A STUDY ON RISK ASSESSMENT IN CONSTRUCTION PROJECT OF AN EDUCATIONAL INSTITUTION

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Abstract

The risk involved in the construction works is relatively higher than the other works. The biggest challenge is to reduce the risks involved. Risk assessments include identifying risks, analyzing risk and controlling risk qualitatively by various methods. In this study, the Questionnaire checklist method is used to identifying the risk in the construction work, at an educational institution. Based on this, risk assessment is made to control the risks.

Keywords: *Risk assessment, Risk identification and Construction works etc….*

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1. INTRODUCTION

Construction means forming building systems. It involves planning, design and financing and continues until the structure is ready for habitation. Normally, the work is managed by a project manager, design engineer and construction engineers. Construction is a time consuming process as long as construction work is in progress. The risks present in the construction area also have the potential to cause harm to the construction workers, so risk assessment is supported out frequently to remove the threat since the construction area. Effective risk assessment eliminates the risk and provides safety to the workers while working in the construction site.

Risks can be defined as an event that negatively affects the project objectives, which are

1. Time and Schedule
2. Cost
3. Quality of work

A risk is nothing but a situation and is neglected by construction contractors and consultants while considering bids and tenders. The number of risks arising from a task is directly proportional to the number of people working on it. [3]

Some of the risks related with the structure process are fairly predictable or readily identifiable; others may be totally unpredictable [1].This study aims to better understand the risk assessment process and other risk processes. It has been already recognized that a strong accepting of risk innate by each member ready to improved risk distribution. The objective of this learning is to find means of finding the risk calculation and further methods that can be utilized by using checklist methods.

2. METHODOLOGY

Checklist analysis is the methodology used for this study. Detailed checklist has been prepared as per the construction work at the educational institution. Checklist analysis has been found to be simple and cost effective analysis, which can provide reasonable results. The checklist is prepared by dividing the whole work into 10 categories. It helps in detailed examination and analysis of the hazard and there by risk identification and risk assessment.

The checklist is divided into Excavations and Trenches, Scaffolding, Electricity and Lighting, Machinery and Equipment, Fire safety, Physical Hazards, Chemical Hazards, Psychosocial stress factors, First Aid and Emergency preparedness and Personal Protective Equipment (PPE). Data is collected by direct survey by using the prepared checklist, which provided a better picture of the hazards and risks.

3. ANALYSIS AND DISCUSSION

3.1 Excavations and Trenches

An excavation means earth removal by any manmade cut and trench to construct the base of building in the construction work. All excavations must be made safe against collapse. A trench means depth of an excavation and is larger than the width. In that institution all excavations are isolated properly to prevent accidental access and there is a safe means of access for the workers but the adequate protection to personnel in the excavation from falling material is not maintained properly.

3.2 Scaffolding

It is a impermanent assembly used to upkeep people and material in the erection or restoring of structures and extra-large assemblies. It is generally a sectional coordination of

metal pipes or tubes, although it can be from other materials. In that institution, scaffoldings are properly erected and inspected before use. Handrails, Midrails and toe-boards are maintained properly. But the safe access routes to work platform (Ladders or Stairs) are not properly maintained.

3.3 Electricity and Lighting

Power is the set of physical phenomena related with the existence and flow of absorbing charge. Lighting is the considered use of light to realize real or visual result lighting contains the use of together synthetic light sources like spots. In that institution the distribution of site electricity is planned properly, artificial lighting should be adequate for safety and quality but distribution boards and cables are not located and protected.

3.4 Fire Safety

It refers to protections that are occupied to stop or decrease the possibility of a fire that may outcome in death, hurt, or property loss, aware those in a assembly to the existence of an uninhibited fire in the incident of happens, to decrease the damage began by a fire. In that institution, the fire extinguishers are presented at noticeable places, Smoking is not tolerable on places where the explosive things are stored and lighting devices for site conditions are properly located. But the emergency exits are not properly and clearly marked and the workers are not trained properly.

3.5 Machinery and Equipment

Machine has a power source and measure a system of mechanisms that form the actuator to realize a exact application of productivity powers and movements. Equipment is a tools or supplies needed for a special purpose. In that institution, the machine and equipment are suitable for construction environment, footing and support are provided properly but there are no proper safety devices. Electric wires are in damaged condition and carrying maximum load beyond its capacity.

3.6 Physical Hazard

Physical hazard are substances or activities that threaten workers physical safety. They are the most common and are present in most work places. These include unsafe conditions that can cause injury, illness and death like fire, explosion, and chemical reactivity among many others. In that institution, the employees do not use appropriate earshot protections when the sound level is more than 85 dB. Hand vibrations are not avoided because of improper vibrating work methods and tools are not maintained properly.

3.7 Chemical Hazards

A chemical hazard is a substance that can cause harm to workers. Chemicals may cause harm by being touched or inhaled. These substances contaminate the area and are potentially dangerous. In that institution, the employees are not wear respirators and the material data sheets are not maintained properly.

3.8 Psychosocial Stress Factors

It refer to a process in the body, to the body common idea for adjusting to all the powers, alterations, demands and pressures to which it is visible. It is not just physical exposure which activates this plan however; mental and social does so as well. In that institution, workers have given a chance to rapid the opinions and thoughts of their work and developments in health and safety and also workers are instructed to follow the right working methods.

3.9 First Aid and Emergency Preparedness

First aid is the facility of first care for an infection or harm. It is generally done by non-experts, but qualified personnel to a sick or hurt person until medical treatment can be identified. In that institution proper first-aid equipment are available. But there are no trained employees to be given first-aid.

3.10 Personal Protective Equipment (PPE)

It helps to keep the wearer from the body injury. PPE reduce the exposure of employees from the hazards. It does not eliminate the hazard but it helps to reduce the impact of the hazard. It strains the workers who wear it and reduce the ability of their work being carried out. Good ergonomic design of Personal Protective Equipment can reduce their discomfort. In that institution, PPE cannot properly maintain.

4. CONCLUSION

The study results were obtained through checklist analysis conducted in educational institution. From that checklist, assessment of risk in the construction site of an educational institution is done. With the help of risk assessment the risks that are present in the construction site of an educational institution are determined previously to provide safe working environment to the construction workers. The management takes the responsibility to conduct the risk assessment periodically to eliminate the risk and allow the worker to work in a safe way. Since it is an educational institution, most of the construction safety aspects are neglected. But it leads to the hazardous situation for the construction workers in the site. They simply aim for finishing the construction work but not think about workers health. But workers health and safety are more important than any other. Construction work is an ever green work; it gives employment to most of the people considering the safety aspects will leads to safe working environment and save the life of the workers.

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