

Design of a Range of Household Devices For Rural Applications using Eco-friendly Materials



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Keywords: Rural Housing Structure, Eco-Friendly Materials, Furniture

Abstract:

Housing is one of the important valuable assets for people of rural areas in India. The necessities in their house are limited due to various factors. The project proposes to develop a new innovation of household devices in rural house which makes their life and activities easier. The selection of this project motivates the improvement of rural life structure from the base level and also makes a route to the future innovations in related areas. The project mainly focussed on the house structure in rural areas and space limitations inside the home. The idea was generated for a product on basis of utility of space accommodation without disturbing other activities.

Design process included various methods of research, data collection researches such as ethnography, product study, market study through various methods like questionnaires, interviews, images, videos and daily life activities of the rural people. Quality Functional Deployment (QFD) and Product design specification (PDS) were implemented as the basis of data collected from the research area. The requirements in the rural areas were sorted out on weightage factor, the needs in the rural area were classified and design developed. Those concepts for the rural areas were finalized on weighted ranking method.

The development of final concept of products of furnitures was described in detail including the manufacturing process, validation and comments. The validation of 1:1 working model has been carried out with rural users and their feedback was also included in detail. It has been found that there was a mixed feeling towards the product through analyzing of product structure and suggestions to be considered for further improvements of the product. The implementation of ergonomics factors for the usability and the selection of appropriate material for manufacturing were also found satisfactory for the durability of the new innovation. In the interactive study with people and children in rural areas it has found that the user group were satisfied and the product has found to be a solution for their problem in researched area.



Rendered model

Final products