

Evaluation and performance improvements in the construction techniques of mud houses in flood affected areas of Swat

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Abstract

About one third of people from all cultures and in climates live in earth constructed houses. From the roof of the world in Tibet, or the Andes Mountains in Peru, to the Nile's shore in Egypt, the deserts of Middle East or the fertile valleys of China, earth is used as one of the major construction material.

Flooding, due to flash and riverine floods, snowmelt floods, is the most taxing of water-related natural hazards to humans, material assets, as well as to cultural and ecological resources. Annually, flooding affects about 520 million people and their livelihoods, claiming about 25,000 lives worldwide. The annual cost of flood damages to the world economy is between \$50 and \$60 billion. The devastating floods brought about by Oct 2010 monsoon rains resulted in a disaster that was unprecedented in Pakistan. The flood affected 20% of the country, rendering almost 20 million people homeless, with around 2000 dead.

In this study flood performance of the mud houses in Swat valley has been analyzed on the basis of field observations. Furthermore design and construction improvements have been suggested for better performance of mud houses in floods. It has been observed that the performance of mud houses can be improved with very little additional cost, which can save the precious lives and property in the wake of natural disasters.