consultant in Sri Lankan construction project context too demonstrates the basic assumption of close connections as acceptable space for cognitive, emotional and behavioural connections. The parties in Sri Lankan construction project culture too are able to gain the benefits of enhanced power, influence and effective business relationships through such connections. For example, the close connections between the client and contractor in Project C created a higher influential ability towards the roles and responsibilities of the consultant. Such influences included summoning higher management of consultant's organisation for instant meetings by the client in request of the contractor and client seeking advice from the contractor about the performance of the consultant and so on.

The next key feature of external cultural setting includes the 'previous most experienced contract type of contractor'. As indicated by the Ankrah et al. (2009) there was no evidence available for different procurement methods resulted in different cultural orientations, in their study on factors influencing the culture of a construction project organisation. However, clear evidences were available that previous most experienced type of contract of the contractor demonstrating the hidden basic assumptions about the best way to organise project society. For example, it was evident in Project C that when a contractor had the previous most experience on 'design and build' contracts, they were looking for strict responsibility allocation in relation to design and construction, since they experienced a programming in mind that unlike the 'design and build' effort, they had come for only construction in the 'traditional method' contract. They constantly compared their learnings in previous type of contract and current type of contract in determining the roles and responsibility allocation. This finding supported the Schein's (1984, 1990) elaborations on existing basic assumptions at a given instance was based on previous basic assumptions of the organisational members. Further, it could be argued that the procurement methods

demonstrating differing cultural orientations, since the project culture model proposed by Zuo (2008) for relational contracting and the guide developed in this research for traditional method (refer Figure 7.4) have many differences in cultural orientations among the two. For example, the cultural orientations of 'individualism in project organisation', 'competition among members' and 'strict conformance over innovation' in projects with traditional method of procurement are not available in relational contracting types of projects.

The feature of external cultural setting 'consultant's project organisation structure' has some links to the discussions on effect of organisational structure on project culture in cultural literature. A quantitative study carried out by Stare (2011) to identify the impact of the organisational structure and project organisational culture on project performance in Slovenian enterprises concluded that an increasing level of project manager authority (from a low level of authority in a functional to the highest level in a project-based organisation) positively impacts on several cultural dimensions (line management's attitude, following the internal regulations, respecting the project manager's formal authority). That research showed that a matrix project organisation was in use in two thirds of the enterprises considered for that study. A similar pattern is identified in the developed guide for determining basic assumptions. Moving from functional matrix to project-led matrix structure of project organisation, level of authority of the project manager, who is assigned from the consultancy organisation is increased and the dedication of the consultant's personnel appointed to the project too is increased.

The features such as 'type of client', 'dedication of client' and 'end-user and client being separate or the same organisation' are in line with the contribution of the client for the project cultural orientations as described by Ankrah et al. (2009) and Fellows et al. (2007). According to Fellows et al. (2007), a project culture was developed based on a common goal, where setting such a goal for the project participants, it was important to identifying who is the client and what is needed to satisfy the client. The guide in Figure 7.1 being limited to public sector projects is an indication of the type of client. Moreover, since construction project culture is a combined demonstration of

sub cultural assumptions of consultant, contractor and client, the indication of basic assumptions of the client in variation to the different types of public sector clients in the guide is further in line with the elaborations of the Fellows et al. (2007). The guide goes beyond the type of client to the extent of considering the dedication of the client and looking into the set-up of end-users as well.

Evidences were available with the extent literature related to the key feature of 'contractor's stage of organisational development' as indicated in the guide to determine basic assumptions. Chinyio (2007) explained how the attitudes mattered in construction projects, especially in partnering contracts, when a larger, established clients and a smaller non-established contractor were entered in to a partnering agreement. This explanation included that larger, established clients used to hold negative attitudes towards smaller, non-established contractors, when requested for additional claims, indicating such claims were not in 'the spirit of partnering'. A similar situation was reported with Project B, where the contractor, who was not at the growth stage in industry complaining, they were not able to claim all additional costs incurred and time wasted due to client's variations, being a non-established contractor. This was because, they were afraid that client would hold a bad attitude about them for claiming additional often. Such contractors were used to harmonise with other team members and look for social consensus in defining what was true in project context.

The other key features of external cultural setting are 'contractor's organisational strategic competitive advantage', 'consultant's organisational strategic competitive advantage' and 'contractor's or consultant's organisational issues'. Fong and Kwok (2009) evaluated the organisational culture of project levels of contracting firms in order to assess knowledge management success. They discussed the possibility of cultural behaviours such as respect to other team members differ according to the organisational objectives of the contractor's firm. Elaborating on the cultural differences of between architectural and contracting firms, Ankrah and Langford (2005) indicated that objectives of the two types of firms contributed to the differences of the organisational cultures, hence would have implications for team working.

In addition, the identified basic assumptions included integrated, differentiated and fragmented basic assumptions as indicated by Gajendran et al. (2012), summarised in Figure 9.2 and Figure 9.3.

9.7 Summary

This chapter included the cross case analysis of Cases A, B and C. The cross case findings included basic assumptions of contractor, consultant and client together with the reasons for variations among the three cases. Next, a further analysis of the identified basic assumptions was carried out to identify the popular integrated, differentiated and fragmented basic assumptions. Such popular combinations of basic assumptions were mapped with some popular responses for internal integration and external adaptation problems identified through the cross case analysis. Further ten key features of external cultural setting such as: organisational preference of sharing privacy with the appointed client or contractor or consultant; previously most experienced contract type of contractor; consultant's project organisation structure; type of client; dedication of client; end-user and client being separate or the same organisation; contractor's stage of organisational development; contractor's organisational strategic competitive advantage; consultant's organisational strategic competitive advantage, and contractor's or consultant's organisational issues were identified. A guide to determine the cultural basic assumptions of public sector building construction projects in Sri Lanka was developed by mapping the identified basic assumptions to the key features of external cultural setting. Next chapter presents the conclusions and recommendations drawn from this research.

CHAPTER 10: CONCLUSIONS

10.1 Introduction

This chapter presents the conclusions drawn from this research study and the recommendations made based on the conclusions. Initially, the research process adopted is discussed in a summary, indicating the aim and objectives. Next, the conclusions drawn from the key research findings are discussed in relation to each research objective. The limitations of the research and contribution to knowledge are identified next. Finally, the research conclusions are extended to offer recommendations for the industry and for future potential research.

10.2 An overview of the research method

The aim of the research was to develop a methodology to determine the public sector building construction project culture in Sri Lanka, by analysing underlying basic assumptions. These were to:

1. review the concept of basic assumptions in a cultural context, in order to develop a working definition and a conceptual framework, which help to understand construction project culture using underlying basic assumptions
2. develop a methodology to derive underlying basic assumptions of public sector building construction projects
3. analyse patterns of underlying basic assumptions to derive basic assumptions of the sub-cultural groups of contractor, consultant and client in public sector building construction projects in Sri Lanka
4. analyse the underlying basic assumptions of public sector building construction projects in Sri Lanka, using the integration, differentiation and fragmentation perspectives of culture
5. design a guide to determine the public sector building construction project culture in Sri Lanka, using underlying basic assumptions of dominant sub cultures

The key research question that this research attempted to answer was "*how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?*" The research process, which was adopted to realise the aforementioned aim and objectives and thereby answer the key research question, consisted of five key stages.

The first stage comprised of a literature review into seminal cultural research in general and in construction contexts to achieve the first objective (refer Chapter 2 and 3). The concept of basic assumptions in culture was synthesised mainly using the Value Orientation Theory and extended to identify the construction project culture through a working definition and a conceptual framework. Fourteen cultural dimensional areas were identified as a guide to consider, when applying the conceptual framework to derive basic assumptions in construction project cultural context.

The second stage comprised of developing a methodology to derive underlying basic assumptions of public sector construction projects to achieve the second objective (refer Chapter 4). This involved selecting case study as the research strategy, which shares ontological, idealist assumptions in the interpretive paradigm (refer Chapter 3 and 4). 'Construction project culture' was identified as the main unit of analysis. Triangulation of several data collection techniques were utilised. They mainly involved interviews using a guide for indirect questioning to extract basic assumptions and observations at progress review meetings using a guide to identify responses to internal integration and external adaptation problems. A pilot case study was conducted to test and refine the appropriateness and robustness of these data collection instruments (refer Chapter 5).

The third stage comprised of data collection from the selected three public sector building construction projects in Sri Lanka, which followed theoretical sampling strategy. Every project team consisted of a public sector client, government consultancy organisation and a private contractor organisation. Three personnel from each sub-cultural group of client, contractor and consultant were interviewed from

each case and observation of two progress review meetings for each case were carried out in order to derive rich in-depth qualitative data (refer Chapter 4) .

The fourth stage involved conducting the within case analyses (refer Chapters 6, 7 and 8) and the cross case analysis (refer Chapter 9) to achieve the third, fourth and fifth objectives. Code based content analysis was utilised to rigorously analyse qualitative data derived from the interviews and meeting observations. During within case analyses, the patterns of basic assumptions and the related basic assumptions were derived for each case. In the cross case analysis, a comparison of the basic assumptions across the three cases were made further analysing them using integration, differentiation and fragmentation perspectives of culture. The analysis of variations of basic assumptions across the three cases led to identify key features of external cultural setting and assisted to develop a guide to determine the cultural basic assumptions of public sector building construction projects in Sri Lanka.

The fifth stage involved pattern matching of the case study findings with the existing literature and finally, conclusions and recommendations were drawn.

10.3 Conclusions of the research

The main conclusions of the research with regard to each objective set are discussed within this sub section.

10.3.1 Objective 1: Review the concept of basic assumptions in a cultural context, in order to develop a working definition and a conceptual framework, which help to understand construction project culture using underlying basic assumptions

Among different cultural manifestations, basic assumptions were identified as the core of every cultural context. The concept of basic assumption was identified as a value that transformed into deep beliefs of an individual or a group. This is when a given value, which led to the behaviours of such individual or the group began to solve the problems of the given cultural context and get rooted in the mind of the individual or the group as a taken-for-granted value (Schein, 1984, 2009). Many researchers

identified these basic assumptions with the terminology ‘taken-for-granted values’ or ‘world-views’ too. Vaguely, some researchers referred these basic assumptions as ‘cultural orientations’, but one should carefully look into their interpretation of the phenomenon for those ‘cultural orientations’ to be basic assumptions. Further, some researchers used the term value and basic assumptions interchangeably for the phenomenon of basic assumptions. Basic assumptions of an individual or a group could be derived through the Value Orientation Theory (VOT) by Kluckhohn and Strodtbeck (1961). VOT is consisted of three basic theoretical assumptions as: (1) there is a limited number of common human problems (cultural dimensions) for which all people must at all times find some solutions, (2) there is a variability in solutions (basic assumptions/world view) for all such problems, which is neither limitless nor random but, is definitely variable within a range of possible solutions and (3) all alternatives of all solutions are present in all societies at all times but, are differentially preferred. This research too followed the VOT in deriving the basic assumptions of the public sector building construction projects in Sri Lanka.

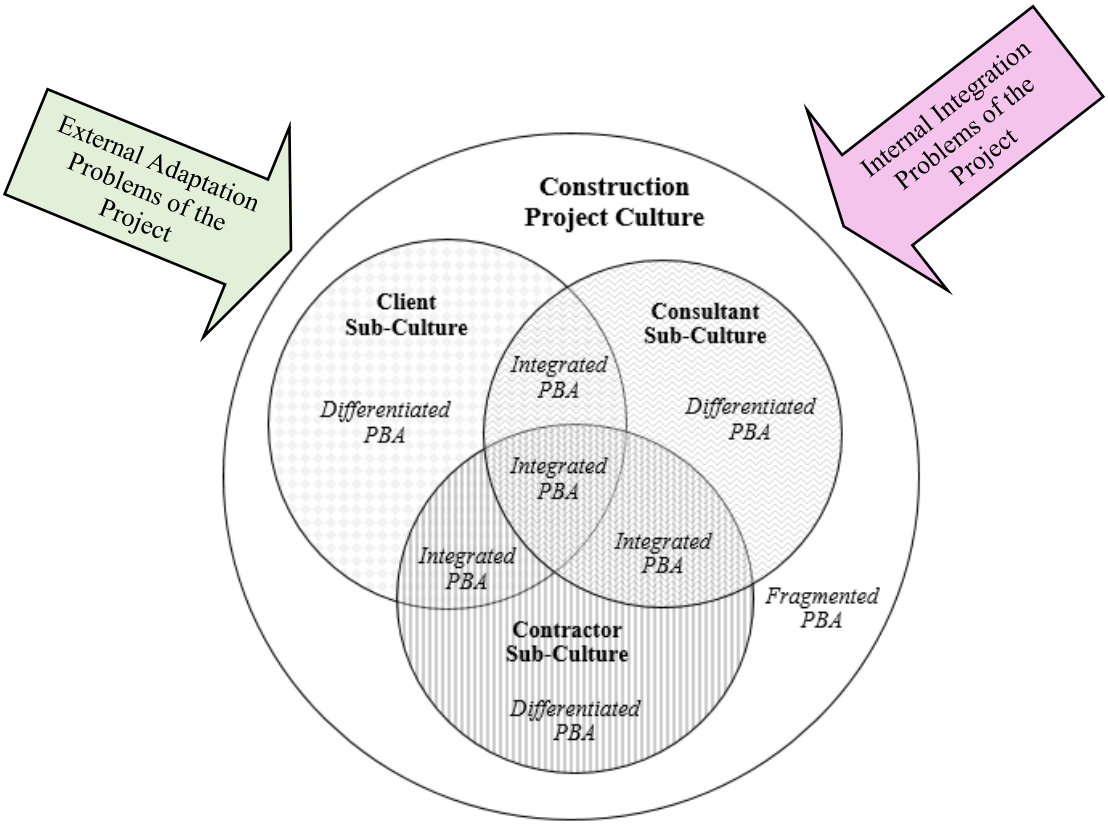
The working definition developed for construction project culture was:

> “Construction project culture is the patterns of underlying basic assumptions of the project team members; some in harmony among team members, some in conflict among sub-groups within the project and some in paradox, demonstrated through the responses for internal integration and external adaption problems of the project.”

This definition indicated that project culture was the patterns of basic assumptions and those patterns were demonstrated through the responses of the internal integration and external adaption problems of the construction project. This way of conceptualising construction project culture as patterns of basic assumptions was more in line with the belief that culture was the unconscious processes of forms and practices of construction project team members i.e. patterns of basic assumptions were unconscious or psychological processes of the human mind. Thus, this definition considered culture as a root metaphor. These patterns of basic assumptions emerged subjected to the previous basic assumptions held by the members and through the new

assumptions learned within the projects. The said internal integration and external adaptation problems were considered from the work of Schein (1990). Internal integration problems included; language, boundaries, power and status, intimacy, rewards and punishments and ideology, while external adaptation problems included; strategy, goals, means of accomplishing goals, measuring performance and corrections. Further, this working definition directs project culture to be viewed from all the three cultural perspectives; integration, differentiation and fragmentation i.e. patterns of basic assumptions in harmony among team members as integration, patterns of basic assumptions in conflict among sub-groups within the project as differentiation and patterns of basic assumptions in paradox as fragmentation. Following the work of Gajendran et al. (2012), practical-orientation was considered in both integration and differentiation perspectives with the expected outcome to be the improvement of mutual understanding and removal of misunderstandings among members of the project organisation and among sub-cultural groups. The expected outcome of fragmentation perspective was the emancipation of members in project culture.

The conceptual framework developed to understand construction project culture using underlying basic assumptions is presented in Figure 10.1. This framework included the concepts discussed within the aforementioned working definition. Both the definition and framework were free from sector (public or private) or national territory (E.g.: Sri Lanka) specific concepts. Thus, both the working definition and the conceptual framework could be applied for an empirical data collection and an analysis to understand the construction project culture in any sector or a national territory without alterations.



PBA – Patterns of Basic Assumptions

Figure 10.1: Conceptual framework to understand construction project culture

10.3.2 Objective 2: Develop a methodology to derive underlying basic assumptions of public sector building construction projects

Conceptualising construction project culture as patterns of basic assumptions essentially considers culture as a root metaphor with ontological assumption of reality as a social construction. Therefore, subjective qualitative means of knowledge creation was expected with thick descriptions, following the axiological assumptions of more value input from the researcher on the research process. This led to the epistemology of understanding, how the social reality about project culture was created. Thus, the research paradigm of this research was considered as interpretivism with the cultural philosophical position being culture as a root-metaphor.

These patterns of underlying basic assumptions of the project team members were quite difficult to capture in a research without a proper methodology being adopted. These difficulties included: what aspects in a project cultural context to be observed and questioned to collect data and, how to analyse the collected data, in order to extract the patterns of basic assumptions and the basic assumptions in a cultural research. Adaptation of qualitative approaches allowed collecting context specific data. Application of case study research strategy using multiple data collection techniques (interviews, observations and documentation) aided for a robust collection of data and improved data triangulation in this research. In addition, conducting the pilot study as a pre-test added more value to the research.

The semi-structured interview guideline and the progress review meeting observation guideline, which were tested and verified through the pilot study, allowed for a systematic way of questioning and observing on responses for internal integration problems (language and concepts, group boundaries, power, status and intimacy, rewards and punishments and ideology) and external adaptation problems (mission, goals and strategies, means of accomplishing goals, measuring performance and corrections) of the construction project to extract the underlying basic assumptions. The justifications provided for any 'response' for internal integration and external adaptation problems, gave notions to the patterns of basic assumptions and basic assumptions.

When preparing the interview guideline, questions were prepared to ask the interviewee; 'why', 'what are the reasons', 'who suggested', 'what is the speciality in this project context' to adopt such responses. This was because, underlying basic assumptions in a cultural context would not be directly available to the researcher and those were to be extracted by analysing such 'responses' adopted for internal integration and external adaptation problems. Thus, questioning the key actors in a cultural setting and observing the required aspects was a skill to be developed by a researcher and this was obtained through a pilot study.

The pilot study confirmed that questioning on special challenges, conflicting or critical situations are essential to go deep into the assumptions of the project team.

Furthermore, asking the interviewees to come up with examples to support their ideas brought in verifications, justifications and more depth to their ideas. In addition, observations made by means of participating in progress review meetings of the construction project team was very important, since such meetings were considered as one of the main socialisation events of the project team members. Furthermore, observing meetings and paying site visits prior to interviews made the interviews more effective. It was essential to observe the meetings as an independent passive participant to obtain the real picture by avoiding the hawthorn effect. Finally, the data analysis of the pilot case study indicated the possibility of extracting the patterns of basic assumptions and deriving the basic assumptions based on those patterns following the VOT.

10.3.3 Objective 3: Analyse patterns of underlying basic assumptions to derive basic assumptions of the sub-cultural groups of contractor, consultant and client in public sector building construction projects in Sri Lanka

Subjected to the indicative data analysis process of comparing, coding and theme building, patterns of basic assumptions were derived for the sub-cultural groups of contractor, consultant and client of each case. Patterns of basic assumptions of contractor's sub-cultural group of Projects A, B and C were summarised in Tables 6.2, 7.2 and 8.2 respectively. Patterns of Basic Assumptions of consultant's sub-cultural group of Projects A, B and C were summarised in Tables 6.3, 7.3 and 8.3 respectively. Patterns of basic assumptions of client's sub-cultural group of Projects A, B and C were summarised in Tables 6.4, 7.4 and 8.4 respectively. Due to the context specific nature of patterns of basic assumptions, those were presented in the within case analysis only.

These patterns of basic assumptions were mapped to the fourteen cultural dimensional areas identified in Table 3.1 with the intention of deriving the basic assumptions. These 14 areas were sub-perspectives of the 11 cultural dimensions identified through the literature review as; (1) The nature of human relationships, (2) The nature of human nature, (3) The nature of reality and truth, (4) The nature of human activity, (5) The nature of time, (6) Acceptance on homogeneity or diversity, (7) Unknowable and

uncontrollable, (8) Gender (9) Motive for behaving, (10) The state-individual relationship and (11) The organisation's relationship to its environment. A new cultural dimensional area was derived from the case data to determine the nature of human relationship. This was about what was the acceptable space for cognitive, emotional and behavioural connections among team members. Such an acceptable space could be either close or distanced. Further, the cultural dimensional area question of "is the team best off if it is highly diverse or if it is highly homogeneous?" (refer Table 3.1) was not leading to any basic assumption of construction project culture. This was because, construction project team members had to accept that any construction project team as inevitably diverse in nature.

Overall, there were both similar and contrasting basic assumptions among different sub-cultures. These basic assumptions included the dominant own world view of each sub-cultural group and the view of each sub-cultural group about the dominant world view of other sub-cultural groups too. This derivation of basic assumptions on world view of other sub-cultural groups was to check for any differences between the 'believed assumption' of any sub-cultural group and any 'existed dominant assumption' of other sub-cultural group within the team. For example, consultant of Project A believed on 'individual role authority' as the best authority system within the project, however, they also believed that in contrast to their belief, client's world view was 'client's autocracy' as the best authority system within the construction project. The basic assumptions of the sub-cultural groups of contractor, consultant and the client were summarised in the Tables 9.1, 9.2 and 9.3. As per the three assumptions of the VOT, there were variations in the basic assumptions among groups in the same context, for the same cultural dimension. For example, when contractor's sub-cultural group believed the correct nature of human activity to be 'fatalistic', client believed it to be 'client dominance'. Overall, the basic assumptions of the Sri Lankan construction project culture demonstrated some links to the Sri Lankan national cultural orientations.

10.3.4 Objective 4: Analyse the underlying basic assumptions of public sector building construction projects in Sri Lanka, using the integration, differentiation and fragmentation perspectives of culture

The basic assumptions of public sector building construction project culture in Sri Lanka was further analysed using the integration, differentiation and fragmentation perspectives of culture. Figure 9.2 presents those popular integrated basic assumptions and Figure 9.3 presents the popular differentiated and fragmented basic assumptions in public sector building construction projects in Sri Lanka, along with the popular responses for internal integration and external adaptation problems. These responses for popular integrated, differentiated and fragmented basic assumptions provided a further description of the nature of the existed basic assumptions so that the patterns of basic assumptions arising out of such responses could be predicted.

- Integration perspective discussed the most popular shared basic assumptions among all or any two of the sub-cultural groups of contractor's, consultant's and client's sub-cultural groups. Seventeen (17) popular such integrations were identified. Only two basic assumptions were shared among all three sub-cultural groups: "individuals in the project team were encouraged to conform" and "nature of human nature was evil".
- Differentiation perspective identified the existence of sub-cultural groups and the ambiguities among such sub-cultural groups. Nine (9) popular such differentiated basic assumptions were identified.
- Fragmentation perspective identified the ambiguous interpretations of basic assumptions by members in a cultural context. The four (4) fragmentations identified included: "contractor's belief on 'autocracy of unbiased and dedicated leader', consultant's belief on 'individual role authority' and client's belief on 'autocracy of consultant' as the best authority system for the construction project, but survived without any of the said types of authorities"; "consultant appraised 'cooperation' with informal/non-contractual behaviours of team members as contributing to project success, while assuming 'contract dominance' as the correct way for humans to behave within project context"; "dilemma of the client, contractor and consultant about the acceptable space

for cognitive, emotional and behavioural connections among any of the two parties without being bias and losing trust of the third party", and "consultant's dilemma of satisfying the public sector client verses duty of serving the government/nation".

10.3.5 Objective 5: Design a guide to determine the public sector building construction project culture in Sri Lanka, using underlying basic assumptions of dominant sub cultures

A guide to determine the public sector building construction project culture in Sri Lanka was designed as presented in Figure 9.4. This was done by mapping the basic assumptions identified for the contractor's, consultant's and client's sub-cultural groups with some key features of the external cultural environment. These key features were derived from the reasons identified for the variations in basic assumptions among three cases of the three sub-cultural groups. These features were some signals to predict the basic assumptions indicated in the guide. Thus, one should first determine the external cultural features of the given cultural setting, before determining the basic assumptions of the public sector building construction projects. Such key features included; organisational preference of sharing privacy with the appointed client or contractor or consultant, previously most experienced type of contract of contractor, consultant's project organisation structure, end-user and client being separate or the same organisation, dedication of client, contractor's organisational strategic competitive advantage, consultant's organisational strategic competitive advantage, contractor's stage of organisational development, type of client and contractor's or consultant's organisational issues .

The actual behaviours of the client, contractor and consultant were mostly in line with the basic assumptions they held. However, only the basic assumptions of the best authority system indicated a difference in actual behaviour from what the contractor, client and consultant believed. Contractor assumed 'autocracy of an unbiased and dedicated leader', consultant assumed 'individual role authority' and client assumed 'autocracy of consultant' as the best authority system for the construction project. In

contrast, it was the client's autocracy that was existed within the public sector construction project context.

Overall, the research question of 'how to determine public sector building construction project culture using underlying basic assumptions and their patterns as a whole and in sub-cultures through integration, differentiation and fragmentation perspectives?' was answered by the methodology developed through this research to extract basic assumptions by following the VOT, then using such methodology to extract basic assumptions and finally analysing those basic assumptions in integration, differentiation and fragmentation perspectives and key features of external cultural setting.

10.4 Contribution to knowledge

The knowledge created through this research mainly contributes to the existing knowledge domain of construction project culture. The theoretical contribution and methodological contribution are discussed within this sub section and empirical contribution is discussed in the subsequent sub section (refer Sub Section 10.5) as implications to construction projects and its teams.

Theoretical Contribution – A framework to understand construction project culture as a root metaphor could be presented, including all the concepts discussed within this research as indicated in Figure 10.2. According to this framework, the internal construction project cultural setting comprised of the responses for internal integration and external adaptation problems and boundaries shaped through the features of external cultural setting. The patterns of basic assumptions were demonstrated through these responses for internal integration and external adaptation problems. These patterns were based on the integrated, differentiated and fragmented basic assumptions. Such basic assumptions were transferred from the basic assumptions from past project or organisational experiences and transformed into new basic assumptions due to new learnings from the current project. Thus, culture held a dynamic nature in its existence.

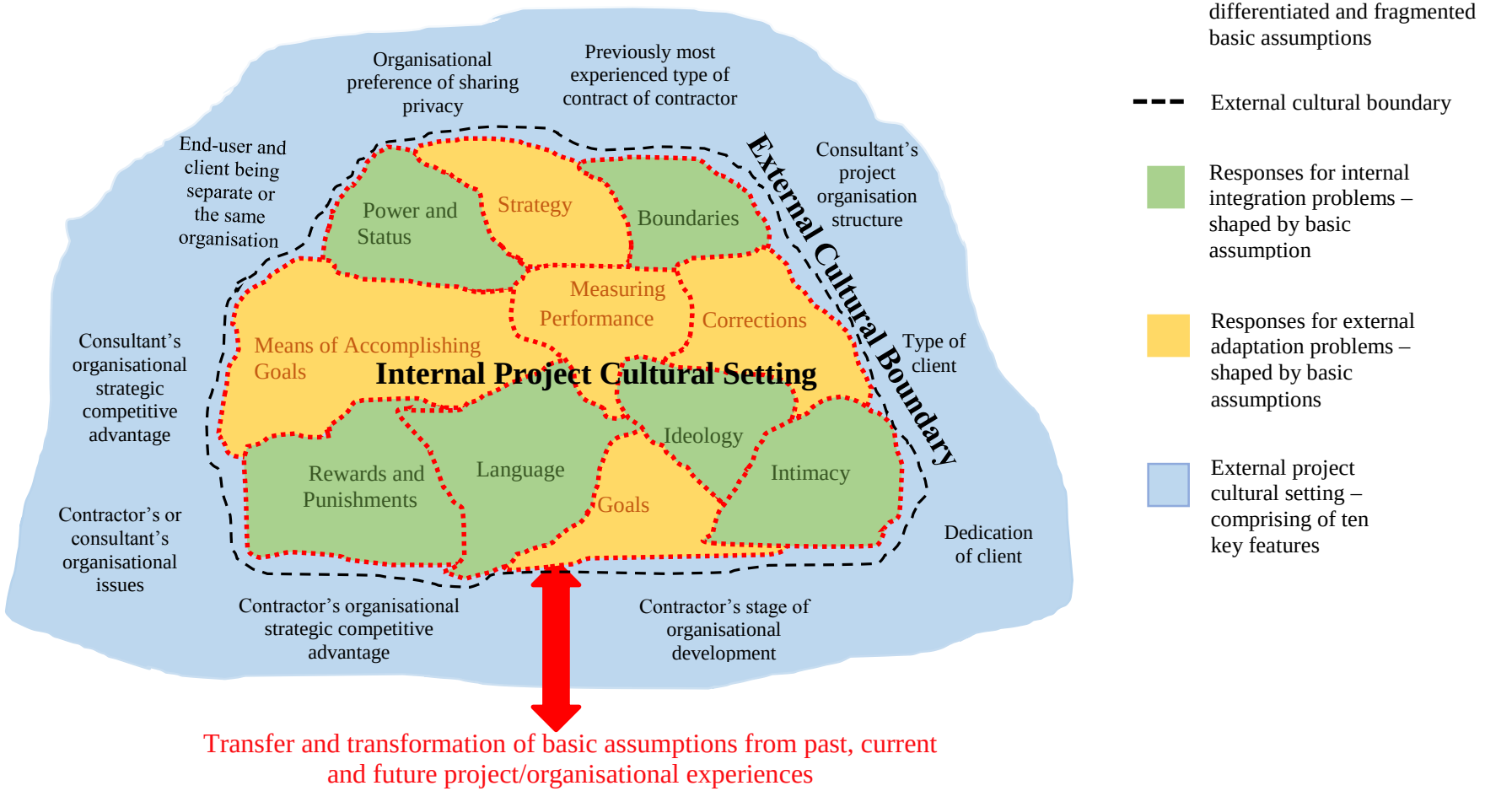


Figure 10.2: Framework to understand construction project culture as a root-metaphor

Accordingly, construction project culture was considered as patterns of basic assumptions, which were unconscious or psychological processes of human mind, demonstrated through the responses for internal integration and external adaption problems. This conceptual framework has been tested to public sector building construction projects, procured through traditional method in Sri Lankan in this research.

The further analysis of basic assumptions from the integration, differentiation and fragmentation perspectives (refer Figure 9.2 and Figure 9.3) described the popular combinations of basic assumptions among sub-cultural groups of client, contractor and consultant existed within the public sector building construction context in Sri Lanka and some popular responses for the internal integration and external adaptation problems. These popular responses could be helpful to predict on the patterns of basic assumptions in the construction project cultural context.

The developed guide to determine the basic assumptions of the public sector building construction projects procured under traditional method contracts in Sri Lanka (Refer Figure 9.4), contributed to the knowledge base as a comprehensive guideline to determine the construction project culture using eleven (11) cultural dimensions and ten (10) key features of external cultural setting of the project. These eleven (11) cultural dimensions included; (1) The nature of human relationships, (2) The nature of human nature, (3) The nature of reality and truth, (4) The nature of human activity, (5) The nature of time, (6) Acceptance on homogeneity or diversity, (7) Unknowable and uncontrollable, (8) Gender (9) Motive for behaving, (10) The state-individual relationship and (1) The organisation's relationship to its environment. Further, this guide could be used to determine the basic assumptions of the contractor's, consultant's and client's sub-cultural groups separately. Rather than depending on existing organisational and project cultural models, this guide was developed using an inductive analysis of construction project cultural context, based on the conceptual framework developed for understanding construction project culture as a root-metaphor, as depicted in Figure 10.2.

Methodological Contribution – There was a gap in the existing knowledge base as what methodology to be used to extract these patterns of basic assumptions and the basic assumptions in construction project culture. This research contributed to fill such knowledge gap, indicating a methodology designed using case study as the research strategy. Interviews, meeting observations and documentation were proposed as suitable data collection techniques. Further, the research explained, how responses for internal integration and external adaptation problems of public sector building construction project setting could be used to extract the patterns of basic assumptions and then to derive the basic assumptions. The semi-structured interview guideline (refer Annexure 1) and the progress review meeting observation guideline (refer Annexure 2) developed in this research contributed to the knowledge base on how to question about the internal integration and external adaptation problems of the public sector building construction project setting to obtain the project responses for such problems to extract the patterns of basic assumptions and thereby to identify the basic assumptions.

10.5 Implications to construction projects and its teams

Empirical contribution of the research is discussed in this sub-section. This research basically contributes to unveil the underlying basic assumptions of the public sector building construction projects in Sri Lanka to expose the issues to predict and avoid the possible problematic areas within the public sector construction project cultural setting. Some recommendations can be made to the public sector of Sri Lankan construction industry based on the research findings.

The outcome of this research could be used for decision making during negotiations and change initiatives. According to the cultural philosophical assumptions of this research, it is believed that basic assumptions held by members are difficult to be changed. Thus, during negotiations, knowledge on basic assumptions of one party could be used tactfully to make the negotiations successful by another party. This is by not hurting such assumptions of the former party or by purposefully supporting the assumptions of former party during negotiations. For example, as the consultant believes on objective tests and processes as the correct way to define reality and truth,

a negotiation should be supported with facts with concrete evidences rather than based on pragmatic tests for a negotiation to be successful with the consultants. Hills (2002) describes how a Native American small tribe survived during negotiations with major Americans with the knowledge on basic assumptions of the major Americans. Similarly, during change management processes, such knowledge on assumptions could be used tactfully and not directly going against those assumptions if such change management process is to be successful. For example, since the whole team held the assumption that conformance is rewarded in a project context, bringing in any innovative initiative should be done not to change their initial assumption totally. Instead, it should be done in a manner that could support such assumption until a transformation happens with the realisation of the inappropriateness of such assumption by the members themselves. For example, if a client expects innovation from the Sri Lankan contractors and consultant, they should put specific attempt to make them realise how much innovative initiatives would be rewarding to them. Such a thoughtful management using basic assumptions would avoid any resistance to change or any mislead by mere climate changes and support effective negotiations among client, contractor and consultant.

According to Zuo (2008), collaborative procurement approaches require an integrative, cooperative, flexible and people-oriented project culture. It is apparent from the findings that contractors, consultants and clients working for Sri Lankan public sector building construction projects believe the nature of human nature as evil. Mistrust among team members is a highlight. They further believe that the members in a construction projects are normally encouraged to conform and tend to strictly adhere to the signed contractual terms. Popular integrations indicate that nature of human relationship of contractor and consultant to be competitive with power struggles and poor team work. Having these findings for traditional method contracts, it is quite suspicious that relational type of contracting, partnering and alliancing would be a success in such cultural settlings, unless proper attention on culture is made during project initiation. This could be the reason that these collaborative arrangements had not offered the expected benefits in many occasions (refer Bresnen & Marshall, 2000).

Hence, an understanding of the underlying basic assumptions and a cultural shift to them is needed when introducing new working practices to construction industry.

Currently, there are number of foreign contractors and consultants involved in Sri Lankan public sector projects such as Chinese, Japanese and Indian to name few (refer South China Morning Post Publishers Ltd., 2017). Knowledge created through this research would be helpful for effective management of any cross cultural construction project teams in public sector building construction, involving Sri Lankans with any other foreign members. This researchers provides a guidance to predict on the thinking and behaviour patterns of Sri Lankan contractors, consultants and clients. Such knowledge will be helpful to remove misunderstandings among cross cultural members and Sri Lankans and to avoid any socially unnecessary sufferings.

As indicated by Gajendran et al. (2012), it is important to identify the fragmentations in any cultural context, so that it could remove the socially unnecessary sufferings. This study identifies some fragmentations related to public sector building construction project culture. For example; the fragmentation; "contractor believing on 'autocracy of unbiased and dedicated leader', consultant believing on 'individual role authority' and client believing on 'autocracy of consultant' as the best authority system for a construction project, but surviving without any of the said types of authorities", gives notion on how project context is in a constant tension, due to none availability of their preferred type of authority. It is apparent that contractors and clients prefer having a powerful, unbiased and dedicated project managers serving for the projects, which seems lacking in Sri Lankan public sector construction projects, when project manager is appointed from a government consultancy organisation. Clients mostly tend to exert 'client's autocracy' in project context, mostly when they feel a lacking in proper controls in project management. Such socially unnecessary sufferings could be avoided, if project managers are aware of the basic assumptions of the contractors and clients, in relation to the best authority system for a project. Similarly, it is important for the public sector clients to be aware of the fragmentation of "public sector consultant's dilemma in satisfying the public sector client verses duty of serving the government/nation". This dilemma brings in frustration to the consultant and loses

team spirit, when a client becomes too demanding over their individual needs, going against providing a righteous service to the government. Therefore, knowledge created through this research on fragmented basic assumptions of public sector project culture could be used by project managers and clients for better management of public sector building construction projects.

The knowledge on differentiations of cultural manifestations could remove misunderstanding among sub-cultural groups (Gajendran et al., 2012). Thus, it is important for project stakeholders, more importantly project managers to be aware of those differentiations, during their involvement in projects. According to the findings of this research, some popular, contradictory differentiations are available in public sector building construction projects in Sri Lanka. These are providing negative signals in project context. For example: consultant's belief on individualism, while contractor's belief is on groupism as the best way to organise project society; contractor believing on subjective means, while consultant and client believing on objective means of determining reality and truth and, contractor believing in 'being fatalistic', consultant believing in 'contract dominance' and client believing in 'client dominance' as the correct way to behave within the project context create tension among client, contractor and consultant. When team members are aware of these major differentiations of sub-cultural groups, they tend to have a better understanding among each other to avoid conflicts within a project context and may learn to appreciate their differences. Otherwise, it is mostly evident that these contradictory differentiations are consuming the positive energies within project context massively.

10.6 Limitations of the research

There are some limitations of this study, which are essential to be highlighted as follows:

- This research bears the limitations inherent to the research methodology being adopted. Due to the use of case study as the research strategy and confined to three case studies, this research provided an output best fit for theoretical generalisation, rather than statistical generalisation as described by Yin (2009).

The findings of this research, basically the guides developed (Figure 9.2, Figure 9.3 and Figure 9.4) to determine the public sector building construction projects in Sri Lanka, should be used as frameworks to understand the construction project cultural setting, rather than using it as some generalised statements to describe the project culture. Further, this research carries the axiological assumptions of value input from researcher within the research process too.

- Cultural studies being context specific, it is worth highlighting the general cultural context tested through this research. In explaining the construction project culture in Sri Lanka, the findings were limited to the building construction projects rather than studying a variety of other construction outputs such as infrastructure developments. It was further confined to new construction of buildings, rather than studying refurbishments or renovations. Further, all projects selected for the case studies were major scale projects with construction contract sums of more than Sri Lankan Rupees 500 million. Further, research was limited to public sector projects, thus, the research output holds specific features of public sector clients and other public sector project features.

- This research brings in evidences on how cultural basic assumptions were demonstrated differently due to the transfer of basic assumptions from past project experiences with different procurement methods. Thus, it is worth highlighting that this research was confined to studying the construction contracts procured under traditional method. Further, a comparison of the construction project culture model developed by Zuo (2008) for relational type of contracts with the guide developed in this research (refer Section 9.6) for traditional method contracts indicated variations in cultural orientations. This justifies the necessity of considering such a limitation in type of contract in this kind of a cultural study.

- During within case analysis, patterns of basic assumptions specific for individualistic sub-cultures and some unique professional sub-cultures were disregarded. This was considering the generalisation of the patterns to the client,

consultant and contractor sub-cultures across the three cases. Such disregarded patterns from specific professional sub-cultures were mainly from the architects in the three projects. However, there can be some influence from such sub-cultures, which could have an effect on the current research outcomes, depending on the dominance of such sub-cultures in different project cultural settings.

- Further, during case analysis, only the four stakeholders; client, end-user, contractor and consultant were identified as dominant within the selected cases contributing to the basic assumptions of the project culture. During data collection and analysis, researcher looked into the possibility of the influence of other stakeholders such as; sub-contractors, suppliers, local authorities and so on, but they were not holding an important position within the selected cases. However, there is a possibility of these other stakeholders too demonstrating dominant basic assumptions within different construction project cultural settings, given those stakeholders holding higher importance, authority and power comparatively.

- There were number of limitations of the project team setting considered during case selection. Selected project teams included private sector major contractors, public sector clients and public sector consultants, considering the popularity of that team setting for public sector building construction projects in Sri Lankan context. This was because, public sector clients were compelled to give priority to government consultants for their projects, either by regulations or to avoid any possible conflicts of interests by awarding to private sector consultants. All types of past relationships among team members such as between client-contractor, client-consultant and consultant-contractor in past projects have been accounted within this study. All contractors were selected through selective or competitive tendering only. Consultants were selected through negotiations or through direct appointment.

- In all projects considered for this project, project manager had been appointed through the consultant's personnel and not through the client's personnel or

through a separate organisation. Thus, possibility of the influence of such appointment from client's personnel or through a separate organisation was not considered for this study. Further, 'Engineer to the Contract' in all the three cases had been appointed from the consultant and the delegated authorities of the Engineer were resided with the consultant's personnel only. Thus, the effect of Engineer being assigned from the client's personnel was not considered in this study.

10.7 Recommendations for further research

Based on the findings of this research, the following recommendations for further research could be made:

- A longitudinal study could be carried out to understand how **basic assumptions from new learnings emerge** within the construction project life cycle. This could be done by comparing the basic assumptions of the team members held at the project initiation with the basic assumptions held at the project completion and explaining how the cultural transformation happens. Further, this could dig into emergence of culture within a project cultural context based on basic assumptions transferred to the project context from previous project learnings and organisational learnings. Such knowledge will contribute to the insights of dynamism of culture.

- Socialisation process of the construction project team members could be further studied to understand how the existing members **transfer the basic assumptions** they believe as true to the new members. Such a research could include developing guidelines to understand the individual basic assumptions of the new team members and comparing it with the existing project basic assumptions to be used during recruitment and selection processes of new members. The methodology developed in this research to extract basic assumptions of the project context could be revised to support extracting the assumptions of the individuals. Outcome of such a research could contribute to enhance the effectiveness of

recruitment, selection, induction and socialisation processes related to new project entrants.

- Consultant's sub-culture can be further analysed with a focus of identifying the basic assumptions of specific **professional sub-cultures** such as architects' basic assumptions, design engineers' basic assumptions, and quantity surveyors' basic assumptions. This will provide insights into how integrated, differentiated and fragmented basic assumptions of such professional sub-cultures could be used for effective management of design teams in traditional method of procurement in construction projects. Similarly, Contractor's sub-culture can be further analysed focusing on construction site culture to identify the sub-cultures within the contractor's sub-culture such as labourers' sub-culture. Such knowledge created would contribute to effective management of contractor's team.

- The methodology developed in this research can be used to extract basic assumptions of the **organisational culture of contracting and consultancy organisations**. In addition, such a study can be further extended to analyse the basic assumptions of the organisational culture in integrated, differentiated and fragmented perspectives. Knowledge created on organisational cultural assumptions could be used for better management of organisational conflicts and change processes. Further, organisational cultural assumptions identified could be used to better explain the project cultural assumptions of contractor and consultant sub-cultures identified in this research.

10.8 Summary

This chapter presented the conclusions and recommendations drawn out of this research, which aimed to develop a methodology to determine the public sector building construction project culture in Sri Lanka, by analysing underlying basic assumptions. The guide designed to determine the basic assumptions of the contractor's, consultant's and client's sub-cultures and the three perspective (integration-differentiation-fragmentation) analysis could be used for project decision

making during change initiatives, negotiations, applications of collaborative procurement approaches and cross cultural project settings to remove misunderstandings and socially unnecessary sufferings among project participants.

Details of Publications

International Refereed Journals

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2017), Methodology to extract underlying basic assumptions of a public sector construction project culture: an exploratory case study. *International Journal of Construction Management*, (Published online: 16 Jun 2017), https://doi.org/10.1080/15623599.2017.1338130, (Indexed in Scopus and ESCI).

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2017). Conceptualising construction project culture: culture as a root-metaphor as opposed to the culture as a variable. *International Journal of Construction Project Management*, *9*(1), 1-17.

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2018). Nature of existence of public sector construction project culture: case studies in Sri Lanka. *Built Environment Project and Asset Management*, (Manuscript accepted subjected to minor corrections, paper is under the second round of review)

International Refereed Conference Publications

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2018). Basic assumptions of contractor's sub culture in public sector building construction projects in Sri Lanka. *The 7th World Construction Symposium 2018: Built Asset Sustainability: Rethinking Design, Construction and Operations*, 29 June - 01 July 2018, Colombo, Sri Lanka.

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2017). Three perspectives of public sector construction project culture: an exploratory case study in Sri Lanka. *The 13th International Research Conference 2017, organised by University of Salford*, United Kingdom, on 14-15 September 2017, 428-442.

- Samaraweera, A., Senaratne, S, & Sandanayake Y.G. (2017). Nature of existence of public sector construction project culture: an exploratory case study. *The Sixth World Construction Symposium 2017*, jointly organised by Ceylon Institute of Builders (CIOB), International Council for Research and Innovation in Building and Construction (CIB) and Building Economics and Management Research Unit (BEMRU), University of Moratuwa, Sri Lanka on 30 June - 02 July 2017 in Colombo, Sri Lanka, 308-315

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Annexures

Annexure 1: Interview Guideline

Interviews will be conducted with nine key participants of the selected construction project including three members from each party; client, contractor and consultant. Data collected from the interview will be tape recorded (with the permission of the interviewee) or otherwise note taking. However, the actual names of the projects and the interviewees will not be disclosed under any circumstances to maintain confidentiality. Further, your honest and true comments during the interview would add much value to the outcome of this research.

Project:

Name (Optional):

Designation:

Date:

Background Information

1. Can you provide following information regarding the project briefly?

a) Scope -

b) Duration -

c) Cost -

d) Procurement method -

2. Can you explain about your work experience in the construction industry?

3. Have you been in the team from the very beginning of the project or did you join the team later?

4. What is your nationality?

5. What is your religious belief?

6. Whom do you think the most important member in your project team?

7. Who are the respectable people in your project team?

8. Whom do you think the most powerful member in your project team? Any team member influencing positively or negatively a lot to every decision making in project team?

External Adaptation Problems

9. Mission, Strategy, Goals

9.1 What are the main objectives set by the client for the team to achieve, to make this project a success (related to time, cost, quality etc.)? How did you know about them?

9.2 What are the reasons for making them the main project objectives?

9.3 What are the main strategies set to achieve those objectives?

9.4 From where these strategies are coming from? Are the strategies completely based on formal reasoning and logic, or are they partly a product of the beliefs and bias of someone in the project team (What gave credibility to those opinions)?

9.5 Do you think those strategies are practical and those are helping to realise the objectives?

9.6 Are there any special challenges, conflicting or critical situations you have faced (e.g. operationally, technically, socially, legally, environmentally etc.) while carrying out this project?

9.7 Have you found solutions for the above mentioned problems? What was done, why it was done and what were the outcomes? Do you all think there is a solution for every problem being encountered?

10. Means of Accomplishing Goals: Structure, Systems, and Processes

10.1 What are the main project communication methods followed among client, consultant and contractor? Are they formal or informal? Who decided on those?

10.2 Do you believe that the current project communication methods are effective in achieving the project objectives?

10.3 Do you see a huge difference among how client, consultant and contractor work in the project, in terms of working patterns, norms, treating the subordinates and other team members and ethics? What are the reasons for those difference?

Cultural Manifestation		**Client**	**Contractor**	**Consultant**	**Reason**
Working Pattern					
Norms					
Treating subordinates and other team members					
Ethics					

10.4 Have you faced any issue related to the systems and processes (e.g. quality management, safety, procurement etc.) within the project? Have you taken any actions related those issues or do you think they are at a tolerable level to achieve the project objectives?

10.5 How much important health and safety to your project? Has the project faced any issue related to health and safety?

10.6 How frequently variations occur in his project? What are the reasons for those variations and who initiate them mostly?

10.7 Do you think you have time and resources for innovations in this project?

10.8 How much of subcontractors involved in this project? Do you see any major sub-contract work influencing goals and strategies of this project?

11. Measuring Performance: Error-Detection and Correction Systems

11.1 How do you discover that you are not meeting goals and targets?

11.2 Is your performance monitored closely? What are the performance evaluation systems (error-detection systems) established in your project team for consultant and contractor? Are there differences in performance evaluation system among them?

11.3 How does the project team react if they discover that some important goals are not being met or any error or mistake is detected? What do you all do about it then? Are there differences among parties on what they do about the results?

11.4 Who are responsible for ultimate time, cost and quality of the project? Why?

Internal Integration Problems

12. Common Language and Concepts

12.1 Do you feel you have changed your language and way of thinking since you started working for this project team?

12.2 If you have worked for more than one project, what are the differences among those and current project on how people talk and think?

13. Group Boundaries: Who is in and who is out?

13.1 Do you consider people as insiders and outsiders to your sub group (client, contractor, consultant), when developing relationships with other team members?

13.2 Can you recall what it was like to join this project team? Did they consider you as an insider to the project team very soon?

13.3 Have you brought anyone into your project team? How did you manage the process?

13.4 Are there female team members in the project team? Would it have been very different, if male members were appointed to get the same work done?

14. How Power, Status and Intimacy are Defined

14.1 How appropriate is it to interrupt the leader/project manager when he or she is speaking?

14.2 If you disagree with the leader/project manager, do you feel encouraged or discouraged to voice your disagreement face-to-face? Is it alright to disagree in front of others, or do you have to seek the leader/project manager out and disagree privately?

14.3 Are you encouraged or discouraged to disagree with your team members face-to-face? Will you disagree in front of others?

14.4 Does your leader/project manager discuss about your performance directly or do you have to guess how you are doing?

14.5 If your project manager/leader asks you to evaluate his leadership or management, how comfortable would you be saying exactly what you think and feel?

14.6 Can you bring family and personal problems to project team, or are you expected to keep them separate from work and private?

14.7 Do meetings start on time? Do they end on time?

14.8 Do you think about continuing relationship with other team members (either client, consultant or contractor) when taking decisions? If yes, any example of a decision you took considering continuing relationship?

14.9 As you think what is the reason for the meeting room arrangement to be kept formal/informal? Does it really work in that manner?

14.10 Does the client influence decision making in project frequently? In what way? Have you or any project team member refused any proposal/request by the client?

14.11 Can you identify the people with higher and lower status within the project, and is it clear to you what their status rests on?

15. How Rewards and Punishments are Allocated

15.1 What do you consider to be a reward or a punishment in your work situation,?

15.2 What signals do you pay attention to, in order to figure out how you are doing?

15.3 When others receive visible rewards, is it clear to you what they did to deserve those?

15.4 When others are punished, how do you know they are being punished, and is it clear what they did to deserve the punishment?

16. Ideology

16.1 Can you explain any area in project work that was least under the control of the team members?

16.2 What did you do to avoid bad outcomes?

Annexure 2: Progress Review Meeting Observation Guideline

Project:

Progress Review Meeting Number:

Date:

Place of Meeting:

Organising Party of the Meeting: Client/Contractor/Consultant

Background Information

1. Project details
   a) Scope
   b) Duration
   c) Contract Sum
   d) Procurement method
   e) Client
   f) Consultant
   g) Contractor

2. Progress details
   a) Finished project scope up-to-date

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   b) Finished project time up to date
   c) Finished project cost up to date

3. Members present at the meeting (Designations only)
   a) Client's party

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b) Contractor's party

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c) Consultant's party

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4. Main issues discussed in the meeting

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External Adaptation Problems

5. Mission, Strategy, Goals

5.1 In general, which project objective (time, cost, and quality) is given the highest priority in the meeting?

5.2 Does it seem an abnormal situation in the meeting for the day or does it seem the usual priority given as per the observation?

5.3 Any major strategies discussed in the meeting to achieve objectives?

5.4 From where these strategies coming from? Is the strategies completely based on formal reasoning and logic, or is it partly a product of the beliefs and bias of someone in the project team?

6. Means of Accomplishing Goals: Structure, Systems, and Processes

6.1 What kind of structures, systems and processes established in the project?

6.2 Any issue discussed in the meeting related to problems or success in the organisation structure, systems or processes.

6.3 Any hint on main project communication methods followed among the client, consultant and contractor? Are they formal or informal? Who decide on it? Are those methods seem to be successful?

6.4 Any issue discussed in the meeting related to communication problems?

6.5 Any huge difference among how client, consultant and contractor behave in the meeting, in terms of dress, working patterns, norms, treating the subordinates and other team members and ethics?

6.6 What kind of health and safety issues discussed in the meeting?

6.7 What kind of variations discussed in the meeting?

6.8 Does the project team discuss about innovations at the meeting?

7. Measuring Performance: Error-Detection and Correction Systems

7.1 How do the members discover that they are not meeting goals and targets?

7.2 Any performance evaluation system noted by the observer related to the project team in terms of cost, time quality?

7.3 Are there differences among parties of the project team how they measure themselves and what they do about the results?

7.4 Any hint about the party (contractor/consultant/client) to be responsible for ultimate time, cost and quality of the project?

Internal Integration Problems

8. Common Language and Concepts

8.1 What is the language the meeting is being conducted and general communication is done?

8.2 Does the project team use special jargons or acronyms that they would have taken for granted, but an out sider finds strange and undecipherable?

9. Group Boundaries: Who is in and who is out?

9.1 Only the regular set of team members attending the meeting or any special people are brought into the meeting?

9.2 If any special member attending the meeting how he/she is treated by other team members?

9.3 Does the project team consider gender when allocating roles and responsibilities among team members?

10. How Power Status and Intimacy are Defined

10.1 Who chairs the meeting?

10.2 Is the person chairing the meeting having the control of the meeting, while proceed?

10.3 If not, who are the team members interrupting the meeting chair massively?

10.4 How much are the team members encouraged to agree or disagree in front of the meeting chair and other team members while proceeding meeting?

10.5 Does every team member contribute to the meeting? If not, who are the members not participate much with the discussions?.

10.6 Does the project manager or the meeting chair discuss about the performance of the parties (consultant/contractor) directly?

10.7 Are the team members bringing family and personal problems to the meeting? If yes, what were those?

10.8 Does the meeting start on time and end on time?

10.9 Do the parties discuss about any continuing relationship in any future projects?

10.10 How is the meeting room arranged? Is it formal or informal?

10.11 Does the client influence a lot on decision making during the meeting? If yes, in what way? Does any team member refuse any proposal by the client?

10.12 Is it easy to identify people with higher and lower status within the project team?

11. How Rewards and Punishments are Allocated

11.1 Any hint on what the project team considers as a reward or a punishment with regard to work?

11.2 Any incident discussed amounting to a reward and the behaviour of the members in the team at the meeting?

11.3 Any incident amounting to a punishment and the behaviour of the members in the team?

12. Ideology

12.1 Any incident discussed at the meeting that has/had been least under the control of the team members?

12.2 What have been done to avoid any bad outcomes?

Annexure 3: Case Evidences – Case A

This annexure includes case evidences for Contractor (Cont A), Consultant (Cnsl A) and Client (Clnt A) respectively for Case A.

A1 Contractor

A1.1 Basic Assumptions on the Nature of Human Relationship

A1.1.1 Level of authority was critical in decision making (Cont A 1 01)

Construction Manager (A/CM/Q9.4)	•"DGM (Consultancy) is capable of realizing anything very quickly. He too can influence and take the control and had the authority to make direct decisions in that team which made it really easy to work with him."
Site Engineer (A/SE/Q9.4)	•"Consultatn asked us to bring SS2 type of a nail for rafters, which were not indicated in the intial drawings. So, we bought some from a reputed supplier and showed them. Then, they wanted to send the nail to check the components and we sent those for testing. Again there was a tar sheet to be fixed on reepers. We proposed some brass nails for that. They told they want to check components in brass nail also, which was unimportant and unnecessary. Now what we felt was, their Chief Structural Engineer or someone from top has asked to check the components of nails. They follow instructions blindly when coming from higher authorities. We do not behave in that way. We have the confidence to say that we should not do it, it is useless.."
Progress Review Meeting No.32 Observation	•Project Quantity Surveyor was absent for the 32nd meeting. When the Contractor raised a quaestion about a Claim pending for approval, Assistant Project Quantity Surveyor indicated that only Project Quatity Surveyor could give a decision about it and he was not authorized to make comments on that.

A1.1.2 A powerful, impartial leader was essential to drive the project (Cont A 1

Construction Manager (A/CM/Q10.4)	•"They had not finalized the project scope by the time they had started the project. Client did lot of changes at the initial stage of the project. Consultant was in trouble due to the same reason. In addition, consultant never bravely fought for that. We happened to tell the client all the time that this project got delayed not because of Consultant or Contractor, but because of the Client."
Site Engineer (A/SE/Q14.1)	•"Nobody from consultant's team is leading us. They are just forcing us. They give us deadlines and force us to do achieve them. They never monitor the key things. Real monitoring is not happening. They do not check why delays occur from our side. They are mere forcing to achieve targets.
Progress Review Meeting No.32 Observation	•During the meeting, DG (Corporate Management) of Client proposed shifting the new generator, which was already placed at the ground floor of the building back to a generator room constructed outside of the building. This was surely going to be a new variation to the works and consume some additional time. It had to add up a whole new set of electrical works. Soon after this discussion, Client questioned the Contractor about the handing over date of the building with a tone of dissatisfaction about time performance of the Contractor. By that time Project Coordinator mentioned "all these variations consume time and disrupt the current flow of work, and pushing for completion is unfair if variations are a necessity". However, researcher too noticed Project Manager and other consultants keeping quiet until the DG (Corporate Management) questioned from the Project Manager, whether the said variation would consume much time as told by the Contractor.

A1.1.3 Consultant lacked integration among different designers (Cont A 1 03)

Construction Manager (A/CM/Q9.6)	•"I think Architect had a responsibility to recheck whether the structural designer had designed what she had expected. Better if she had suspected a little. If what architect had wanted was not drawn, there should have been a discussion on that, whether it was something impossible. Architect openly declared that she intended a round column. Even, there is a team here from consultant's personnel based at site. All instructions go via that team. At least they should have checked the drawings sent from head office. There is a small challenge and a risk to the contractor because consultant is not much careful in the work."
Site Engineer (A/SE/Q9.4)	•"We faced a problem with the heating, ventilation and air conditioning system and the electrical system. Once we had finished all wiring to fix electrical fittings in a room. However, after the duct line for the heating, ventilation and air conditioning system was done only it was realised that space was limited for the proposed electrical fitting by the Electrical Engineer. It created re-work for us."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.6)	•"Still we are in discussions for the re-work cost of the piers. We have a higer uncertainty over the approval.They complain we should have identified the mistake in their drawings during construction.".

A1.1.4 Teamwork history was beneficial for project success (Cont A 1 04)

Construction Manager (A/CM/Q9.4)	•"We did that as a special treat for this client and considering the experiences we faced by working with this consultant and we felt it would be a problem for a new team to work with these consultants. That is why we all came here. We believe it is easy to work with a known set of people."
Site Engineer (A/SE/Q9.3)	•"We happen to work in a team, not individually. So it is good to continue with a same set of known people."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q12.1)	•"The reason for assigning the same staff with this project same as previous project is also because we found this Consultant a little different, specially the working procedures. We thought it would be easy if the same team comes here to work with this Consultant."

A1.1.5 Consultant desperately attempted to win the Client (Cont A 1 05)

Construction Manager (A/CM/Q9.4)	•"Client used to request on things, which went against the sequence of construction, due to being a layman for construction works but, Consultant never tried to correct or oppose the Client or advise them. This was because Consultant wanted to get whatever requested done for the Client to win him."
Site Engineer (A/SE/Q9.6)	•"Finishing works got delayed due to the changes occurred in the heating, ventilation and air conditioning system following the variations requested by the Client. These included the exclusion of the auditorium, introduction of the kitchen and change of other office locations and drivers' facilities. Such a delay of finishing works occurred until the duct layouts got finalized by the Consultant. However, when Client requested on accelerating the finishing works for a quick handover of the building, Consultant never attempted to reason out the Client about the inability of carrying out the finishing works until finalizing the duct layouts. His was because, Consultant never wanted to go against the Client's wishes and lose the good name."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q9.6)	•"Consultant Project Quantity Surveyor refused to pay for the earth works and structural works of a variation work of the fuel tank installation because we had missed those items in the cost proposal. Consultant had no strong contractual grounds to reject the late request for the earth works and structural works. This happened due to some attitude issues of Consultant Project Quantity Surveyor. She believed rejecting claims and deducting the amounts of Contractor would be praised by the Client."

A1.1.6 Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont A 1 06)

Construction Manager (A/CM/Q10.6)	•"I normally express my dissatisfaction openly in meetings. When Client asked to change the place of generator for the third time, I told my dissatisfaction directly face-to-face during the meeting. That is becuase, Client should know that their unnecessary varied works are distrupting our work. Otherwise, they think, their decisions are right all the time and we only get penalised."
Site Engineer (A/SE/Q10.4)	•"We normally do the material ordering manually. Now we are into establishing an ERP system. We are in testing stage. If we had applied it to this project, this project would have been better. We got all criticisms mainly due to delays in material procurment. If we had improved it, nobody would have pointed our mistakes to this extent."
Progress Review Meeting No.32 Observation	•When the Project Architect indicated that she has given all the approvals for related materials for doors and windows and any delay for finishing the work would be with the Contractor only, Contractor reminded her that apporval was ultimately given after two consecutive reminders in two progress review meetings and she distrupted their smooth work flow without giving timely apporvals.

A1.1.7 Close connections with team members were not a requirement for project matters (Cont A 1 07)

Construction Manager (A/CM/Q14.1)	•"Even I am known to this DG (Corporate Management), but I never tend to go and talk personally. Even I know the Secretary to the Ministry. But never interfere officially. We do not need that. We do not try to take advantages of relaionships. We know we deliver the best we can and we do not want to depend on relationships for good name."
Site Engineer (A/SE/Q14.8)	•"Sometimes consultant says they will issue details and drawings later and requests not to bring out delay in drawings during meetings. So we agree on those accordingly thinking about the relationship. However, we never tend to make such requests."
Progress Review Meeting No.32 and 33 Observations	•Contractor was viewed as very agressive during meetings, defending for questions and arguments. Every statement was contractual and factual with a formal stance. Contractor looked very professional during the meeting.

A1.1.8 Continuing relationships with Client and Consultant were not essential and only professional working relationships were adequate (Cont A 1 08)

Construction Manager (A/CM/Q14.8)	•"As a team, our Chairman does not consider long term relationship with Client or Consultant and openly says anything."
Site Engineer (A/SE/Q14.8)	•"We do not specially consider continuing relationship during decision making. None of our superiors has ever told us to consider about such a thing. But we try to maintain a good working relationship."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q14.8)	•"We normally find projects through tendering. There are projects we get through negotiation also. But that is limited with public sector projects. We got this project also through competitive bidding. So, it is very rare we would be again happen to work with the same Client and Consultant. So we do not pay much attention on continuing relationship."

A1.2 Basic Assumptions on Nature of Human Nature

A1.2.1 No Appreciations and only constant highlighting of mistakes were available within the team (Cont A 2 01)

Construction Manager (A/CM/Q15.1)	•"In construction, there is nothing called appreciation. Only appreciation we get is if the work is finished on time and people start talking about it. When payments from Client get done without any trouble, we realize that project was delivered well."
Site Engineer (A/SE/Q15.1)	•"There is no appreciation from client or consultant. Now we have applied this project for construction excellence award of Construction Industry Development Authority of Sri Lanka. They will be visiting us soon and we would receive appreciation from them if we get selected for the award."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q15.1)	•"We have received a letter from the Consultant saying that we would be charged liquidated damages from 20th January onwards. Client has the habbit of complaining to our Chairman for every mistake. He knows that we get blamed or punished from our Chairman, when he receives such a complain."

A1.3 Basic Assumptions on Nature of Reality and Truth

A1.3.1 Level of experience was crucial in decision making in a construction project (Cont A 3 01)

Construction Manager (A/CM/Q10.4)	•"Normally, I prepare programme for my projects. One reason is, an experienced person should prepare the programme. Or else such a person should guide the person preparing it because sequences and other complications are difficult to understand for inexperienced staff."
Site Engineer (A/SE/Q10.4)	•"We always doublt whether the Consultancy team lacking experience or authroity. Sometimes they propose very impractical things. When the Chief Structural Engineer comes, he makes all decisions very quickly, on site, but Project Structural Engineer takes time for approvals and decisions. Construction works require fast decision making. One pending decision can afffect number of other activities too."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.2)	•"Project Manager is the only experienced person stationed at site from Consultant. Other staff members are very junior. So we observe they are always referring matters to head-offcie staff for decision making."

A1.3.2 Understanding construction sequence was critical for project success (Cont A 3 02)

Construction Manager (A/CM/Q10.4)	•"Why ceiling finishes come to critical path in this project is because, duct lines are to be installed for the air conditioning system. Therefore, ceiling cannot be finished without finishing duct lines. Even duct lines occupy the biggest spacing above the ceiling. It disturbs all other services too."
Site Engineer (A/SE/Q11.3)	•"Sometimes Client makes requests early finish of some items without much understanding of the sequence of work. We plan those items to be carried out in a later day considering a possible damage to such work if done that sooner. For example, Client asks to tile the floor when ceiling work is remaining. But we try to achieve sequence rather than merely doing what they request."
Construction Manager (A/CM/Q10.8)	•"We happened to carve a big hole through a timber ridge becuase Consultant had not finalised the HVAC system piror to finalising the ceiling works. We face such difficulties when working practically on site."

A1.3.3 Consultant was impractical in their decision making (Cont A 3 03)

Site Engineer (A/SE/Q9.4)	•"Consultant was very impractical. Otherwise they would not ask us to test components of the brass nails we suggested for fixing tar sheet. We are not worried to test components of SS2 type of nails for rafters. It is difficult to work in project with heavy time constraints, when they start asking test reports for such unnecessary things."
Construction Manager (A/CM/Q9.3)	•"Delays occurred due to the reason specifications and drawings were not received on time from the designers; both architectural and structural. Designer thinks that anything can be done quickly when the design is finished and handed over to the contractor. When they design something; we happen to import some items, have to draw Performa, have to do necessary negotiations and for some items there would be no factory productions, so that we have to ask them to manufacture newly for us. To do all these things, it sometimes takes two, three month when we try to do practically."
Site Engineer (A/SE/Q9.6)	•"We had to construct the new building to match the concept of a Greek temple of the old building. To get those feature of a Greek temple, we had to do lot of carving and moulding works while doing construction. Lot of cantilever parts were there, where we had to build them by giving support from the structural slab itself. These works were really time consuming. Consultant questioned why we could not construct a slab in 14 to 15 days. To support the mouldings, structural projections were created which consumed a lot of time. Therefore, when a normal slab consumed 14 days, our slabs consumed more than 28 days. Not even twice but, sometimes more than two and half. They think with standard parameters. We cannot work according to text books in a real life project."
Progress Review Meeting No.33 Observations	•" •Client asked from the meeting participants about issuance of construction drawings for a steel access bridge connecting the old building to the new building. All at once the consultant Project Structural Engineer said; "*Yes, we issued all necessary drawings on last Monday. Now contractor can start the work this week*." It was a varied work to the construction contract. In response, Project Coordinator of Contractor sarcastically stated that; "*I wonder whether you think that we can do anything soon a drawing is drafted and given to us*". It made everyone at the meeting laugh out, but it had a hidden idea of the impracticality of the statement made by the project structural engineer about starting work by the same week.

A1.3.4 .Cause and effect governed every aspect in project context (Cont A 3 04)

Construction Manager (A/CM/Q11.1)	•"We have reasons most of the times for not achieving the goals and target. We have not gone for targets that we cannot achieve deliberately. When a time extension is claimed and given those reasons are considered. Nowadays, we have a problem with the weather pattern. There is an unusual weather pattern starting from the mid-August. This has affected us a lot. Actually, those are the reasons. Otherwise we could have worked according to the given programme and achieved the targets."
Site Engineer (A/SE/Q14.1)	•"Nobody from consultant's team is leading us. They are just forcing us. They give us deadlines and force us to do achieve them. They never monitor the key things. Real monitoring is not happening. They do not check why delays occur from our side. They are mere forcing to achieve targets."
Procurment Assistant (A/PAs/Q11.3)	•"Now contractor could not achieve the time target given by us, either due to bad weather or something. Still they could not do that. Once DG (Corporate Management) said there is a lack in their workforce involved with this project. They bring in justifications all the time.Weather and all that they are saying. However, we had asked for the building in January. But we did not receive. Now they have come up with a different reason. They said some goods ordered were delayed. Some of their internal problem.

A1.4 Basic Assumptions on Nature of Human Activity

A1.4.1 The correct way of behaving was being reactive, not proactive (Cont A 4 01)

Construction Manager (A/CM/Q11.3)	•"Within our team, many members understand mistakes only after committing them. Mostly they are unaware of the mistake. Therefore, normally reactions are there and what we do is we correct once a mistake has happened from our people. However, actually we should have searched what is the cause and effect for every lapse we make, but when the construction goes on we do not have time to stop and search for causes for everything."
Site Engineer (A/SE/Q10.4)	•"Sometimes Consultant complains that records are not delivered on time. Nothing wrong in that complain. It happens when staff who used to handle those get changed or resigned. We quickly attend to those and we have never missed out what Consultant had requested."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q11.1)	•"Normally Consultant points out if we are not meeting any goals and targets. We too find out. Mostly, they alarm us on any non-achievement of goals."

A1.4.2 Client assumed a higher power and tried to control the Contractor (Cont A 4 02)

Construction Manager (A/CM/Q6)	•"Client is used to shout out; ‘we want you to get this done’, ‘why don’t you do it quickly’. Once during a meeting I happened to remind them that we are governed by the contract not by client or consultant. Things get controlled if all team members obey the contract."
Site Engineer (A/SE/Q14.10)	•"Client pressure us a lot for timely competion. Sometimes they threaten us to an extent that they would blacklist us if not completed on time. However, they have to consider the distruptions they caused by coming up with numerous varied works."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q9.3)	•"Due to the enormous pressure from the Client to finish work on time, we have taken number of initiatives, despite adding to our losses. We fixed about 2000 number of glasses in windows temporarily at our own cost, to be changed later in future since glass procurement was delayed, hired labour from a government security department at a higher rate and employed internal staff from our other projects giving transport and meals from Project A."

A1.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

A1.6.1 Not innovation, but conformance was rewarding in a construction project (Cont A 6 01)

Construction Manager (A/CM/Q10.7)	•"We do not have very massive scale innovations. We have on the spot innovations. From contractor's side we happen to do sudden innovation in works. Morethan that we are under time pressure to finish the work rather than trying out innovations."
Site Engineer (A/SE/Q10.7)	•"We cannot decide on innovative methods. We are only following Consultant's instructions. The only innovative proposal we have given was the construction method for the external column heads. It could be constructed either in-situ or pre-cast. We did in-situ with concrete. We formed the mouldings with fibre and poured concrete on site. So, only such small things were done as innovations."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.7)	•"I think its not innovation that Consultant is expecting from us. They check whether we exactly adhered to the contract to do a payment. Even a small variation from contract can amount to deduction in a payment. According to the contract, innovations can be time consuming with approvals."

A1.7 Basic Assumptions on Unknowable and Uncontrollable

A1.7.1 Decisions made by the Client were uncertain

Construction Manager (A/CM/Q10.6)	• "“Since there were many changes in the scope of work, the arrangements we had earlier had to be changed. Reasons of many delays were due to Client's own variations. They do not make make firm decisions on what they really expect from this project. Everybody is afraid to complain against the Client, since Client is a powerful ministry."
Site Engineer (A/SE/Q10.6)	• "We faced a massive delay in finishes due to the change in heating, ventilation and air conditioning system. ari conditioning system was chnaged becuase Client compteletly removed the auditorium from the builing and brought in a massive chnage. When the Secretary changed, they chnaged all the requirments like this."
Progress Review Meeting No.33 Observations	• "The Director General (Corporate Management), extended his apologies for creating trouble asking to change the location of the transformer for the third time. An old transformer room was there at the location of the new building, which was shifted to a new location at the beginning of the construction works. Initially, Secretary of the Ministry had advised to construct a new transformer room at a location away from the new building. Later same officer had instructed to demolish the newly constructed transformer room and move it to the basement of the new building considering the damage it could bring to the view around the building. After the change in government that had happened during the construction period, the newly appointed Secretary to the Ministry was asking to shift the transformer away from the basement to a separate transformer room. This was because, it could be dangerous to have a transformer inside the basement due to possible flooding that could occur within the area. The researcher could witness the discussions had among the team members over the aforementioned scope change during the meeting observation."

A1.7.2 Ultimate responsibility of time, cost and quality of the project resided with the Contractor

Construction Manager (A/CM/Q10.7)	•"Ultimate reponsibility of the project outcomes comes to the project manager of the contractor, who does the management. The party who incurs the cost and responsible for that is the Contractor. Contractor will spend and reason out whether the spent money can be reclaimed."
Site Engineer (A/SE/Q11.4)	•"I think Contractor is responsible for time, cost and quality of the project. This is because, we are to manage people and get the work done physically on site. We do the hardest job. Though everybody calls it a joint responsibility, I think ultimate blame comes to us, the Contractor, if we could not achieve the time, cost or quality objective."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q14.9)	•"Although Contractor did whatever specified and instructed by the Consultant, the responsibility of proving a claim resided with the Contractor. If we failed to prove a work done through documentation, we happened to bear the cost incurred of his own. That was why documentation and formal communication methods were crucial in a project.""

A1.7.3 Formal instructions in black and white would protect the contractual rights of the Contractor (Cont A 7 03)

Construction Manager (A/CM/Q10.1)	•"I prefer having an informal arrangement in meeting room. However, according to our past experiences, it is good to keep everything formal. This is because, when disputes arise over contractual matters, this is really important. When we go for legal aids with Adjudication or Arbitration, we sometimes go beyond construction contract law to civil law. Most of the lawyers involved might be not familiar with construction. In such occasions, we can prove and justify matters only with evidence from properly maintained documents."
Site Engineer (A/SE/Q10.1)	•"I think since we are working with a government client, we cannot improve this formal communication system with written communication modes more than this. It is because, if we happened to follow legal processes like Adjudication we would find it difficult to face that."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.1)	•"this is a government project and issues will definitely arise during billing if no proper documents were maintained."

A1.7.4 Contract was the biggest control and upholder of justice in a construction project (Cont A 7 04)

Construction Manager (A/CM/Q6)	•"Once during a meeting I happened to remind them that we are governed by the contract not by client or consultant. Things get controlled if all team members obey the contract…Though there are misbehaviours and mis-instructions, with objections and discussions, somehow everybody is taken back to the frame of contract."
Site Engineer (A/SE/Q11.1)	•"We cannot go with the speed we want. We have to follow all formalities and procedures and proceed. Reasoning out should be there. Permission should be taken for everything. Inspection should be done for everything."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.6)	•"We say Quantity Surveyor will not agree therefore, please bring the Quantity Surveyor to that location, or else ask them to refer to the Quantity Surveyor. Quantity surveyors are powerful because they work contractually. They reason out and justify they cannot pay."

A1.8 Basic Assumptions on Gender

A1.8.1 Attitudes of females matter in working for a construction project (Cont B 8 01)

Construction Manager (A/CM/Q13.4)	•"More than gender, I consider the experience in every occasion. I expect experience, because, ease or difficulty in working both comes depending on that. Whether you want to get a good experience or not stems out from attitudes too."
Site Engineer (A/SE/Q13.4)	•"Several problems can be identified with females working in construction industry. These may not be directly because they are females, but due to them being not much exposed to site it happens. Since they prefer working from office, some are little impractical and understanding is less. They lack site experience. In contrast, when there are males, they tend to visit sites and gain exposure, which is lacking in females."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q13.4)	•"No difference on gender. Females are more concerned on works. Easy and responsibility they take is high. Site work difficulty is there."

A1.9 Basic Assumptions on Motive for Behaving

A1.9.1 Every project was just another job to bring profits to the organisation (Cont A 9 01)

Construction Manager (A/CM/Q6)	•"This ministry is powerful. When our Managing Director was summoned to the client's office, he never opposed anything and accepted whatever client said. But for us, this is just another job for our organisation. We try our best to keep the losses to the minimum."
Site Engineer (A/SE/Q16.1)	•"It is not fair them forcing us to incur additional costs anymore to accelarate. We have already born number of additional costs such as fixing 2000 of all glasses in windows temporarily. So we have to change them one day. We have done it at our cost due to pressure from the client. Similarly, we experienced budget overruns due to CSD labour we employed for higher rates. We employed internal staff from our other projects. So we are giving transport and meals for them from the budget of our project."
Technical Officer (Maintenance) (A/TO/Q16.1)	•"though we send any letter, say we blacklist them and try whatever possible, we cannot speed up the project. Though we tell we need the building on this date, we are not giving any extension here after, contractor goes to their speed. When they asked for the third extension, we decided to charge liquidated damages from them in the last meeting. They are submitting reasons for that. Now we are trying to take a decision from secretary level that the reasons given cannot be considered."

A1.9.2 Anything should be done if contractually entitled for a payment, since finance mattered at the end (Cont A 9 02)

Construction Manager (A/CM/Q11.4)	•"Contractor will spend and reason out whether the spent money can be reclaimed. Whatever the work we do here, we should have the claim. If we cannot justify, then there is a risk for us. So, before spend anything, we recheck whether cost is approved for that and whether necessary details have been received. We have no worry over the bill of quantities agreed items. They are already agreed. We be careful with variations; whether consultant has checked each and every step and whether inspections were done or not."
Site Engineer (A/SE/Q10.1)	•"When consultant quantity surveyor says 'no we cannot pay for this' or 'we cannot allow for this', then others become helpless. It is difficult for other consultants to reach the top management and revise such decisions given by the consultant quantity surveyor because, she says everything with contractual backing. We have experience on how quantity surveyors look at those things and take decisions in this consultancy organisation. So what we do is that we say quantity surveyor will not agree for that therefore, please bring the quantity surveyor to that location, then we can agree for that or ask to refer to the quantity surveyor. Quantity surveyors are powerful because they work contractually. They reason out and justify they cannot pay."
Consultant Project Quanitity Surveyor (A/CnslPQS/Q13.4)	•"Contractor all the time says, you cannot ask us to do like that consultant quantity surveyor would not agree on that easily."

A1.9.3 Delivery of expected project quality was an organizational concern (Cont A 9 03)

Construction Manager (A/CM/Q9.1)	•"We believe that Client should be given the accepted quality for the money they pay. It's not that we try to get a profit somehow. Our Chairman believes that even though we make a loss out of the project, we have to deliver the quality expected by the client. He never let us do anything carelessly."
Site Engineer (A/SE/Q9.1)	•"Quality can be reduced when accelerating the work. Yet they want us to accelerate the work and handover on the agreed date…We cannot compromise quality of our work out put considering the time pressure."
Assistant Director (Premises) (A/AD/Q14.1)	•"Architect everyday asks me to tell Director General (Corporate Management) not to pressure Contractor all the time because, this can lead to quality problems. Not that we disregard quality. We think that Consultant and Contractor will not do any lapses in quality since this is a building of treasury department… I know Consultant checks it a lot .That is how we believe and not that we disregard quality."

A1.9.4 Continuous improvement was a necessity (Cont A 9 04)

Construction Manager (A/CM/Q10.4)	•"It is better if the systems and processes were better than this. Regardless of what we normally believe, when more records are demanded and periodical things we happen to attend increase, we feel it is better if we had set up a good established system. Sometimes Consultant complains that records are not delivered on time. Nothing wrong with them. We need improvements as the contractor."
Site Engineer (A/SE/Q10.4)	•"We normally do the material ordering manually. Now we are into establishing an Enterprise Resource Planning system. We are in testing stage. If we had applied it to this project, this project would have been managed better."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q10.4)	•"A small group of site staff is allocated to record daily progress for project monitoring purposes. They basically reported monthly progress by collecting documents on daily basis. Some lapses had been identified with that system, as the team sometimes comes up with unrealistic figures on project performance. It may be due to some errors in data entries. However, still we want to operate the system without totally eliminating it because, we want to somehow develop it gradually with experience"

A1.11 Basic Assumptions on Project Organisation's Relationship to its Environment

A.11.1 Contractor should always be ready to have ultimate justice through Adjudication or Arbitration (Cont A 11 01)

Construction Manager (A/CM/Q14.9)	•"I prefer having an informal arrangement in meeting room. However, according to our past experiences, it is good to keep everything formal. This is because, when disputes arise over contractual matters, this is really important. When we go for legal aids with Adjudication or Arbitration, we sometimes go beyond construction contract law to civil law. Most of the lawyers involved might be not familiar with construction. In such occasions, we can prove and justify matters only with evidence from properly maintained documents."
Site Engineer (A/SE/Q14.9)	•"I think since we are working with a government client, we cannot improve this formal communication system with written communication modes more than this. It is because, if we happened to follow legal processes like Adjudication we would find it difficult to face that."
Contractor's Project Quanitity Surveyor (A/ContPQS/Q9.7)	•"We expect to go for Adjudication, if we could not get the requested amount for the fuel tank variation from Consultant."

A2 Consultant

A2.1 Basic Assumptions on Nature of Human Relationship

A2.1.1 Client believed that continuous pressuring could motivate the Consultant and Contractor (Cnsl A 1 01)

Consultant Project Architect (A/CPA/Q14.1)	•"We knew that quality of work can get compromised due to unnecessary pressurising of the Client...Later, while we were talking informally, Director General (Corporate Management) said he was shouting and pressurising because he wanted to finish the project soon. He said it was a management strategy motivate the Contractor."
Consultant Project Quantity Surveyor (A/CnslQS/Q11.3)	•"Since we did not have a chief engineer electrical by then, we always had some issues in those areas. A new one was appointed by this January only. Only junior electrical engineers went for meetings. So problems got highlighted. Even Client summoned our General Manager and complained it."
Meeting Minutes of 31st Progress Review Meeting	•"Director General (Corporate Management) stressed that the building to be completed and handed over to the Client before 31st December 2016." •"Director General (Corporate Management) reminded the deadline as 31st December 2016 as stressed by the Secretary to the Ministry at the special meeting held on 03rd August 2015 at the Client's office in the presence of Chairman, Contractor's organisation."

2.1.2 Perfect performances of individual roles would bring success in project performances (Cnsl A 1 02)

Consultant Project Architect (A/CPA/Q9.6)	•"We normally do not criticise the Client, but, when Client had not liaised with the local authorities for project requirements, we reminded them and took minutes about it in the progress review meeting. That was a role of the client. Client had to coordinate with the local authorities. When there are lapses in their role, we minute them. It is not a criticism, but rather we expect everybody to perform their individual roles."
Project Manager (A/PM/Q14.6,12.2)	•"If a Letter of Credit has not yet being opened by the Contractor or, if materials have not yet being arrived, those are private things of the Contractor. Those things are not relevant for us as the Consultant, even though those are the reasons for the delay. They have to handle those by themselves...Even though I am the Project Manager, I cannot take decisions alone. Architect, Quanitity Surveyor, each one has to take the lead in their respective roles."
Consultant Project Quantity Surveyor (A/CnslQS/Q8)	•"Architect provides decisions and carry out her role and other engineers also individually perform their roles. I feel lack of coordination among them. This is highly visible with all the consultants doing designs on specialised services…it is very rarely we have internal meeting and usually work in individual divisions in isolation. We had several meetings when essential."

A2.1.3 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl A 1 03)

Consultant Project Architect (A/CPA/Q10.4)	•"It is really difficult to do parallel projects with this project. This is because, we have happened to check lot of drawings with this contractor. Sometimes I feel whether we are wasting time also. It would have been better, if we could have had another draftsperson of consultant at site level to do this. Also, I think it is better to have another such person since lot of paper work involved with this project. This is due to the Contractor requesting every information in writing and they also send lot of written documents for material approvals. Parallel project works are difficult with this project."
Consultant Project Quantity Surveyor (A/CnslQS/Q11.2)	•"Everybody is busy with parallel projects. I do not think anybody has full attention on Project A, other than the site staff."

A2.1.4 Client was the most important member in the project team (Cnsl A 1 04)

Consultant Project Architect (A/CPA/Q6)	•"Client is the most important member becuase, Client becomes the ultimate decision maker of the project team."
Project Manager (A/PM/Q6)	•"Client is the most important member. We must give priority to Client. We are bound to Client. We are here to fulfil the Client's requirements as the Consultant."
Consultant Project Quantity Surveyor (A/CnslQS/Q6)	•"Client is the most important member, becuase all are working for the Client."

A2.1.5 Client depended on Consultant as the technical advisor (Cnsl A 1 05)

Consultant Project Architect (A/CPA/Q10.8)	•"One fire supplier came and told they are the ones supplying for the Client's existing main building and requested to have work from the new building. But client told that it is not required to award the fire equipement supply to the same supplier and Consultant should decide what is the best for this project. So it was not given to that supplier."
Project Manager (A/PM/Q9.4)	•"Client is not a technical person. So according to their knowledge they suggest different things. So, we are the people who advise them. If it is practical, then we can proceed. Client believe us. We do not misguide client. We make them aware and take technical decisions on behalf of them."
Consultant Project Quantity Surveyor (A/CnslQS/Q8)	•"Nothing like that, because he does not have technical knowledge as such. What he does is, he says we want to get this thing also done. You all tell us how to get it done."

A2.1.6 Formal methods of communication were important but, effectiveness and efficiency in communication resulted, when red tape for fast communication was overcome within the process (Cnsl A 06)

Consultant Project Architect (A/CPA/Q14.9)	•"Only two formal meeting are there for progress review with the participation of key project team members. All other meetings are informal. Pocket meetings at site are set to gather everybody and clarify if there are any issues. They are informal and we talk in a very relax manner. We invite everybody such as; sub-contractors for those as they are the people physically executing the project. We cannot run a project only with formal meetings. To achieve a proper coordination of more than fifteen number of services installed by fifteen different specialized sub-contractors, informal meetings are a must. We cannot depend on bi-weekly formal meetings. When required, we make minutes for those informal meeting too."
Project Manager (A/PM/Q10.1)	•"According to our experience of working with Contractor, they do not proceed any work without written instructions. They do not accept verbal instructions. Emails are used but very beginning we communicated with emails and they did not accept. Then we pointed out that there is a clause in the contract that email instructions can be accepted. So now they accept."
Consultant Project Quantity Surveyor (A/CnslQS/Q10.1)	•"We have informed the contractor to accept the information sent by several e-mail addresses of Consultant's staff. From quantity surveying division, my email address is there. We are used to confirm many quantity surveying related information and instructions through e-mails. When everything get finalized eventually only we send it through a letter. By the meantime, lot of communication happen through e-mails. It is really fast to have e-mails. Many documents are exchanged through e-mails. We cannot carry out projects, by exchanging every information through letters."

A2.1.7 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl A 07)

Project Manager (A/PM/Q13.2)	•"In some occasions delays occur and Client gets disappointed, because we are not achieving their target. There are places I cannot explain reasons to Client since those are our own faults as the Consutlant. There are also occasions I cannot tell anything to our people also, becuase I know our own problems at oganisational level. I use to keep silent."
Consultant Project Architect (A/CPA/Q9.3)	•"Contractor was holding plastering until the services get finalized. That is why appointing the services sub-contractors was a success to the project. Client insisted to start the finishes prior to finish the structure because, their workforce was bit less. Normally Contractor put the blame to the Consultant, so they started saying they cannot start finishes until services get finalized. So that is why we attended to that to avoid any lapses from Consultant's side. We do not have any blame for the Consultant's side. We have done our role.
Progress Review Meeting Observation No.33	•It was observed Consultant and Contractor were in cold arguments over lapses of each other during the meeting. Client asked from the meeting participants about finalising fixing windows at third floor. Then, Consultant quickly resonded stating they have finalised all the details and specifications of the windows. Then, Contractor sarcastically indicated that details for ironmogery was still pending and Consultant had to look into missing details soon to finish the work."

A2.1.8 Contractor attempted to pass all responsibilities and blames to the Consultant (Cnsl A 08)

Consultant Project Architect (A/CPA/Q9.3)	•"Normally contractor put the blame to the consultant, so they started saying they cannot start finishes until services get finalized. So that is why we attended to that to avoid any lapses from consultant's side. We do not have any blame for the consultant's side. We have done our role."
Project Manager (A/PM/Q10.1)	•"According to our experience of working with Contractor, they do not proceed any work without written instructions. They do not accept verbal instructions. Emails are used but very beginning we communicated with emails and they did not accept. Then we pointed out that there is a clause in the contract that email instructions can be accepted. So now they accept. They try to pass the responsibilities as much as possible through such strict procedures."
Consultant Project Quantity Surveyor (A/CnslQS/Q9.3)	•Initially, they were complaining on detail and specification delay for finishes. Now when provided, they had suggested temporary works for ceiling. They had sent a letter like a claim notice. This is for sectional completion. Now it took this much of time and they should have finished the material procurements by now. I told they would not be paid additionally for that. They should have completed all material procurements by now. They cannot put blame to the Consultant any more and ask for additional claims.

A2.1.9 Close connections with the Client was important, but not with the Contractor (Cnsl A 09)

Project Manager (A/PM/Q14.4)	•"Yes we discuss. But I cannot directly tell the members in the Client's team that their performance is not good. Other Contractor's team we can say. Client also do not criticise the performnce of the Consultant directly. For example, when there are delays to provide designs, DG (Corporate Management) says, 'why do you all do like that. You all can give them on time. Why delaying likewise.' Not directly criticise performance. Indirectly says that and shows our mistakes."
Consultant Project Architect (A/CPA/Q14.1)	•"Later, while we were talking informally, Director General (Corporate Management) said he was shouting and pressurising because he wanted to finish the project soon. He said it was a management strategy motivate the Contractor."
Project Manager (A/PM/Q13.2)	•"In some occasions when delays occur and Client get disappointed, because we are not achieving his target. There are places I cannot explain reasons to Client since those are our own faults as the Consutlant. There are also occasions I cannot tell anything to our people also, becuase I know our own problems at oganisational level. I use to keep silent. Then I am the person who get blamed, because I am the project manager. I cannot talk those situations in open meetings. So I call the Client aside and explain that this kind of a situation is there and I cannot talk in an open meeting. Then they understand."

A2.1.10 Continuing relationship was very much important with the client, but not with contractor (Cnsl A 10)

Consultant Project Architect (A/CPA/Q14.8)	•"Continuing relationship is very much important with the Client. We get projects, if we keep them happy only."
Project Manager (A/PM/Q14.8)	•"We do not have any advantage from contractors, but we do not treat them badly. We get jobs from clients. So, we try not to get the relationship damaged with the client. Nothing special is done for building up the relationship. We try our best to do everything positively. There are some future projects available with this client. Hope they will award some of those to us too."
Consultant Project Quantity Surveyor (A/CnslQS/Q11.2)	•"Now normally contractor complains that we are really strict and difficult to get the payments done. When that is said, DG (Corporate Management) once said, he is really happy that government officers are there working strictly like that.

A1.2 Basic Assumptions on Nature of Human Nature

A1.2.1 Contractor only believed in formal written methods of communication (Cnsl A 2 01)

Project Manager (A/PM/Q10.1)	•"We give verbal instructions to Contractor, but they do not accept. We have to give them written instructions. According to our experience of working with them, they do not proceed any work without written instructions. Very beginning of the project, we communicated with emails and they did not accept. Then we pointed out that there is a clause in the contract that email instructions can be accepted. So now they accept."
Consultant Project Quantity Surveyor (A/CnslQS/Q11.2)	•"Contractor asks in meetings, whatever instructions given by architect or engineers, give them in writing, otherwise they cannot provide them to the consultant quantity surveyor. So, they always get details from Client and Consultant as we want."
Consultant Project Architect (A/CPA/Q10.3)	•"Contractor has a habit of re-drawing and detailing all construction drawings with shop drawings. They send them all for approval to me. They claim for interim payments using these drawings. Sometimes there are construction works which could be amalgamated during this re-draft. For example; kerb and the plaster they could have drawn together, but they do not do so and lot of double work is there. It just increases our paper work. It is a waste of our time too since we have to check a lot. I had to send them all errors in writing and ask for re-submissions too."

A2.2.2 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl A 2 02)

Consultant Project Architect (A/CPA/Q15.1)	•"Once wrong actions get repeated by us or Contractor several times, Client is used send a letter. Such incidents were there. That was a punishment like. They do not send any appreciations in writing...Sometimes we say good for the Contractor, for materials and all we say good sometimes. We have appreciated workmanship sometimes. Only verbally. We never send any appreciation in writing."
Project Manager (A/PM/Q15.1)	•"No rewards or no appreciation. We rarely try to appreciate each other in meetings or in any other situation. We try to point out mistakes. I think this is Sri Lankan attitude."
Consultant Project Quantity Surveyor (A/CnslQS/Q15.1)	•"Verbal appreciations are there. No appreciations in writing."

A2.2.3 Contractor targeted for additional claims in every situation (Cnsl A 2 03)

Consultant Project Architect (A/CPA/Q13.1)	•"Contractor send letters for any small delay targeting a claim all the time. When they send something like a warning letter, we understand that they are going towards a claim and issue the relevant drawing very quickly."
Project Manager (A/PM/Q11.1)	•"Contractor never wanted to start finishing works without finalising the designs of some remaining three services. If required to start, they wanted the Client to agree to pay for any possible damages to the finishes that could occur when installing those three services later."
Consultant Project Quantity Surveyor (A/CnslQS/Q9.3)	•"Initially, they were complaining on detail and specification delay for finishes. Now when provided, they had suggested temporary works for ceiling. They had sent a letter like a claim notice. This is for sectional completion. Now it took this much of time and they should have finished the material procurements by now. I told they would not be paid additionally for that. They should have completed all material procurements by now. They cannot put blame to the Consultant any more and ask for additional claims."

A2.3 Basic Assumptions on Nature of Reality and Truth

A2.3.1 Strict follow of contract clauses and strict control on cost induced Client's faith on Consultant (Cnsl A 3 01)

Consultant Project Quantity Surveyor (A/CnslQS/Q11.2, 10.3)	•"Normally contractor complains that we are really strict and difficult to get the payments done, when that is said, DG once said, he is really happy that government officers are there working strictly like that. They have a big belief that we never do any unnecessary payment ever. Client has told that in several meetings. Also contractor all the time says, you cannot ask us to do like that, Consultant QSs would not agree on that easily like that...Even contractor says in meetings, whatever instructions given by architect , engineers, give them in writing, because otherwise they cannot provide them to QS. So they get all the details from client or any consultant, as we want. In writing is essential for the contractor. It is a learning coming from a previous project."
Project Manager (A/PM/Q14.10)	•"Sump pump of the generator room was not in the original scope. We did not implement it because, it was not in the original project scope and it could add to the project cost negatively with the already implemented number of varied works. Client asked me, 'just let the Contractor install that pump and get paid, otherwise they would not do the generator room properly without much financial benefits for them'. This pump was a huge profit making item for the Contractor. It is not that we try to be negative all the time, but we try to be contractual all the time. We follow contract. But client does not think accordingly. However, we explain the contractual boundaries to them."
Consultant Project Architect (A/CPA/Q10.6)	•"Since consultant quantity surveying division checks everything very well according to the contract, Client has a lot of faith on consultant. They are very much confident that we deduct all unnecessary costs and send only the essential costs for payment. Therefore, up-to-date they have never questioned on payments related to any variation or items of Bill of Quantities."

A2.3.2 Difficult to convince the practical aspects of construction to the client (Cnsl A 3 02)

Consultant Project Quantity Surveyor (A/CnslQS/Q9.3)	•"Client during design stage told us this should be an ideal project completing within the budgeted time and cost. However, Client kept on coming up with variations, and we tried our best to be within the initial budget by balancing the additions with omissions. We informed Client about difficulties we are facing for such strict management of cost. However, now project has ended up exceeding both the initial budget and the limits for the budget variations as well. Also, it is very difficult to convince the Client that finishing the project on time is difficult with number of variations they come up with time to time. They argue with us why it could not be finished as requested.
Project Manager (A/PM/Q12.1)	•"Client does not understand the difficulties of those practical aspects of construction. While I was working for the client organisation previously, even though we understood those difficulties, we did not care. We wanted to get the work done somehow. We did not want to worry about the failures or difficulties of consultant or contractor. It could be the same with this Client too."
Technical Officer (Maintenance) (A/TO/Q12.2)	•"None of the ones from client's team is technical except myself. So, how Client understand technical aspects is very limited. For example, if someone says he wants a concrete work done in one week, if we are technical, we say, it is impossible in one week. There is a setting time for it. If we try to accelerate the work beyond the limited setting time, quality of the concrete can be reduced. If you are technical, you would understand that. If not, you would wonder 'why not?'. There are such confusions. There are things that are difficult to explain the Client at all."

A2.4 Basic Assumptions on Nature of Human Activity

A2.4.1 Controls in a construction project were the contracts (Cnsl A 4 01)

Consultant Project Quantity Surveyor (A/CnslQS/Q9.3)	•"Sometimes variations come to us as instructions given by architect and engineers. We have rejected those sometimes saying those are not really variations. For example, a big variation was initiated to increase and double the capacity of the generator to cater the existing building. This generator has a fuel tank. Contractor had quoted an amount saying 'steel fuel tank in accordance with the CPC standards' few months ago. Then again very recently they sent another variation for a concrete structure to bury the same fuel tank. However, we rejected it for the moment because, we question why they did not foresee such cost. For the last letter we wrote to them that this was not substantiated to believe it as a variation and if justified correctly, we are ready to accept it as a variation. There is such a control."
Project Manager (A/PM/Q14.10)	•"Sump pump of the generator room was not in the original scope. We did not implement it because, it was not in the original project scope and it could add to the project cost negatively with the already implemented number of varied works. Client asked me, 'just let the Contractor install that pump and get paid, otherwise they would not do the generator room properly without much financial benefits for them'. This pump was a huge profit making item for the Contractor. It is not that we try to be negative all the time, but we try to be contractual all the time. We follow contract. But client does not think accordingly. However, we explain the contractual boundaries to them."
Consultant Project Quantity Surveyor (A/CnslQS/Q10.6)	•"Since consultant quantity surveying division checks everything very well according to the contract, Client has a lot of faith on consultant. They are very much confident that we deduct all unnecessary costs and send only the essential costs for payment. Therefore, up-to-date they have never questioned on payments related to any variation or items of Bill of Quantities."

A2.4.2 Client assumed a higher power and tried to control the project (Cnsl A 4 02)

Consultant Project Architect (A/CPA/Q9.3)	•"Since this client is a powerful body in the country, we can never stand against them for anything they say. We have to do exactly whatever they say. Even many political influences from a Secretary of another ministry was also there for this project. We could control the influences to some extent since we got the project scope defined and agreed with the Client right at the beginning. However, for example, if they say they want to get the project finished by a given date, they exactly want that to happen. Sometimes, even though Client is contractually liable to give extension of time to the Contractor, they disregard those."
Consultancy Agreement of Project A Clause 1.2	•"Nothing contained herein shall be construed as establishing or creating a relationship of master and servant or principal and agent."
Consultant Project Quantity Surveyor (A/CnslQS/Q8)	•"Client always says, they want to get this done and get that done. We are asked to change the design, asked to do this work and that work. They were too demanding to the extent we were like their own employees."

A2.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

A2.6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl A 6 01)

Consultant Project Architect (A/CPA/Q10.7)	•"Client wanted to design a building; interior with modern facilities and exterior matching to the existing building. So I could not be innovative with any external finishes or external appearance. I was restricted to the budget since building was on government funding. This existing building is one of the heritage buildings in Sri Lanka. So I had to be careful on the design to get approved by the relevant authorities. So I carefully studied the existing building and the regulations for heritage buildings and did design, than trying to be innovative."
Project Manager (A/PM/Q10.7)	•"We have resources for innovation, but time is the problem. Contractor never try to innovate. Time pressure can be a reason. Also, this Contractor had always tried to construct exactly what was given in the construction drawings and specification. They re-draft the construction drawings and try to confirm our specifications and design. They try to stick to the contract all the time. "
Consultant Project Quantity Surveyor (A/CnslQS/Q10.7)	•"We do not experience innovation a lot in pubic sector building projects in Sri Lanka. Funding may be a restriction."

A2.7 Basic Assumptions on Unknowable and Uncontrollable

A2.7.1 Decisions made by public sector clients were uncertain (Cnsl A 7 01)

Project Manager (A/PM/Q10.6)	•"When there was the previous government, the higher authorities were some other group. They totally collapsed and then new comers are there now with the new government. So the concepts, thinking and everything was changed with the new governemnt. These politicians do not follow policies. If policy decisions are taken, these construction projects cannot face this much of variations with government changes."
Consultant Project Architect (A/CPA/Q9.3)	•"During project initiation Client informed us that Project A had to be a critical example for other government building construction projects achieving all scheduled budgets and time. Normally, most of the public sector building construction projects experienced cost overruns. Client wanted complete Project A within the budgeted cost and be an example to other ministries. This was because, the ministry related to Project A was the government ministry entitled for allocation of funds for government construction projects. So, we were asked to thoroughly study the project requirements and include everything within the project scope and incorporate them into the BOQ to avoid variations. But, Client themselves initiated number of variations right after the award of contract to the Contractor."
Progress Review Meeting No.32 and 33 Observations	•Director General (Corporate Management) initiated both the 32nd and 33rd meetings questioning about finishing date of the project and the issues related to that. This chasing behind time was because, government has changed and the new government has required additional office spaces for accommodating some additional staff. It had given rise to some more varied work such as; converting the drivers lodging area to office spaces. Further, this had resulted more problems in data and telecommunication systems, and the heating, ventilation and air conditioning systems, as those had already being finalized when converting the drivers lodging area to office spaces was requested.

A2.8 Basic Assumptions on Gender

A2.8.1 All genders were treated equally in construction projects (Cnsl A 8 01)

Consultant Project Quantity Surveyor (A/CnslQS/Q13.4)	•"No challenge for female members. I do not see any difference in allocation of roles and responsibilities for males and females. Even in our division, majority is female. Even we work with higher administrative levels such as; cabinet appointed tender board's secretary level. We have not yet realized any problem as females. We can argue and justify our ideas without any problem. So no issue we have faced in any occasion."
Project Manager (A/PM/Q13.4)	•"There is no difference as males females in construction. Both are working at the same level."
Consultant Project Architect (A/CPA/Q13.4)	•"As a female, I have never felt a difference in any project. Both are treated equally."

A2.9 Basic Assumptions on Motive for Behaving

9.2 Contractor tried to deliver the quality as expected by the Consultant (Cnsl A 9 01)

Consultant Project Quantity Surveyor (A/CnslQS/Q9.1)	•"Client has no issues regarding quality. We are very much sure that accepted quality can be achieved with regard to the workmanship of the Contractor."
Project Manager (A/PM/Q10.4)	•"We do the evaluation of sub-contractors. Then Contractor decides to whom they will award. We cannot force them. We just give them the evaluation and rank like 1,2,3. They will select. However, when we rank 1,2,3 they will not for 2 or 3 normally and they will go for 1. Contractor wants to deliver the quality as preferred by the Consultant mostly."
Consultant Project Architect (A/CPA/Q9.3)	•"Contractor submits material approvals with technical literature properly for every single material starting from bathroom fittings to nuts and bolts. Then we evaluate those and accept or ask to resubmit or ask for additional information. Then we know while construction is going on, what are the materials they have used, for example; if it is a wash basin, what is the length, width, height, what plumbing to do etc. Everything is finalized beforehand. Most of the contractors industry fail to do this."

A2.10 Basic Assumptions on State-Individual Relationship

A2.10.1 As Client was the ultimate user of the new construction, satisfying client's requirements should be given a priority (Cnsl A 10 01)

Project Manager (A/PM/Q10.4)	•"When there was the previous government, the higher management was some other group. They were totally collapsed and new group came in after the government change. Old concepts, thinking and everything was changed. New Client's personnel expects new things. Although we cannot address every requirement of them, we try our best to address most of them."
Consultant Project Architect (A/CPA/Q9.3)	•"We asked the Client not to change the auditorium to office spaces because, auditorium was the main space allocated for the building and the total interior space arrangement got affected with its removal. In addition, they wanted to have the restaurant and the kitchen on top of the building for which we advised not to. It is difficult to take goods up there. However, due to their insistence; we changed everything and catered their requirements. Actually, at the end of the day, client is using the building. We thought, if the building does not come out as they wish, it could be useless for the Client. We have taken approval for the design of this building three times up to date due to design changes; approval from Colombo Municipal Council once and approval from Urban Development Authority twice"
Project Manager (A/PM/Q9.6)	•Client changed the design with an expansion in the building design including a part of adjacent land. They had the ownership of that land but had been leased out to a different organisation. This happened even after piling, at the middle of the project only. There was no permission to construct on that land until the lease period is over. However, since Client was a powerful ministry, we were asked to do the construction until plan apprval from local authority is recieved in next year."

A2.11. Basic Assumptions on Project Organisation's Relationship to its Environment

A2.11.1 Public sector clients received concessions in legal aspects (Cnsl A 11 01)

Project Manager (A/PM/Q9.6)	•"Client changed the design with an expansion in the building design including a part of adjacent land. They had the ownership of that land but had been leased out to a different organisation. This happened even after piling, at the middle of the project only. There was no permission to construct on that land until the lease period is over. However, since Client was a powerful ministry, we were asked to do the construction until plan apprval from local authority is recieved in next year."
Consultant Project Architect (A/CPA/Q9.6)	•"We were not allowed to keep the transformer room near the lake during planning approval from Urban Development Authority (UDA). Somehow Client obtained permission to keep it temporarily located there until taken inside the building later. By the time, Client applied for UDA approval again since they wanted to locate it outside as they planned before.Since, this is a powerful ministry, Client obtained approval from UDA finally."

A3 Client

A3.1 Basic Assumptions on the Nature of Human Relationship

A3.1.1 Consultant had the legitimate control of the project, but never used (Clnt A 1 01)

Assistant Director (Premises) (A/ADM/Q11.4)	•"Consultant can control the project time, cost and quality very well. But this Consultant does not do it properly. This project should be in their blood. I think one project should have one team. It is difficult to do parallel projects. Consultant does not do that. Since they are a government body, all government projects all around the country comes to them."
Technical Officer (Maintenance) (A/TOM/Q10.3)	•"Even there are occasions where Contractor do not care the Consultant. That is a weakness of the consultant. Consultant has all the power according to the contract to control the Contractor. This is how I think. Contractor raise a voice because there is a weakness of the Consultant.'
Procurement Assistant (A/PA/Q)	•"Consultant check on cost and quality and inform us. Whatever Contractor says, we check with the Consultant and get their approval for any cost and quality matter."

A3.1.2 The most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt A 1 02)

Assistant Director (Premises) (A/ADM/Q9.4)	•"We requested the Contractor to give us the average labour utilization plan per week and how they intend to go for the given time target with that number of labourers. Then only we realised Contractor is unable to achieve the target and took the necessary steps to provide an additional labour force from a government security department."
Technical Officer (Maintenance) (A/TOM/Q9.3)	•"Initially, contractor had the problem of lack of workforce. When we stressed from here only, they increased the labour force. But still we have been unable to get the speed we anticipated."
Consultant Project Architect (A/CPA/Q14.1)	•"Later, while we were talking informally, Director General (Corporate Management) said he was shouting and pressurising because he wanted to finish the project soon. He said it was a management strategy motivate the Contractor."

A3.1.3 A strong project management was essential for project success (Clnt A 1 03)

Assistant Director (Premises) (A/ADM/Q10.2)	•"I think project manager has to be strong than this. I am not criticising him. But he has to have a better coordination than this."
Technical Officer (Maintenance) (A/TOM/Q7)	•"There was a DGM (Consultancy) who involved with the project previously and now retired. He involved with the project even after his retirement. Now this person is not there. Everybody listened and respected him. He had very good leadership qualities. Whenever we talked to him regarding a matter, he attends to it fast and make a decision quickly. I think projects need that kind of personalities."
Procurement Assistant (A/PA/Q14.1)	•"If Director General (Corporate Management) does not lead the team, there is no strong personality to lead the team I feel."

A3.1.4 A construction project would never be a priority of a client's day-to-day work (Clnt A 1 04)

Assistant Director (Premises) (A/ADM/Q14.8)	•"We also check on the progress and start pressurising the Contractor and Consultant, when Minister or Secretary to the Ministry starts questioning and complaining on delays in occupying the new building only. We are busy with routin office work. That happens sometimes."
Procurement Assistant (A/PA/Q12.1)	•"Normally, we do not have time to involve in this particular project only. We have duties of other usual existing building renovation projects every day. If we can recruit one project manager from our organisation and appoint, this project would have been successful than this. Then the sole responsibility of that person becomes this project. Then, these delays would have been really less."
Project Manager (A/PM/Q16.1)	•"Client wants to get the building done, but since this is not their priority of work, they do not pay much attention. Just keep complaining without action. Now they have scheduled a date and pressurise the Contractor. They are putting the pressure, when they get a pressure from their superiors only. They are not personally involving."

A3.1.5 Formal methods of Communication was important but, effectiveness and efficiency in communication resulted in, how much the red tape for fast communication was overcome within the process (Clnt A 1 05)

Assistant Director (Premises) (A/ADM/Q10.1)	•"Many decisions and information pass through informal communication procedures such as; telephone calls. I feel that we could have gone for more informal procedures than this. Sometimes, Project Manager talk to me over the phone and inform that they are having a particular problem and need client's approval urgently and it is difficult to send a letter right at that moment. In such occasions, I go and talk to Director General (Corporate Management) and give approval over the phone saying let's do the documents later, no problem, you all can carry out the work. There was trust built up between Client and Consultant to that extent."
Technical Officer (Maintenance) (A/TOM/Q10.2)	•"This communication system is not effective. We write letters, get signatures, send files. It takes time when the letter reaches. Like the modern practices, if we can give the okay through an email and start the work, then it is good. Just think we take a call, try to contact the person, etc. it is really difficult. There is a path for letters here. First goes to Assistant Director, then to another sir, then to DG, and then should come back here. Until then, we have to wait to send an instruction. If we can send an email and just give an okay it is better.
Procurement Assistant (A/PA/Q14.9)	•"Meetings are also important because, as a government organisation, meeting minute are accepted as formal legal document. So whatever said in a meeting minute, we do not need to take any approvals. We can just refer the meeting minute. Otherwise lot of letters to be sent and need to take approvals. We have a big procedure in files. Meetings are easier than the letter procedure"

A3.1.6 Consultant was the most important member in the project team as they were the technical advisors taking care of quality (Clnt A 1 06)

Assistant Director (Premises) (A/ADM/Q10.2)	•"When we went to select furniture, Project Architect explained us everything very nicely. I really did not have any idea actually. She justified nicely why she selected something. Nothing was selected randomly. I felt the importance of the role of Consultant."
Technical Officer (Maintenance) (A/TOM/Q6)	•"Consultant is the most important memebr in the team. Consultant takes care of quality. Client cannot do much on that. We totally depend on Consultant for the quality of the building."
Procurement Assistant (A/PA/Q9.3)	•"Client can judge and comment on things visible for us only. We are unable to comment many things about the services installed or concrete structural works done. We lack technical knowledge to comment on those. Only Consultant can get that done for us."

A3.1.7 Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt A 1 07)

Assistant Director (Premises) (A/ADM/Q10.3)	•"Actually contractor and consultant do not do things in a friendly manner. I feel that there is no trust built up between the two. They two are arguing and fighting in the meeting. For example, a typical situation during the meeting is; contractor says, we sent some documents for approval. Then Consultant Project Architect says, I received it yesterday only. I think, it should be something they should have discussed before coming to the meeting. Contractor's Project Coordinator usually says; 'every day you all put blame to the Contractor, but Consultant have not given us the required approval, for inspection'. They want to pass the responsibilities to each other."
Technical Officer (Maintenance) (A/TOM/Q10.3)	•"Whenever Contractor was questioned about the delay of the project, they used to come up with some fault of the Consultant as the reason for the delay."
Procurement Assistant (A/PA/Q15.1)	•"Mostly one party says, due to these, these problems of the other party we could not get these things done, but DG (Corporate Management) intervenes and sort it out."

A3.1.8 Close connections with the Consultant was advantageous, but nothing special with the Contractor (Clnt A 1 08)

Assistant Director (Premises) (A/ADM/Q14.1,14.8)	•We kept on insisting that we need the building quickly. Project Architect says everyday, please ask DG, not to pressure everyday, this can lead to quality problems, these contractors are trying to maximise profit in this kind of situations with variations, which we were unable to realise as laymen. Since Project Architect was closr to us only we got the chance to understand it....Actually, we thought about it because their involvement is good. If we ask the Consultant to come right now for a meeting, they come. Even if we talk at night for any problem, they respond for it. Since they respond only, we could answer Secretary and Minister during problematic situations. Otherwise we also know nothing anbout construction."
Technical Officer (Maintenance) (A/TOM/Q13.1)	•"There is a Resident Civil Engineer from Consultant, he is very friendly with us. He, himself comes to us and talks to us. He himself goes if he gets to go somewhere. It is easy then. We need that kind of consultants. He had common sense. He had the urge to get the work done. He comes to me. Goes to madam, goes to DG. Goes to local authorities and get the work done. We prefer that sort of close relationships. then it is easy to work."
Procurement Assistant (A/PA/Q10.3)	•"When we ask something from Consultant Project Quantity Surveyor, she never forgets to reply us. She calls back and responds very quickly. We solve many problems over the phone. It eases our work here."

A3.2 Basic Assumptions on Nature of Human Nature

A3.2.1 No appreciations, only punishments were practised in construction projects (Clnt A 2 01)

Assistant Director (Premises) (A/ADM/Q15.1)	•"We never appreciate Contractor or Consultant verbally or in writing. We complain all the time to Contractor, that labour is not utilized well, resources are not utilized well, not working on time etc. We have sent totally 4 letters with complaints. Now another is pending to inform them that dates are delayed and we cannot give them any time extension and we are planning to claim liquidated damages."
Technical Officer (Maintenance) (A/TOM/Q15.1)	•"There are no rewards (Laughs) Punishments are there. Through letters, DG punishes verbally anyway. Almost everyday, due to all the issues in the project. Appreciations are very less."
Procurement Assistant (A/PA/Q15.1)	•"I do not see any value to send such appreciations (laughs). We have never done. I think punishments are there. Still we have not sent the letter, but we are expecting to inform them through a letter that we wish to claim liquidated damages, if they are going to exceed the last agreed date of completion."

A3.2.2 Contractor only believed formal instructions in black and white (Clnt A 2 02)

Assistant Director (Premises) (A/ADM/Q10.2)	•"Initially, Consultant was informed through emails and some confusions occurred. This was because Contractor did not like to accept emails. When emails were sent, they kept on saying they did not receive a letter and want it in black and white. We have informed them that emails are an acceptable mode of communication according the contract. However, due to the same reason, we have avoided emails as much as possible."
Technical Officer (Maintenance) (A/TOM/Q10.1)	•"Though Contractor trusted to do what we ask, they paused and delayed the work because they doubted whether Consultant would approve or not. It is fair, because Contractor says, though you all asked, Consultant did not give the okay yet to proceed the work. Initially, Consultant informed through emails and some confusions occurred. It was because contractor did not like to accept emails. They want everything in letters."
Procurement Assistant (A/PA/Q10.1)	•"Contractor never followed any decision or instruction given by the Consultant over that phone. Contractor had requested written instructions for everything, which made the communication really slow."

A3.3 Basic Assumptions on Nature of Reality and Truth

A3.3.1 Client learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt A 3 01)

Assistant Director (Premises) (A/ADM/Q9.4)	•"I could I identify the facilities given with this current PABX system later only. If we were getting a new system, we happen to pay a lot. Initially, Contractor did not like. Consultant told us that Contractor will surely charge it since we were to introduce a nominated supplier at the middle of the contract. When we justified, Contractor too realized that compared to the cost of their suggested supplier, our supplier was better. So, they liked it and went along with our supplier."
Technical Officer (Maintenance) (A/TOM/Q9.6)	•"There was a huge problem in the water sump of the existing building. That sump comprised of 40 number of separate individual tanks. A proper supply of water could have been gained to the existing building, if the sump of the new building could have designed to cater the both new and existing building. We are worried that we could not identify that requirement during the design stage of the new building to incorporate it to the contracts of new building. We discussed with Consultant Project Design Engineer, to check the possibility of incorporating it by the time we identified it during the construction stage, but unfortunately it failed."
Procurement Assistant (A/PA/Q9.6)	•"We identified the possibility of introducing the second entrance car porch by acquiring the adjacent only after awarding the contract. We realised that possibility, while we were wondering about solving the car parking problem currently exist with the existing building only."

A3.4. Basic Assumptions on Nature of Human Activity

A3.4.1 Client was the most powerful member in the project team (Clnt A 4 01)

Assistant Director (Premises) (A/ADM/Q9.6)	•"Consultant does not like to issue construction drawings for this area of land since we have not yet received the ownership from lessee. However, they carry on the work due to the pressure from us."
Procurement Assistant (A/PA/Q9.6)	•"We are the institution allocating funds for all government construction projects. We have that power. Funds are not a major issue for us."
Consultancy Agreement of Project A Clause 1.2	•"Nothing contained herein shall be construed as establishing or creating a relationship of master and servant or principal and agent."

A3.5 Basic Assumptions on Nature of Time Units

A3.5.1 Continuing relationships with Contractor or Consultant was not essential (Clnt A 5 01)

Procurement Assistant (A/PA/Q14.8)	•"According to my knowledge there is no consideration of continuing relationship. Even this Consultant is also a government organisation. So we never treat or mistreat considering such a thing. Now we have other consultants working for us. If we have any favoration, then we could have taken this Consultant for that also. So nothing like that. When we get another project to be done, sometimes we could give it to them or we have other government consultants. So could be given to them as well."
Technical Officer (Maintenance) (A/TOM/Q14.8)	•"No consideration on continuing relationship.. Everything is done to get this project done. We are ready to give any bad comment either to Contractor or Consultant to get this project done."
Assistant Director (Premises) (A/ADM/Q14.8)	•"Yes, there is some expectation of continuing relationship. We expect to work with thesame consultant. We are constructing 100 quarters. We were discussing whether to give it to a private firm. When I and DG discussed, he said, let’s give it to the same consultant, it’s good they involve, they are now known to us, and a cabinet paper was sent on that. Actually, we thought about them because their involvement is good."

A3.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

A3.6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt A 6 01)

Assistant Director (Premises) (A/ADM/Q11.1)	•"Internal problems of the Contractor are irrelevant to the Client. If they agreed to handover the building by end December, they have to do accordingly."
Procurement Assistant (A/PA/Q11.3)	•"Contractor is bound to handover the building on the agreed date within an acceptable quality to the agreed price."
Technical Officer (Maintenance) (A/TOM/Q15.1)	•"When Contractor asked for the third extension of time, we decided to charge Liquidated Damages from them in the last meeting. They are submitting reasons for that. Now we are trying to take a decision from secretary level that any decision given cannot be considered. So, Consultant has been asked to check whether Liquidated Damages are possible to be charged."

A3.6.2 Not innovation, only conformance was expected from the project team (Clnt A 6 02)

Assistant Director (Premises) (A/ADM/Q11.1)	•"What we want is mentioned in the contract. We did not particularly concerned or encouraged for any innovation for Consultant or Contractor. We always check whether they deliver according to the contract."
Procurement Assistant (A/PA/Q10.7)	•"Client did not have any particular idea about encouraging the team for innovation I think. Getting the normal contract stipulated building done was itself a challenge for us as a layman to the construction industry."
Technical Officer (Maintenance) (A/TOM/Q10.7)	•"Contractor does not propose any innovative things by themselves. What they are used to say is ‘consultant did not say’, ‘consultant did not give’, ‘it was not instructed’, ‘it is not what is in Bill of Quantities’ and ‘that is what they say’. Sometimes, Contractor might be having any experience that payments not being made by deviating from the contract. So, they try to go by the rule."

A3.7. Basic Assumptions on Unknowable and Uncontrollable

A3.7.1 Uncertainties in decisions were unavoidable in public sector projects (Clnt A 7 01)

Assistant Director (Premises) (A/ADM/Q10.2)	•"Design was changed three times as per the requirements of our previous Secretary to the Ministry after awarding the contract. Further, design changes occurred due to new requirements after the government changes. Contractor and Consultant might be disappointed with the number of variations and lack of firm decisions. We too see it as a weaknesses from Client's party. However, I cannot change it because, they are orders from higher authority level. If Minister says something, we have to abide by it. For example; there was a specific space allocated in first floor for drivers. After wiring works for data communication, public address systems and all plastering works were all over, contractor was asked to change it to an office area, saying office areas were inadequate. Now they have to break all plasters and get the specialised services sub-contractors back to work."
Procurement Assistant (A/PA/Q9.3)	•"Director General is the one disrupt the project and also get the project accelerated time to time both."
Technical Officer (Maintenance) (A/TOM/Q10.2)	•"Scope changes were unavoidable from Client. We witnessed how it disrupted the smooth execution of the project for the Consultant and the Contractor. But within government system, chnage in governments creates variations to project."

A3.7.2 Variations were not an issue, as long as project had enough funding (Clnt A 7 02)

Assistant Director (Premises) (A/ADM/Q9.2)	•"Actually it is difficult to consider cost in this kind of a construction work, because design changes come in. It is not the same scope we have now compared to what we had right at the beginning of the project. It is not the initial requirements we had now prevailing. So when design revisions come in, it is normal that we expect cost revisions. We do not consider cost a lot. Funds are also there. If a cost revision comes in, the only problem is to get a cabinet approval for the varied amount."
Sri Lankan National Procurement Guidelines (2006) Sub Clause 8.13.3	•"Contract variation orders may be authorized by the Head of Department/Project Director provided that the net sum of the variation and any previous variations does not exceed the amount of the contingency provision provided in the approved contract budget. Contingency provision generally should not exceed ten percent (10%) of the estimated contract amount."
Technical Officer (Maintenance) (A/TOM/Q9.2)	•"This building should match with the purpose of the building. The purpose is to make a place where foreign delegates who would come to invest in Sri Lanka meet the government officials. Though it need not to be too much expensive, luxury finish inside the building is a must. We have a concern over cost, but we could not avoid the varied costs resulted in within the process of achieving the intended purpose of the building."

A3.8 Basic Assumptions on Gender

3.8.1 The ideal situation was to have a balance in genders for a construction project (Clnt A 8 01)

Assistant Director (Premises) (A/ADM/Q13.4)	•"I feel it is good to have a mix in a project. I noticed in this project that there is a considerable difference in personal relations between male and female. Females are really good in personal relations. For example, I have noticed how Consultant Project Architect, who is a female, behaves when she happens to get a decision reversed by the Director General (Corporate Management), who is a little aggressive by nature. She never argues or fights back with him. She can absorb any argument by the Director General and explain it later very calmly. I think, a male would have not done that other than arguing back with the Director General. So, it is good to have females also in a construction project."
Procurement Assistant (A/PA/Q13.4)	•"I have never felt any difference with regard to the gender. Sometimes it is easy to communicate and get the workdone due to having females."
Technical Officer (Maintenance) (A/TOM/Q13.4)	•"I never have no difference for male or female. I look for their capabilities. Sometimes when we get a male, he can be weaker than a female too. Male has a feeling within for this filed. He can tackle issues quickly, explain quickly, It is sometimes difficult for a female to do so. For example, though a female architect could do a beautiful design, when a contractor questions on how we practically construct though you drew it in that way, it is difficult for a female to explain it. She gets stuck. Males tend to answer quickly. Tend tell something though it could be wrong even. Females get scared. We as females, though we know what is happening in the industry, we get backward when we get questioned. We have cultural problems."

A3.9 Basic Assumptions on Motive for Behaving

A3.9.1 Client was liable to make timely payments to the Contractor (Clnt A 9 01)

Assistant Director (Premises) (A/ADM/Q15.1)	•"Regarding payments, Director General (Corporate Management) all the time says, ‘we shout at Contractor always, check whether we have paid them timely. They all work with a large team and timely payment is essential."
Procurement Assistant (A/PA/Q9.6)	•"Director General (Corporate Management) took necessary steps to make an advance payments to the Contractor for the second time during the end of previous year. This was because, the allocated funds for that year had not been claimed fully by the Contractor due to lack of project progress. This was a special payment beyond the normal regulations for financial payments related to government construction projects."
Progress Review Meeting No.33 Observation	•Client asked the Contractor to try out claiming all the funds allocated for that year, at least under material at site.

A3.10 Basic Assumptions on State-Individual Relationship

A3.10.1 Laws should be lenient on public sector clients (Clnt A 10 01)

Assistant Director (Premises) (A/ADM/Q9.3)	•"Getting approvals for the building design drawings with the transfomer room facing the lake was a challenge for us. However, we received the approval since we could influence as apowerful ministry in the country."
Procurement Assistant (A/PA/Q9.6)	•"Director General (Corporate Management) took necessary steps to make an advance payments to the Contractor for the second time during the end of previous year. This was because, the allocated funds for that year had not been claimed fully by the Contractor due to lack of project progress. This was a special payment beyond the normal regulations for financial payments related to government construction projects."
Technical Officer (Maintenance) (A/TOM/Q9.7)	•"We have not yet received the ownership of the land from the lessee. We have received the permission to construct verbally only. But we will get the approvals for the design once we get the ownership of the land next year."

Annexure 4: Case Evidences – Case B

This annexure includes case evidences for Contractor (Cont B), Consultant (Cnsl B) and Client (Clnt B) respectively for Case B.

B1 Contractor

B1.1 Basic Assumptions on the Nature of Human Relationship

B1.1.1 Level of authority was critical in decision making (Cont B 1 01)

Site Engineer (B/SE/Q10.1)	•"It is good that we have an experienced Resident Eningeer appointed to the site. He is stationed at the site and he has a good experinece to provide us with clarifications on instructions given by the Consultant. However, he is not with adequate authority to provide instructions all the time. It is good if he were with all required authroity to speed up decision making."
Contractor's Project Manager (B/CPM/Q14.1)	•"Project Manager is a very supportive character. However, It seems she is not with adequate experience and authority level to answer the Contractor. She is mostly referring to Project Coordinator and Additional General Manager (Hospital Works) for decision making. This has caused the decision making quite slow."
Contractor's Project Quantity Surveyor (B/ContQS/Q10.3)	•"There is a huge delay in decision making when we happen to take approvals for the things from Client. In our organisation, we can get a response quickly from head office if we give a call and ask or if we send an email. But with the Client, if we give something to the Director-Hospital, he needs to get the approvals from the ministry and then reaches us. It takes a very long time."

B1.1.2 A powerful leader was essential to drive the project (Cont B 1 02)

Contractor's Project Manager (B/CPM/Q14.1)	•"It is good if we have a person to drive this project. I think there should be a strong personality from the client's side. We do not get that pressure or motivation. Not even Director-(Hospital) was doing that before retirement. In all other projects we are involved in, for example, Chief Engineer of Municipal Council is the project manager. He pressurises mostly, both consultant and contractor. He gives that motivation. Checkes on progress and whether good have been delivered to site. That role is not done by anyone in this project."
Site Engineer (B/SE/Q14.1)	•"What I feel is, neither Client nor Consultant is monitoring us properly and motivating us. We can naturally feel relaxed when there is no one to pressurize us. Sometimes we would have being more serious than this if there had been someone to drive us. It is the cultural belief in Sri Lanka that people do not work properly, unless they are being monitored and pressurised much. People have used to think like that."
Contractor's Project Quantity Surveyor (B/ContQS/Q14.1)	•"Resident Engineer is stationed at site and Project Manager is Stationed at head-office of the Consultant. Both of them are tend to give instructions and lead us. But, that leading is not really happening. Resident Engineer does not have required authority to lead us. May be Project Manager is too busy with other projects. From Client also, we had Deputy Director (Hospital), who looked into matters, but he too was busy to look into project matters. It is good, if there were one person with all required authority to lead us from Client or Consultant."

B1.1.3 Consultant lacked integration among different designers and Contractor put special effort to bring in integration (Cont B 1 03)

Contractor's Project Manager (B/CPM/Q10.4)	•"This Consultancy organisation is a bigger one. There are seperate departments for different services, for example for electrical designs, for fire protection and detection design, for HVAC designs etc. Always we happen to contact each department for each design. Neither Project Manager nor Project Coordinator from their head office involve with the coordination of those for us. There were number of design integration problems, which we happened to sort out by talking to seperate department. We tolerated those with much patience, since we did not want to create problems and damage the relationship with the Consultant. We involved in sorting out the integration issues by coordinating with them."
Site Engineer (B/SE/Q9.6)	•"There were problems with the setting out detail and the foundation, pile locations. It was a bigger issue we faced at the initial stages."
Progress Review Meeting No.24 Observation/ Meeting Minute of Meeting No.23	•"It was observed during the meeting that HVAC Design Engineer had been asked to discuss with the Consultant Project Architect to decide on the plenium height in third floor during the previous meeting (No.23). However, they two had not discussed about it before coming to the meeting. Contractor expressed their urgency to get an answer for that during that meeting itself, since work on third floor had been on hold due to the same reason. Thus, the two Consultants discussed about it during the meeting."

B1.1.4 Client involved if there were cost related issues only (Cont B 1 04)

Contractor's Project Manager (B/CPM/Q9.1)	•"Its not about cost or time that client is much interested in. They are keeping an eye on whether their requirements are getting fulfilled by the project. The spaces, areas, and availability of facilities required by the occupants. I think it is connected with the quality and scope. If we take a room, there should be enough space to keep all the tables that are already at the old building. These are the things they are more concerned about. Also about air condition, telephone, data, whether all facilities are there. They do not discuss on cost. "
Site Engineer (B/SE/Q9.3)	•"Now only End-user is slighlty pushing behind time, since project is near completion and they are worried about timely deliver. Otherwise they never worried about cot or time of the project. Only looked for getting their requirements fulfilled with the quality they expected."
Contractor's Quantity Surveyor (B/CQS/Q10.3)	•End-user always delays in the process. Initially, they come up with a requirement and rush us to get the work done. However, if we ask them to get us the approval on cost from the Client for the same, then they take a long time to get the approvals from the ministry and reach us back.

B1.1.5 End-user was not concerned on cost or time, but project scope and quality only (Cont B 1 05)

Contractor's Project Manager (B/CPM/Q9.1)	•"Ministry as the Client does not get involved much with project work. Ministry does the coordination. They are mostly behind cost only. It is the ministry who has the responsibility if the project is not finished within the budget. Issues can come up with how to pay the additional costs to the Contractor. Sometimes, whether to take cabinet approvals or board approvals, all has to be decided by the ministry. Still ministry does not have that threat. So they are silent. We have not exceeded the budget and it is apparent there will be no overrun in budget in the future too. "
Contractor's Quantity Surveyor (B/CQS/Q9.2)	•"Ministry has one of their Works Engineers appointed for the project. She visits the site and attends the progress review meetings mostly once in two months only. She paid additional visits, when Director-Hospital made requests. I think ministry depends heavily on Consultant. Works Engineer becomes more vigilant once a clam notice is submitted or, when the End-user initiates a variation only. Ministry is on cost of the project I think. "
Progress Review Meetings No. 25 Observations	•Participation of the only direct representative from the Client, i.e. the Works Engineer was available only for the meeting No.25. She specifically mentioned during the meeting that she was present for the meeting that day to check on any issues related to payments to Contractor and to know the final cost agreed between Consulant and Contractor for variation on floor finishes. This pointed out that she was only concerned on the cost of the project.

B1.1.6 Contractor lost power with their mistakes and they gained power with mistakes of other team members (Cont B 1 06)

Contractor's Project Manager (B/CPM/Q9.1)	•"Time factor did not affect us a lot, because, client has some other work to be finished from their side, since they have not finished procurement of furniture to shift the staff to this new building. So, though we finish the building and handover, they have a problem of occupying. Therefore, we do not have time pressure at a greater scale...We have a schedule agreed with Client for 31st March, because they have to arrange for furniture. So we expect to finish the project by then."
Contractor's Project Manager (B/CPM/Q10.3)	•"We especially never allowed them to comment on a quality issue. Mostly in any site, contractor is complained on quality issues and ask to break off something or they send letters complaining on those. We did not allow for those in this site."
Site Engineer (B/SE/Q9.3)	•"There are delays in instructions some occasions. When giving extension, there is a liability from them to consider things fairly since variations occured due to their variations and due to their delays in decision making only."
Contractor's Quantity Surveyor (B/CQS/Q11.1)	•"When we send a notice for any claim, if there is a delay in response, we normally mention those during meeting. If there is a delay in the approval, we normally mention those too at the meeting. If responsibilities of each party are not performed, it should be notified to Client, so we say those. But not in a harmful way."

B1.1.7 Close connections with Consultant was advantageous, but normally unacceptable in project context (Cont B 1 07)

Progress Review Meeting No.24 and No.25 Observations	•"It was observed that Contractor never argued with the Consultant, although Consultant was arguing aggressively. Consultant and Contractor behaved in a very friendly manner during and after the meeting that it was difficult to recognise, Contractor's staff and the Consultant's staff seperately for the researcher.
Contractor's Project Manager (B/CPM/Q10.1,15.1)	•"I knew this Consultant since a little time back. I personally like them. They treat us really well....Consultant do not appreciate normally. Consultant never writes to a contractor to appreciate, and it is a problem in our practice. It is because then they can get complains that consultant is bias or supported the contractor. But, if you interview a consultant in private, then they will reveal their real idea about the contractor."
Contractor's Project Quantity Surveyor (B/ContQS/Q10.3)	•"We are very much close to Resident Engineer. He checks on our interim payment application at site and request us to submitt all missing documents and correct all errors in submission before sending to head offfice. He is very cordial and I learnt many things from him."

B1.1.8 Maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont B 1 08)

Contractor's Project Manager (B/CPM/Q7,9.4,10.4)	•"Client is the one superior. I think all three should have equal rights in the agreement. But here, contractor gets a lower level status. We mostly do not try to find out the lapses of the Client and Consultant. We try to corporate with them and do the work...The most important things is maintaining good relationship within this team. Otherwise the project would not be successful. It is not right if we keep on arguing only. We try our best to deliver the best quality they look for. That is what we expect as a contractor...There were number of design integration problems, which we happened to sort out by talking to seperate department. We tolerated those with much patience, since we did not want to create problems and damage the relationship with the Consultant."
Contractor's Quantity Surveyor (B/ContQS/Q14.8)	•"It is not we try to create problems with the Consultant and Client because of claims. We always try to send cliem notices and look for their concern over the claim. We consider maintaining good relationship with them. Else, it is difficult to work in the team."
Site Enigneer (B/SE/Q14.8)	•"We are speically advised by our superiors to maintain good relationship with the Client and Consutlant. I think, that is the way we get good projects from them in future. We try to satisfy both of them always. I think providing the required the quality they want is the way we can satisfy them and we are trying to do that. I think that is the responsibility of the Contractor too. We look for their referral to other Clients or may be to get another project in this ministry."

B1.2 Basic Assumptions on the Nature of Human Nature

B1.2.1 No appreciations and only constant highlighting of mistakes were available within the team (Cont B 2 01)

Contractor's Project Manager (B/CPM/Q15.1)	•"We do not see appreciations openly. Consultant do not appreciate normally within the meeting or writes to a contractor to appreciate, and it is a problem in our practice. It is because then they can get complained that consultant is bias or supported the contractor. But, if you interview a consultant in private, then they will reveal their real idea about the contractor. When something like a defect is noticed, then they openly comment about it."
Site Engineer (B/SE/Q11.4/15.1)	•"The way public look at the consultant is very different. If any issue arises in the project, blame first comes to the contractor. Nobody asks who designed this. Contractor becomes responsible for everything...As the contractor, it is rare we are being appreicated, almost no I would say. We discuss laspes at meetings."
Progress Review Meeting No.24 and 25 Observations and Meeting Minutes of Progress Review Meetings No.23 and 26	•No appreciations among the parties were observed during meetings or in any meeting minutes. Only the problems, issues and lapses were discussed among the team members during the meeting and mentioned in meeting minutes.

B1.3. Basic Assumptions on the Nature of Reality and Truth

B1.3.1 Level of Experience was crucial in decision making in construction (Cont B 3 01)

Site Engineer (B/SE/Q10.1)	•"It is good that we have an experienced Resident Eningeer appointed to the site. He is stationed at the site and he has a good experinece to provide us with clarifications on instructions given by the Consultant. However, he is not with adequate authority to provide instructions all the time. It is good if he were with all required authroity to speed up decision making."
Contractor's Project Manager (B/CPM/Q14.1)	•"Project Manager is a very supportive character. However, it seems she is not with adequate experience and authority level to answer the Contractor. She is mostly referring to Project Coordinator and Additional General Manager (Hospital Works) for decision making. This has caused the decision making quite slow."
Contractor's Project Quantity Surveyor (B/ContQS/Q10.3)	•"Resident Engineer is a very experienced person. He does his job very well as the person coordinating the site and Consultant's head office using his experience. I think the project went smoothly, mostly becuase of his vast experience and knoweldege. He can solve many problems at site level."

B1.3.2 Understanding construction sequence was critical for project success (Cont B 3 02)

Site Engineer (B/SE/Q10.4)	•"We get variations then and there. It is good if they can decide on that right at the beginning of the project. Many variations intiated were, could have been decided at the beginning of the project. Sometimes they come up with changes at the last moment. We plan the order the goods and when it is about to place the order only they change the work. Same experienced with the tiling in third floor. This has affected the timely completion of the project massively."
Contractor's Project Manager (B/CPM/Q14.1)	•"If Client has some new requirement, they discuss with the consultant and contractor and decide on what to do. When they ask for different additions/ommisions during stages where those things cannot be done for them, we refuse those with justifications. There are such problems in this second floor, which is pertaining to some mistakes from initial stages. There is a staff allocated, who is going to occupy second floor. As indicated by the client, when this building is compared with the existing, they feel this building is not adequate for them. Space is not adequate. Furniture arrangement is not enough for them they say. There are lockable cupboards, which are lacking in this new building. We cannot address those issue right now. But, they keep on complaining about those now during project completion."
1st Progress Review Meeting (No.24) Observation	•It was observed during meeting, when Deputy Director (Hospital) requested to have a new counter for a cashier at first floor, Contractor's Project Manager trying his best to explain that intiating such work right at that moment could affect their current other construction activities practically.

B1.3.3 Logical reasoning worked for decision making (Cont B 3 03)

Contractor's Project Manager (B/CPM/Q11.1)	• Since we have professionals from Consultant and Client it is a great opportunity for us. It is not a individuals with political power involving. We explain everything with reasons, then they understand it. We can convince them. They give us the due respect to our designation too.
Contractor's Project Quantity Surveyor (B/ContQS/Q10.3)	• "We mostly look into client's satisfaction. There were instances where client's requirement was a different and they were requesting on a different thing. When such a thing happened, we discussed on that and informed the Consultant and took decisions. For example, with curtains and blinds. We were flexible on those when there was a valid reason to do that and not solely because they request on something."
Site Engineer (B/SE/Q9.4)	• "We refuse when necessary with justifications. Hospital staff (End-user) wanted to have wall cupboards suddenly during construction. That was totally a new requirment. We refused it with necessary justifcations. But we try our best to give the Client as much as we can.

B1.3.4 Discussions gave results (Cont B 3 04)

Site Engineer (B/SE/Q9.6)	•"We gave one brand of steel for material approval. Consultant was not happy with the brand and wanted to go for their preferred brand with excellent quality. However, the brand we had brought into site was an acceptable brand for the required quality. We had brought one lot already to the site when they rejected. However, after discussions Consultant allowed us to use that lot until we order the next lot in their preferred brand. We believe discussions can solve many problems positively."
Contractor's Project Quantity Surveyor (B/ContQS/Q9.6)	•"Normally, interim payment application is submitted to the Resident Engineer. If there is any problem, he discuss with us and sort it out before sending to the head office of the consultant."
Contractor's Project Manager (B/CPM/Q10.3)	•"Very friendly environment is there with the Consultant and Client. We go and discuss anything. They listen to those as well. Actually the staff involved with a project also affect that. May be because of the relationships we have built with the Client and the Consultant. Or maybe because of the confidence they have that we will do the job right. When consultant starts feeling that, then the consultant starts believing us. We have not faced any issue resulting any major clashes up to date. We could discuss and sort out al problems."

B1.4 Basic Assumptions on the Nature of Human Activity

B1.4.1 Client/End-user assumed a higher power in the project team (Cont B 4 01)

Construction Project Manager (B/CPM/Q7.0)	•"Generally, decision making, approvals all happen after discussing with the client. For example, if it is required to do a big change, it is the client who decides on those, than the other two parties. Team always give priority to client's opinion."
Contractor's Project Quantity Surveyor (B/ContQS/Q11.4)	•"Architect had instructed Air Conditioning units to be installed only for two partition units in one floor. However, Hospital staff visited recently and informed they want to increase Air Conditioning units for other cubicles too. Central Air Conditioning system with ducts are being installed here. They are pressurising us on time too. This sudden decision is going to be a huge disruption for our work. Sometimes, the whole disruption will not be possible to justify in a time claim theoretically."
Site Engineer (B/SE/Q8.0)	•"I think Director-Hospital is the most powerful member in this project team. He influences in all major decision making."
2nd Progress Review Meeting (No.25) Observation	•It was observed that Deputy Director Hospital with the other members of the end-user presented at the meeting ignored the Architect's instructions and started their own discussion on colour selection of office furniture. Architect finally requested them to finalise the colours and let her know.

B1.4.2 Contractor was placed with the least power in the project team (Cont B 4 02)

Construction Project Manager (B/CPM/P1/Q7.0)	•"When we consider the norms in Sri Lankan construction industry, contractor does not come forward very strongly. Client is the one superior. I think all parties should have equal rights in the agreement. But here, contractor gets a very lower status. We mostly do not try to find out the lapses of the client and consultant. We try to corporate with them and do the work. Same happens in this project too."
Site Engineer (B/SE/P5/Q11.4)	•"In Sri Lankan context, consultant is placed at a higher level compared to the contractor. Consultant thinks otherwise things cannot get done properly from the contractor. The way public looking at the consultant is very different. If any issue arises in the project, blame first comes to the contractor. Nobody asks who designed this."
1st and 2nd Progress Review Meeting (No.24 and 25) Observations	•It was observed that Client and Consultant were always highlighting the lapses of the Contractor and giving advises and instructions to Contractor's personnel. Contractor was always trying to defend themselves, but in a more rational and polite manner.

B1.6 Basic Assumptions on the Acceptance on Homogeneity or Diversity

B1.6.1 Strict conformance to standards was expected (Cont B 6 01)

Contractor's Project Manager (B/CPM/Q9.1)	•"Vinyl flooring was a huge variation we experienced within this contract. Hospital staff required to install the exact vinyl tile they had laid in their existing building. We and Consultant tried to offer the Client with a different vinyl brand available in Sri Lankan market that conforms the required standard.But Client did not agree. So, happened to import consuming a higher cost and time of the project."
Site Engineer (B/SE/Q9.6)	•"We gave one brand of steel for material approval. Consultant was not happy with the brand and wanted to go for their preferred brand with excellent quality. However, the brand we had brought into site was an acceptable brand for the required quality. We had brought one lot already to the site when they rejected."
Progress Review Meeting No.24 and 25 Observation	•"It was observed in both meetings that Consultant was too concerned on Contractor using approved matierials. They discussed about metieal approvals for tiles, vinyl flooring, aluminium and waterproffing during those two meetings. It was observed that Contractor was always trying to conform to the specifications given bring in materials as Consultant wanted."

B1.7 Basic Assumptions on Unknowable and Uncontrollable

B1.7.1 Ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont B 7 01)

Site Engineer (B/SE/Q11.4)	•"The way public look at the consultant is very different. If any issue arises in the project, blame first comes to the contractor. Nobody asks who designed this. Contractor becomes responsible for everything."
Contractor's Project Manager (B/CPM/Q11.4)	•"This should be a team work. When the quality is considered, contractor gets a bigger responsibility. However, Consultant also has a responsibility becuase they only select and approve materials. But public opinion in Sri Lankan context is that Contractor is responsible all the time."
Contractor's Project Quantity Surveyor (B/ContQS/Q6)	•"I think it is the contractor who is the most important member in the project team. This is because, it is the contractor who can provide what the client wants. It is the contractor who finds out whatever get missed out by the consultant. However the work is planned, what matters ultimately is the quality of work by the contractor."

B1.7.2 Decisions with public sector clients were uncertain (Cont B 7 02)

Contractor's Project Manager (B/CPM/Q9.1)	•"The problem with the public sector client is that sometimes new staff comes in with new requirements. We happen to look into those and do the changes accordingly. We have already attended to many changes as such. They coming up with numerous changes like this have become one reason for this project delay too."
1st Progress Review Meeting (No.24) Observation	•It was observed during the meeting Deputy Director (Hospital) mentioning that staff required a separate counter built for the cashier in first floor. Both Contractor and Consultant showed their disgreement to that indicating all work at first floor was over by that time and Director (Hospital) before his retirement wanted to omit that counter since he did not require patients circulating at first floor. However, Deputy Director (Hospital) insisted on having this cashier counter done, therefore Consultant and Contractor accepted to join the Client for a site visit to decide on a place to build it after the meeting.
Contractor's Project Quantity Surveyor (B/ContQS/Q6)	•"We get variations then and there. It is good if they can decide on that right at the beginning of the project. Sometimes they come up with changes at the last moment. We plan the order of goods and when it is about to place the order only they change the work. Same experienced with the tiling in third floor."

B1.7.3 Not everything could be claimed from the Client contractually (Cont B 7 03)

Contractor's Project Manager (B/SE/Q9.4)	•"There were number of small variations such as shifting light points, socket outlets, partition etc. We got them done for the Client. We definitely gave that support to the client. But for many of such works, we cannot ask for time extensions. Consultant might say those works go parallel to other works, but the disruptions happen due to those variations are heavy. However, the most important things is maintaining the relationships with this team. Otherwise the project would not be successful. It is not right, if we keep on arguing only."
Site Engineer (B/SE/Q11.4)	•"Since site was in a congested area with limited access, during tender stage, Client agreed to provide access for material transportation through the front main gate. However, later we all realised that it was not possible since it caused disruption to the hospital kitchen goods transportation. Thus, we happened to use the narrow, crowded, one-way access road for material transportations. So, our whole material transportation plan got disrupted. We even happened to transport some goods at night. Further, we changed our stores also to ease loading and unloading. But we did not try to claim any of those additional costs".
Contractor's Project Quantity Surveyor (B/ContQS/Q9.6)	•"As site is in a limited space, within the heart of Colombo, in a congested area, finding labour accommodation and material storage were an issue. We had planned to store material in ground floor until the building handover. That is the reason ground floor work is still pending. But now Client is suddenly requesting an early handover of ground floor before other floors. We have already exceeded our budgets on labour accommodation and material storage. So this early acquisition will add on to the current losses, but it is really difficult to justify our initial plan and have a cost claim from Client right now."

B1.7.4 Formal instructions/approvals in black and white would protect the contractual rights of the Contractor (Cont B 7 04)

Contractor's Project Manager (B/CPM/Q14.9)	•"As this is a government project, responsibilityhas been passed to the contractor via ministry. Contractor has signed and responsible for the project outcomes. If we do not work formally, whenever an issue arises, such as; a huge claim, a huge damage or a huge construction failure, if we haven't followed formal procedures and not done proper documentation, we would not be able to find out who is responsible for it. I do not feel it much during payments,but it is also there in that too. But in a major way, to make the project successful and to make everyone realize the responsibility, it is essential to have instructions/approvals in wiriting in government projects.
Site Engineer (B/SE/Q11.1)	•We give everything by letters. We cannot take verbal instructions from Consultant. We take all instructions and approvals in writing. If we get any technical issue, we inform those in writing. Then only we can justify ourselves in a payment application or any claim.
Contractor's Project Quantity Surveyor (B/ContQS/Q9.2)	•"We usually submit claim notices indicating cost can be increased in these amounts if the extra work is undertaken. We are usually submitting it to the Consultant for the attention of the Client. We look for the Clent's approval, so that it might not be an issue during payments"

B1.8 Basic Assumptions on Gender

B1.8.1 Different genders had different capabilities to perform project tasks (Cont B 8 01)

Contractor's Project Manager (B/CPM/Q13.4)	•"I think it is better if the contribution of male and female can be better.We find works of females being systematic. Documentation is especially good. Very good for measurements related works. They be more concern on the given task and attend to those.."
Contractor's Quantity Surveyor (B/ContQS/Q13.4)	•"Being a female is not a major issue as I am a quantity surveyor. I would have felt some diffciulty, if I had been a technical officer, working on heights constantly and working during night times. Now also I happen to get on to heights sometimes, but it is not a big issue since I am young."
Site Engineer (B/SE/Q13.4)	•"I think females find it difficult to work at site with labourers lacking with proper discipline. They can perform office work well. Their documentation capabilities are really good."

B1.9 Basic Assumptions on Motive for Behaving

B1.9.1 A better quality should be delivered to the client (Cont B 9 01)

Contractor's Project Manager (B/CPM/Q10.3/9.4)	•"We especially never allowed them to comment on a quality issue. Mostly in any site, contractor is complained on quality issues and ask to break off something or they send letters complaining on those. We did not allow for those in this site. We did not receive any such comment up to date. Quality related defects have never been informed about...We try our best to deliver the best quality they look for. That is what we expect as the contractor."
Contractor's Project Quantity Surveyor (B/ContQS/Q6)	•"I think it is the contractor who os the most important member in the project team. This is because, it is the contractor who can provide what the client wants. It is the contractor who finds out whatever get missed out by the consultant. However the work is planned, what matters ultimately is the quality of work by the contractor."
Site Engineer (B/SE/Q16.1)	•"We are worried that we could have achieved a better quality if the project had been planned and managed better. "

B1.9.2 Continuous improvement was a necessity (Cont B 9 02)

Site Engineer (B/SE/Q16.1)	•"If our system of material ordering and supplying system was good, we could have got the work done better than this. We found it difficult to finance all the materials at once during this latter part of the project due to higher number of material orders. Our planning was poor and we got it worsened when client kept on initiating variations. We have realised that we need to be more careful on project planning."
Contractor's Project Manager (B/CPM/Q16.1)	•"We had issues with material procuring, labour supply and staffing towards to end of the project. We found it difficult to handle all parallel projects done by our organisation. I think we failed in planning the resources of the projects. We expected to finish major other project in Colombo and utilise resources in that project in this project. However, we could not do that. I think we need to improve our organising and planning capabilities."
Contractor's Project Quantity Surveyor (B/ContQS/Q16.1)	•"Cost and resources monitoring mechanisms set in by us are poor. Cost exceeds mostly due to problems in procurement. There are various problems occurring when the project and the head office try to work together. We need to find solutions to overcome those problems as much as possible to perform better."
Consultant Project Architect (B/CPA/Q9.6	•Contractor was good. They looked into every aspect of the project. They talk to us whenever a problem arises. Talk to get feedback mostly.

B2 Consultant

B2.1 - Basic Assumptions on Nature of Human Relationship

B2.1.1 Client/End-user was too demanding owing to their governing profession (Cnsl B 1 01)

Project Architect (B/PA/Q9.1, 9.4)	•"Doctors (End-user) wanted their lounging areas to be vinyl. They said it should look better. Better than normal office areas, normal lobby areas, and other normal hospital areas. Because everything had to be a little special for them... Doctors always had their bias saying they wanted their areas should be different. Yes they were very demanding. They wanted attached toilets. They wanted their area to be special. If they were given a common toilet area, they did not like it."
Project Manager (B/PM/Q16.1)	•"Now in this project, due to the heavy influence from other doctors, number of extra works have been created to the Contractor and us. Most of the things were based on their own private perceptions, for example, rest room areas of the doctors were not done according to the architect's guidance, but according to their own way; type of tiles, colours, floor tiles were changed to vinyl, timber doors for the aluminium doors."
Resident Enigneer (B/RE/Q9.4)	•"Doctors try to get what they want. Here also we have the same problem. I have been in this health sector for many years now. As I think all this is due to the nature of the profession of these doctors. They put much concern on facilities."

B2.1.2 Perfect performances of individual roles would bring success in project performances (Cnsl B 1 02)

Resident Engineer (B/RE/Q14.1)	•"We do not expect anyone to drive us. Each one perform their own duty. We believe that when a time period is given, then everybody will do it accordinly.There are agreements signed for Contractor and Consultant with Client."
Project Manager (B/PM/Q10.4)	•"With regard to quality of work, everybody has a role. Architect checks and selects materials. Resident Engineer checks and approves the billed work. We have all specifications prescribing all the required quality of any work. Contractor has to work accordingly. When everyone performs the respective roles accordlingly, then we can achieve quality."
Project Architect (B/PA/Q15.1)	•Mostly the resposibility of delay is passed on to the Contractor. We send letters asking them to accelarate the works. It is becuase they have failed to perform their role as agreed. I do not think relationship could damage with those letters.

B2.1.3 Client's concerns were on time and cost only (Cnsl B 1 03)

Resident Engineer (B/RE/Q11.1)	•"Ministry handles projects around the country. So, Project B is only one project out of many. Ministry normally looks into matters and arrnage meetings when they find projects getting delayed or for any financial issue such as budget overrun or funding requirements only"
Project Manager (B/PM/Q14.1)	•"We experience project requirements are getting monitored by the hospital staff only. Ministry as the Client is only concerned on project finances only. The only regular attendee to the progress review meeting from the Ministry was the Works Engineer, but she is also mostly behind payments."
Progress Review Meetings No. 25 Observations	•Participation of the only direct representative from the Client, i.e. the Works Engineer was available only for the meeting No.25. She specifically mentioned during the meeting that she was present for the meeting that day to check on any issues related to payments to the Contractor and to know the final cost agreed between Consulant and Contractor for variation on floor finishes. This pointed out that she was only concerned on the cost of the project.

B2.1.4 When client and end-user became different authorities, it was about designing/constructing for someone within the budget and control of someone else (Cnsl B 1 04)

Project Architect (B/PA/Q9.1)	•"We are directly dealing with the ministry. We deal with eye hospital only for functional aspects because they are the end users. Although ministry says we have to do this within their budget and instructions, eye hospital people should be able to function smoothly. When hospital staff come up with variations, then we ask them to convey it through ministry."
Project Manager (B/PM/Q11.1)	•"All main work of project is handled by the ministry. Hospital staff (End-user) is working under the ministry. Director of the Hospital is a representative of the Ministry only. Even bills are sent to ministry. We call upon the officers from the ministry to attend the progress review meetings held by the Director. We discuss issues of the project with the Director, but we take approvals from the Deputy Director General (DDG) (logistics) at ministry."
Resident Enigneer (B/RE/Q8,9.1)	•DDG (Logistics) is the one who manages the cost budget from the Client's party. He is the one who is taking ultimate decisions regarding the project matters....We write to the DDG (Logistics) indicating hospital is asking for this kind of a change. Then they check and instruct us, if it is within the financial limit.

B2.1.5 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl B 1 05)

Project Architect (B/PA/Q13.1)	•"I think we are doing many projects at the same time. We are not able to concentrate on one particular project. If you take where one architect is handling only one building project, may be you will see a difference. Here we are handling about 25 projects and Project B is only one of that. It is not easy for us. Today we are working on Project B, tomorrow another one. Day after another one. Evening another one and Morning another one. In that sense we are stressed and cannot give 100% of our attention to one project. "
Project Manager (B/PM/Q14.1)	•"We are here for project management. But we are not here only for this project, we have some more other projects to take care of. Thus, a lot of work for every individual. So we are not dedicated to this project."
Resident Engineer (B/RE/Q14.1)	•"I do most of the site and head office coordinations works. I am the full time appointment to this project with highest level of authority. Project Manager cannot be dedicated only to this project, since she has other project works also to attend to."

B2.1.6 Client depended on Consultant as the technical advisor (Cnsl B 1 06)

Resident Engineer (B/RE/Q11.1)	•"Normally, Contractor prepares a progress report. But I also prepare one from the daily records I take. Client or Hospital Staff believe what I bring to the meeting only...Client has technical staff, but, no a major monitoring happening from Client. We have to takecare of all technical issues of the project."
Project Architect (B/PA/Q16.1)	•"Client has their engineering section to monitor our work. But I do not think they do it appropriately. They have about 5 to 6 Works Engineers. They have Technical Officers. But no one is visiting regularly. May be becuase they have projects all over the country. They keep the whole trust on us for quality controlling. Hospital staff involves in quality checking but, they are not technical people to do that and do not have adequate knowledge."
Project Manager (B/RE/Q14.1)	•"Normally, techincal issues are not discussed with the Director-Hospital or any hospital staff. We directly send those matters to the Ministry. However, we have been given all automony to handle techincal matters of the project. Ministry trust on our work and advise."

B2.1.7 Contractor did not fight back and tried to maintain relationship (Cnsl B 1 07)

Resident Engineer (B/RE/Q15.1)	•"We have infomred them about delays in writing. But they have never reply to us in writing. They just keep them as letters and come and talk to us. That does not mean they do not care. Most of the problems they had could not be solved at site level, so they come and talk to us giving all the reasons for the delay."
Project Manager (B/PA/Q9.4)	•"Arguments are less with the Contracor. No big issue as in other contracts. No any big issues has arisen at least for a rate approval, where we try to change a rate given by the contract. Only two requests for time extension have been submitted. Even for time extension, they send a note for time extension indicating the reasons. Then we send we would consider only these these reasons for extension of time, and then they will send the claim for time extension stating the reasons we agreed only."
Project Architect (B/RE/Q15.1)	•"Yes sometimes, when there is a delay or mishandling, we inform them to the Contractor in writing. I do not feel relationship will break when we do that kind of a thing. I think they appreciate it. We are asking them not to repeat the same mistake again. They are hoping to get more jobs from us. We have more jobs. If they have a fault in this project, they won't get those. We will not recommend them. Usually, when Ministry selects contractors, they get our recommendation. We are in the Technical Evaluation Committees. So, when they get this job done properly, they will definitely get another one. We say this contractor is good. Then it is a good recommendation for them."

B2.1.8 Formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl B 1 08)

Resident Engineer (B/RE/Q10.1)	•"There are occasions where I give instructions over the phone and they attend to those till I send them in writing later. Now Contractor knows how things happen between us. They believe us for over the phone instructions. When I am not at site, they talk to the head office over the phone and get instructions. Otherwise it is difficult to work efficiently in a big project. But we never give critical instructions over the phone and they too never accept... There are delays in decision making when we try to communicate with the Client through letters. If we go and talk to the Ministry directly, then they give decisions right at that moment."
Project Architect (B/PA/Q10.4)	•"We ask the Contractor to send the samples through email to approve, which is fast. Some material suppliers do that. But this Contractor does not like to do that. He wants to happen it formally."
Project Manager (B/RE/Q14.1)	•"We communicate through letters mostly. We hold meetings for critical decisions. However, we happen to give instructions over the phone too. We cannot wait a letter reaches the Contractor or another meeting day for urgent matters. But those will be confirmed through letters or log notes later."

B2.1.9 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl B 1 09)

Resident Engineer (B/RE/Q9.2)	•"We do not provide all drawings and details at once. We provide those time to time during each stage to the rate they finish the work. But we never let them complain over delay in details. I think if the Consultant start getting that complain from the Contractor, then we cannot control them. We cannot guide someone if we have our own mistakes."
Project Manager (B/PM/Q10.3)	•"Although we certify and send bills to the Ministry, payments get very delay. This has become reasons to give time extension to the Contractor also. Contractor sometimes say they will put interest claims, but have not requested upto date. So what we do is, when they complain about a delay in payment, we allow them extension of time instead to do the Work, so that they can wait for the cash to buy goods. This is without claiming interest claim. That is how it happens. We cannot put all blame or complaint to the Contractor, since we have such lapses from our side.
Progress Review Meeting No.24 and 25 Observations	•It was observed that Consultant's Respesentatives were all the time highlighting the mistakes of the Contractor infront of the Client. They were trying to control the Contractor through highlighting of mistakes.

B2.1.10 Contractor attempted to pass responsibilities to Consultant tactfully (Cnsl B 1 10)

Resident Engineer (B/RE/Q9.2)	•"Since we did not provide all the drawings and details at once and only provided stage by stage as the Contractor finished the work, once when the Contractor tried to order the floor tiles, tile stocks were not available with that supplier. This caused a delay in the project schedules. So Contractor tried to raise a concern that if we had provided the drawings earlier, they would have done the procurment timely. But they could not justify it, since they had not finished the other work in that floor to procure tiles or they had not requested us the tiling details ealier."
Project Manager (B/PA/Q9.6)	•"For materials like HVAC and vinyl tiles there were instances, where they send the quotations and specifications of three suppliers and let us select rather than they go ahead and selecting their own supplier. Though we selected the tiles, there were instances ordering and delivery to site getting delayed due to their own reasons. Then, they try to say, this thing happened because we selected the particular supplier. It happened during the vinyl tile selection. So are they really trying to pass the risk and blames to the consultant."
Progress Review Meeting No.24 Observations	•It was observed during the meeting, when the Deputy Director Hospital asked about when the Contractor was hoping to start the vinyl flooring works, Contractor's Project Manager indicated that materials have not yet being imported since the particular supplier selected by the Consultant lacked stocks right during that period. In response, Project Manager stated that procurments should have been planned earlier rathe than complaining about the selected supplier.

B2.1.11 Contractor attempted for close connections with the Consultant (Cnsl B 1 11)

Resident Engineer (B/RE/Q10.4)	•"Once we get close, Contractor tend to say their internal problems. We got to know that the Contractor's Project Manager was not given adequate authority to take decisions. Initially they did not tell those. Until for first three months they did not tell anything to us. So we mistakenly believed the whole project was under his control."
Project Architect (B/PA/Q9.6)	•"Project did not have any serious issues. May be becuase contractor is also very good. They are looking to every aspect. Talk to us, talk to get feedback. Their Site Engineer is very cordial. Work very closely with us."

B2.2 - Basic Assumptions on Nature of Human Nature

B2.2.1 Contractor only believed in formal written methods of communication (Cnsl B 2 01)

Resident Engineer (B/RE/Q10.1)	•"Whenever we give an informal verbal instruction, which is rare, Contractor runs behind us to make a log note on that. Though confirmation of a verbal instruction in writing was a responsibility of Consultant, Contractor acts as it is their own responsibility to get the written confirmation from us."
Project Architect (B/PA/Q10.4)	•"We ask the Contractor to send the samples through email to approve, which is fast. Some material suppliers do that. But this Contractor does not like to do that. He wants to happen it formally. They send us all smaples accompnies formal letters and expect us to give the approval in writing too."
Project Manager (B/RE/Q14.10.3)	•"We send all instructions in writing. Even Contractor wants every instruction in writing. They believed formal written methods of communication only."

B2.2.2 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl B 2 02)

Resident Engineer (B/RE/Q15.1)	•"Actually there are no appreciations. There are no much reasons to appreciate the contractor. We will appreciate if there are reasons to appreciate. If not, generally no such appreciation from Client as well...We shout Contractor during meetings and even at the site we shout at them. We have informed them delays in writing. But Client never shouts the Contractor as much as we do, however, Client expresses his dissatisfaction at the meeting."
Project Architect (B/PA/Q15.1)	•"In government projects we normally do not see any appreciations. May be during the building handing over ceremony, Client could appreciate us...We normally look for lapses in Contractor and write letters."
Project Manager (B/RE/Q15.1)	•"We have not received or given any special appreciations...If Contractor does anything wrong we are not reluctant to act appropriately. If they delay the work, we would be recommending liquidated damages."

B2.3 - Basic Assumptions on Nature of Reality and Truth

B2.3.1 Proper detail documentation was a strength for a government consultant (Cnsl B 3 01)

Project Architect (B/PA/Q10.3)	•"When you handle projects with a private architectural firm, you do not get lot of drawings and documents. They only give the most essential architectural drawings and contractor finds it difficult to work. However, we are more thorough with our details, drawings and tender document. ."
Project Manager (B/PM/Q10.4)	•"We have developed the specifications and drawings describing the required quality in detail. Therefore, it is easy for the Contractor to work and deliver what Client needs."
Resident Engineer (B/RE/Q10.1)	•"All important decisions and instructions from Consultant to contractor is always recorded through letters. What we have observed with the client is that they inform everything during meetings. Everything is taken from meeting minutes. Since it was not enough, recently I asked them to give some instructions in writing. That is how the instructions should be given according to the consultantcy agreement. We need to keep all records and do documentation properly as a government consultant."

B2.3.2 Convincing the Client/End-User on practical aspects was very difficult (Cnsl B 3 02)

Resident Engineer (B/RE/Q11.4)	•"They have number of problems regarding the space allocation. We have given the maximum usable space within the available land extent. They do not understand, technically. We draw plans and go and describe those to them during meetings and they give the approval, but practically when the construction go on they tend to do changes."
Project Architect (B/PA/Q9.1)	•"Director Hospital (End-user) only decided to do this project. It was very difficult to convince the Ministry (Client) about the shifting plan for the administration office area and do demolition for the master plan to be proceeded. We had to go to Secretary of the ministry and do a presentation. After that ministry got convinced, because they need space. Because they have no other way to expand. It was really difficult to convince them, how we were planning to do the project practicaly."
Project Manager (B/PM/Q16.1)	•"We were having early discussions to go for a eight storied building. We could have gone up to 10 stories easily with the same pile foundation. It is not worth the cost of the piles. Now they just have 5 storied building even without any provision for possible future expansions. We tried to explain it to them. Client insisted they cannot afford it at by that time."

B2.3.3 Changes were inevitable since Client/End-user learnt along the project life cycle (Cnsl B 3 03)

Resident Engineer (B/RE/Q11.4)	•"We draw the plans and go and describe those to them during meetings and they give the approval, but practically when the construction go on they tend to do changes."
Project Architect (B/PA/Q14.10)	•"Variations with space allocations are unavoidable with clients. After we take the Client's approval, arrange the things and when we proceed with that then they come up and say they have another person to put into that area, or they need some store area, toilets. They mostly think about these changes when they witness the building in real."
Project Manager (B/PM/Q16.1)	•"They do changes while the construction work is proceeding. Though we had finalised the plans and layouts, doctors sometimes ask for additional rooms and spaces. Sometimes difficult with some groups of doctors. For example, in library area, there was a glass fixed. After constructing it, they came up and said, they do not want it, although they anyway would have drapers and close that wall. If we tried to change that opening, the façade could get changed. So, we did not change it. However, if reasonable, we have changed too."

B2.4 - Basic Assumptions on Nature of Human Activity

B2.4.1 Controls in a construction project were the contracts (Cnsl B 4 01)

Project Architect (B/PA/Q10.1)	•"We are very much careful whether Contractor is following the project specifications and drawings. We have detaled out everything in the contract. Once we rejected their selected tiles, even after delivering the samples to the site. They should have been more careful on the specifications given."
Project Manager (B/PM/Q10.4)	•"Safety is not in a very good level at the site. They are not wearing helmets. We have given instructions. But they are not using those. So we are not paying them the preliminary item on safety, since they are not wearing them. We have deducted the amounts from their interim payment application."
Resident Engineer (B/RE/Q10.1)	•"All important decisions and instructions from Consultant to contractor is always recorded through letters. What we have observed with the client is that they inform everything during meetings. Everything is taken from meeting minutes. Since it was not enough, recently I asked them to give some instructions in writing. That is how the instructions should be given according to the consultantcy agreement. We need to keep all records and do documentation properly as a government consultant."

B2.5 – Basic Assumptions on Nature of Time Units

B2.5.1 Long term relationship with the Client was more important than with the Contractor (Cnsl B 5 01)

Resident Engineer (B/RE/Q9.4)	•"We cannot say that all decisions are taken on logical reasoning. The changes in third floor tiling to vinyl flooring was done as per the client's request only. Those were very expensive for a government building and this variation brought in lot of distruption to project schedule. This is a floor for medical consultants. I think our architect thought we could face problems if we do consider fulfilling the requirements of the medical consultants. We will happen to work with this End-user in future sometimes. So, we gave them the priority despite the distruption."
Project Manager (B/PM/Q14.8)	•"We think about continuing relationship with this Client. Our section in our consultancy organisation works mostly for this ministry. We do most of the hospital projects. So we are careful about mantaining relationship with this Client. But there is no speciality with the Contractor as such."
Project Architect (B/PA/Q14.8)	•"This ministry is one of our long standing clients. We have opportunity for lot of new projects. If we do a master plan, then we will definitely get a new building project also. Now we are doing Kaluthara master plan and we are getting a ten storied building there. So if we do a master plan and present it in an appropriate manner, to the minister or the ministry, then we will definitely get a job for sure. We are doing buildings of hospitals all over the country."

B2.6 - Basic Assumptions on Acceptance on Homogeneity or Diversity

B2.6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl B 6 01)

Project Architect (B/PA/Q10.1)	•"Budget is a restriction. When we design a building like this, usually if we do it for a private hospital, we go for more luxury finishes. Even lobby areas, we can stick to good quality finishes. Here we have to always look into the cost. Creativity and the outcome get restricted. When you do a lobby, usually you can do many things. You can use granite, glass, toughened glass and all. Here we have to cut down cost, so can't afford those. So we have some restrictions there for design."
Project Manager (B/PM/Q10.4)	•"No innovation as such. This is a typical kind of a building project. A typical design. I do not think in this kind of a government building project, there is a room for innovation."
Resident Engineer (B/RE/Q10.7)	•"We alsways expect the Contractor to follow the given specifications and drawings. We check whether the material brought in matches the given speicfication, work done meets the standards, whether specified tests have been passed"

B2.7 - Basic Assumptions on Unknowable and Uncontrollable

B2.7.1 Decisions made by public sector clients were uncertain (Cnsl B 7 01)

Project Architect (B/PA/Q9.6)	•"Now Director is retired and only Deputy Director is there. He is unable to get the things done, because he does not have the power and authority. So there is a little bit of conflict. Previously, director said, do not ask anybody, I will decide and you go ahead. Now, this deputy director is unable to say that. He has no consensus from everybody and it is not easy. Decisions get changed time to time as he is unable to be strict on decision making."
Project Manager (B/PM/Q16.1)	•"Many doctors got changed time to time in different divisions. So according to private views of each and every person, some things get changed."
Resident Engineer (B/RE/Q16.1)	•"Difficult to work in government projects if their is no single person from Client is making decisions. Decisions keep on chnaging with new appointments to different designations of the Client."

B2.8 - Basic Assumptions on Gender

B2.8.1 All genders were treated equally in construction projects (Cnsl B 8 01)

Project Architect (B/PA/Q13.4)	•"Gender is not a concern in a construction project. I have never felt any gender descrimination during my job as a female"
Project Manager (B/PM/Q13.4)	•"No issue with the gender. Only the qualifications are considered to perform the job"
Resident Engineer (B/RE/Q13.4)	•"We have many female members working for this project. Even Project Mabager, project Architect are females. We have not felt any difference in gender. Only the ability to work is considered."

B2.10 – Basic Assumptions on State-Individual Relationship

B2.10.1 Satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl B 10 01)

Project Manager (B/PM/Q16.1)	•"If this Contractor exceeds the extended date of completion, we are not reluctant to recommend Liquideated Damages (LD). In previous projects we have the experience where, Contractor avoid LD though we recommended, by using their private relationships with the Client. Also, we had Contractors, who were given extension of time by the Client, when we had recommended termination. However, we will be always doing what is right for the government, although individual clients behave of their own."
Project Architect (B/PA/Q9.4)	•"Doctors (End-user) wanted their lounging areas to be vinyl. They said it should look better. Better than normal office areas, normal lobby areas, and other normal hospital areas. Because everything had to be a little special for them... Doctors always had their bias saying they wanted their areas should be different. Yes they were very demanding. They wanted attached toilets. They wanted their area to be special. If they were given a common toilet area, they did not like it. But I think they have to use public funds more carefully."
Resident Engineer (B/RE/Q9.1)	•"Current rest rooms of medical consultant are formed in a very high standard. So, they expect the same standard in this new building too. I think, it is from somebody's private donation. They have formed it to a level of a private hotel. They say, they want to feel free when they go inside and different other reasons. But I do not think we should provide such high quality for a government building like this. We should not waste public funds."

B2.11 - Basic Assumptions on Project Organization's Relationship to its Environment

B2.11.1 Public sector client received concessions in legal aspects (Cnsl B 11 01)

Project Architect (B/PA/Q6)	•"We have not yet received the building design approval from Colombo Municipal Council (CMC). They are requesting us to indicate parking space for the new building, which we cannot provide at the moment. We submitted for Urban Development Authority approval. They approved. Preliminary clearance we got. But CMC approval is pending. But, still this is a government project. They will surely give approval. So we started the project."
Resident Engineer (B/RE/Q9.6)	•There is no parking space provided in the submitted drawing for builfing approval. Parking space is allocated within the master plan of the hospital and not individually only for this particular building. Staff who are going to be shifted to new building is having parking. Therefore, no parking problem will come in. I think we will get the approval. As I think, since this is a government client and specially a hospital, council might not be that much strict on the designs.

B2.11.2 Project and contractor’s internal organisational issues were significantly inseparable (Cnsl B 11 02)

Resident Engineer (B/RE/Q9.2)	•"It is very clear that contractor's project staff does not have enough autonomy and power to take decisions and work in the project. Contractor's Project Manager did not have full authority over material procurment to the project. This delayed the work heavily. We, as the consultant cannot bring in solutions for those. But we can see those are directly affecting the project"
Project Manager (B/PM/Q9.6)	•"This Contractor respond to our demands to a satisfactory level. If they have enough staff, labour or money, they attend to work quickly. We have observed, they show slow response, when they have internal organisational problems with resources and systems. There were certain issues, where they lacked working capital and things got delayed."
Project Architect (B/RE/Q16.1)	•"There is a shortage in labour supply in the project. I do not think the shortage in labour supply is a market problem. The reason is because, they all the time try to compare the rates in tender with the labour rates demanded by the labourers. So when the labourers quote high rates contractor is reluctant to offer work to them. Therefore it is difficult for them to find the workers. This contractor has quoted for the tender with very low prices. I think contractor's profitability issues directly affect project work"

B3 Client

B3.1 - Basic Assumptions on Nature of Human Relationship

B3.1.1 Consultant had the legitimate control of the project (Clnt B 1 01)

Senior Administrative Officer (B/SAO/Q11.1)	•"Whether Contractor is working well or not is not directly related to us. It has to be done by the Consultant. They have been given powers to do it. Consultant has appointed a Resident Engineer to monitor. Ministry is also not checking the project matters on regularly basis because, Consultant is responsible for all these works. We know, if something happens, Consultant has to take the responsibility."
Public Management Assistant (B/PMA/Q11.1)	•"I think we have given all the required authority to the Consultant to monitor and control the Contractor. "
Works Engineer (B/WE/Q11.4)	•"If contractor is delaying, consultant has the liability to check why contractor is delaying. What problems contractor having. They have to discuss and sort out the problems. From Client's side, if there is an issue with the Consultant, we check it and sort it out."

B3.1.2 Client was responsible for fulfilling End-user requirements (Clnt B 1 02)

Senior Administrative Officer (B/SAO/Q6)	•"We get this work done from the Ministry. Ministry is the Client. We do not even tender by our name. What we do here is, we inform the requirement. Then they do all tendering, selection of tenderers, Technical Evaluation Committees, allocation of funds and provision of all consultancy services. They are the responsible party for this construction."
Public Management Assistant (B/PMA/Q11.4)	•"Client has the responsibility for ultimate cost, quality and time. They have to get this building done for us."
Progress Review Meeting No.24 Observations	•Deputy Director-Hospital expressed his dissatisfaction when he noticed that Works Engineer from the Ministry was absent for the progress review meeting No.24. He mentioned that it is the Ministry as the Client has the responsibility of getting this building done for them.

B3.1.3 Cost was a Client's matter, not End-user's (Clnt B 1 03)

Public Management Assistant (B/PMA/Q9.2)	•"We cannot give a support for cost because we are not the party making payments to the client. Payments are made by the ministry. So we do not follow up that. Vouchers go through them. No we do not get. We have no idea about the cost."
Senior Administrative Officer (B/SAO/Q9.3)	•"We cannot do anything about the cost. Cost is informed to us by the Client through the Consultant. When we request for a variation, then Consultant requests the Contractor to submit a price proposal and informs it to the Ministry."
Progress Review Meeting No.24 Observations	•Nobody was present for the meeting No.24 from the Ministry (Client). Thus, Deputy Director-Hospital proposed the Consultant to discuss the cost of variation on thrid floor finishing with the Client, not with them.

B3.1.4 Client/End-user depended on the Consultant as the technical advisor (Clnt B 1 4)

Public Management Assistant (B/PMA/Q6)	•"I think Consultant is the most important member. We can give only an idea or a requirement. Whether that idea is right, wrong or matching is something known to them. For example, we do not know how to have proper ventilation in the new building. We say we want ventilation. They only know how to have it and design it. We totally depend on them. That is how we can get this building done."
Senior Administrative Officer (B/SAO/Q7)	•"We, from the administrative department of the hospital provide the project requirments and Consultant give us advice on technical and legal aspects. We have know idea on those."
Works Engineer (B/WE/Q9.6)	•Ministry has to look into number of projects all around the country. I am responsible to overlook several such projects. So I cannot look into every matter in this project. We have appointed a consutlant to look into those technical matters. It is a team work. We depend on the consultant's sevice.

B3.1.5 Formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt B 1 5)

Senior Administrative Officer (B/SAO/Q10.1,10.3)	•"We can ask Consultant to do any work through a phone call. We do not have a necessity of sending letters, emails to the Consultant. Resident Engineer is stationed here. We can talk to him anytime...We normally summon emergency meetings apart from the monthly progress review meeting. If Resident Engineer requests for any extra meeting, then we summon one for any discussion."
Public Management Assistant (B/PMA/Q10.1,10.2)	•"We mostly use formal methods of communication. We have a relationship built that we can get things done through phone calls, but we do not totally depend on phone calls. We follow file process with letters."
Works Engineer (B/WE/Q10.1,10.6)	•We cannot do a project totally depending on letters. We have a progress review meeting once a month. We discuss in that meeting. Apart from that they can talk to us over the phone anytime they want. Even Contractor talk to us regarding bills and payments. They do not refer technical problems to us. We discuss and talk a lot during progress review meeting...We discuss about variations during progress review meeting or we normally discuss informally over the phone and take decisions. Then they send us letters and we too reply to them."

B3.1.6 Contractor and consultant always tried to defend themselves by passing responsibilities to each other (Clnt B 1 6)

Works Engineer (B/WE/Q11.1)	•"During meetings we witness Contractor indicating their problems and Consultant indicating their own problems and that is how we get to know the problems both of them having. We happen to be a mediator sometimes. But Contractor is a more silent party, compared to the Consultant."
Public Management Assistant (B/PMA/Q11.1)	•"We mostly believe what the Consutlant says. But during meetings we experience both parties arguing on their own lapses. Then we can understand the real situation to a greater extent."
Senior Administrative Officer (B/SAO/Q13.1)	•Contractor indicates faults of Consultant when claiming extension of time. It is very popular. Each one try to pass their responsibility to someone and get the extension of time.

B3.1.7 Close connections with the Consultant or Contractor were not essential for project matters (Clnt B 1 07)

Senior Administrative Officer (B/SAO/Q10.1)	•"Consultant cannot give us official calls directly. It should come through the Director (Hospital)"
Works Engineer (B/WE/Q15.1)	•"During last visit, I told Contractor, they could get blacklisted, if the work is not done properly."

B3.2 Basic Assumptions on Nature of Human Nature

B3.2.1 Rare appreciations and contractually agreed punishments were practiced in construction projects (Clnt B 2 01)

Works Engineer (B/WE/Q15.1)	•"We might not be saying, they all have done an excellent work openly. When they work well, we look for their needs and help and do not chase behind...We say, if they do not perform well, they will happen to face problems and will get blacklisted. During last visit, I told them, they could get blacklisted, if the work is not done properly."
Public Management Assistant (B/PMA/Q15.1)	•"No appriciations as such. Its not popular...If Contractor delays the project, liquidated damages will be charged. It is something that should be charged from them becuase they have delayed the project and we have happned to face difficulties."
Senior Administrative Officer (B/SAO/Q15.1)	•"We do not do appreciations mostly, either to the Consultant or the Contractor. No rewards, no punishments. We inform them our requests, our changes, variations. They will be treated contractually if they do not perform those accordingly."

B3.3 Basic Assumptions on Nature of Reality and Truth

B3.3.1 Following systems, processes and procedure produce results (Clnt B 3 01)

Senior Administrative Officer (B/SAO/Q9.1,9.5,13.1)	•"Time and cost schedules are not prepared by us. It is done by the ministry tender board. I think real systems and processes have been followed in developing those... We are going inline with the master plan. So we know we ding the right things... This is the government procedure of working. I do not see any other possibility. Government procedures has to be followed. Though we try to have short cuts, we cannot get them done, because, we have our regulations. We have to work within those."
Public Management Assistant (B/PMA/Q10.4,14.9)	•"We go in line with the government procurement guidelines and we know we get the things done right...We have treasury audit and internal audit. Therefore, file system is compulsory for us. We have to follow the letter system. We have to obtain approvals from relevant parties. We should prepare the meeting minutes."
Works Engineer (B/WE/Q15.1)	•"We inform them our requests, our changes and variations. They will be treated contractually if they do not perform those accordingly."

B3.3.2 End-user learnt within the project life cycle, therefore should be allowed to initiate variations accordingly (Clnt B 3 02)

Works Engineer (B/WE/Q7)	•"Initially, End-user gives us their requirement. Then only we communicate it to the Consultant that these things need to be designed. But these hospital staff come up with variations as work progress. We try our best to fulfil their needs. They come up with totally different things despite what they agree at the beginning. Their needs change with time and hope betters ways of including facilities. It happens when the directors change also. Sometimes, even other doctors request changes."
Public Management Assistant (B/PMA/Q9.4)	•"During piling works, it was noisy and medical consultants complained that it was a disturbance and problematic during surgeries due to vibration. Therefore, we disregard the project time and cost and decided to shift to a different type of a silent piling machine. It increased the project cost. Such variations were required to be initiated."
Senior Administrative Officer (B/SAO/Q9.1)	•"After the structure was done hospital staff realised that the space is not adequate. They realised that some new patients can be provided with some new facilities. Even with the experience they realised new requirements. Accordingly variations came up. We realised it was difficult to incorporate all those variations within the system and constraints."

B3.4 Basic Assumptions on Nature of Human Activity

B3.4.1 Client was the most powerful member in the project team (Clnt B 4 01)

Senior Administrative Officer (B/SAO/Q8)	•"Ministry is the most powerful member in the project team. It is because, all main functions and activities are done and controlled by them. We, the hospital staff follows the Ministry orders. Though we give the concept and the requirements, Ministry becomes the controlling body for everything. All payments to Contractor and Consultant done through Ministry and all project decisions are made by them."
Public Management Assistant (B/PMA/Q9.4)	•"Everybody listens to Director-Hospital.He can influence any decision being made."
Works Engineer (B/WE/Q14.1)	•Client is the head of the team. I am the Works Engineer representing the client. So we are handling the project management. Typical problems are already there. Apart from that the biggest issue we are having is that contractor is delaying the project. I have informed my higher authorities to call upon a meeting to discuss this issue. We hope to solve that problem, once the meeting was held...Time extension will be given only if the DDG (Logistics) approves it only.

B34.2 Things could be sorted out in discussions (Clnt B 4 02)

Senior Administrative Officer (B/SAO/Q11.1,14.8)	•"We visit the site and check the things being constructed according to our knowledge and and call upon meetings for Consultant and Contractor if we need a variation or any clarification...Consultant and Cotractor never come for argument with us. If something is impossible to be done, they give us explaination that due to these reasons, it is difficult to be done"
Public Management Assistant (B/PMA/Q7)	•"It is the hospital director that is the most respectable. But there is a separate committee, who come to a final decision after discussing with the relevant parties. But approves by the head of the hospital, the director. But all decisions taken with discussions."
Works Engineer (B/WE/Q10.6,14.1)	•When a variation is being required by the Consultant, initally they talk to us and Consultant. Then after all of us discussing together only we come to a conclusion. We normally discuss those during progress review meetings or discuss over the phone to take decisions...We are ready to charge Liquidated Damages (LD) anytime from the Contractor if required. However, we normally do not do it at once. We will be calling upon a discussion to ask why it happened and only LD will be charged. This is becuase, LD will amount to something like getting blacklisted."

B3.5 Basic Assumptions on Nature of Time Units

B3.5.1 continuing relationship was not a concern with Contractor or Consultant (Clnt B 5 01)

Senior Administrative Officer (B/SAO/Q14.8)	•"We need not to consider this relationship separately. According to government procedures, this consultant is providing consultancy services to the ministry. Consideration of working relationship is enough for us. We need not to care specially...Chances are really rare, we would be working with this Contractor again. We select Contractors through tendering."
Public Management Assistant (B/PMA/Q14.8)	•"No much expectations on continuing relationship with Contractor or Consultant. This Consultant was appointed by the Ministry, higher authorities. But, it is not compulsory to give our future projects to them. Contractor was a random selection through tendering."
Works Engineer (B/WE/Q14.8)	•"What I believe is, if the consultant deliver what we require on time, then the relationship will get continued. If not it will not. But as humans we try to work together in a friendly manner. If work is not properly achieved through this consultant then it is a loss for the government and no point of continuing."

B3.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

B3.6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt B 6 01)

Senior Administrative Officer (B/SAO/Q11.1,11.4)	•"I think Ministry is not checking regularly because, Consultant is responsible for all these works. We know, if something happens, Consultant has to take the responsibility...Contractor has the responsibility of handing over the building as per the time schedule. Consultant has the responsibility to follow them up. Resident Engineer is the most responsible."
Public Management Assistant (B/PMA/Q11.4)	•"Consultant and Contractor have agreed to deliver the project as required by the Client. It is their responsibility to work accordingly."
Works Engineer (B/WE/Q9.1,11.4)	•"When we allocate a specific time for the project, we expect them to finish within the specified time...If Contractor is delaying, then Consultant has the liability to check why Contracto is delaying and what problems Contractor has. They have to discuss and sort out the problems.

B3.6.2 Not innovation, only conformance was expected from the project team (Clnt B 6 02)

Senior Administrative Officer (B/SAO/Q13.1)	•"We do not expect innovation from the Contractor or Consultant. This is a basic building. We want to get the agreed design constructed within the specified time and cost....We are going inline with the master plan. So we know we ding the right things."
Public Management Assistant (B/PMA/Q10.4,11.4)	•"We go in line with the government procurement guidelines and we know we get the things done right... Consultant and Contractor have agreed to deliver the project as required by the Client. It is their responsibility to work accordingly."
Works Engineer (B/WE/Q15.1)	•"I think there are limited funds in government projects and o room for innovative work. What we expect from the Contractor is to do the construction according to the Client approved design given by the Consultant. Consultant has taken prior approvals from the Client for all the designs."

B3.7 Basic Assumptions on Unknowable and Uncontrollable

B3.7.1 Satisfying all End-user's staff was impossible within this project (Clnt B 7 01)

Senior Administrative Officer (B/SAO/Q13.1)	•"This building is not relevant to all staffs of the hospital. Only related to the administrative staff. Building is for administrative staff areas and doctors' rest rooms only. Patients are not related. So we do not need to listen to all staff in the hospital."
Public Management Assistant (B/PMA/Q16.1)	•"No. Sometimes, when I look from my side, what I expected has not happened. But from the organisation's point of view, their expectations have been fulfilled. Majority of staff is satisfied. There are ones who are not satisfied. There are problems in some areas. But as a whole it is okay. We cannot do exactly what we want. There is a building concept. We cannot provide everything hospiatl staff ask for. For example, director's office requested a toilet, but we cannot do that. According to the building concept, it has a different plan on how wash rooms are located. They happen to adhere to that."
Works Engineer (B/WE/Q9.4)	•"Cost is fixed. Achieving the quality is a must. We try to fulfil things within the limits. Beyond that client happens to get the extra things done through a separate new project. If not, the requirement happened to be disregarded. Some are there to whom it is difficult to convince and some are there who listens. For example, some are there who likes cast iron windows, and some like aluminium. They are the ones who realise any lapses in the project as end-users. They may practical from their side. But we are within limits."

B3.8 Basic Assumptions on Gender

B3.8.1 Gender was not a concern to work in a construction project (Clnt B 8 01)

Senior Administrative Officer (B/SAO/Q13.4)	•"I do not see any speciality as a male or female, what I think is, if knowledge is there, there is no difference as male and female. Everything runs on their knowledge."
Public Management Assistant (B/PMA/Q13.4)	•"I have never experienced any difference in working with males or females in specific."
Works Engineer (B/WE/Q13.4)	•"I have not faced any problem being a female working for this project. Gender has not become an issue. It is not about whether it is a male or a female, but the role of the professional involved is the only thing important to them."

B3.10 Basic Assumptions on State-Individual Relationship

B3.10.1 The objective of the project was to fulfil the requirements of the hospital staff as much as possible (Clnt B 10 01)

Senior Administrative Officer (B/SAO/Q9.4)	•"we try to shift Out Patients Department (OPD) area by moving the administrative staff to the new building. We took the project title under expansion of OPD areas. Thoug this is the title, the real project is a different one."
Public Management Assistant (B/PMA/Q16.1)	•"Sometimes, when I look from my side, what I expected has not happened. But from the organisation's point of view, their expectations have been fulfilled. Majority of staff is satisfied. There are ones who are not satisfied. There are problems in some areas. But as a whole it is okay. We cannot do exactly what we want. There is a building concept. We cannot provide everything hospiatl staff ask for. For example, director's office requested a toilet, but we cannot do that. According to the building concept, it has a different plan on how wash rooms are located. They happen to adhere to that."
Works Engineer (B/WE/Q9.4)	•"We try to fulfil things within the limits. Beyond that client happens to get the extra things done through a separate new project. If not, the requirement happened to be disregarded. Some are there to whom it is difficult to convince and some are there who listens."

B3.10.2 Laws should be lenient on public sector clients (Clnt B 10 02)

Senior Administrative Officer (B/SAO/Q13.4)	•"Local authority looks for parking spaces for design approval. We cannot allow for a parking space here, we do not have a parking space here. Actually there is no space to be shown as parking space. Our prime objective is not to have an administrative building, but to shift all Out Patients Departments to this area and provide good facilities to patients. Not to provide facilities to the admin staff, but for the patients. So they would be giving the approval."
Public Management Assistant (B/PMA/Q9.6)	•"The biggest issue we had was the design approval of Colombo Municipal Council (CMC) approval. We have problems in obtaining CMC approval. There are problems in allocating parking area. Despite the approval we started the construction. We hope we can have it since this is a government project."
Works Engineer (B/WE/Q9.6)	•"Such design approval problems are normally happening in construction projects. It does not affect the operations of the project. We will have the approval in future."

Annexure 5: Case Evidences – Case C

This annexure includes case evidences for Contractor (Cont C), Consultant (Cnsl C) and Client (Clnt C) respectively for Case C.

C1 Contractor

C1.1 Basic Assumptions on the Nature of Human Relationship

C1.1.1 Level of authority was critical in decision making (Cont C 1 01)

Assistant Operation Engineer (C/AOE/Q10.3)	•"Consultant's hierarchy is too short. If we are unable to reach the Chief Engineer, then there is no one with same authority to contact for a decision making. Resident Engineer is also a very junior engineer with very low authority level. It is a huge problem for decision making. In our hierarchy, there is me, then Operations Engineer and also Senior Operations Engineer looking after the project matters."
Operations Engineer (C/OE/Q14.1)	•"It is better if we get the decisions early. When any apporval is asked for, Consultant usually takes about 2, 3 weeks. Then what we try to do is, we try our best to finish off the work fast with time pressure, than concerning on quality. If site level staff has adequate authority to make decisions, then this our work would have been very easy and efficient."
Senior Operations Engineer (C/SOE/Q10.4)	•"They check on quality but decision making is very slow. There is slow in getting apporvals for qulaity reports. There is a slow in decision making at site level. They forward matters to the top level and it consumes more time."

C1.1.2 A powerful project manager was essential for a construction project (Cont C 1 02)

Senior Operations Engineer (C/SOE/Q10.2)	•"There is a big issue here in design delays. When we talk to Chief Engineer, he says things are not under his control. He asks us to complaint it to his superiors through a letter copying the letter to him. He too believes that then only work get attention. Chief Engineer also work within authority limits. It is a problem within this system."
Operations Engineer (C/OE/Q8)	•"As I think consultant should have powerful person taking care of the project. But still we have not felt there is any person like that from consultant. At least there should be someone at the meeting to make a decision fast. Chief engineer leads the project, but he is lacking ins fast decision making. He lacks the support from the supportive staff around him, from engineering designs or architectural designs at head offcie according to their organisational structure. He tried his best initially to speed this up. But I think he did not get the support."
Assistant Operation Engineer (C/AOE/Q11.4)	•"Chief Engineer is also not here full time, though he is the project manager. If a powerful person comes to the project site office from consultant, then it would have been more easy to control and monitor the project matters for them."

C1.1.3 Design and quality were Consultant's responsibility (Cont C 1 03)

Assistant Operation Engineer (C/AOE/Q6,9.1,10.4, 11.4)	•"It is the consultant controls the quality. Contractor is the one who manages the time and get the construction done. Client keeps faith on Consultant for quality... It is better if this quality management system can be improved further, rather than just giving instructions. If Consultant really wants, they can check more on quality."
Operations Engineer (C/OE/Q6)	•"I think it is the consultant who is the most important, because the quality of final output of the project depends on their decisions. If the consultant is doing the design, then they have a massive role on how to finish the project well, as building has to function for 20, 25 years. Functioning of the building totally depend on their design.
Senior Operations Engineer (C/SOE/Q9.3)	•"There is a delay in drafting the designs for the Services. They are lacking with design staff. They asked whether we can do it for them. We have informed we cannot do it. We are not on a design and build contract. We came for construction.."

C1.1.4 Consultant lacked integration among different designers (Cont C 1 04)

Assistant Operation Engineer (C/AOE/Q9.5)	•"There are some mouldings here. When the arch is done, there comes a column. Structurally there is no column. It is a waste. They should have used a structural column there. Now they are asking to construct it with brick, just for architectural purposes. When we take the design team, thereis a lack of integration between architectural, structural and mechanical persons."
Operations Engineer (C/OE/Q9.3)	•"We had to cast some additional piles during piling works. May be they had missed to integrate those during structural design. Later only we were informed about these additional piles."
Senior Operations Engineer (C/SOE/Q9.5)	•"Sometimes I feel we are wasting our time comparing structural and architectural drawings looking for variations. These integrations issues should have been sorted out at the design offcie."

C1.1.5 Contractor lost power with their mistakes and gained power with mistakes of other team members (Cont C 1 05)

Operations Engineer (C/OE/Q9.5)	•"We keep information and design details lacking in all areas informed through letters early to the Consultant. This is because design is done from them. We have informed them about several things over several letters by now that delays can happen due to lack of those details."
Senior Operations Engineer (C/SOE/Q16.1)	•"We had a problem with the piling sub-contractor. That sub-contractor lacked enough resources. So we cannot achieve the target we expected. It is our fault that we couldn't identify that they lack experience for such a big project. It was a problem in our techncical evaluation process. Consultant informed us about the delay in writing too. We somehow controlled the situation and caught up the delay, but it was not good as a major contrator we failed in that. We become weak within the team with such lapses"
Progress Review Meetings No.26 and 27 Observations	•It was observed that Contractor and Consultant were constantly highlighting each other's lapses during meetings. Consultant was more agressive compared to the Contractor. Contractor tactfully brought in lapses of Consultant, whenever a delay of a construction work was highlighted. For example, when a delay in electrical works indicated, Operations Engineer highlighted some major variations of construction drawings with tender drawings of the electrical light fittings that could result in cost variations. So, suddenly, Consultant became silent on delay since they were at fault creating cost overruns to the Client's budget, which got highlighted infront of the Client."

C1.1.6 Close connections with Client was important, but not acceptable in project context (Cont C 1 06)

Senior Operations Engineer (C/SOE/Q11.1)	•"We refurbished the building Client is currently residing. We did partition works and renovated. Therefore, there is a strong relationship with Client and us. Therefore, when there is any issue from the Consultant, we directly tell the Client that there are this kind of issues with the Consultant, you please attend. They are familiar to us. We tell them, there is an issue in this particular thing, better check that with the Consultant. It can be a delay, a problem in the design. We tend to say. We informally inform them that you got to talk with the consultant about that and we cannot talk about as the Contractor. Normally they talk with us a lot than with the Consultant on what can be done on that regard. Such a relationship is there."
Operations Engineer (C/OE/Q10.2)	•"We have better connections with the Client than Consultant having with them. But we never interfere the normal contractual processes. We always refer to Consultant over project matters without by passing them and informing the Client."
Assistant Operation Engineer (C/AOE/Q9.5)	•"If there is a payment issue we directly talk to Client. We have a relationship with the Client that we can talk to them and ask to pay kindly without a delay. We do not need to wait for the Consultant."

C1.1.7 Maintaining long-term relationship with the Client and Consultant was an organisational concern (Cont C 1 07)

Senior Operations Engineer (C/SOE/Q14.8)	•"We definitely consider continuing relationship with both Client and Consultant. Definitely we have a possibility of meeting this Client and Consultant in future with new projects. Our senior staff always emphasises that we should maintain the relationship with clients. If the client got some small job, may be a small renovation in their office, we attend to those on behalf of them. Sometimes we do not consider any payment for that. We consider keeping every client. Normally clients themselves talk to us asking for small and big works. We receive new jobs with that contacts. Chairman considers relationships with clients for finding new jobs. We receive jobs in that way than from tendering.
Assistant Operation Engineer (C/AOE/Q14.8)	•"We consider continuing relationships with Clients and Consultants. My superiors normally inform us not to have any issues with the other parties. Even we want to continue this project without a problem also."
Operations Engineer (C/OE/Q14.8)	•"There were certain decisions we all took, considering we will happen to work with them in future. Consultant and client both. It is our senior staff that be more concerned on this....If client says he has some work at office to be done, then if possible we will agree and get it done through the site staff. It is the same for every client and consultant. If they ask for any help, considering the long term relationship, we are ready to do any help. Not major things only small things. Sometimes, some clients are really friendly with us and we get projects through that. We have not specifically thought about it here in this site, but there were instances we have though like that in other projects. "

C1.2 Basic Assumptions on Nature of Human Nature

C1.2.1 Rare appreciations and only constant highlighting of mistakes were available within the team (Cont C 2 01)

Assistant Operation Engineer (C/AOE/Q15.1)	•"Sometimes looking into the current situation compared to our delay we had initially, they are more satisfied now. Now they say project is going on alright. But no big apprications, but we understand from their reactions...We hold meetings to talk about issues and problems only. No such appreciations get minuted."
Senior Operations Engineer (C/SOE/Q15.1)	•"They mention our lapses and we also mention their lapses and we try to sort out things during meetings. But we maintain working relationship. We tend to argue with each other. But we all respect and consider the seniority or the designation during arguments...no appreciations usually. Once we finish the project, we could have such appreciations if Client would be happy with our work."
Progress Review Meeting No. 26 and 27 Observations, Meeting Minuted No.25 and 28	•No appreciation noted among team members during any of the progress review meetings observed or any of the meeting minutes reviewed.
Operations Engineer (C/OE/Q15.1)	•"No appreciations yet in this project. In other sites we have received appreciations for finishing at the targeted time or finishing within the cost budget limits. We have received it from the clients mostly. We mostly talk about issues only. Client has sent dissatisfactions in writing. Client has directly written us letters."

C1.2.2 Good to have a consultant as a whistle blower (Cont C 2 02)

Assistant Operation Engineer (C/AOE/Q11.4)	•"We be careful to do whatever the work we do when consultant is there. Otherwise, after proceeding such a bug work and ultimately if we get stuck, everything we do will be fruitless."
Operations Engineer (C/OE/Q10.4)	•"This is my first experience of working with a consultant. We tend to be more concerned on quality in projects on traditional method than with design and build projects. It is because they check on small, small things. So mostly we are more concerned on quality than in other projects."
Senior Operations Engineer (C/SOE/Q12.2)	•"We normally do design and build projects. I have limited experience where a consultant involve this much with a design. This is a tendered job. So, we had some learnings by dealing with a consultant. How to work with a consultant. I think it is good. But we have to learn how to deal with a situation where consultant shows lapses. It is good there is someone to overlook our work. This helps us improve our technical side. Since consultant is checking on technical aspects, we too happen to check on those things before the consultant. We have to be sound on technical aspects. In design and build, involvement of a consultant is very limited. In this situation, we are more alert since there is a consultant looking at us.

C1.3 Basic Assumptions on Nature of Reality and Truth

C1.3.1 Level of Experience was critical in decision making (Cont C 3 01)

Senior Operations Engineer (C/SOE/Q10.1)	•"There was an issue with pile socketing. When we tried to start pile socketing Resident Engineer did not allow us to do it, but we also felt there is no issue with that. We have prior experience doing the same. We knew we can start socketing when we checked the sample. But She said not enough, and cannot be done by the machine. So we gave up the work that day. But after we contacted her senior the other day, he said okay and asked to proceed. Experience really matters at site level."
Operations Engineer (C/OE/Q10.1)	•"We always use formal methods of communication at site level, becuase very less experienced staff is involved at site level from the Consultant. We are scared of any lapses in approvals."
Assistant Operation Engineer (C/AOE/Q10.2)	•"I think if the consultant's staff stationed here can give a proper instruction when any issue arise, then we can achieve a greater speed. Mostly they refer back everything to the head office staff. Even for a very small matters. This can be due to lack of proper experience. If we could have sorted out the problems at the site itself then construction could be speeded up."

C1.3.2 Consultant was impractical in their decision making (Cont C 3 02)

Assistant Operations Engineer (C/AOE/Q9.5)	•"When there are impractical situations, we discuss and get solutions and sometimes we move on with impractical things too. We happen to do impractical things. There are some mouldings here. When the arch is done, there comes a column. Structurally there is no column. It is a waste actually. They should have used a structural column there. Now they are asking to construct it with brick. So now it is just a column for architectural purpose only. "
Operations Engineer (C/OE/Q10.4)	•"I feel the way they look at quality is wrong. Sometimes, when formwork and reinforcement is set for a concrete slab or any element, they come at last minute and ask to change, when the pump car also has arrived at site. We cannot attend to such a thing practically at the last moment."
Progress Review Meeting No. 26 Observations	•"It was observed during the meeting, Director General asking the Senior Operations Engineer to come up with a date to finish a concrete ramp for which design details also have not yet been forwarded to the Contractor. Senior Operations Engineer argued that it was impractical asking for a completion date for a construction, for which at least designs have not yet been recived and also such a thing cannot be done within few minutes."

C1.3.3 Discussions gave results (Cont C 3 03)

Assistant Operation Engineer (C/AOE/Q9.4)	•"When a problem arises we discuss and take decisions. If it is a problem with the structure, then the structural engineer involves. However, sometimes when we feel construction process is getting detailed if we wait for head office staff of Consultant, then our engineer stationed here and their engineers stationed here discuss and sort out at site level. We go to higher level, if it is a big issue only...there were some concrete arches here in the front of the building. When we consider the level, arches go beyond the beam. So we were unable to execute arch work. So they asked us to give a solution. So we did a drawing and got it approved. We can discuss and come to decisions."
Operations Engineer (C/OE/Q9.4)	•" If we do not discuss within the meeting, it is through a letter only we argue or any of our decisions are sent. Meetings only occur once in two weeks. So between meetings, information is sent to chief engineer only through letters. If any activity on doubt was on critical path, then we try to do what they ask for and speed up the work at site level."
Senior Operations Engineer (C/SOE/Q10.2,15.1)	•"We can use documents and we need to have the friendship also. We cannot work fighting with each other. So we talk over the phone and sort out problems. We ask 'shall we do like this?', discuss with the Client and Consultant and sort out issues. There are instances where it is difficult to construct according to the design. In such scenarios, we tend to give a proposal and ask whether that way is good, discuss and do it...They mention our lapses and we also mention their lapses and we try to sort out things during meetings."

C1.4 Basic Assumptions on Nature of Human Activity

C1.4.1 The correct way for Contractor and Consultant to behave was being reactive, not proactive (Cont C 4 01)

Senior Operations Engineer (C/SOE/Q10.5)	•"Safety is not enough at site. There is a lacking from our side too. We are not too strict to labourers. They do not wear helmets though we ask them to do so. But there are helmets at the stores. We too are responsible if something happen to them. Consultant's insist or force on us to improve safety is not enough. They do not check on those things much. Consultant can force us if they really want to us to improve".
Operations Engineer (C/OE/Q9.5,16.1)	•"We will be facing a delay in the proejct with services installation...We have not received the required design details yet. We had 4 to 5 meetings to discuss how to accelarate the receipt of design details. But still we do not see any satisfactory reaction from the Consultant."
Assistant Operation Engineer (C/AOE/Q11.2)	•"Consultant is mainly check our performance through progress of work. Monthly we provide them with a report on progress and they check with that. The amount of monitoring they do to give us a constructive feedback is not enough. Out of the bill we submit they can calculate how much work done...We do not do daily monitoring of work. There is no a large progress if we consider daily, but there is a considerable progress if checked weekly. There can be works where we plan to day and do not do at all. So consideration of weekly progress is better.

C1.4.2 Consultant was the most powerful in the project team (Cont C 4 02)

Senior Operations Engineer (C/SOE/Q8)	•"I think Regional Chief Engineer (Zone 1 - Construction) is the most powerful within the team as the project manager."
Operations Engineer (C/OE/Q8)	•"As I think there should be a powerful person from consultant to make fast decisions. But still we have not felt there is any person like that from consultant. Despite stationed at site, at least there should be someone at the meeting to make a decision fast. Chief engineer leads the project, he is lacking is fast decision making."
Assistant Operation Engineer (C/AOE/Q8)	•"It is the Regional Chief Engineer (Zone 1 - Construction) the most powerful. When a problem arises, the final decision comes from him as the project manager. When he asks to do something, we happen to obey him."

C1.4.3 Contractor was placed with the least power in the project team (Cont C 4 03)

Senior Operations Engineer (C/SOE/Q10.3)	•"Everybody is treated equally. However, we get a bigger pressure from the Client and the Consultant. There are conflicts we sometimes face, arguments we get. However, that does not amount to they discriminate us in the project. May be becuase, we are a major contractor. They do not put the force they put on small contractors on us. Even we too do consultancy works at their level. So they do not try to exert a bigger force. They normally consider when we come up with a suggestion."
Assistant Operation Engineer (C/AOE/Q11.3)	•"Consultant do not respond fast as much as we do. We complain about the delay in design details during the meeting. But they carry on with the normal speed they work. What we feel is that Consultant is not get criticized and pressurized as much as the Contarctor."
Operations Engineer (C/OE/Q11.4)	•"When trying to achieve time, quality can be compromised. When the A/C document is given at the last moment and ask us to do within a month, we try to achieve the time target. Then quality can be compromised. So consultant also has a bigger responsibility in that. However, Contractor will be blamed mostly in this scenario in out culture. "

C1.5 Basic Assumptions on Nature of Time

C1.5.2 Previous work history was advantages (Cont C 5 02)

Senior Operations Engineer (C/SOE/Q14.8)	•" We appointed the same Operations Engineer from the past project with this Client to project C too. I also worked in that project. So Client was very much known to us. It is easy to work then, and we can fulfill he Client's requirements with better understanding."
Operations Engineer (C/OE/Q14.8)	•"It is our senior staff that be more concerned on this. There were certain decisions we all took, considering we will happen to work with them in future. and also based on the past experiences we had with this Client. We know this Client make payments very fast. We never faced that problem before and also now."

C1.6 Basic Assumptions on Acceptance of Homogeneity and Diversity

C1.6.1 Not innovation, but conformance was rewarding in the construction project (Cont C 6 01)

Senior Operations Engineer (C/SOE/Q10.6,11.1)	•"We do not consider innovations massively because we are on a time constraint...When we send them any material, they ask for specifications and do tests for those materials. When we bring in materials for steel roof, we have to submit them technical details for that. We happen to end the sections to a lab specified and obtain the reports."
Assistant Operation Engineer (C/AOE/Q9.6)	•"There had some bobbins to be fixed. Those were really big. One was about 100kg in weight. It was in concrete. It was a very big challenge for us. Handling was difficult due to weight, since we did not have a tower crane. We did it somehow since it is their design and they wanted it to be done as per the drawings and specifications."
Operations Engineer (C/OE/Q11.4)	•"We did a staircase with a width greater than what they had specified. This we did because, by experience we knew that it is difficult to do a proper finishing without constructing with such a wider width. It is the edge between the concrete and brick wall. We finished the staircase into the brick wall and did the brick wall on staircase. However, Consultant PRoject Quantity Surveyor refused to pay for this new way of construction and they paid for the drawing. They expect us to do what is in the drawing. Practically it is difficult to finish as per the drawing. "

C1.6.2 Formalities should be conformed to the procurement method (Cont C 6 02)

Senior Operations Engineer (C/SOE/Q10.1)	•"We use letters because those become evidences for us in future to obtain any payment or if any other issue comes in. Then we have a written document, indicating where was the issue. If it is a design and build project it is not a problem. This is something designed by someone else. We have to keep evidence for that. We cannot answer later by just depending on phone calls or at least without a log note.
Assistant Operation Engineer (C/AOE/Q12.1)	•"Traditional method is very much different than the design and build. Previously I worked with design and build projects. So now we try to follow formal methods of communication since it could be a problem for us in billing.Since we previously designed in design and build method, this kind of formalities and procedures were not required."
Operations Engineer (C/OE/Q10.4)	•"This is my first experience of working with a consultant. We tend to be more concerned on quality in projects on traditional method than with design and build projects. Is it because someone is overlooking your work. They check on small, small things. So mostly we are more concerned on quality than in other projects."

C1.7 Basic Assumptions on Unknowable and Uncontrollable

C1.7.1 Ultimate responsibility of time, cost and quality of the project resided with the contractor (Cont B 7 01)

Senior Operations Engineer (C/SOE/Q11.4)	•"Responsibility of prject outcomes resides with the Contractor. Completing the project on time ultimately resides with us. It is one of our responsibilities. Blame comes to us. We try to finish this on time, at least getting the details by force. At least by sending letters or by any means. Becuase things are client oriented and we take everything as our responsibility.
Assistant Operation Engineer (C/AOE/Q11.4)	•"Consultant only controlling the quality a lot. Contractor is the one who manages the time and get the construction done on time. There is a joint responsibility for the quality. However,if there is any failure, Consultant can point at us for the faliure also. We submit all checklists, and they check and approve all those. However, when a problem comes, it can backfire to the Contractor too. We cannot predict what will happen."
Operations Engineer (C/OE/Q10.3,11.4)	•"We respond speedily to everything. What we feel is, Consultant does not care that things getting delay at site level. But it is something really important for us, because it is we who get affected as the contractor and fail to achieve the target. It is we who get blamed at the end...When A/C document is given at the last moment and ask us to do within a month, we try to achieve the time target. Then quality can be compromised. So consultant also has a bigger responsibility in that. But, Contractor will be blamed mostly in this scenario.

C1.7.2 formal instructions/approvals in black and white would protect the contractual rights of the Contractor (Cont B 7 02)

Senior Operations Engineer (C/SOE/Q10.1)	•"We use letters because those become evidences for us in future to obtain any payment or if any other issue comes in. Then we have a written document, indicating that issue. There should be evidence. If it is a design and build project it is not a problem. This is something designed by someone else. We have to keep evidence for that. We cannot answer later by just depending on phone calls at least without a log note."
Assistant Operation Engineer (C/AOE/Q9.4)	•"We discuss and sort out at project level. In whatever way it happens, a log note is entered stating, this decision was taken due to this reason and make it formal. Even if we do the change, we enter a log note, so that whenever they check on it in any day they know what happened whenever an issue arises."
Operations Engineer (C/OE/Q9.5)	•"We keep all lacking design information informed through letters early. This is to the Consultant, because design is done from them. We have informed them about several things over several letters by now that delays can happen due to lack of these details. ."

C1.8 Basic Assumptions on Gender

C1.8.1 Attitudes of females matter in assigning roles and responsibilities (Cont B 8 01)

Senior Operations Engineer (C/SOE/Q13.4)	•"I think it depends on person. There are females who work actively than male in field. It can be a personal attitude problem. They are good for documentation. They do not survive in field work. They are better in office work. No big issue for females for consultancy team. They are office base. It is difficult for them to stay when site is working at night. Sometimes concerting works go no till late mid night."
Assistant Operation Engineer (C/AOE/Q13.4)	•"They are good for documentation. Being a consultant might not be a big issue. But construction, might be bit of a problem for them related to labour handling. There are times, where labourers do not listen though we demand something from them. So it is bit difficult. If they happen to get some work done from a labourer, then they could get stuck. Then we happen to assign a male. When site engineers are assigned from the consultant, they are not dealing with any labourers. They will deal with a technical officers or engineers. So it will not be an issue."
Operations Engineer (C/OE/Q13.4)	•"For site work involvement, females work well when they join newly, they go to the site. But later, with experience they try to be at the office. There are some who lacks practicality. But majority can work practically. I have seen females who handle the laboureres well. Attitudes matter.It is something away from the gender. "

C1.9 Basic Assumptions on Motive for Behaving

C1.9.1 Anything should be done if contractually entitled for a payment and time (Cont B 9 01)

Senior Operations Engineer (C/SOE/Q9.4)	•"We normally do not do anything not mentioned with the agreement even if they ask us to do. For example, there was an issue, we are on traditional method of procurement and not design and build. So, we refused to do tender evaluations, though we can get the tender calling done for them for services. It is because, we will be paid an attendance fee only for us in that scenario."
Assistant Operation Engineer (C/AOE/Q12.1)	•"Previously I worked with design and build projects. So now we try to follow formal methods of communication since it could be a problem for us in billing."
Operations Engineer (C/OE/Q10.1)	•"We mostly do not like to perform a work if a firm decision is not given or information is not provided for us to do a billing. Although we can do certain things without details, when we do the things without proper details, they could avoid paying. We did the staircase with a width greater than what Consultant had specified. This we did because, by experience we know that, it is difficult to do a proper finish without constructing with such a wider width. We finished the staircase into the brick wall and did the brick wall on staircase. Now, when we talk to the Consultant Project Quantity Surveyor, he says they cannot pay for this new way of construction and they will only pay for the drawing. They expect us to do what is in the drawing. Practically it is difficult to finish as per the drawing."

C1.9.2 Continuous improvement was a necessity (Cont B 9 02)

Senior Operations Engineer (C/SOE/Q10.5)	•"Safety is not enough at site. (What is the issue?) There is a lacking from our side too. We are not too strict to labourers. They do not wear helmets though we ask them to do so. But there are helmets at the stores..... During initial 6 months they wear and adhere to safety guidelines. We do not let them enter the site without the helmet. Some contractors never allow to enter the site without helmets. We have to develop to that level, but we are lacking in that. We are working on that."
Assistant Operation Engineer (C/AOE/Q16.1)	•"Piling works went out of our control. It can be because we were lack of a big idea about machinery when we do the bidding. There is an issue, whether a proper evaluation had happened during tendering for the sub-contractor. If there had been a proper technical evaluation, this might have identified early. They had a very old construction method. We need to improve our procurment system.
Operations Engineer (C/OE/Q10.4)	•"I think we have many things to get improved as the contractor. Mostly, materials required for operations are requested through the site. Once we request, we have to keep following it until it is delivered to the site. What I observe with other major contractors is when they send the request to the head office for material, there is someone from the head office following it and sending it to the site. Such a setup is really good. The problem is, we have happened to follow it from here. "

C2 Consultant

C2.1 Basic Assumptions on the Nature of Human Relationship

C2.1.1 Client allowed the Consultant to work with full authority without monitoring (Cnsl C 1 01)

Project Architect (C/PA/Q11.1)	•"In Sri Lankan practise, consultant is regarded as a perfect character. It is wrong to indicate like that. We only look for faults of contractor. Clients are not aware that they have to look for faults of consultant as well. What they think is that these architects and engineers have been hired to check the performance of the Contractor. So only the lapses of contractor get informed. Sometimes Contractor informs that instructions and drawings are delay from us and we agree to give them in one week or two weeks. Then it is over. Other than that client is not going to write letters to the consultant to chase behind or to get compensation for the delay. There is no such practise related to consultant."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q11.1)	•"Client does not have any system of monitoring us. They monitor by attending the meeting. They have no technical knowledge to question on the construction aspects. They totally depend on us."
Project Structural Engineer (C/PSE/Q15.1,10.6)	•This client doesn't do any monitoring of Consultant's work. They check on the end result. They request the design drawings to be done and they check for the mile stones. They had given a date for tendering. We had to work for that. First he gives his concept and then they ask us to tender on a certain date. He doesn't monitor in-between... No big variations from the Client, only our mistake in ground levels created the variations..
Senior Operations Engineer (C/SOE/Q11.1)	•"I do not see the Client monitoring the Consultant. Client doesn't have a knowledge as such. That is the problem they have. They check on progress and check on cash flow. There is no technical person involved from client to monitor. We did a project of the same Client before. Therefore there is a strong relationship with Client and us. Therefore, when there is any issue from the Consultant, we directly tell the client that there are this kind of issues with the Consultant, you please attend. It can be a delay, a problem in the design. We informally inform them."

C2.1.2 Perfect performances of individual roles would bring success in project performances (Cnsl C 1 02)

Project Architect (C/PA/Q9.4)	•"In this project, Client has given the full authority to the Consultant. We always depend all our decisions on quality even though Client is against us. We send letters saying and justifying the correct things and always try our best to initiate what is the best for the quality. So no problem in public sector, whatever we say, we can get the Client approve it."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q11.1)	•"According to my opinion, government buildings should not have frill works, such as mouldings. If reinforcement work is not done properly, those get corroded and the moulding work tend to have cracks. I think durability of the building get affected with those features in a country like Sri Lanka and due to maintanence procedure being poor. I think it is something Architect has to think about. It is related to his role. I feel it is better if he had removed that."
Project Structural Engineer (C/PSE/Q3,7,9.4)	•"We have no much relationship with client as the structural design staff. We have all connections with the architect. We join the team since the architect get all approvals for the sketches and drawings from the client. This is during design stage...Client's concept is extracted by the Architect. Then come and get-together with the other team members to proceed the work. Services design staff do not contact the Client a lot. We do our roles in isolation. We have full authority in our own role to design as best for the project. Then after design team designs only we give the design to the estimating staff. So after the estimation only things are handed over to procurement division."

C2.1.3 Dedication to the project work was difficult with parallel projects at organisation level (Cnsl C 1 03)

Project Architect (C/PA/Q10.4)	•"Due to the lack of staff and we are involving for five six projects at a given time and not assigned to a project fulltime. We professionals like to handle one project. Then we can take the responsibility of that project and stay. But when considering the country we live and when compared to the capacity of our professionals, giving one project to one person is a failure. We five, six architects handled the whole countrywide projects. It is not impossible because, when we take buildings department we have eight branches island wide and we have about 4 engineers with about 12 TOs. Quality aspects are checked by them. Then the architects at head office were checking on architectural aspects and the things we can observe from eyes like lapses in finishes. We have progress review meetings once a month. If it is special we visit by the mean time."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q9.3)	•"There is a lapse in our consultancy also, because our department cannot take the capacity of providing the service for all the services installation at once. At the moment we are with many projects in hand."
Project Structural Engineer (C/PSE/Q10.4)	•"We have the problem of lack of staff. Working for parallel projects have become a problem. Difficult to assign a team only for this project. Difficult to give attention for one project. If the assigned project design team can stay together until project ends integration problems can be overcome. Nobody as such. Everybody works for parallel projects."

C2.1.4 Client depended on Consultant for Quality (Cnsl C 1 04)

Project Architect (C/PA/Q9.1)	•"In public sector, the most concern becomes the time and cost only. There is no concern of them regarding the quality. I can clearly say that. Though they comment they want this kind of a thing, the responsibility of quality of that product directly comes to the professional like architects and consultant team. They think they have appointed a Consultant to check quality, and no idea how it could be achieved, by specifying standards, brands etc. So we all as the Consultant, work together to bring in the best quality for them."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q9.1)	•"As I think Client does not have a big idea about any of the time, cost or quality of the project. They totally depend on us for the quality. They are chasing behind time at the moment since they are on rent. Cost is a concern since they have to somehow spend the allocated funds for the year."
Project Structural Engineer (C/PSE/Q9.1)	•"I think Client does not have any idea over quality of a project outcome. They let the consultant to take that over."

C2.1.5 Client was the most respectable person in the team (Cnsl C 1 05)

Project Architect (C/PA/Q7)	•"We all respect the the Additional Secretary to the Commision. Additional Secretary has an upper hand as the client's representative. Whole team tries to satisfy his requirements.
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q7)	•"Additional Secretary is the most respectable. He overlooks our work, and if we have any issue, he quaickly attends to it. We respect for his designation too. Normally, CLient becomes the most respectable in any project team."
Project Structural Engineer (C/PSE/Q7)	•"Everybody respected the Client. Everybody was eager to listen to the Client during progress review meetings too. This is their project. We all work for them."

C2.1.6 Formal method of communication was essential, but effectiveness and efficiency in communication depended on how much red tape could be overcome within the communication process (Cnsl C 1 06)

Project Architect (C/PA/Q10.2)	•"Not only though letters, many things are communicated over the phone. Architectural practice is about communicating the client and contractor over the phone and during meetings. But the stuff in the meeting get included in the meeting minute. I am not much agreed with proceeding everything by getting in written approvals, because there is a huge delay cause by that practise when we try to achieve the project completion with construction works. If we could have dropped an email at least to support the audits, we could have avoided lot of delays."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.2)	•"I think now it is high time to give priority to emails. Email is not included within this contract. We use emails internally with the Resident Engineer and other Consultants. But for major things affecting cost and time are sent through letters."
Project Structural Engineer (C/PSE/Q7)	•"Not only letters, we use telephone calls too. Otherwise it is difficult to do the work. But Contractor requires to get the instruction at least through a log note. Otherwise they do not work. So when we give any instruction during urgent occasions such as during concreting, they attend to it. But we have to leater sent the same instruction in writing."

C2.1.7 Contractor was placed with the least power in the project team (Cnsl C 1 07)

Project Architect (C/PA/Q9.4,11.1)	•"In this project, Client has given full authority to Consultant. We do not see any bias of Client. Whatever the decisions given by us is carried out by the Contractor...Contractor is regarded as placed at the lower position because, since every fault is pointed at them therefore, since they are working to our orders, there is a lower position created in the practise. But there was no such thing if the Contractor is maintaining high standards and reputed only. In all other projects we engaged except one project, contractor was regarded as a lower level party because, there could be lapses and misrepresentations and we change the way we look at them. So we and client normally become one level and they come to a lower position."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q7)	•"We are here to monitor the Contractor. Client expect us to do that."
Project Structural Engineer (C/PSE/Q9.4)	•"During construction of capping beams, Contractor proposed to do the beams halfway to complete the beam later. However, we did not like it, but it created some issues later, during construction. I wanted to finish all initially. They did as we wanted, but later we too felt it is better if we had done as they proposed. But later only we realised."

C2.1.8 Contractor attempted to pass all blames and responsibilities to the Consultant (Cnsl C 1 08)

Project Architect (C/PA/Q10.4)	•"We proposed that an engineer for quality assurance has to be recruited to the site from Contractor. Then he/she will be checking on quality matter. But contractor is showing us that Consultant had not included such requirement in the intial contract. So they let the Consultant to takecare of quality matters."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.4)	•"Wonder whther you realized during the meeting that when they were asked to come up with a completion date for the ramp, they indicating that without the design it was impossible to comment on that. They were requesting for the design in a very negetice way. Contractors are too risk averse."
Project Structural Engineer (C/PSE/Q10.1.)	•"Contractor never intiates any work, until we provide them with written instructions."

C2.1.9 Consultant lost power with their mistakes and gained power with mistakes of other team members (Cnsl C 1 09)

Progress Review Meeting No. 26 and 27 Observations	•It was observed that Consultant was very agressive COmpared to the Contractor during meetings. They maintained a strategy of highlighting the mistakes of the Contractor. Consultant strictly requested to come up with dates to finish some remaining works at site from the Contractor. However, Contractor tried to avoid it by highlighting design detail delays."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q9.3)	•"There is a lapse in our consultancy also, because our organisation cannot take the capacity of providing the service for all the services installation at once for all the projects in hand att the moment. We are with many projects in hand. If we wait to design all these, then lot of time can be consumed due to this. So we carry out the work as indicating provisional sums and by the time, we design and send Contractor the document. We haven't nominated any specialised services sub-contractor also. It created some problems in the project affecting the time duration. We received some criticisms over this issue from the Contractor. It is not good for us.
Project Architect (C/PA/Q9.1)	•"Contractor had some issue internally, during piling works. They took long time to start the work and supply goods and resources to site. Resource issue were there with the piling sub-contractor too. We called upon meetings and pressurised. We asked the Contractor to prepare catch up programmes for the situation. We asked them to do work parallel and increase the staff. Increase the gang size, we somehow tried to let them absorb the delay to the initally agreed total project duration according to the contract."

C2.1.10 Close connections with the Client and Contractor were not essential (Cnsl C 1 10)

C2.2 Basic Assumptions on Nature of Human Nature

Project Architect (C/PA/Q10.4)	•"I have experience in private sector too. We see consultant going behind and obeying the Client all the time. But it is better in public sector. Because in public sector, once the work is given to us, we do not offer things to the client's say. We always depend all our decisions on quality even though client is against us. We send letters saying and justifying the correct thing and always try our best to initiate what is the best for the quality."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q14.8)	•"We normally work for government projects. So maintaining relationship is important. We cannot anyway work with broken relationships. But if even Client or Contractor intervenes to the achievement of quality of the project, I will definitely work against it. So even relationship can be damaged by that."
Project Structural Engineer (C/PSE/Q10.1.)	•"As design engineering staff, except the architect, we have very limited connections with the Client."

C2.2.1 Contractor only believed in formal written methods of communication (Cnsl C 2 01)

Project Architect (C/PA/Q10.2)	•"Contractor wanted all instructions in writing. They may be requiring to submit those with interim payment application."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q7)	•"Normally all instructions go through me. But I have given some authority to Resident Engineer to issue instruction. This is only small ones. Because otherwise Contractor might not proceed the work during an issue, if I am not available to issue the instructions. Contractor work only to written instructions."
Project Structural Engineer (C/PSE/Q10.3)	•"Contractor will do anything if there is a seal or signature from the consultant, so that they can claim. It is same for a private contractor or a government contractor. This contractor is also the same."

C2.2.2 Contractor targeted for additional claims in every situation (Cnsl C 2 02)

Project Architect (C/PA/Q11.4)	•"I think it is with the consultant that majority of the responsibility resides in achieving the time, cost and quality objectives of the project. Because client is normally a layman. Contractor will play, if there are loopholes made by the consultant only. They go for numerous time and cost claims based on our faults as the Consultant."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.4)	•"Contractor did not agree with us to provide an engineer seperately for quality assuarance. They indicated such requirement was not their written under the contract, therefore they refused it. If required, they wanted the Client to pay for it additionally. If we consider major contractors, normally they have such an appointment for any project."
Project Structural Engineer (C/PSE/Q10.3)	•"I think it is the duty of the Consutlant to avoid additional cliams by a Contractor."

C2.2.3 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Cnsl C 2 03)

Project Architect (C/PA/Q15.1)	•"We do not have a culture in construction, where we appreciate each other. Clients tell good after completion, but they do not send any letter appreciating the work. They take it like, since this is a government department, we have to provide this service else, they never think a reword has to be given to these people at least as a mean of a letter of appreciation. They take it like an obligation of a government department. We discuss lapses of each other during meetings. We sent letters also to the Contractor indicating our dissatisfaction during their delay at piling works. We did not give them any punishment. But there are other projects where we sent letters mentioning we will terminate as punishments."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q15.1)	•"Nobody gets any appreciation like that. We are used to look into the issues, not the good things. I think it is there in our culture. We discuss only bad things. We discuss only bad about any human being though so many good has been done."
Project Structural Engineer (C/PSE/Q15.1)	•"Yes, appreciate during meetings. If there is an appreciation, only verbally, nothing in writing."

C2.3 Basic Assumptions on Nature of Reality and Truth

C2.3.1 Proper detail documentation was a strength for the Consultant (Cnsl C 3 01)

Project Architect (C/PA/Q10.4)	•"Form consultant's side, not mentioning about several specifications within the contract document created some issues in the project. We proposed an engineer for quality assurance has to be recruited to the site. Then he will be checking on quality aspects in detail. But contractor is showing us that there is no allocation for such an appointment within the contract document. That was one of our faults. It is really good if we had one. We relaised tha having proper documentation done in the contract is essential for a consultant."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q9.3)	•"We faced issues since we happened to include services items as provisional sum items, due to lack of staff to design all those during tendering stage. I have proposed the head office people to include all possible specifications and let them cost at the initial tendering stage, without including small provisional sum items. It would be difficult for AC and fire. But can be practised for many other services. We have to get out documents done right as the Consultant. Then it is easy to work."
Project Structural Engineer (C/PSE/Q10.4)	•"I think our quality management system is good, becuase we get all documentation done then and there appropriately."

C2.4 Basic Assumptions on Nature of Human Activity

C2.4.1 Controls in a construction project were the contracts (Cnsl C 4 01)

Project Architect (C/PA/Q9.1)	•"Contractor had some issue internally, during piling works. They took long time to start the work and supply goods and resources to site. Resource issue were there with the piling sub-contractor too. We called upon meetings and pressurised. We asked the Contractor to prepare catch up programmes for the situation. We asked them to do work parallel and increase the staff. Increase the gang size, we somehow tried to let them absorb the delay to the initally agreed total project duration according to the contract."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.1)	•Every instruction should go through me. . I am the only engineer's representative and letters are valid if only passed through me. I am the only one here instead of Director General. I have delegated some authority to Resident Engineer (RE). She gives instructions either through log notes or forward the head office people's instructions. Otherwise there is no limit for everybody giving instructions. We strictly follow the contract conditions in instructions."
Project Structural Engineer (C/PSE/Q11.4)	•"If Contractor is doing anything wrong, we have to check on those. Client directly check do not engage with the Contractor. They talk to us only. It avoids confusions"

C2.5 Basic Assumptions on Nature of Time

C2.5.1 Long term relationship with the Client was more important than with the Contractor (Cnsl C 5 01)

Project Architect (C/PA/Q14.8)	•"We always value continuing relationship to get the next project of the client. I have many experiences where many clients always call us for the next building projects of them. If we take divisional secretariats, they will definitely give every project to us and non-other. That culture is there in our organisation ery clearly. But that is not there with the contractor I think. Mostly Consultant works close with contractor, but I have never seen the same contractor working continuously with us. They tender and come in and their appointment will be a coincident. So no big concern."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q14.8)	•"As a government consultancy organisation, we heavily depend on public sector clients. Therefore, we try to keep a long term relationship with the Client."
Project Structural Engineer (C/PSE/Q14.8)	•"We always give priority to client. We can get future projects. Nothing special with this project. It is our way for every project. So we consider continuing relationship.Nothing speical with the Contractor

C2.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

C2.6.1 Not innovation, only conformance was practiced in a public sector construction project (Cnsl C 6 01)

Project Architect (C/PA/Q10.7)	•"For contractor allowance for innovation is zero. Our consultant engineers have limited knowledge in design. For example, if Contractor comes up with a new design at least for the formwork, then if it is not included in the British Standard, then it is being rejected by our consultants. Structurally contractor is not given any chance for any new attempt to get a new experience or new experiment. Architectural innovation depends on the client. Funding is an issue. I faced budget limitations when designing this building to suit British Colonial era. Then again, there are standard, and if we cannot achieve the standard within the cost effective innovation, then it is a problem. When we try to do it in a private sector project, only I and the client become responsible for it. When I try to an innovation in public sector, then all my superiors also become responsible for it. Then due to their possible influence, I avoid doing innovations.."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.7)	•"I think we should not have frill works, as mouldings in government buildings. Those are not at all required for a government buildings, according to my personal view. Because we have maintenance issue in government buildings in Sri Lanka. They find it difficult to paint walls even. When moulding work is there, water tend to retain in those. We cast mouldings and if reinforcement work is not done properly, those get corroded and the moulding work tend to have cracks. I think durability of the building get affected with those features in a country like Sri Lanka.."
Project Structural Engineer (C/PSE/Q10.7)	•"When we provide the Contractor with the structural engineering drawings, we expect them to do it exactly as we have designed. Everything depends on the structure of the building. So we never want them to do changes to it here and there. It would be a huge risk"

C2.7 Basic Assumptions on Unknowable and Uncontrollable

C2.7.1 Decisions made by public sector clients were uncertain (Cnsl C 7 01)

Project Architect (C/PA/Q6)	•"There is a speciality in designing a building for public sector than for private sector. The main person representing the client can get changed several times within the project life cycle. If we work for the private sector, we cater for an individual person, his taste, we get the client brief and convert into the architectural brief. But here, the client brief changes once the head of the client changes. So what we discuss and finalize with the initial client changes. In this project, though we took the briefing for the carder, the initial client's representative (Secretary) wanted the building have the image of a building from British era in Sri Lanka. So we designed to suit his requirement. But it was not the same when the new Secretary was appointed. He had some different requirements."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q10.7)	•"The new Secretary requested to remove some moulding works to save cost. He is more focused on obtaning the maximum facilities for the end-users than architectural features of the building."
Project Structural Engineer (C/PSE/Q9.6)	•"While work goes on, Client requires to change different aspects. It is compulsory for any project. So we too try to revise and help them since they are the ones going to live in those buildings."

C2.7.2 Consultant was responsible for the ultimate time, cost and quality of the project (Cnsl C 7 02)

Project Architect (C/PA/Q11.4)	•"I think majority of the responsibility of time, cost and quality resides with the consultant. This is because client is normally a layman. Contractor will play, if there are loopholes made by the consultant only. This is if we do not do the time management properly or if we do not do cost management properly.
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q11.4)	•"Consultant is responsible for project outcomes. Because they provide all estimates to the client and rate those. Contractor has to do the work physically in real, operationally handling. But consultant happen to take the responsibility later. Happen to take the responsibility of cost definitely.
Project Structural Engineer (C/PSE/Q11.4)	•"I think consultant is responsible for achieving time, cost and quality fo the project because, client gives us the project. We tender, evaluate and select the contractor. We have to get the work done from the contractor being selected. If contractor is doing things wrong, we have to check on those. Client directly do not engage with the contractor. They talk to us only."

C2.8 Basic Assumptions on Gender

C2.8.1 all genders were treated equally in construction projects (Cnsl C 8 01)

Project Architect (C/PA/Q13.4)	•"We work with female memebers within the team. Gender is not a major consideration in design context, if you have adequate knowledge."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q13.4)	•"I think either it is a male or a female working for the consultant or contractor, everything depends on attitudes. After learning something, if we do not have the attitude or necessity to do something properly, nobody does it properly. It is something that has to come from childhood."
Project Structural Engineer (C/PSE/Q13.4)	•"I am also a female. No issue in working with males or females in consultancy practice. No gender descrimination I have experienced. All are equally talented and treated."

C2.10. Basic Assumptions on State-Individual Relationship

C2.10.1 Satisfying the public sector client should not be beyond providing a righteous consultancy service to the government (Cnsl B 10 01)

Project Architect (C/PA/Q9.4)	•"In this project client has given the full authority to Consultant. We do not see any bias of client. Whatever the decisions given by us is carried out by the contractor. I have experience in private sector too. We see consultant going behind and obeying the client all the time. But it is better in public sector. Because in public sector, once the work is given to us, we do not offer things to the client's say. We always depend all our decisions on quality even though client is against us. We send letters saying and justifying the correct thing and always try our best to initiate what is best for the quality."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q14.8)	•"We normally work for government projects. So maintaining relationship is important. We cannot anyway work with broken relationships. But if even Client or Contractor intervenes to the achievement of quality of the project, I will definitely work against it. So even relationship can be damaged by that."
Project Structural Engineer (C/PSE/Q14.8)	•"We are working for the government, as the consultancy organisation and the project we are involved in. We should always be careful how we spend money and what decisions we take."

C2.11. Basic Assumptions on Project Organization's Relationship to its Environment

C2.11.1 Government clients received concessions in legal aspects (Cnsl C 11 01)

Project Architect (C/PA/Q9.6)	•"According to Urban Development Authority regulations, for private buildings they allow only for 47feet. But there was a condition that we can go for upto the height of the tallest building close by. So as the architect, I should be giving the best we can give. So we brought three cross sections from three adjacent buildings and argued that gazette include the adjacent building height and we got the permission. Somehow the clause of the gazette was amended following our approval since all three buildings of which I brought the cross sections were illegal buildings. Gazette was silent without mentioning legally approved buildings."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q9.6)	•"Actually it is difficult to finish these projects without working at night. It is difficult to transport concrete within Baththaramulla area during daytime. So according to the law here we cannot work night. However, access also an issue with the access road being very narrow. Still the road it yet to be constructed. So during concreting, our officers are staying with the contractor and we have allowed such work at night."
Project Structural Engineer (C/PSE/Q9.6)	•"We were able to get approvals for height restrictions somehow"

C2.11.2 Contractor’s organisational management system was directly affecting on project matters (Cnsl C 11 02)

Project Architect (C/PA/Q13.4)	•"This Contractor's quality management was not very good. There are better privaet sector contractors who have great quality management systems. Quality is something they have to build as a culture within the organisational system. It is difficult to expect them to bring a best system only for this project."
Regional Chief Engineer (Zone 1-Construction) (C/RCE/Q6)	•"I think Contractor's involvement is high, because cost is totally handled by him. If they had quoted the project to a very low rate, then they try to do the work at the lowest cost possible for them. Then it becomes tedious work for the contractor as they happened to find out low cost procedures. Then it affects time as it takes more time to find a good material at low cost. Now labour cost is very high. Then they try to find labour at cheap rates. Then it affects to the quality. Therefore to get a job done in better quality and speedily, I think contractor’s effort at least should be there to an extent of 70%."
Project Structural Engineer (C/PSE/Q11.3)	•"Delay occured becuase Contractor had selected a non-competent Sub-Contractor for piling. Not very good machinery were brought to site at the beginning. We had to tell repeatedly to get those changed. Machinery were not sound. Contractor has to reconsider how they select sub-contractors for their work."

C3 Client

C3.1 Basic Assumptions on Nature of Human Relationship

C3.1.1 Consultant had the legitimate control of the project (Clnt C 1 01)

Additional Secretary (C/AS/Q9.2)	•"If Consultant had pushed behind the Contractor and monitored the Contractor well, this project would have been finished less than 900 days I think."
Chief Accountant (C/CA/Q9.6)	•"Everybody works for our requirement. But, consultant is the one who contacts others for the meeting. When we convey our requirement, they only tell others using the technical terms. We can ask them to get us a room done in a particular location. Then they will instruct, from what it is made, where to grill, what length and width for the room. So I feel that it is to the consultant that everybody listens but, it is our requirement. They are the ones conveying those in technical terms. Contractor also listens to them. So consultant had the overall control..."
Public Management Assistant (C/PMA/Q10.3)	•"Technically, final decision is taken by the Consultant. If Contractor is making any change technically or if they want to get any approval for any suggestion, they refer to Consultant. Then Consultant only decides whether to approve the change or not. "

C3.1.2 A strong project management was essential for project success (Clnt C 1 02)

Additional Secretary (C/AS/Q9.2,14.1)	•"When the sub-contractor delayed the piling works, I came and held number of meetings, asked to bring new machines. First they brought some machines, but those machines broke due to poor quality. So we started shouting, called upon meetings and asked to bring new machines. I only intervened and did that. I called up a meeting and asked the sub-contractors also to attend and asked to put new machines. Otherwise could have got delayed than this...Now that responsibility has been over my shoulders. I have happened to drive the project. There is no project manager as such. Chief Engineer is looking after all projects in western province. He cannot do it since he is busy."
Chief Accountant (C/CA/Q14.1)	•"There is no designation as the Project Manager in this project. So Additional Secretary has happened to do that role. It is good if we could have a strong project management personnal for the project."
Public Management Assistant (C/PMA/Q14.1)	•"Additional Secretary has happened to drive the project. "

C3.1.3 The most effective way to get work done was through continuous monitoring and frequent pressurising (Clnt C 1 03)

Additional Secretary (C/AS/Q9.2,15.1)	•"We have sent several letters indicating delay in work. I think it is something we have to do. Not to punish. But to motivate...we complained, requested, held meetings, we somehow get things accelerated. Otherwise things will not happen."
Chief Accountant (C/CA/Q9.6)	•"We forced and the subcontractor was changed. A new sub-contractor was appointed. Then work went smoothly."
Public Management Assistant (C/PMA/Q9.3)	•"Contractor has a work schedule. It is revised and we force the contractor to finish it within the given time period. "

C3.1.4 Discussions gave results (Clnt C 1 04)

Additional Secretary (C/AS/Q9.2)	•"I came and held number of meetings and asked to bring new machines. First they brought some machines, but those machines broke down due to poor quality. So we started shouting, called upon meetings and asked to bring new machines. I only intervened and did that. I called up a meeting and asked the sub-contractors also to attend and asked to put new machines. Otherwise could have got delayed than this."
Chief Accountant (C/CA/Q10.2)	•"Apart from the bi-weekly meeting, there are special meetings. We need the input of all parties to make decisions."
Public Management Assistant (C/PMA/Q10.2)	•"When ever a problem arises, we call upon special meetings. In a construction project it is difficult to take a decision alone. Consultant opens up the problem. Contractor gives reasons. All partied should get-together to solve problems."

C3.1.5 Formal methods of communication was important, but effectiveness and efficiency in communication resulted in how much red tape was overcome within the process (Clnt C 1 05)

Additional Secretary (C/AS/Q14.9)	•"I think we should have both formal and informal methods of communication. Mostly what we do is, we visit the building and talk about lapses informally and then come to the meeting room and discuss formally. That is what is happening. We freely talk their and come and take the decision here. We have both. It is effective."
Chief Accountant (C/CA/Q10.1)	•"Informal means we talk verbally since we want to get things done soon. Small matters we communicate only over the phone. Some other matters we send through letters since we want to make them formal."
Public Management Assistant (C/PMA/Q9.3)	•"We use emails to make the process fast, but we ask them to send the original documents. Though we use emails, we make the process formal all the time. We do it carefully."

C3.1.6 Client depended on Consultant as the technical advisor (Clnt C 1 06)

Additional Secretary (C/AS/Q6, 9.1)	•"Consultant only give us advice on construction, handle it, monitor and control the project. We do not know construction. We do not know engineering. We say good, looking attractive, that all. We only measure through what we see. But all lapses in it would be identified by Consultant only...We depend on consultant for quality. We happened to involve tile slection during finishes stage. We came for checking. Still, we just came and had a look when they select the tile only. We had no knowledge to comment on those."
Chief Accountant (C/CA/Q6)	•"When we consider the consultant, they are very much important for us, as we do not have any knowledge on that. We are not into engineering field. We have a very limited knowledge. We go by general knowledge. So consultant is very important for us."
Public Management Assistant (C/PMA/Q9.3)	•"We send all documents we receive from the contractor to the consultant. Consultant only approve them. They only possess technical knowledge. Once they approve only we start to implement them."

C3.1.7 Contractor and Consultant always tried to defend themselves by passing responsibilities to each other (Clnt C 1 07)

Additional Secretary (C/AS/Q7)	•"There is an environment, where the contractor call me and asks we have a problem like this, what shall we do? That is how we called upon a special meeting today. So in order to sort out all problems only I summoned everyone. If they two get-together and do it, there can be problems. So I called upon a meeting to discuss matters. I arranged it by looking at their problems. We have arranged such meetings for several times. Then only things could be done quickly. "
Chief Accountant (C/CA/Q9.3)	•"Contractor sometimes writes letters to Consultant indicating their lapses with a copy to Client.They do not send it as a complain, but just to mention that the promised details were not received. They say these things have ben promised to be given during this particular meeting but not received yet. For example, Contractor had asked for the furniture layout and Consultant had agreed to provide by 5th December. Contractor depends on wiring for networks, lighting on that. They are waiting for furniture layout. They might not receive it even by 10th, 15th December. Then contractor writes a letter to us, with a copy to Contractor that these things have not yet received. "
Public Management Assistant (C/PMA/Q11.4)	•"Delays happen because of the contractor. It is the duty of the contractor to finish within the time schedule. If you point the finger to them, they will start telling there are issues with the consultant too."

C3.1.8 Contractor had close connections with the Client as a Client selected party to work for them (Clnt C 1 08)

Additional Secretary (C/AS/Q6, 9.1)	•"Consultant only give us advice on construction, handle it, monitor and control the project. We do not know construction. We do not know engineering. We say good, looking attractive, that all. We only measure through what we see. But all lapses in it would be identified by Consultant only...We depend on consultant for quality. We happened to involve tile slection during finishes stage. We came for checking. Still, we just came and had a look when they select the tile only. We had no knowledge to comment on those."
Chief Accountant (C/CA/Q7)	•"There is an environment, where the Contractor calls me and asks we have a problem like this, what shall we do? That is how we called upon a special meeting today. So, in order to sort out all problems only I summoned everyone. If they two get-together and do it, there can be problems. So I called upon a meeting to discuss matters."
Public Management Assistant (C/PMA/Q9.3)	•"Normally Contractor informs us if there are problems with the Consultant. This is more in informal terms."

C3.2. Basic Assumptions on Nature of Human Nature

C3.2.1 Rare appreciations and constant highlighting of mistakes and punishments were available in construction projects (Clnt C 2 01)

Additional Secretary (C/AS/Q15.1)	•"We have sent several letters indicating delay in work. I think it is something we have to do. Not to punish. But to motivate. I normally send letters indicating the responsibility of both Contractor and Consultant, not pointing out to one party mostly."
Chief Accountant (C/CA/Q15.1)	•"We have never thought about appreciating any party. If someday we happen to give a letter of appreciation, we would give it. Other than that no specific thoughts on appreciations. I think punishments are mentioned on the contract itself. If Contractor delays the project we are entitled to charge liquidated damages from them."
Public Management Assistant (C/PMA/Q15.1)	•"We inform dissatisfactions in writing. We have sent. There is a delay, and ask to attend to it soon."

C3.3. Basic Assumptions on Nature of Reality and Truth

C3.3.1 Procedures were a priority for public sector clients (Clnt C 3 01)

Additional Secretary (C/AS/Q9.6)	•"Initially, we wanted to handover the building construction and piling to two seperate contractors. This is during we were preparing the tender documents. However, the representative from the treasury did not allow us for it considering a clause in the cabinet paper. He said procedure was to award both under a single contracts. But we were against that. We wanted to have piling and building construction as two seperate contracts. But however, it was carried out as one following the rules."
Chief Accountant (C/CA/Q10.4)	•"We got restricted to government regulations, we could not negotiate and appoint anyone, so we happened to go for competitive bidding with this price. We had no options. We thought about this Contractor at first and forwarded the proposal to the cabinet. Then we were instructed from the cabinet asking not to go for this specific contractor and go for competitive bidding. However, the same Contractor got selected from the open tendering too."
Public Management Assistant (C/PMA/Q10.3)	•"Contractors are being developed with new concepts and ideas. But we and Consultant go on with old systems. We follow government approved schedules. So there is a conflicts between the two."

C3.4. Basic Assumptions on Nature of Human Activity

C3.4.1 Client was the most powerful member in the project team (Clnt C 4 01)

Additional Secretary (C/AS/Q8)	•"We, Client is powerful. We are one of the most powerful commissions. So each of these government servants should come to us, to get their work one, including all staff of Consultant. But we do not force a lot. They listen to us and do the needful. They cannot go beyond us. They have a fear for us. That is why it was told in the meeting bu Director General that if it is this Commission, we can get anything done. But we do not use it. But everybody knows we are powerful."
Chief Accountant (C/CA/Q11.4)	•"We have given the job to the consultant, since we are not capable of doing it by ourselves. So consultant should get it done for us."
Public Management Assistant (C/PMA/Q8)	•"Whatever happens in the project, everything depends and bases on client. Even consultant acts accordingly. So it is the Client who is the most powerful."

C3.5 Basic Assumptions on Nature of Time Units

C3.5.1 Continuing relationship was not a concern with Contractor or Consultant (Clnt C 5 01)

Additional Secretary (C/AS/Q14.8)	•"Since we and Consultant are goernment organisations, we two can meet again in another project. However, we have no concern on paying special attention about relationship. But we work cordially with everyone in the team."
Chief Accountant (C/CA/Q14.8)	•"For the time being, we do not have any future project with this consultant. So no big concern on continuing relationship. We do not care for that. We never try to blame anyone that could damage to the relationship, all three are professional bodies, we discuss and sort of stuff.
Public Management Assistant (C/PMA/Q14.8)	•"We do not care about coninuing relationship with Cosultant or Contractor. Less probability of meeting the same Contractor, since we go for open tendering. We have no future projects coming in too."

C3.6 Basic Assumptions on Acceptance of Homogeneity or Diversity

C3.6.1 Consultant and Contractor were bound to deliver what was agreed in the contract under any circumstances (Clnt C 6 01)

Additional Secretary (C/AS/Q11.4)	•"I think both contractor and consultant are liable to deliver what is agreed under the contracts. We do not have any delay from the client's side. We fulfil any requirement soon they ask for. This is one of our requirements. We only have the urgency to finish this. So whatever requested, we provide within one or two days. So they too should be the same."
Chief Accountant (C/CA/Q9.1)	•"We are from the government sector. We have a budget. Annual budget allocations are there. Also in the agreement between contractor and us, there is a period mentioned as 900 days. Accordingly, we have to finish the work within that period is something and also we are on rent, since we have a budget allocation, we have agreed with the treasury that we will seize paying a rent and will move on to our own place...Even contractor knows that project should be finished within 900 days. We also know that we should move from this place by that time. So we want to get the building finished by that time. That is what we care much at this point. Concerns on quality and cost are still there. But priority is time."
Public Management Assistant (C/PMA/Q11.1)	•"Consultant has the complete responsibility of technical issues. Now, we carry out annual audits, if there is an issue, we can track."

C3.6.2 Not innovation and only conformance was expected from the project team (Clnt C 6 02)

Additional Secretary (C/AS/Q10.7)	•"We have signed a construction contract. So we follow the agreement. We expect that. We cannot go beyond that. So we have to monitor and have them follow the contract."
Chief Accountant (C/CA/Q10.5)	•"When we take piling, there are tests for piling. We know those tests have been carried out. During meetings they discuss whether a particular test is passed or failed. That is a one standard way of checking the quality of the work. Accordingly we decide that quality has been achieved."
Public Management Assistant (C/PMA/Q10.3)	•"Contractors are being developed with new concepts and ideas. But we and Consultant go on with old systems. We follow government approved schedules. So there is a conflicts between the two. It is difficult to explain it technically for you. But we observe it."

C3.7 Basic Assumptions on Unknowable and Uncontrollable

C3.7.1 Uncertainties in decisions were unavoidable in public sector projects (Clnt C 7 01)

Additional Secretary (C/AS/Q9.6)	•"All problems occured with piling works was becuase an unsuitable sub-contractor got selected, since we could not award the piling works seperately to another contractor. We tried to award piling works to a different Contractor, however, due to the cabinet paper clause we had to award the main work and the piling works to the same contractor."
Chief Accountant (C/CA/Q10.5)	•"We got restricted to government regulations, we could not negotiate and appoint anyone, so we happened to go for competitive bidding with this price. We had no options. We thought about this Contractor at first and forwarded the proposal to the cabinet. Then we were instructed from the cabinet asking not to go for this specific contractor and go for competitive bidding. However, the same Contractor got selected from the open tendering too."
Public Management Assistant (C/PMA/Q10.6)	•"With the change of the Secretary to the Commisison, project requirments changed. Partition lay out was totally chnaged resulting in variations in electrical and network and data cabling works too."

C3.8. Basic Assumptions on Gender

C3.8.1 Gender was not a concern to work in a construction project (Clnt C 8 01)

Additional Secretary (C/AS/Q13.4)	•"We do not see any problem by assigning females or males. There are females in the project. No issue. If they have the knowledge to perform the required role, then it is alright."
Chief Accountant (C/CA/Q13.4)	•"No effect of gender. Even I am a female. No issue in working for the project."
Public Management Assistant (C/PMA/Q13.4)	•"No issue of gender. We get our work done."

C3.9 Basic Assumptions on Motive for Behaving

C3.9.1 Client was liable to make timely payments to the Contractor (Clnt C 9 01)

Additional Secretary (C/AS/Q9.4)	•"We have funds, we can pay and I am able to say that straight. We will not delay a single day, we will pay. Funds are not a problem, I can give as much required if work is progressing."
Chief Accountant (C/CA/Q9.3)	•"When they ask for cash we release cash. We never delay cash. When we are asked to get any clearances, we get those done for them without any delay. We are keep doing those things at the moment."
Public Management Assistant (C/PMA/Q9.3)	•"All bills comes to me to forward for payments. I never delay and provide full support for timely payments to Contractor and Consultant. We have enough funds and can make timely payments."

C3.10 Basic Assumptions on State-Individual Relationship

C3.10.1 Laws should be lenient on public sector clients (Clnt C 10 01)

Additional Secretary (C/AS/Q9.4)	•"We took all environment related reports. There is no issue. Everybody liked to transfer us the land, but number of parties got involved with that such as Provincial Council, District secretariat, Urban Development Authority. When all get involved, it was bit difficult to get the transfer done. This is to transfer the land title to us. We got the approvals easily being a government organisation."
Chief Accountant (C/CA/Q9.4)	•"There was a height restriction for buildings in this area. We cannot go beyond 3 storeis. Our building is 5 storied. But we got it somehow."
Public Management Assistant (C/PMA/Q9.3)	•"Obtaining legal approvals was easy since we are a powerful commision in the country."

Annexure 6: Integration, Differentiation and Fragmentation Perspectives of Basic Assumptions of Public Sector Construction Projects in Sri Lanka

Cultural Dimension	Questions to be Answered	Abstract Basic Assumptions of Contractor			Abstract Basic Assumptions of Consultant			Abstract Basic Assumptions of Client			Integration /Differentiation/Fragmentation Perspectives of Abstract Basic Assumptions of Construction Project		
		Dominant Own World View	View on Dominant World Views of Consultant	View on Dominant World Views of Client/End-User	Dominant Own World View	View on Dominant World Views of Contractor	View on Dominant World Views of Client/End-User	Dominant Own World View	View on Dominant World Views of Contractor	View on Dominant World Views of Consultant	Contractor's Own World View	Consultant's Own World View	Client's Own World View
1. The nature of human relationships	A1 - What was the best authority system for the construction project?	Autocracy of Unbiased and Dedicated Leader			Individual Role Authority		Client's Autocracy (Consultant A,B)	Consultant's Autocracy			Autocracy of Unbiased and Dedicated Leader *(Fragmentation)*	Individual Role Authority *(Fragmentation)*	Autocracy of Consultant *(Fragmentation)*
	A2 - What was the best way to organize project society?	Groupism (Contractor A,B) Individualism (Contractor C)	Individualism	Individualism (Contractor B)	Individualism		Individualism (Consultant B)	Individualism (Client A,B) Groupism (Client C)			Individualism, Groupism *(Integration/Differentiation)*	Individualism *(Integration/Differentiation)*	Individualism, Groupism *(Integration/Differentiation)*
	A3 - What was the correct way to relate to each other, to distribute power and affection within project context?	Competitive			Competitive/ Cooperative	Competitive (Consultant A,C) Cooperative/ Competitive (Consultant B)	Cooperative	Cooperative	Competitive	Competitive	Competitive *(Differentiation/ Integration)*	Competitive/ Cooperative *(Differentiation/ Integration)*	Cooperative *(Differentiation/ Integration)*
	N1 - What was the acceptable space for cognitive, emotional and behavioural connections?	Distanced with Consultant and Contractor (Contractor A) Close with Consultant/ Distanced with Client (Contractor B) Close with Client/ Distanced with Consultant (Contractor C)			Close with Client/ Distanced with Contractor (Consultant A) Close Connection with Contractor/ Distanced with Client (Consultant B) Distanced with Client and Contractor			Close with Consultant/Distanced with Contractor (Client A) Distanced with Contractor and Consultant (Client B) Close with Contractor/ Distanced with Consultant (Client C)			Close/Distanced *(Fragmentation)*	Close/Distanced *(Fragmentation)*	Close/Distanced *(Fragmentation)*

					(Consultant C)								
2. The nature of human nature	A4 - What was the nature of human nature?	Evil	Evil	Evil	Evil	Evil	Evil	Evil	Evil (Client A)		Evil *(Integration)*	Evil *(Integration)*	Evil *(Integration)*
3. The nature of reality and truth	A5 - What was the way reality and truth to be defined within the project context?	Pragmatic Test Reliance on Wisdom (Contractor A,B) Social Consensus (Contractor B,C)	Objective Tests and Processes (Contractor A,C)		Objective Tests and Processes Pragmatic Test (Consultant A,B)			Pragmatic Test (Client A) Objective Tests and Processes/Pragmatic Test (Client B) Objective Tests and Processes/Social Consensus (Client C)			Pragmatic Test/ Reliance on Wisdom/ Social Consensus *(Differentiation/ Integration)*	Objective Tests and Processes/ Pragmatic Test *(Differentiation/ Integration)*	Objective Tests and Processes/ Pragmatic Test/ Social Consensus *(Differentiation/ Integration)*
4. The nature of human activity	A6 - What was the "correct" way for humans to behave within project context?	Fatalistic (Contractor A,C) Harmonising (Contactor B)	Client and Consultant Dominance (Contractor B) Consultant Dominance (Contractor C)	Client Dominance (Contractor A,B) Client and Consultant Dominance (Contractor C)	Contract dominance		Client Dominance (Consultant A)	Client Dominance Harmonising (Client B,C)			Fatalistic, Harmonising *(Differentiation/ Integration)*	Contract dominance *(Differentiation)*	Client Dominance, Harmonising *(Differentiation/ Integration)*
5. The nature of time	A7 - What kinds of time units were most relevant for the conduct of daily affairs within the project?	Past (Contractor A,C) Present (Contractor A) Future (Contractor B,C)			Future with Client, Present with Contractor			Past, Present			Past/Future, Past/Present *(Differentiation/ Integration)*	Future/Present *(Differentiation/ Integration)*	Past/Present *(Differentiation/ Integration)*
6. Acceptance on homogeneity or diversity	A8 - Was the team best off if it was highly diverse or if it was highly homogeneous?												
	A9 - Should individuals in the project team be encouraged to innovate or conform?	Conformance			Conformance			Conformance			Conformance *(Integration)*	Conformance *(Integration)*	Conformance *(Integration)*
7. Unknowable and uncontrollable	A10 - Did the team members tend to believe in	Believed in Contractual Control			Believed in Fate			No much Belief in Fate (Client A)			Believed in Contractual Control *(Differentiation)*	Believed In Fate *(Integration)*	Believed in Fate/ No much Belief on Fate* *(Integration)*

	fate/uncontrollability?							Believed in Fate (Client B,C)					
8. Gender	A11 - How should project society distribute roles, power and responsibility between the genders?	Among Both Genders, but Appropriately			Not Gender Concern			No Gender Concern (Client B,C) Among Both Genders (Client A)			Among Both Genders, but Appropriately *(Differentiation)*	No Gender Concern *(Integration)*	No Gender Concern *(Integration)*
9. Motive for behaving	A12 - What should be the motive for behaving within the project context?	Being-in-Becoming with profit motive			Doing	Being (Consultant A)		Being-in-becoming (Client A,C) Client into Doing, End-user into Being-in-Becoming (Client B)			Being-in-Becoming with Profit Motive *(Integration)*	Doing *(Differentiation)*	Being-in-Becoming *(Integration)*
10. The state-individual relationship	A13 - Should precedent right and responsibility be accorded the nation, individual or both?	Individual			Individual (Consultant A) Nation (Consultant B,C)			Individual			Individual *(Integration)*	Nation *(Differentiation)* *Individual *(Integration)*	Individual *(Integration)*
11. The project organization's relationship to its environment	A14 - Did the project organization perceive itself to be dominant, submissive, harmonizing or searching out a niche?	Submissive			Always Dominant for Client's aspects Dominant for Contractor's aspects (Consultant A) Submissive for Contractor's aspects (Consultant B,C)			Dominant			Submissive *(Integration with Consultant)*	Dominant for Aspects Under Client's Control *(Integration with Client)* Submissive for Aspects Under Contractor's/Consultant's Control* *(Integration with Contractor)*	Dominant *(Integration with Consultant)*