

Risk Management Strategies in Construction Companies in India

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Abstract

Risk Management comprises of identification of risk, quantitative or qualitative assessment of risk, selecting the most suitable method for handling risk then proper monitoring and documentation of risk. The risk may occur due to various technical, social and political reasons. Therefore an effective system to assess and manage the risk in construction companies is a challenging task for a civil engineer. In this paper various risk factors are identified and a survey is taken among the persons present at the construction site of different companies. Some risk management policies are suggested to overcome the spotted issues and provide a risk free environment.

Keywords: Construction site, Occupational risk, Recoverable injury, Risk management policies, Risk prevention

I. INTRODUCTION

Construction companies and firms in India such as the government consultants and contractors normally face different types of risks (e.g., environmental risk, physical risk, political risk, social and economic risk) during construction however most of the companies faces the possibility of loss or injury and someone or something that creates or suggest a hazard. Risk and precariousness inherent in the construction industry are more than other industries in India. The process of planning, executive and maintain all project work activities is complex and time taking. Risk is measured for three types of outcome: recoverable injury, unending injury and demise (Aneziris et al., 2012).project risk management is an integral part of the process which provides a proper, reasonable and orderly tool that helps contractor in analyzing , identifying and managing risk in a construction project this process is also the enables to know the strategies that suggest risk relocate, risk prevention, risk avoidance , loss cutback and insurance and financial loss minimization. In the construction industry if these risk are not deal adequately there is an outmost possibilities of financial loss , time delays and loss of life, outcome in disappointment of client and public(Danish et al.,2014). The whole process need s a myriad of people with various skill sets and coordination of a immense amount of complex and interrelated activities. The current study is centralized on concept of risk management and also will cover the related literature on the topic, development of a questionnaire survey and suggestions related to risk management in construction industry of India.

II. METHOD

A. Collection of Companies Data:

The most important work is collection of data and it is based on the survey and questionnaire of 6 construction companies in lucknow and kanpur namely: (A) Ivrc Enterprises, (B) Omaxe Limited, (C) Shakra Constructions, (D) Nagarjun Constructions and (E) Salimaar Buildsys Limited (F)CMR Construction ltd, which includes the risk component at the construction site. The data is randomly collected from different work load sizes of construction companies for last five years of construction duration [2]. The risk component of questionnaire were accident Fall from height-placement ladder, accident due to fall down from height-fixed scaffold, a temporary work erected around a building for convenience of worker , accident fall from height-roof, fall down from stairs or ramp, come in contact tangency with falling object-manual handling, come in impinging with object person which is carrying or using-handheld tools, come in work with moving or static vehicle, come in contact with open electricity-wires, come in contact with electricity-tool and electric section , come in contact with fire-firefighting work , the dupe of human aggression, the dupe of animal demeanor.[1]The mean and average value of the component from the questionnaire of 6 different-different construction companies was calculated (Annexure-I).

B. Risk Mitigation:

Having accepted the risk coverage, and measured probabilistically its possible impact, it is the accurate time to take achievement. The contractor will proper prepare advantageous risk management strategies. These strategies are usually depending on the nature and likely outcome of the risk. The aim of these strategies is to decimate as much as probable the likely impact and to

addition manage of risk. With this in mind, the result management composed of two steps: (a) melioration of substitute risk management planning and (b) testimonial and designation.

III. CASE STUDY

Annexure-I. Questionnaire-Risk factors collect at the construction site.

S.Num.	component (Number of People)	Years				
		one	two	three	four	five
1.	How many fall accidents from height-placement ladder?					
2.	How many fall accidents from height-fixed scaffold, platform?					
3.	How many fall accidents from height-de-installing scaffold?					
4.	How many fall down from stairs or ramp?					
5.	How many fall from height-roof?					
6.	Strike by vehicle and vehicular factors?					
7.	How many problems come in tangency with falling object?					
8.	Open electricity wire and electrical risks?					
9.	How many come in contact with fire-firefighting?					
10.	How many come in contact with electricity-tools?					
11.	How many are the victim of human aggression?					
12.	Guard from fire and the use combustibile materials, dangerous explosive?					

Table – 1

Risk component and their data mean for six years.

S.Num.	Risk factors	Years					
		A	B	C	D	E	F
1.	Falls from scaffolds or platforms	1	2	2	1	1	0
2.	Falling Objects	2	2	3	1	1	2
3.	Strike by vehicle and vehicular factors	2	3	2	2	1	1
4.	Guard from fire and the use combustibile substance, explosive (physical or Chemical)	1	0	1	0	1	0
5.	Electricity wire and electrical risks	1	2	1	1	3	1

(1) IvrcI Enterprises, (2) Omaxe Limited, (3) Shahara Construction,(4) CMR Constructions, (5) Nagarjun Buildsys Limited. (6) Salimaar group

Table - 2.

Risk component and its management strategies

Factor factors	Management Strategies
Falls from scaffolds or platforms	Proper use of safety Belts, safety wall nets and guardrails while working on height and open area, scaffold dock, fundamentals checks of scaffolds, cyclic safeguarding and judging of platforms and scaffolds.
Falling objects	Strongly fasten objects, which might fall, uniformly balance allocate loads on cranes and also check before using, use of exceptional protection tools and/or nets, check cyclic safeguarding and assessment and appraisal of lifting tools.
Strike by vehicle and vehicular factors	Drit-free up spills in roads, road exterior design, detach ordinary areas from vehicles routes and way, fixed Venetian blind spot mirrors and sub mirrors, cyclic protection and noticing of vehicles, lightning and driver's training updating too.
guard from fire and the use combustibile substance, explosive (physical or chemical)	Fire-resistant safety clothing, categorization of combustibile materials, use of private shielding Equipment, use of less flammable substances if feasible, maintenance and exposing training.
Electricity wire and electrical risks	Given a good instruction for work near high voltage lining and in situation where a vehicle might be area under discussion to voltage, use of individual shielding stairs Equipment, avoid handling illegal access to areas with high voltage lines and electricity problems, monitoring and measures for safe operational practices.

IV. RESULTS AND DISCUSSION

The function of mean and average value of the factor from the questionnaire of 6 construction companies was calculated, some of the important values of the factors were found to be very common which are mentioned in Table 1. The reason behind these factors values are very common for that the occurrence of risk in these construction sites i.e. falling target, tools which are manually handled, comes in link with passing hot or cold surfaces, fire hot type work, muscular extortions and harassment of the workers while moving around or during working and often they comes in face with the problem of physical explosion etc. The commonly occurring factors were studied, analyzed and their management strategies were mentioned in Table 2. Totally for six construction companies, the questionnaires were given, all the questionnaire survey and its data collection was done from the project manager of the project or the site engineer, quality department ,safety department in construction sites ,the contractors ,sub-contractors, supervisor , foreman and the companies workers which are working in construction sites. Based on the result of survey, there is an urgent required to improve the working circumstance, and also given the demonstration on safety rules and regulation , risk allocation in construction , life insurance and compensation categories to the workers as some firms or company

under the survey lack all these benefits for the workers & employed and it should be made necessary. In some firms, workers are not fully satisfied with the firms as there are no provided the insurance policy, compensation and not given the given the demonstration regarding construction safety rules at the construction site

V. CONCLUSION

Schematic risk analysis and management techniques are seldom employed by Indian construction industry owing to the lack of construction work experience and knowledge. Construction risk administration is playing an important role conception for each construction contractor. A prosperous contractor is obliged to be familiar with his worker and how to classify the work, analyze, take care of overall work and manage the risk in his construction site. A circumstance to facilitate does not happen often desires to have a methodical system, dependable advance that method its risk. Proper Estimates of strength of risk are based on the possibility of an incident taking place and the implication of any important of such an incident[6]. The study describe, on the basis of a questionnaire survey of general contractors which are work in Indian construction companies and risk management practices, the construction industry's awareness of risk related problems with its activities and the degree to which the industry uses risk analysis and management techniques. It concludes that the risk management concept is essential for construction activities in minimizing losses form and heightening productivity the further testimonial can be provided as risk management concept based on this study and from other sources: • Including safety management and occupational risks as an important part of every construction works. The compensation act 1923 (Indian Act) provide for necessary compensation purpose or according to the employer's policy system to the employee's family if death occurs while working (National policy on safety, India). • developing suitable principles for construction work system, codes of practices and using manuals on safety purpose and occupational risk (Ministry of labor and employment, India) (a) Increasing apprehension on safety, risk by using sign board, indication marks and poster whatever is necessary to avoid at the fullest level (according to Occupational safety and health administration, 1996). (b) To Provide first aid and fast medical facilities (Ministry of labour welfare society, India). (c) Life Insurance covers from reputed insurance companies like LIC, UTI,SUN RISE,etc under the liability for death of or injury to any person arising out the performance of the contract. (d) Some percentage of contract amounts should be kept and hold and used as life insurance, compensation which will be useful in case of any accident or injury. [5]

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