

CSIR FIGHTS COVID-19

Temporary and short-term hospital structures for rapid construction

CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai is a national laboratory under the Council of Scientific & Industrial Research, New Delhi. The laboratory has come out with optimum designs for construction of lightweight transit hospital structures to support the efforts of the government in tackling the emergency condition that has risen due to the spread of COVID-19.

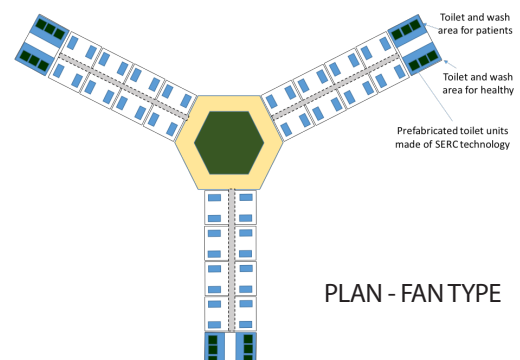
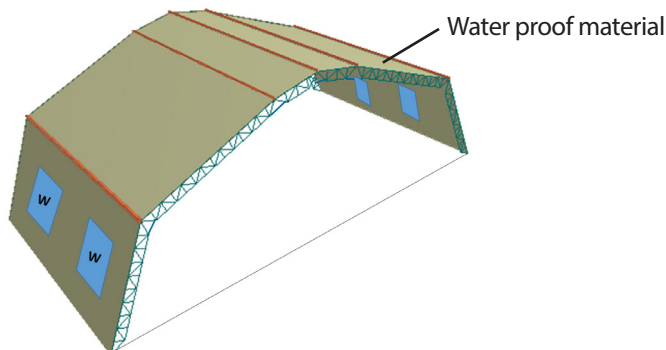
Salient features of the design:

- Designed for fast construction in any location
- Stable as well as scalable due to identical and modular units
- Designs for two types of hospitals to suit:
 - (i) immediate requirements (ii) short-term needs

I Poli-Tal (for immediate requirements)

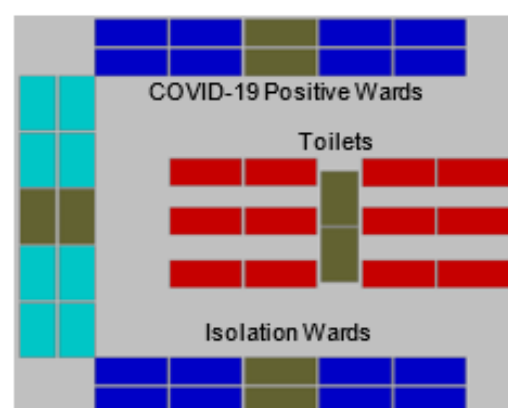
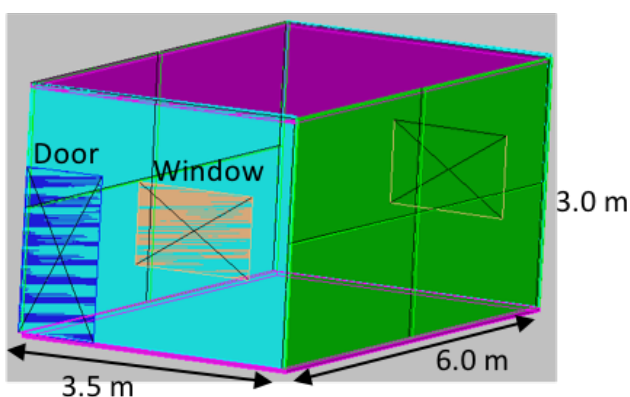
Scheme 1

- Portable units of 9 m x 4 m to accommodate 4 beds
- Optimal design for steel portal structure with ready-to-fix facility
- Manual erection with only basic tools
- Two types of arrangements – fan and wing (flexibility on number of units)
- Maximum 12 days to install 50 beds facility in an area of 6000 sq. ft. at a chosen location
- Approx. cost (with minimum facilities): INR 650 per sq. ft.



Scheme 2

- Module of 3.5 m x 6 m size transported in folded form and erected in less than an hour using crane
- Standard steel sections used with easily deployable envelop
- Provisions to meet the functional requirements and hold 2 beds per unit
- 50 beds facility in just 3 days over an area of 5300 sq. ft.
- Approx. cost (with minimum facilities): INR 1100 per sq. ft.



II Pre-Tal (for short-term requirements)

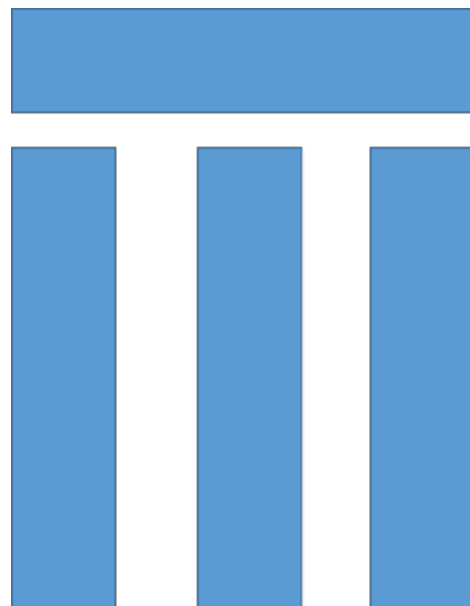
- Pre-fabricated lightweight portal frame structure of 10 m x 45 m for quarantine hospitals
- Semi-permanent facility with options to scale-up
- Provisions to accommodate functional requirements
- Partition walls using EPS panels – thermal comfort
- Roof – Corrugated metal sheet / steel pop sheet
- Includes pre-fabricated toilets made using CSIR-SERC technology
- 50 beds facility can be constructed in about 25 days at an identified site of 5000 sq. ft.
- Approx. cost (with minimum facilities): INR 1350 per sq. ft.
- Provisions for A.C. and other utilities can be included as required



Layout of toilets and wash area in a typical facility
(Pre-fabricated toilet units made of CSIR-SERC technology)



Plan for 100 bed facility



Plan for 200 bed facility



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