

Accepted Manuscript

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PII: S2210-6707(16)30516-9
DOI: <http://dx.doi.org/doi:10.1016/j.scs.2017.02.014>
Reference: SCS 593

To appear in:

Received date: 16-10-2016
Revised date: 14-1-2017
Accepted date: 24-2-2017

Please cite this article as: Al-Jebouri, M. F. A., Saleh, M. S., Raman, S. N., Rahmat, R. A. A. B. O. K., and Shaaban, A. K., Toward a national sustainable building assessment system in Oman: assessment categories and their performance indicators, *Sustainable Cities and Society* (2017), <http://dx.doi.org/10.1016/j.scs.2017.02.014>

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Toward a national sustainable building assessment system in Oman: assessment categories and their performance indicators

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Abstract

The new generation of sustainable building-rating systems especially in developing countries is geared toward incorporating the variations in regional social, cultural, governmental and economic aspects. Likewise, the Sultanate of Oman possess its unique local context, geographical conditions, traditions and culture. The governmental and political requirements including the Omanization program, have also been highly considered in the Oman National Comprehensive Human Development 2040. The National Development Plan 2040 of Oman aims to bring the country into a more a sustainable life style.

The aim of this study is to develop a framework for sustainable building construction in Oman by proposing an assessment system for the construction industry. While addressing sustainability, the system should respect the unique context of Oman in terms of its unique geographical, political, cultural, and societal features. No dedicated sustainability-rating system currently exists for Oman. Hence, this study involves two main stages to establish the sustainability assessment system for Oman. The first stage concentrates on further developing the formulation of the proposed system structure in relation to Oman by reviewing the literature on sustainable development and buildings, as well as analyzing international and regional sustainability-rating systems. The structure of the proposed system development is composed of 5 themes (environmental, economic, social, cultural and governance requirements), 11 categories, and 86 indicators. The second stage focuses on formulating assessment categories and their relevant performance indicators, which are validated through conducting a survey including different stakeholders of the industry from building engineers, building regulators, and sustainability experts. Pairwise and direct ranking method comparisons are used as data collection methods to examine the relative importance and weights of each category and each indicator respectively. The analysis of survey data shows that a prominent relative importance and balanced weights are given to indoor environment quality, natural and human resources, social, and governance requirements. The research output shall help and promote future studies to develop a detailed assessment system for sustainable construction in Oman.

Keywords: Sustainable construction, Sustainability assessment tools, Survey, Oman

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