Design of Mobile Clinic to Operate in Remote Areas

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Abstract:

In India, majority of the rural population lacks adequate medical care. In many cases, people travel hundreds of kilometers to gain access to effective and affordable treatment. The mobile clinic concept responds to this need of India's rural population. Such clinics allow for an advanced medical examination that will improve the lives of many individuals who do not have access to basic healthcare. The main aim of the project is to design and develop a mobile clinic cum caravan for a philanthropic institution run by Dr. B. Ramana Rao. He is a physician, cardiologist from Bangalore and has been providing free medical treatment to the rural poor at his clinic at T-Begur village for the past 40 years every Sunday.

Study of different mobile clinics and caravans was undertaken and the facilities used inside these vehicles were noted as a part of GEMBA study. Dimensions of different departments and accessories inside the clinic were also studied. Technical and customer voices were determined from the questionnaires and user survey conducted. Quality Function Deployment (QFD) was derived based on these. Ideation sketches were prepared initially and then three concepts were made. All the concepts were reviewed and final concept was selected based on weighted ranking method. Digital model for the finalised concept was prepared using Alias Studio tools. Ergonomic analysis of the final concept was done. Mock-up model for the final concept was made to a scale of 1:10.

The new design concept made has the ergonomic features derived from Indian anthropometric data. The location of the equipment and tools are well organised inside the cabin. The storage space for medicine and other accessories is made as per the requirements.

![Final concept of mobile clinic](image1)
![Interior design of mobile clinic](image2)
![Ergonomic analysis of interior design](image3)
![Mock-up model of mobile clinic](image4)