

# Amphibious Housing for Flood-Prone Rural Areas in Vietnam

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## Abstract

Flooding is one of the most dangerous disasters in the world. It is a well-known fact that Vietnam, the country located in South East Asia threatened by flooding. In flood-prone areas, local dwellers, experts and authorities have found many design solutions to flood-proof houses in order to protect people, properties and animals. Almost all of these design solutions are based on both the traditional theory of moving on to higher areas and on raising the foundations of houses to avoid damage caused by annual floods. However, as global warming stimulates a sea level rise and more extreme weather events, it is predicted that flood depths increase as well. A flood mitigation strategy such as relocation or the use of homes built on elevated platform, is an ineffective and unsustainable solution when severe floods reach heights beyond the level that occurred at the time of construction. Therefore, the aim of this paper is to propose a sustainable and affordable concept for amphibious houses as an effective solution to flood-prone rural areas in Vietnam. Through a detailed analysis of basic architectural characteristics regarding rural housing and traditional solutions to the construction of flood mitigation, the study does not only accumulate precious experience from traditional solutions to flood resistant houses for rural residence that would be used and developed in accordance with the proposed concept, but also points out its weaknesses that need to be considered for an optimal design of future amphibious houses. Based on these studies, research would propose a sustainable concept for amphibious houses built in low-income and flood-prone rural areas of Vietnam that not only enables people to stay on their land of origin and simultaneously ensure a safe and healthy environment during flooding, but also increase their life quality all the year.

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