

Floating Houses: Rejuvenating “Home” for the Flood Affected Communities in Bangladesh

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Abstract

Every year the world experiences 40 mega flood events on an average, causing death of more than 50,000 human population and economic damage of US\$ 6 billion. The trend of intensity and frequency of mega flood events has been increasing due to climate change and variability. Flood risk has been increasing not only because of alterations of hazard dimensions but also due to the persisting vulnerabilities triggered from poverty, structural inequality and development deficits. Although living with flood is not an ethical approach when someone who is not responsible for the causes is bearing the brunt of the consequences but adaptation to flooding is the last resort of the vulnerable segment of the population to continue with life and livelihood. Bangladesh is no exception. Historically, the country is renowned to the rest of the world by the footprints left over by megaflood incidences. Numerous evaluation indicates that standard structural and non-structural flood management measures, e.g. river protection embankments, drainage structures, early warning and emergency evacuation to safe shelters, are not effective as desired due to a high level of residual negative impacts to the environment and society. People's perception about living with the flood is indifferent from their experience of dealing with historical flood events since time immemorial. However, relocation and displacement of household members during the flood emergencies is the last choice they prefer to adopt. Therefore, the current research explores the concepts of passive house and net-zero energy building (NZEB) structures to design a floating home with built-in provisions for self-sufficiency in energy, food, water, sanitation and sustainable livelihood provision. A team of architects, environmental scientists, anthropologist and structural engineers came up with a prototype design rejuvenating the concept of “home” drawn from people’s perception and preferences to adapt to life and livelihood in a changing climate.

Keywords: Floating house; Climate change; Adaptation; Net-Zero-Emission Building (NZEB); Passive house

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