

**HEALTH AND SAFETY MANAGEMENT PRACTICES  
OF ROAD CONSTRUCTION PROJECTS IN  
SRI LANKA**

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University of Moratuwa, Sri Lanka.  
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Degree of Master of Science

Department of Building Economics

University of Moratuwa

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Dissertation submitted in partial fulfillment of the requirements for the Degree of  
Master of Science in Occupational Safety and Health Management

Department of Building Economics  
University of Moratuwa

Sri Lanka

August 2016

## DECLARATION

I declare that this is my own work and this dissertation 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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The above candidate has carried out research for the Masters Dissertation under my supervision.

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Dr. (Mrs.) Gayani Karunasena  
Dissertation Supervisor

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Date

## ABSTRACT

### **Health and Safety Management Practices of Road Construction Projects in Sri Lanka**

Road construction workers are exposed to hazards. This study attempts to identify, health and safety practices prevailing in road construction projects, issues and propose measures to mitigate. The study was confined to seven contract packages implemented under Northern Road Connectivity Project (Additional Financing) funded by Asian Development Bank (ADB). Five of them were located in the North Central Province while the other two were in Northern Province. Data was gathered through questionnaires, interviews and observations. Questionnaire comprised six major criteria, namely, training and supervision, safe work procedures, communication, reporting safety, management commitment and injury and return to work. Study revealed that workers are exposed to hazards of frequent and heavy lifting, noise and vibration, hazardous substances such as oil, gas, hydraulic fluid, welding fumes, heavy vehicle operation, working in blasting faces, clearing operations, slips, trips and falls, struck by, being struck by falling objects, hand-arm-whole body vibration, dust, sources of noise, electrical hazards etc. In asphalted areas workers are exposed to high temperatures and Polycyclic Aromatic Hydro Carbons (PAHC) which are carcinogenic. Working in excavated areas is prone to collapse of slopes. Workers are also prone to ergonomic issues caused due to manual handling and awkward postures. Main causes of accidents have been identified as fall from height, fall of objects, struck on stationary objects, struck by moving objects, struck on moving objects, caught in between, exposure to heat, exposure to electricity and exposure to harmful substances. Information gathered from 250 respondents revealed a high positive response in overall health and safety management practices. Five of the six criteria concerned showed a high positive response of greater than 78 percent. Communication recorded the lowest. Contract package wise comparison shows that P3 and P4 had a low positive response in the criteria concerned other than management commitment. Interviews conducted with Project Managers revealed a high commitment. Safety Committees were nonexistent in six of the seven packages except (P2). Observations revealed safety lapses such as working without PPE, working under unsafe conditions, non barricading hazardous zones, lack of warning sign boards and deploying non competent flagmen etc. It is recommended to conduct awareness programmes through Labour Department Officials prior to commencement of construction work, qualified Safety Officers should be employed, sites should be thoroughly inspected to eradicate hazards, work zones should be safe for workers, consultant's field staff should check adequacy of precautionary measures, importance of PPE should be emphasized, hazard areas should be properly barricaded, trained flagman should be deployed, records of toolbox meetings should be maintained, near misses should be recorded, Safety Policy should be accessible to all workers, officials from the Labour Department should visit the sites to check compliance.

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## Abbreviations

ADB	Asian Development Bank
HIRA	Hazard Identification and Risk Assessment
ILO	International Labour Organization
OHS	Occupational Health and Safety
OHSAS	Occupational Health and Safety Assessment Series
OHSMS	Occupational Health and Safety Management System
OSH&W	Occupational Safety Health and Welfare
PAHC	Polycyclic Aromatic Hydro Carbons
PPE	Personal Protective Equipment
PWD	Public Works Department
RDA	Road Development Authority
SD&CC	State Development and Construction Cooperation
TCEO	Territorial Civil Engineering Organization
WHO	World Health Organization



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