

Design and Modeling of Amphibious Houses for Flood Prone Areas: The Case of Nigeria

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Abstract : This research discusses the design and modeling of an amphibious building. The amphibious building is a house with the function of floating during a flood event. Over the years, houses have been built to resist flood events some of which have failed. The floating house is designed to work with nature and not against it. In the event of a flood, the house will rise with the increasing water level and protect the house from sinking. For the design and modeling of this house an estimated cost of N250, 000, approximately \$700, will be needed. It is expected that the house will rise when lightweight materials are incorporated in the design, and the concrete dock (in form of a hollow box) carrying the entire house in its hollow space is well designed. When there is flooding the water will fill up the concrete dock, and the house will rise upwards with vertical guides preventing it from moving side to side or out of its boundary. Architectural and Structural designs will be used in this project.

Keywords : amphibious building, flood, housing, design and modelling

Conference Title : ICHPBDEC 2019 : International Conference on High Performance Building Design and Environmental Concerns

Conference Location : Zurich, Switzerland

Conference Dates : July 29-30, 2019