

**ANALYSIS OF OCCUPATIONAL SAFETY AND
HEALTH ISSUES RELATED TO VERTICAL
TRANSPORTATION DURING CONSTRUCTION OF
HIGH-RISE BUILDINGS IN SRI LANKA**

LUVARAJ.S

JUNE 2023

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Luvaraj Sivasubramaniam

(189416 C)

Masters of Science in Occupational Safety and Health Management

Department of Building Economics

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Luvaraj Sivasubramaniam

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Thesis /Dissertation in partial fulfillment of the requirement for the degree Masters
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DECLARATION

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Name of the supervisor: Ch.QSIndunil Seneviratne

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ABSTRACT

Analysis of Occupational Safety and Health issues related to Vertical Transportation during construction of high-rise buildings in Sri Lanka

Increasing the height of buildings develops complications on vertical delivery. The higher the building is constructed; it requires managing the vertical transportation effectively. Further, it helps to move the workers and the machinery to the designated floor as planned without compromising on time. With respect to labor, vertical movement requires more time in high-rise construction than in low-rise construction. Chances for OSH hazards are more in high-rise building construction, which led to economic, social, psychological, and physical effects. Subsequently, this results in low productivity and efficiency.

This research aimed to propose solutions to mitigate Occupational Safety and Health issues in the high-rise construction projects with respect to the vertical transportation of Materials and Workmen. The multiple case study method was utilized since this study has to focus on the detailed decisions and behavioral attitudes of individuals and groups. Semi-structured interviews were used to gather data, which was then, evaluated using the content analysis. Finally, the framework was developed with findings of the study to mitigate the hazards.

The study's conclusions showed that the organization will profit economically, improve health and safety from proper management of the site's hazards. Several hazard-mitigating measures were proposed such as preparing a method statement & HSE Plan, the necessity of having a separate branch to manage safety-related matters under the supervision of the HSE Manager, providing awareness or training programs, regular meetings, and proper reporting procedures for unsafe acts and conditions. Addressing these hazards effectively would obtain the full advantage of using vertical transportation to the organization that helps to achieve the target without compromising time and cost.

Keywords: *Construction, High-Rise Building, Vertical transportation, Safety, Hazards.*

DEDICATION

*This dissertation was dedicated to my beloved
family for their unconditional love that
motivated me to set higher targets.....!*

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This dissertation was made possible by the significant commitment of many people and organizations, as well as the outstanding help they provided. Many individuals stood behind me, encouraging and directing me down the right route while really hoping for my success. I should note that the words that follow will not do justice to my sincere thanks for the numerous tremendous contributions that helped me much. However, I would want to use this moment to thank them all.

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LIST OF ABBREVIATIONS

CPB	Concrete Placer Boom
HLE	Heavy Lifting Equipment
HRB	High Rise Buildings
HSE	Health and Safety Engineer
LKR	Sri Lankan Rupees
OSH	Occupational Safety and Health
P & M	Plant & Machinery
PMV	Plant Machinery and Vehicle
SL	Sri Lanka
SWP	Safe working Procedures
TC	Tower Crane
VT	Vertical Transportation

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