BENCHMARKING OF BUILDABILITY AND CONSTRUCTION PERFORMANCE IN SINGAPORE: IS THERE A CASE FOR HONG KONG?

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Abstract
This paper investigates what the Best Buildable Design award-winning projects in Singapore have accomplished through the study of key performance indicators. It was found that improved site productivity, shortened project time and reduced construction cost concomitant with manpower savings are generally in tandem with the upward trend of Buildability Scores as calculated based on the Buildable Design Appraisal System (BDAS). The results are persuasive with abundant published data stemming from the award-winning projects. In view of the similarity in the construction environment and success in implementing the BDAS in Singapore, an adapted version called Buildability Assessment Model (BAM) has been developed for adoption in Hong Kong by using local data collected through questionnaire surveys and structured interviews and incorporating more comprehensive assessment criteria. Based on a priori evidence in Singapore, when the BAM is widely used in Hong Kong, it can be reasonably inferred that buildability benchmarks for different types of building projects can be established. Eventually, better project performance in terms of construction time, cost, manpower and productivity in Hong Kong should be achievable when construction stakeholders pay due attention to the buildability of designs.

Keywords
Buildability, Buildable Design Awards, Benchmarking, Singapore, Hong Kong

INTRODUCTION

Buildability was defined by the Construction Industry Research and Information Association (CIRIA, 1983) as “the extent to which the design of a building facilitates ease of construction, subject to the overall requirements for the completed building”. Subsequently, similar to Griffith (1987) who pointed out that a compromise was required between consciously making a design more buildable and accommodating many factors affecting the design, including aesthetics, time, cost and quality, Ferguson (1989) explained that buildability is “the ability to construct a building efficiently, economically and to agreed levels from its constituent materials, components and sub-assemblies”. Following them, there were other studies which contributed to interpreting buildability, including McGeorge et al. (1992), SAB (1993) and Low and Abeyegoonasekera (2001). The more recent publication of Singapore’s Building and Construction Authority (BCA, 2005a) proclaimed that “…buildable designs will lead to improvements in quality … due to the relative ease of construction and the need for fewer skilled tradesmen …” Australia and the US also saw the emergence of a similar but broader concept of “constructability”, which was concerned with different project stages for achieving overall project objectives (CII, 1986). Notwithstanding the sheer differences in terminology appearing in literature, “buildability” and “constructability” have been long associated with the desire to produce designs for enhancing construction efficiency. There has been a lot of