World Academy of Science, Engineering and Technology
International Journal of Energy and Environmental Engineering
Vol:11, No:08, 2017

Analyzing the Effectiveness of Elderly Design and the Impact on Sustainable Built Environment

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Abstract : With an unprecedented increase in elderly population around the world, the severe lack of quality housing and health-and-safety provisions to serve this cohort cannot be ignored any longer. Many elderly citizens, especially singletons, live in unsafe housing conditions with poorly executed planning and design. Some suffer from deteriorating mobility, sight and general alertness and their sub-standard living conditions further hinder their daily existence. This research explains how concepts such as Universal Design and Co-Design operate in a high density city such as Hong Kong, China where innovative design can become an alternative solution where government and the private sector fail to provide quality elderly friendly facilities to promote a sustainable urban development. Unlike other elderly research which focuses more on housing policies, nursing care and theories, this research takes a more progressive approach by providing an in-depth impact assessment on how innovative design can be practical solutions for creating a more sustainable built environment. The research objectives are to: 1) explain the relationship between innovative design for elderly and a healthier and sustainable environment; 2) evaluate the impact of human ergonomics with the use of universal design; and 3) explain how innovation can enhance the sustainability of a city in improving citizen's sight, sound, walkability and safety within the ageing population. The research adopts both qualitative and quantitative methodologies to examine ways to improve elderly population's relationship to our built environment. In particular, the research utilizes collected data from questionnaire survey and focus group discussions to obtain inputs from various stakeholders, including designers, operators and managers related to public housing, community facilities and overall urban development. In addition to feedbacks from end-users and stakeholders, a thorough analysis on existing elderly housing facilities and Universal Design provisions are examined to evaluate their adequacy. To echo the theme of this conference on Innovation and Sustainable Development, this research examines the effectiveness of innovative design in a risk-benefit factor assessment. To test the hypothesis that innovation can cater for a sustainable development, the research evaluated the health improvement of a sample size of 150 elderly in a period of eight months. Their health performances, including mobility, speech and memory are monitored and recorded on a regular basis to assess if the use of innovation does trigger impact on improving health and home safety for an elderly cohort. This study was supported by district community centers under the auspices of Home Affairs Bureau to provide respondents for questionnaire survey, a standardized evaluation mechanism, and professional health care staff for evaluating the performance impact. The research findings will be integrated to formulate design solutions such as innovative home products to improve elderly daily experience and safety with a particular focus on the enhancement on sight, sound and mobility safety. Some policy recommendations and architectural planning recommendations related to Universal Design will also be incorporated into the research output for future planning of elderly housing and amenity provisions.

Keywords : elderly population, innovative design, sustainable built environment, universal design
Conference Title : ICISD 2017 : International Conference on Innovation and Sustainable Development
Conference Location : Copenhagen, Denmark
Conference Dates : August 17-18, 2017