

Scheduling of Repetitive Activities for Height-Rise Buildings: Optimisation by Genetic Algorithms

Authors : Mohammed Aljoma

Abstract : In this paper, a developed prototype for the scheduling of repetitive activities in height-rise buildings was presented. The activities that describe the behavior of the most of activities in multi-storey buildings are scheduled using the developed approach. The prototype combines three methods to attain the optimized planning. The methods include Critical Path Method (CPM), Gantt and Line of Balance (LOB). The developed prototype; POTER is used to schedule repetitive and non-repetitive activities with respect to all constraints that can be automatically generated using a generic database. The prototype uses the method of genetic algorithms for optimizing the planning process. As a result, this approach enables contracting organizations to evaluate various planning solutions that are calculated, tested and classified by POTER to attain an optimal time-cost equilibrium according to their own criteria of time or cost.

Keywords : planning scheduling, genetic algorithms, repetitive activity, construction management, planning, scheduling, risk management, project duration

Conference Title : ICCSE 2016 : International Conference on Civil, Construction and Safety Engineering

Conference Location : Paris, France

Conference Dates : March 14-15, 2016