

## Development of Construction Cost Optimization System Using Genetic Algorithm Method

**Authors :** Hyeon-Seung Kim, Young-Hwan Kim, Sang-Mi Park, Min-Seo Kim, Jong-Myeung Shin, Leen-Seok Kang

**Abstract :** The project budget at the planned stage might be changed by the insufficient government budget or the design change. There are many cases more especially in the case of a project performed for a long period of time. If the actual construction budget is insufficient comparing with the planned budget, the construction schedule should also be changed to match the changed budget. In that case, most project managers change the planned construction schedule by a heuristic approach without a reasonable consideration on the work priority. This study suggests an optimized methodology to modify the construction schedule according to the changed budget. The genetic algorithm was used to optimize the modified construction schedule within the changed budget. And a simulation system of construction cost histogram in accordance with the construction schedule was developed in the BIM (Building Information Modeling) environment.

**Keywords :** 5D, BIM, GA, cost optimization

**Conference Title :** ICBSE 2014 : International Conference on Building Science and Engineering

**Conference Location :** Penang, Malaysia

**Conference Dates :** December 04-05, 2014