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Study on Risk Management of Occupational Safety and Health in Silpi Construction

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ABSTRACT: During the last decades there has been a growing awareness about occupational safety and health risk by the various interested parties in the construction industry. However, despite the substantial improvements achieved, the rate of accidents is still significantly higher than in most of the other industry. Two major reasons have been used to explain this high rate of accidents in the construction industry. 1. The intrinsic riskiness due to the nature of the activities and the particular characteristics of construction projects and organisations and 2. The financial and economic issues regarding the implementation of additional safety measures in a growing competitive market. This companion paper is presented in two parts. The major lines of research and contributions in the field of occupational safety and health in the construction industry. The review covers occupational safety and health research, organized in accident understanding studies, accident analysis studies and accident modelling studies, and occupational safety and health and risk management, in particular risk criteria and limits.

I. INTRODUCTION

1.1 General: Occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards. Health has been defined as “A state of complete physical, mental, and socio well-being and not merely the absence of disease or infirmity”. Occupational health is a multidisciplinary field of health care concerned with enabling on individual to undertaken their occupation, in the way that causes least harm to their health.

Health has been defined as it contrasts, for example, with the promotion of health and safety at work, which is concerned with preventing harm from any incidental hazards, arising in the workplace. Importance:

- To ensure a safe and healthy work environment
- All employers have duties under the health and safety in environment.
- Good health and safety management practices.
- Provide information, training and supervision for employers.

1.2 Concept: Occupational health and safety is concerned with protecting the safety, health and welfare of people engaged in work or employment. The enjoyment of these standards at the highest levels is a basic human right that should be accessible by each and every worker.

1.3 Requirements:

- Provide employees with the skills and knowledge.

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- Provide sufficient information for managers.
- Provide the capabilities the personal with OSH responsibilities.

1.4 Responsibilities of employers:

- Provide and maintain a safeworkingenvironment.
- Ensure the safe use, storage and handling of substances.

1.5 Responsibilities of managers and supervisors:

Managers and supervisors have responsibilities on behalf of their employer, but must also comply with their requirements as employees. It is their responsibility to:

- Act as rolemodels
Identify assess and control hazards

II. METHODOLOGY

(1) LITERATURE REVIEW

Many journals are collected and studied which gives a clear understanding of the research topic. It explains different aspects relevant to the study conducted here.

(2) DATACOLLECTION

The data collection is a survey questionnaire. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of the gathering information from respondents. Questionnaires are also sharply limited by the fact that respondents must be able to read the questions and respond to them.

(3) MANAGEMENTHAZARD

- Identify thehazards
- Identify all affected by the hazard andhow
- Evaluate therisk.
- Identify and prioritize appropriate control measures.

The assessment should include practical recommendations to control the risk. Once recommended controls are implemented, the risk should be recalculated to determine if it has been lowered to an acceptable limit.

(4) HAZARD RISK MANAGEMENT

Hazard identification are assessment is an important step in the overall risk assessment and risk management process. It is where individual work hazards are identified assessed and controlled /eliminated as close to source (location of hazard) as reasonable and possible.

(5).PROCESS OF RISK MANAGEMENT

Hazard risk deals with accidental or fortuitous losses. These risk involve the potential for loss without any corresponding possibility of gain. To effectively manage risk, it helps to develop a systematic approach.

- Riskanalysis
- Riskcontrol

- Riskanalysis:

Risk analysis is the first and perhaps the most important step in the risk management process. The purpose of identify exposure to loss

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things that, if they go wrong, could cost of company money.

- Risk control:

Risk control involves any strategies or techniques you can implement to lower the frequency or severity of a loss exposure. Risk control includes safety, claims management and resources.

- Management onsite:

Employers with project supervisors must cooperate and protect workers health and safety. This can be achieved by:

- ❖ Avoiding risk to all workers
- ❖ Evaluating risks that cannot be avoided
- ❖ Combating risks at source
- ❖ Using collective measures to protect workers

(6).IMPLEMENTATION OF PERFORMANCE:

Safety is an important issue, but many employers do not feel it is vital to the success of companies. For a long time, the construction industry has been labeled as with poor OSH culture and performance.

(7).PRECAUTIONS OF SAFETY AND HEALTH:

Before work starts on site, For example by:

- ❖ Putting in place a purchasing policy for machinery and work equipment(for example, buying tools with low noise and vibration emissions)
- ❖ Setting health and safety requirements in tender specifications(meeting national legislation as minimum)

III. DATA COLLECTION

Questionnaire Survey: The questionnaire survey was a stage of part one of the research. In the stage was the aim was to determine perception of the key project participants of the critical risks identified. The selected construction site was multi-storey buildings with more than 10 storey's. 20 site managers, 30 supervisors' and 240 workers (from 20 construction sites in the same construction company). The respondents in terms of their level of involvement in construction, Gender, employment status, level of education, construction related qualification and experience, exposure to injury and illness, construction health and safety training and information. This stage helped to categorize the health and safety risks perceived by silpi and VSSC construction siteworkers.

IV.IMPLEMENTATION PERFORMANCE

1. **Classify construction activity:** In particular, the following information about each construction activity should be gathered as part of the classification process:

- The duration and frequency of the tasks involved;
- The location of the work
- The number and trade category of workers that will execute the work be exposed;
- The other parties that might be affected by the work;

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- The training which workers had received about the tasks to be carried out;
- The distances and heights that building materials have to be moved manually;
- The nature, quantity, physical form and hazard data sheets of substances used
- Hazards and or potential hazards;
- Controls in place;
- Levels of risk, and

Action to be taken once assessment is completed (BS 8800:1996) 5.2.2. Identify hazards:

All the significant hazards related to each construction activity should be identified. In particular, consideration should be given to which workers will be exposed and what the consequences of such exposure might be. Methods to identify and categorize hazards have to be established.

2. Set safety objectives and performance requirements:

Objectives to increase or reduce something should specify a numerical figure and a date for their achievement, objectives to introduce a safety feature or eliminate a specific hazard should be achieved by a specified date; and objectives to maintain or continue existing condition should specify existing level of activity.

3. Risk assessment:

This assessment could form part of an integrated approach to risk management with in overall business strategy. The risks associated with the particular activity will be based on either the contractor's own experience or the experience of the industry.

A risk assessment pro forma may be used to record the finding of an assessment effort. This form, for example should cover:

- Details of the work activity;

Strategies are outlined in the contractor had several options with which to ensure that safety objective was met of preventing falls from scaffolds-all of which would have satisfied the requirements-based regulations. The contractor could have used any of the following

- A new method;
- A newly developed individual fall arrest system;
- An innovation patented scaffolding system;
- An improvement to existing work practices within the organization ; or
- An established industry or company safe working practice.

4. Design risk control plan and select method of measuring performance:

Contractors can do both the steps of designing the risk control plan and selecting the method of measuring performance at the same time.

5. Review and performance: The final stage in the implementation process is the review of the performance requirements by measuring the outcome indicators to determine whether the control plan was effective and safety objectives achieved. Where the performance requirements were not met, new performance requirements might have to be established. In this event, different outcome indicators might have to be decided upon. It is also likely that a new or revised risk control plan might have been drawn up, the plan implemented, the outcome indicators measured.

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IV. CONCLUSION

Understanding the concept of the OSH management system will help to understand the application of OSH management system in construction industry. The rules and legislation are always protecting the workers safety and ensuring healthy workplaces. The main purpose of the rules and legislation is to prevent accidents, health and injury at workplaces towards development of safety culture. Many companies who have implemented OSH management system have reported benefited from increased operational efficiencies, reduction in lost workdays, fewer accidents and medical claims, recognition by insurers and regulators and improved worker's retention and satisfaction. Organization with effective OSH management system earns positive returns and benefits on their health and safety investment.

This study also aimed to the current practice of health and safety risk management on sites, focusing on risk assessment, risk communication and risk control. The active participation of clients and design teams in the built environment in health and safety matters in silpi and VSSC is yet to be realized. The study also revealed that PPE is the main item used for riskcontrol.

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