

Functional and operational design - house cooling system an minh

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Functional and Operational Design - House Cooling System: An Minh Mapping of the Conceptual Idea The clear understanding of the functional and physical requirements in this project is highly crucial to ensure its success. An Minh house cooling system was developed with the intent of achieving a serene housing environment for the residents. The design was aimed at satisfying the emotional, cognitive and cultural needs of the residents. 1 The functioning of the house cooling system depended mostly on the building type that the design undertook. The assurance for a lasting solution towards the problem of temperatures, air circulation and humidity in the house was enhanced with the adoption of various properties as discussed in the operational issues below. Reliability The reliability of the project design for a house cooling system in An Minh was achieved with the fact that it fits the purpose for the requirement of uncomfortable living conditions. The design ensures the cooling of the house is maintained for a considerable period of time. Reduction of stress regarding acquisition of materials and the construction process was enhanced to improve the level of reliability of the design. Smart and reliable design process was prioritised in the process of design to ensure reliability. 2 This was achieved by coming up with a roofing and window system that enhances air circulation. 3 Further, the use of insulation and double ceiling was highly essential in the blocking of external heat and maintaining the inner cool air. One fact that supports reliability in this context is the availability of materials for the design and fair cost of acquisition of the design. Finally, the extractor fan was very crucial and reliable as it only required installation strategies. With respect to humidification, the extractor fan was situated ten metres on the roof to

enhance removal of warm humid air. Maintainability The design ensures adaptability to include elements that assist in future adaptations to facilitate change in the future. The objective of maintainability was achieved via use of attributes that are easy to acquire and maintain like the extractor fan, the use of insulation by utilising old materials and use of coconut leaves. The rising costs of maintenance calls for a design that easy to maintain and requires less renovation in the course of the house existence. The ideas have also given room for modifications with regard to materials available and which will work in the same manner as the one highlighted in the project to achieve a cooling system. Usability The housing unit designed was enhanced to meet the criteria of accessibility and usability of cooling and ventilation system. The use of shutters and extractor fan ensured a unique indoor comfort in the cooling of the house by using the outer air to regulate the inner temperatures. The shutters ability to allow air entrance and the positioning of the windows ensured usability of the property of cooling concept. The expertise of the extractor fan and how to inculcate the materials to the residents will be availed by the experts with the materials outsourcing being availed by the residents as it easier to obtain most of them. Cost effectiveness The utilisation of easily available materials for the house has contributed towards enhancing cost effectiveness. The use of extractor fan for air circulation required only installation costs and no maintenance cost as it used the external air for running. Looking at the mode of construction devised, basic tactics are applied that will enhance the reduction in cost of coming up with the project. The property of being cost effective favours the design for adoption in the sense that many individual

can afford to install and maintain it. Sustainability The design established incorporated latest and planned ideas to acquire a home with adequate space for families in An Minh district of Vietnam. Sustainability entails a design that avoids resource depletion like energy, water and raw materials. 4 The design under consideration ensured sustainability by use of old materials for insulation like old clothes and newspapers. This contributes in the utilisation of materials that could interfere with the environment and ecological aspects in the residential area as discussed by Parson. 5 On the same note, the use of an extractor fan is critical with respect to utilising outside air for functioning. This outlines the fact behind cost efficiency and effectiveness of the design. Energy saving and improving environmental quality The design was planned early to enhance the decisions towards impact significantly on the functional quality, and long-term efficiency and effectiveness of the house designed. The house design does not entail use of energy for maintenance of cooling gadgets like the fan. Conclusion In the house cooling design for An Minh, the conceptual ideas were mapped into a physical solution by utilising available and adoptable techniques. The techniques include the use of enhanced features to aid in ventilation and cooling of the house. The ideas were perceived viable and their realisation would be effected with respect to utilising the set attributes and features for the design. Bibliography List Kroll, Ehud, et al., Innovative Conceptual Design: Theory and Application of Parameter Analysis. Cambridge: Cambridge University Press. 2001. Parsons, Tim. Thinking: Objects: Contemporary Approaches to Product Design. London: AVA Publishing UK. 2009. Planning Phase, Creating your Solution Design and Architecture:

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