Comparative Study of Structural Steel and Reinforced Concrete Construction Methods: A Malaysian Case Study

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ABSTRACT:

Structural steel construction is a rather common and frequently opted for construction method all around the world, especially in more developed countries. However, in Malaysia, steel construction is yet to be as popular, with the industry still greatly favoring traditional construction methods such as reinforced concrete construction. It is common assumption that structural steel construction is a very expensive method and therefore, would not be feasible in many circumstances. It is the aim of this research study to carry out a comparative study of structural steel construction method with traditional reinforced concrete construction method based on two (2) of the basic principles of project management criteria of a successful project, that is, time and costing in construction. Based on a case study of two real life engineering project of high-level water tank tower structures, it was found that structural steel is more expensive in terms of material cost but with the cost savings, which result from time saving, the overall construction cost is only very slightly higher and therefore, could be as good an option if not better than reinforced concrete construction method. From this study, it is hoped that structural steel usage in Malaysia can be strengthened and all parties in the industry can take the time saving of construction aspect into more serious consideration when choosing their construction methods.

INTRODUCTION

The construction industry in Malaysia is an essential sector in the country's economy. However, this sector had been slow in adapting to new construction technologies and methods.