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SMART-ECO-HOUSE IN OMAN AS A KEY COMPONENT OF A SUSTAINABLE FUTURE - FIELD STUDY

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ABSTRACT

The recent drop in oil prices has lead Oman, a country with an oil dependent economy, to consider new sustainable policies and attitudes.The Sultanate's five-year plan (2011-2015) began the development of renewable energy and environmental protection. One of the state's approaches was hosting the National Eco-House Design contest in 2011 between higher educational institutions. However, disseminating the eco-house concept will take decades to be effective. This commentary argues for the potential of the Smart -Eco house to provide a quick and effective solution to support the present nationwide policy of promoting more sustainable practices. Based on relevant literature review, a questionnaire was written, and interviews were conducted with high ranking government policymakers and directors of smart home companies. The paper aims to draw the attention of the government, experts, decision-makers, and educational institutions to integrate the Smart – Eco house into their efforts towards efficient building energy performance, supporting the national economy, energy infrastructure, and the country's environmentally sustainable policies.

Keywords: *Eco-House, Renewable Energy, Environmental Protection, Oman*

RESEARCH HIGHLIGHTS

1. The factors that led Oman to adopt sustainable and green strategies especially in the construction field (Al-Wahaibi, 2019) (Atkins, 2019) (Hegazy, 2018).
2. The assessment of the current sustainable attitudes in the built environment after one decade of practices (Powmya & Abidin, 2014) (Safinia et al, 2017).
3. The potential of the smart- eco house in supporting the Omani governmental sustainable strategies (Atkins, 2019) (Darby, 2018) (Li & Yu, 2011) (Marques & Louriezo, 2013) (Paxton, 2017) (Ragheb et al, 2015).

Research Objectives

This commentary tries to support Oman's strategies in adopting sustainable attitudes in the construction field to face the growing consumption of its limited resources. Current government practices in Oman show the need to adopt new short-term attitudes to have a greater impact in achieving the sustainability in the construction field. The research tries to provide another path via studying the potential of the Smart-Eco house as a new backing factor for the current sustainable approaches.

Methodology

The research methodology depends on the close review and interpertion of the former relevant literatures. Accordingly, a questionnaire was written, and interviews were conducted with high ranking government policymakers, directors of smart home companies in Oman, and Omani experts who play an important role in implementing government strategies. Furthermore, graphs were prepared and a conclusion was drawn.

Results

The outcomes of one decade of upholding a variety of sustainable and green approaches in the Omani construction domain are still very modest and facing many challenges (Powmya & Abidin, 2014) (Safinia et al, 2017). Since new paths have to be adopted, the smart-eco house has recognizable potentials to be a key factor in supporting the anticipation of the community with respect to the sustainability and eco-friendly approaches in Oman and other regional countries. However, the government needs to do much more to incentivize this transformation, in addition to the vital role of other stakeholders, educational institutions, media, and private sector.

Findings

Involving existing buildings in the sustainability plans in the Sultanate of Oman and other regional countries via government incentives for Smart-Eco house conversions is a short term strategy to realize the long term sustainability and eco-friendly goals sooner.

References

Al-wahaibi, M. (2019). Logistics Hubs in Oman and Political Uncertainty in the Gulf. *Contemporary Review of the Middle East*, 6(2), 109-153.

Atkins. (2019). The Selected Strategy Towards the ONSS. Report prepared for the Supreme Council for Planning, Oman.

Darby, S. (2018). Smart Technology in the Home: Time for More Clarity. *Building Research & Information*, 46(1), 140-147.

Hegazy, S. (2018). Eco-Friendly Architecture- a Prelude in the Sultanate of Oman. *International Journal of Science and Technology*, 3(3), 317-338.

Li, B & Yu, J. (2011). Research and Application on the Smart Home Based on Component Technologies and Internet of Things. *Procedia Engineering*, 15(1), 2087-2092.

Marques, B & Louriezo, C. (2013). Sustainable Architecture, Practices and Methods to Achieve Sustainability in Construction. *International Journal of Engineering and Technology*, 5(2), 223-226.

Paxton, M. (2017). Smart Homes in the U.S. Becoming More Common, But Still Face Challenges. https://www.spglobal.com/marketintelligence/en/news-insights/blog/smart-homes-in-the-u-s-becoming-more-common-but-still-face-challenges

Powmya, A & Abidin, N. (2014). The Challenges of Green Construction in Oman, *International Journal of Sustainable Construction Engineering & Technology*, 5(1), 33-41.

Ragheb et al. (2015). Green Architecture: A Concept of Sustainability. *Procedia-Social and Behavioral Sciences*, 216(1), 778-787.

Safinia et al. (2017). Sustainable Construction in Sultanate of Oman, factors Affecting Materials Utilization. *Procedia Engineering*, 196(1), 980-987.

Udomiaye et al. (2018). Eco-Friendly Buildings: The Architects Perspectives. *International Journal of Civil Engineering Construction and Estate Managemen*t, 6(2), 14-26.

Author's Biography

Soheir Hegazy *started her career as an architect in Egypt where she was awarded the consultant title in 2004 by the Engineering Syndicate of Egypt. She joined the Scientific College of Design in 2009 and two years later was promoted to head of interior design department, finally becoming an Associate Professor in 2016. She published her first book in 2018 and wrote 10 research papers for international refereed journals, focusing on about the continuity between historical and contemporary designs, conservation issues, educational buildings and sustainability.*