

## Design of a Modular Shelter using Eco-friendly Material for Emergency Application.



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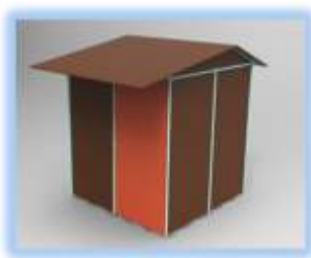
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**Abstract:**

Losing one's home is unusual feeling and living without home is a very difficult thing in our life. Providing shelters for homeless people in the emergency situations is a social responsibility for all of us, because disasters destroy dream of people and society in a single day. People who are homeless because of emergency situations necessitate temporary places to live while they rebuild their houses. This project is an attempt to bring a solution for people without homes in emergency with Modular shelter design.

The design procedure started with a primary research on requirements of emergency shelter around the world. Need for the modular design, which can simplify the transportation and overall size of the shelter was observed. Data collection was carried out through methodologies such as literature survey, product study, market study, and product environment study. Patent study was carried out to understand the functionality in similar products over a period of time. Disaster victims and government officials were interviewed in ethnography and personal interviews to know their opinion and needs. Ergonomic study was carried out for finding product parameters and user comfort. QFD and PDS were developed based on data analysis. Concepts were generated with the help of details from data collection and PDS shortlisted by participatory method. Different issues and needs find out through data collection, which have been addressed in concepts development. Final concept was selected by weighted ranking method.

Detail design has been done with part dimensions and a full scale mock-up model had been made for accurate validation of final concept in terms of ergonomics, functionality and usability. Feedback from users were collected. Major user needs were satisfied in the final design. User response on final design was positive and satisfactory. Digital modeling were developed using software's such as Alias, Photoshop, Keyshot etc.



**Emergency shelter**



**Final working model**



**Final assembly**