

RISK IDENTIFICATION AND RISK MITIGATION IN CONSTRUCTION TECHNOLOGY

Mohd Umar Reshi¹, Er Pooja Sharma², Er Mukesh Kumar³

¹M.tech Scholar, ²HOD Civil, Desh Baghat University, ³Assistant Professor, PPIMT College ,Hissar

Abstract: An investigation is made to find out the risk present in the construction projects (Design Build) in Kashmir. The study investigates to attain an overall idea about the major risks that may occur during a project handling in Kashmir.

Risk management in according to Project Management Institute (PMI) is one of the nine knowledge areas and the integration of an effective risk management is considered a crucial element for project success. Risk in construction project is defined as the uncertain event or condition that, if occurred has a negative outcome on a project's objective. The risk associated with a project depends on its type, size; complexity, location and involvement of parties, usually the main parties are client (employer), contractor and consultant.

I. METHODOLOGY

The work on the project was divided into two main parts. Pre study and main study Pre-study aimed at defining the theoretical basis and consisting of three steps viz. Literature review, choice of construction projects and Preparation of a questionnaire survey. The main study aimed at finding out how the risk management process worked in the projects and consisted of three main stages viz. Questionnaire survey, Interviews with the project participants and Analysis of the gathered data and presentation of the results

Result work

Questionnaire survey was undertaken to understand the perception of the Indian constructional professionals to the risk factors of design build project delivery system and Scale was adapted to identify the significance of risk factors as follows 1 Trivial, 2 Minor, 3 Moderate, 4 Major 5. Catastrophic. The questionnaire was sent to people who are in the construction industry and are of the following background: academician, client/builder, contractor, project management consultant, architect or engineering consultant and responses were received from each of the groups. Total numbers of responses received were forty-five.

Table 1: Experience of the respondents

Time of association with the construction industry		
Experience	Frequency	Percent
5 to 10 years	8	17.78
Less than 5 years	17	37.78
More than 10 years	20	44.44
Total	45	100.0

Table 2: Background of the respondent

Role in construction industry		
	Frequency	Percent
Academician	6	13.33
Client / Builder	7	15.55
Contractor	10	22.22
Project management consultant	11	24.45
Architect / Engineer Consultant	11	24.45

Table 3: Familiarity with design build

Familiar with design build		
	Frequency	Percent
Yes	45	100.00
No	0	0

Table 4: Respondent who were previously involved in DB project in their career

Involved in DB during career		
	Frequency	Percent
NO	16	35.55
YES	29	64.45
TOTAL	45	100.00

The questionnaire survey respondent were asked to rank the twelve risks on a scale of 1 to 5, indicating their perception on the significance of threat these risk pose on the project objectives of a Design build project vs the traditional Design-bid-build project From the responses obtained the mean rank for each risk factor obtained was calculated and the factors were ranked according to the mean rank. Table 5 gives the number of responses obtained and the mean score for each rank. The risks are ranked according to their mean ranks.

Table 5: Survey response analysis Descriptive Statistics: Ranking of risk based on severity of the threat on overall project objective in Design build project delivery system

	RISK	N (no of responses)	Mean	Mean Rank
1	Scope creep risk-DB	45	4.00	1
2	Changes in act/regulation after tender award	45	3.66	2
3	Delay in the approval process by client	45	3.64	3
4	Statutory permits and clearances risk	45	3.60	4
5	Payment / early cash flow requirement	45	3.55	5
6	Act of God /Force Majeure	45	3.44	6
7	Unrealistic schedule	45	3.28	7
8	Unforeseen geotechnical conditions at site	45	3.15	8
9	Delay in delivery of items, to be provided by the owner- DB	45	3.06	9
10	Market fluctuation, like inflation	45	3.00	10
11	Design error and omission requiring rework	45	2.93	11
12	Constructability of design	45	1.71	12

- [10] Namboodiri, Veena S. 2013. Risk Management in Construction Projects Using Primavera Risk Analysis. s.l. : Deptt. Of Building Engineering and Management, SPA Delhi, 2013.

II. CONCLUSION

The following risks were identified as the major risks in design build project delivery system:

1. Scope creep risk
2. Changes in act/regulation after tender award
3. Delay in the approval process by client
4. Statutory permits and clearances risk

REFERENCES

- [1] Engineers. American Society of Civil. 2003. The Management of Construction: A Project Life Cycle Approach. s.l. : Butterworth-Heinemann, 2003.
- [2] Institute, Project Management. 2013. A Guide to the Project Management Body of Knowledge. 2013. Fifth Edition, .
- [3] Jeffrey L. Beard, Edward C. Wundram, Michael C. Loulakis. 2001. Design-Build: Planning Through Development. s.l. : McGraw Hill, 2001.
- [4] Research paper Using a Risk Breakdown Structure in project management. Hillson, David. 2003. s.l. : Journal of Facilities Management, 2003, Vol. VOL. 2.
- [5] Douglas D.Gransberg, James E. Koch and Molenaar, Keith R. 2006. Project Administration for Design Build Contracts: A Primer for Owners, Engineers, and Contractors. s.l. : American Society of Civil Engineers., 2006.
- [6] Lakhanpal, Akshay. 2004. Project delivery using Design Build Contracting. NewDelhi : Department of Building Engineering and Mangement, SPA Delhi, 2004
- [7] Kamboz, Harmandeep Singh. 2009. Construction project risk analysis and management. s.l. : Deptt. Of Building Engineering and Management, SPA Delhi, 2009.
- [8] Managerial Response to Potential risks in Construction. Bhattachariya, Aparajita.1998.
- [9] Deptt. Of Building Engineering and Management, SPA Delhi, 1998.