COMPUTER AIDED COST MODELLING AT BRIEFING STAGE

LINKED TO SMM

Anil Dissanayake
BSc (QS) Hons.

Construction Management Unit
Department of Civil Engineering

University of Moratuwa

Sri Lanka

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Paticca sammuppada

By examining the nature, the Lord Buddha came to realize that every thing is causally connected, causally related to each other. Everything operates and functions on the basis of this causal law. Dependent on certain causes and conditions, arise certain specific effects.

LORD BUDDHA

DEDICATION

This work is dedicated to my Father, Mother, Wife Asiri and Son Anuradha.

COMPUTER AIDED COST MODELING AT BRIEFING STAGE-LINKED TO SMM

ABSTRACT

Involvement of the cost advisors in the early stage of the building design process (briefing stage) for the forecasting of probable cost of projects is often minimal.

The traditional pre tender estimating techniques such as unit method, cost per unit floor area method, cube method, approximate quantities method and the like used to forecast the probable cost of projects are not satisfactory . This bars the cost advisor to make the fullest contribution in the early design stage decisions.

The surveys conducted in this research revealed the fact that local design practice with respect to design stage estimating is limited to unit method, cost per unit floor area method and later stage approximate quantities method and elemental cost method. The use of computer facility to automate tasks in local practice is very low. Quantity surveyors in design offices use spreadsheet software for calculations. Use of database software or other programming languages in the process of cost advice was not evidenced.

This research is, thus, aimed at establishing a computer aided cost model based on bill of approximate quantities properly linked to Standard Method of Measurement (SMM) with the flexibility in application during briefing, sketch plan and working drawing stages. Being linked to SMM, the proposed model ensures transformation of design and cost data into a BOQ prepared in accordance with SMM.

The current practice of using bill of approximate quantities for cost forecasting is limited to later stages of the design process since the method requires design information to work upon. This difficulty has been overcome in the proposed model by incorporating design and cost data libraries with computer manipulation.

A case study was used to generate quantities, compile historical design data, and provide causal relationships to the model. These data coupled with solution neutral design information were used to develop design data library and cost data library of the model which provide sufficient information to make professional judgements at the briefing stage.

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Finally, my special thanks go to my Wife, Asiri for her love, encouragement and moral support in this work.

DECLARATION

This is to certify that this research:

1. embodies the results of my own course of study and research,
2. has been composed by myself,
3. has been seen by my supervisor before presentation
4. has not been submitted in support of an application for another degree or qualification at this or any other university or other institution of learning.

Signature of the research candidate.....

Date: 25 January 2002

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ACT	- Alternative Cost Techniques
AI	- Artificial Intelligence
BCIS	- Building Cost Information Service
BOQ	- Bill of Quantities
CAD	- Computer Aided Design
CV	- Coefficient of Variation
GUI	- Graphic User Interface
IT	- Information Technology
KBES	- Knowledge Based Expert System
RDBMS	- Relational Database Management Systems
RIBA	- Royal Institute of British Architects
RICS	- Royal Institution of Chartered Surveyors
SLIA	- Sri Lanka Institute of Architects
SMM	- Standard Method of Measurement
UDA	- Urban Development Authority, Sri Lanka
VM	- Value Management