

This project aims to bring a recent innovation in building design, using GFRG panels, to a stage of technology transfer to the building industry. GFRG is a new building panel product, made essentially of gypsum plaster, reinforced with glass fibre rovings. This product was originally developed and used for wall construction since 1990 in Australia (under the name, 'Rapidwall'). The IIT Madras research group extended the application of this product to the entire building system – including floors, roofs, and staircases, thus significantly reducing the consumption of reinforced concrete. These panels are 12m long, 3m high and 124mm thick with hollow cavities, and are presently being manufactured in India by Rashtriya Chemicals & Fertilizers (RCF), Mumbai and FACT Ltd, Kochi, making effective use of their industrial waste gypsum. Under this project, experimental and theoretical studies are being carried out to validate and confirm the performance of the floor slabs, the slab-wall joints, the system performance under lateral loads and the durability of the panels. A two-storeyed GFRG demo building (with four flats, covering a total area of 184 m<sup>2</sup>) was also constructed at the IIT Madras campus within one month, to demonstrate the potential application of this technology for rapid affordable mass housing.

*GFRG demo building constructed recently at IIT Madras*