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Impact Of Rework On Cost And Time Performance Based On Coimbatore Construction Industry

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Abstract

Rework has become a troublemaker in the construction industry, and it has not been given the required consideration; it contributes to time and cost overruns in the project. Hence, to improve the performance of projects, the study evaluated rework in 52 building projects in India. The factor contributing to rework, which was measured with different work categories, identifies the severity of rework. A questionnaire was self-administered on projects identified, and rework factors were ranked according to the degree of severity. This study develops the rework reporting system, which is used to facilitate information retrieval at any moment and to be used as a learning tool to prevent further rework events on future projects.

1. INTRODUCTION

Building projects all over the world involve many difficult tasks. These problematic tasks affect the delivery of projects within a specified time and the estimated budget. Most projects involve several contractors, suppliers, and trades that cooperate with each other and can thus affect development in other parts. In such a difficult situation, in which hundreds of events take place concurrently, errors, omissions, and misunderstandings often result in undesirable outcomes that must be reworked.

2. LITERATURE REVIEW

Alwi S., Hampson K., and Mohamed S, "Effect of quality supervision on rework in the Indonesian context" Asia Pacific Building and Construction Management Journal. This paper tries to explore the relationship between the quality of site supervision expressed as training cost, and the rework cost borne by contractors in high-rise building construction.

Hwang B., Thomas S., Haas C., "Measuring the Impact of Rework on Construction Cost Performance" Journal of Construction Engineering and Management. This paper assesses the effects of rework on construction cost performance for projects in various categories. Also, it identifies the sources of this rework and the development of rework reduction initiatives.

Aftab Hameed Memon et al. The result shows delay in design, lack of experience, late delivery of material and equipment, the relationship between management & labor, inadequate planning and scheduling, poor site management are the most common factor that causes cost overrun

L. O. Oyewobi, O. T. Ibironke, B. O. Ganiyu, and A. W. Ola-Awo, "Evaluating rework cost- A study of selected building projects in Niger State, Nigeria" Journal of Geography and Regional Planning Archival. In this paper cost, data were sourced using a structure research schedule, which was self-administered on projects identified to have experienced rework amongst the selected projects. Moreover, these were analyzed using a modest percentile to display at a glance the contribution of each of the building elements to rework**.**

L. O. Oyewobi, A. A. Oke, B. O. Ganiyu, A. A. Shittu, R. B. Isa and L. Nwokobia, "The effect of project types on the occurrence of rework in expanding economy" Journal of Civil Engineering and Construction Technology. This paper presents the workable mechanism to bring together the client and the contractor to minimize change orders and the introduction of additional works during the construction phase.

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3. OBJECTIVES & METHODOLOGY

OBJECTIVES

1. To determine the severity of rework and its occurrence in the Indian industry.
2. To identify the causes of rework
3. To identify the impact of rework on cost and time performance
4. To determine the satisfaction of the client and contractor.
5. To make recommendations on minimizing rework.

METHODOLOGY

1. Collection of Literature
2. Questionnaire preparation
3. Survey in companies
4. Analyzing the severity of rework with different companies
5. Aalyzing the impact of rework with time and cost
6. Analyzing the acceptability level of client and contractor with rework.
7. Recommendations to minimize rework.

4. QUESTIONER SURVEY

1. For the following work categories, how frequent were rework occurrences?
2. For each work category, indicate the cause of rework and its frequency.
3. What percentage increase in cost for each work category as a result of rework?

5. RESULTS & DISCUSSION

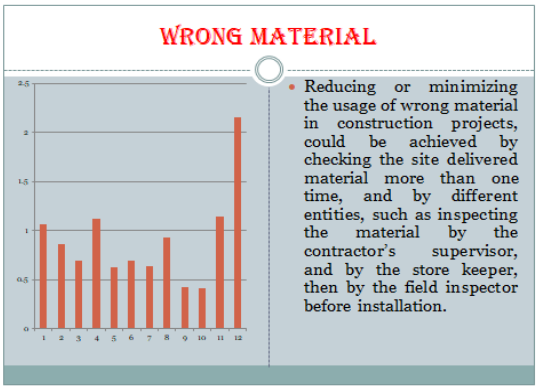

Fig. 5.1 Wrong material

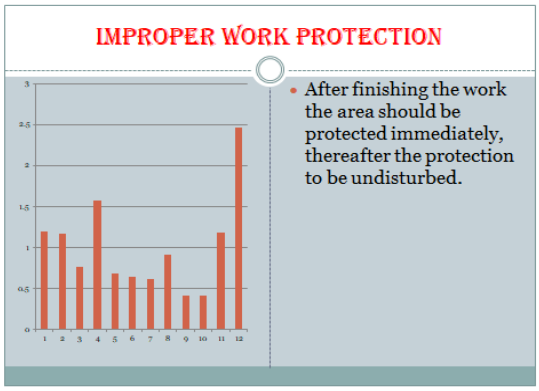

Fig. 5.2 Improper work protection

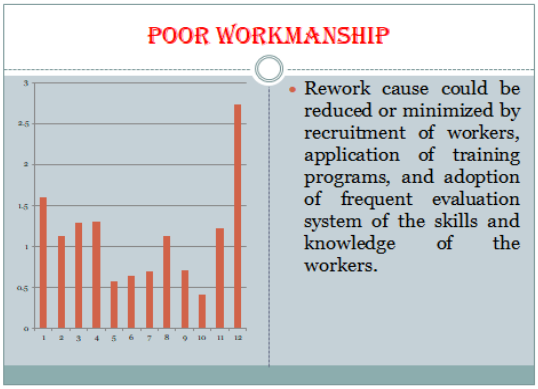

Fig. 5.3 Poor workmanship

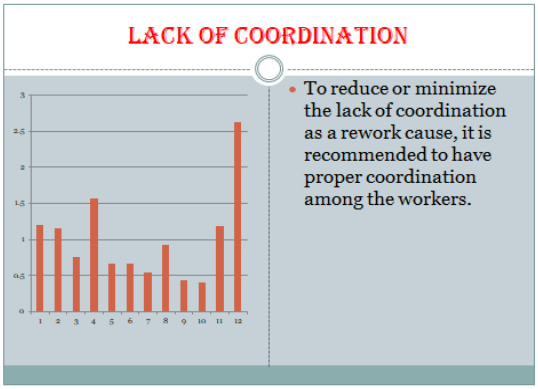

Fig. 5.4 Lack of coordination

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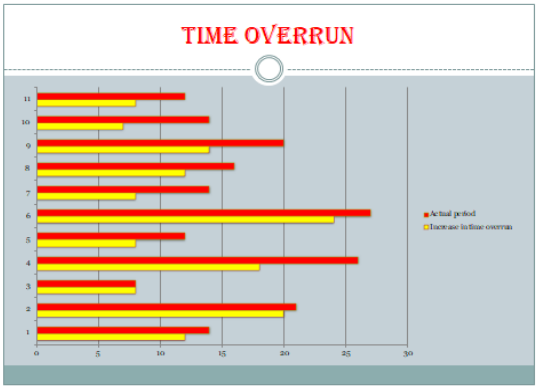

Fig. 5.5 Time overrun

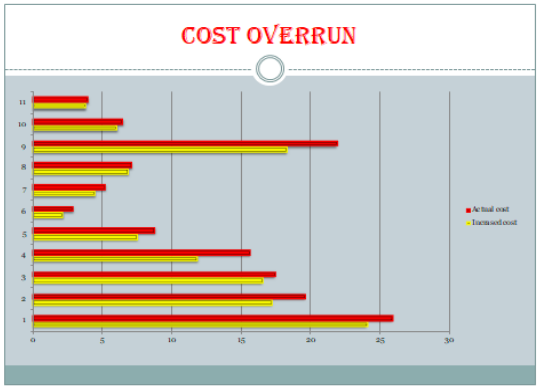

Fig. 5.6 Cost overrun

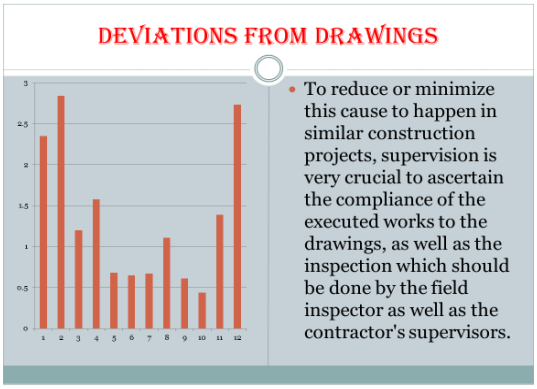

Fig. 5.7 Deviations from drawings

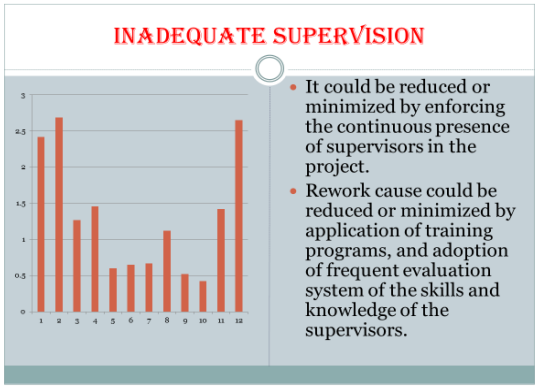

Fig. 5.8 Inadequate supervision

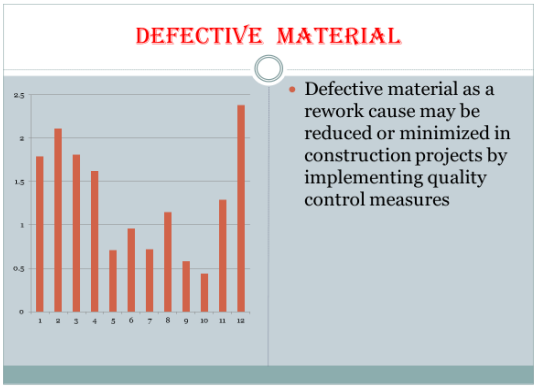

Fig. 5.9 Defective material

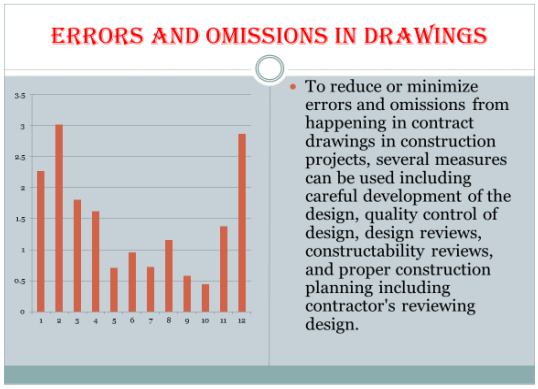

Fig. 5.10 Errors and omissions in drawings

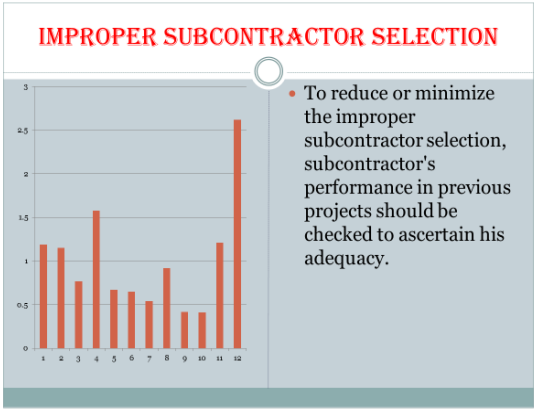

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Fig. 5.11 Improper subcontractor selection

6. CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS

1. The severity indicates that rework causes affected different work categories with various frequencies of rework. Such as Errors and omissions in drawings, Deviation from drawings, inadequate supervision, and Poor workmanship are the leading causes of rework.

2. From the case study, the impact of rework in cost and time overrun is measured.

3. The proposed reporting system for measuring, quantifying construction field rework will be useful in categorizing field rework. It will be used to facilitate information retrieval at any moment and a learning tool to prevent further rework events on future projects.

7. REFERENCES

1. Alwi S., Hampson K., and Mohamed S (2001), "Effect of quality supervision on rework in the Indonesian context" Asia Pacific Building and Construction Management Journal 6, pp. 02 – 06.

2. Hwang B., Thomas S., Haas C., and Caldas C (2009), "Measuring the Impact of Rework on Construction Cost Performance", Journal of Construction Engineering and Management, vol. 135 (03), pp. 187 – 198.

3. L. O. Oyewobi, O. T. Ibironke, B. O. Ganiyu, and A. W. Ola-Awo (2011), "Evaluating rework cost - A study of selected building projects in Niger State, Nigeria" Journal of Geography and Regional Planning, Vol. 04 (03), pp. 147 – 151.

4. L. O. Oyewobi, A. A. Oke, B. O. Ganiyu, A. A. Shittu, R. B. Isa and L. Nwokobia (2011), "The effect of project types on the occurrence of rework in expanding economy" Journal of Civil Engineering and Construction Technology, vol. 02 (06), pp. 119 – 124.

5. Low Sui Pheng and Jasmine Ann Teo (2004), "Implementing Total Quality Management in Construction Firms", Journal of Management in Engineering, ASCE, vol. 20 (01), pp. 08 – 15.

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