Accepted Manuscript

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PII: S0959-6526(17)30113-0

DOI: 10.1016/j.jclepro.2017.01.099

Reference: JCLP 8846

To appear in: Journal of Cleaner Production

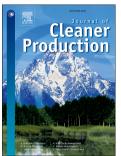
Received Date: 2 November 2016

Revised Date: 12 January 2017

Accepted Date: 18 January 2017

Please cite this article as: Huo X, Yu ATW, Wu Z, A comparative analysis of site planning and design among green building rating tools, *Journal of Cleaner Production* (2017), doi: 10.1016/ j.jclepro.2017.01.099.

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1 Total words: 6722

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11 Abstract

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Appropriate site planning and design (SPD) is a key solution for effective land 12 use on construction sites. A Green Building Rating Tool (GBRT) includes systematic 13 assessment criteria to evaluate whether a building is "green" or not. The effectiveness 14 15 of GBRTs have been explored in energy use, waste management, and indoor air quality in green buildings. However, no investigation has been made to evaluate the 16 effectiveness of GBRTs in site planning and design aspects. In this research, five 17 international GBRTs were selected for a comparative analysis, to better understand the 18 measures that help improve SPD in green buildings. Content analysis was applied to 19 record and compare the relevant significance of SPD-related items in the selected 20 21 GBRTs. The comparative study revealed that in terms of SPD, Building Environmental Assessment Method (BEAM) Plus allocates the highest importance 22 while Green Mark (GM) allocates the lowest. Each GBRT emphasizes different 23 aspects of SPD in green buildings, and BEAM Plus involves the most SPD related 24 items. In addition, the main variables for effective SPD were identified and a 25 theoretical framework was further proposed. The proposed theoretical framework can 26 serve as a foundation for successful SPD in green buildings. The application and 27 potential limitations of the theoretical framework were also discussed. 28

Keywords: Construction site, Green building rating tool, Site planning and design,Theoretical framework

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