Title: INTEGRATED DESIGN PROCESS MODEL FOR GREEN DESIGN BUILDING REFURBISHMENT PROJECTS

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Improving the green design of refurbishment projects plays a key role in reducing the impact of buildings on the economic and environment of a country. However, to achieve that is not easy since the greater part of building refurbishment projects suffers from uncertainty. Furthermore, incorporating green design measures into the design of refurbishment projects is difficult since it requires the input of specialized knowledge of various members of the design team. The design team members need communicate effectively, have the right attributes and perform as a team. The integration of the design process in refurbishment projects can mediate the negative impacts of uncertainty on the green design performance. Therefore, the aim of this research is to develop an Integrated Design Process Model for green building refurbishment projects. The research objectives are: (1) to measure the level of uncertainties during the design process of building refurbishment projects, (2) to measure the extent to which green design measures are integrated into the design of building refurbishment projects, (3) to measure the level of integration in design process of refurbishment building projects and, (4) to establish the extent to which integration in the design process mediate the effects of uncertainty on the green design performance. The data were collected through pilot questionnaire survey on thirty (30) respondents and followed by online final questionnaire survey that involved one hundred-twenty-two (122). The respondents were Architects and Consulting Engineers. The response rate of the final questionnaires survey was 18 per cent. The study applied descriptive analysis using the Statistical Package for Social Sciences (SPSS) and the Structural Equation Modelling (SEM) with Partial Least Square (PLS) Approach Version 3.0. It was found that in general, refurbishment projects were moderately uncertain. The refurbishment projects were also moderately green. The level of integration in the design process was moderate. It was also found that the integration of the design process fully mediated the effects of uncertainty on the green design performance. Thus, it is recommended the in order to produce green buildings in refurbishment projects; the design process should be integrated.

Title: BRITISH ARCHITECTURE IN PENINSULAR MALAYSIA: AN ANALYTICAL STUDY OF ARCHITECTURAL CHARACTERISTICS FOR COLONIAL BUILDINGS IN HILL STATIONS

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The roots of the colonial buildings in Peninsular Malaysia hill stations lie in the early attempts of British colonization to build a cool retreat or the ‘Little England’ for British military and comrade traders. There are many colonial buildings that rich in history and architectural merits but are in a state of deterioration and dilapidation in hill stations of Peninsular Malaysia. Due to that, there is a dire need to protect and to restore these buildings heritage but one needs to have accurate technical knowledge and systematic documentation. The purpose of this research is to provide an accurate roster as a valuable reference and also to determine the methods and techniques of building masonry construction and materials of colonial buildings that reflected the characteristics of British architecture. The research has been carried out in two main methods, which are the primary and secondary data collections. The primary data is obtained from selected case studies and the fieldwork includes building inventory, photo recording, visual analysis, measured drawing and semi-structured interviews. Meanwhile, the secondary data are gathered from literature review, which include books on history, building construction, restoration and conservation, and data on British colonial architecture. Secondary data also include articles, journals, newspapers, websites, and magazines with particular reference to colonial architecture in United Kingdom, India and Malaysia. Comparative analysis of these case studies have been carried out and unveiled the real situation on building construction and materials in term of components, elements, and ornations as well as to create the culture of authenticity for localized architecture. Four selected major hill stations involved are Penang Hill, Penang; Maxwell Hill, Perak; Fraser’s Hill, Pahang; Selangor, and Cameron Highlands, Pahang. Through several interviews and documentation study on methods and techniques of construction, several issues and findings have been achieved, documented, analyzed and synthesized. The results show the localized architecture differs between the British original buildings and the British colonial buildings built in tropical climate of Peninsular Malaysia. In conclusion, for any tangible and intangible information or involvement of construction and conservation for colonial buildings in hill stations; the Construction Direction Roster (CDR) should be abide systematically at anytime by all industry players concerned for the preservation of authenticity of the British colonial buildings, historical place and cultural environment.