

LEAN METHODOLOGY TO REDUCE WASTE IN A CONSTRUCTION ENVIRONMENT

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ABSTRACT

Productivity and waste factors are interdependent of each other. Waste is a major problem in the construction industry which amounts to 60% of the construction effort. A study focused on the construction efficiency by the National Institute of Standards and Technology in the UK has documented 25% - 50 % of waste relates to coordinating labour and managing, moving, and installing materials. Therefore the main aim of this study is to find out the possibilities of waste reduction in the construction industry through lean construction applications. The method adopted for this study is a case study research approach where it concludes the results obtained from a major construction project in New Zealand. A pilot case study was carried out to understand the existing practices. The research study substantially followed the process mapping method to identify the level of concern in waste minimisation on a construction site. Outcomes from the studies indicate that one third of non value adding activities are resulting from factors under the control of management. This study concludes that there are more opportunities to eliminate waste and add value to the construction process. Hence by improving management practices through a lean implementation the non value adding time of a construction project can be reduced and thereby productivity can be improved significantly.

Keywords: Lean methodology, Process map, Value, Waste.