

The Application of the Top Down and Open Cut Construction Method in High Rise Building

Prepared by: Gan Siew Yen

ABSTRACT

The development in Malaysia currently increasing due to the demand of the property is increasing especially in the city such as Kuala Lumpur but the land available is limited. There are two types of construction method for basement or substructure works which is open cut and top down construction method. Open cut construction method is the method where the basic concept of this method to excavate and build the foundation from the bottom to the top level. Top down construction method is the method where the substructure and superstructure works are constructing simultaneously. The challenges in substructure construction for high rise developments normally are its close proximity to the existing buildings and lack of knowledge workers and innovative technology use by Malaysia contractors. Therefore, the aim of the study is to analyse whether the activity of the construction method affect the sustainability and safety of the high rise construction project. The first objective of the study is to identify the application of top down and open cut method for the high rise building while the second objective is to analyse the implications of the project objective (time, cost and quality) for the high rise building based on the top down and open cut method. The respondents for the research are the contractor's within Kuala Lumpur and Selangor only as these locations are the most congested and consist of high population area. The quantitative research method had been applied in this research which 30 out to 100 respondents responded the questionnaire survey. The conclusion had drawn the study of application of the construction method and the possible factors affecting the construction method in term of the time, cost and quality. According to the first objective, the application of open cut construction method is still the favourable method among the contractor's due to the high cost required to implement the top down construction method. The analysis shown that the quality of the construction workmanship is the main factor's affecting the selection of open cut construction method as this method is the common method used for almost all construction projects in Malaysia.