

Keynote address**Mapping the Relationship between Modular Building Construction and Transportation Infrastructure**V Y J Bandara¹, J Taron², G Assef³, L Kattan⁴**Abstract**

Currently, modular building construction (MBC) is gaining in popularity as an alternative to conventional on-site building construction (CBC). While the appearance of modular buildings is most often indistinguishable from conventionally constructed buildings, their interaction with other key infrastructural systems such as transportation, energy, water and waste management, varies greatly; however, very little if any research exists on the matter. Thus, understanding these interactions and quantifying the impacts are essential to identify ways to minimize their negative externalities. Conversely, it would be useful to understand how transportation infrastructure can be adapted such that it positively impacts the trend toward MBC.

The objective of this study is to identify opportunities to understand the interactions between MBC and transportation infrastructure to provide a framework for future research that can support a positive relationship between these two inherently integrated infrastructural systems. To achieve this objective, a 2-part literature review was conducted that maps the infrastructural systems impacted by MBC with an emphasis on transportation systems. The first section of the literature review focused on various published material on MBC methods, through which the impacts of MBC on transportation system and vice versa were identified. The analysis of this section pointed to instances of MBC which reduces the negative impact on transportation systems due to building construction such as the reduced transportation requirements of labor, site-overheads, and construction equipment to and from the site. Similarly, it also pointed to instances where MBC presents challenges to the transportation system compared to CBC such as the requirement of transporting large prefabricated building components. The second section reviews existing life cycle impact assessments of MBC methods, through which the overall impact of MBC on the transportation infrastructure system was mapped.

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