CATEGORY

PROVEN TECHNOLOGY CATEGORY : GHTC-INDIA

PRODUCT / TECHNOLOGY

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3D MODULAR PRECAST TECHNOLOGY: MAGICPOD

Alternate to conventional RCC framed /load bearing structure

Scan QR Code for Video

CONTACT DETAILS

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BRIEF

3D Modular Precast/ Magic Pods using steel mould and high performance concrete of building modules in factory/ casting yard. These pods are transported to the construction site & assembled.

This 3D Volumetric concrete construction is the modern method of building by which solid precast concrete structural modules like room, toilet, kitchen, bathroom, stairs etc. & any combination of these are cast monolithically in Plant or Casting yard in a controlled condition. These Modules termed as MagicPod are transported, erected & installed using cranes and push-pull jacks and are integrated together in the form of complete building unit. Subject to the hoisting capacity, building of any height can be constructed using the technology.

Construction & installation process

Sequential construction in the project here begins with keeping the designed foundation of the building ready, while manufacturing of precast concrete structural modules are taking place at the factory. Factory finished building units/modules are then installed at the site with the help of tower cranes. Gable end walls are positioned to terminate the sides of building. Pre stressed slabs are then installed as flooring elements. Rebar mesh is finally placed for structural screed thereby connecting all the elements together. Consecutive floors are built in similar manner to complete the structure.

Advantages

- About 90% of the building work including finishing is complete in plant/casting yard leading to significant reduction in construction & occupancy time
- The controlled factory environment brings resource optimization, improved quality, precision & finish
- The required concrete can be designed using industrial by-products such as Fly Ash, Ground granulated blast furnace slag (GGBS), Micro silica etc. resulting in improved workability & durability, while also conserving natural resources. In this project Ground granulated blast furnace slag & silica fume is being used in concrete.
- With smooth surface it eliminates use of plaster
- The monolithic casting of walls & floor of a building module reduces the chances of leakage

- The system has minimal material wastage (saving in material cost), helps in keeping neat & clean construction site and dust free environment
- Use of Optimum quantity of water through recycling
- Use of shuttering & scaffolding materials is minimal
- All weather construction & better site organization

SALIENT FEATURES

- Upto 90% industrialization ensures savings in wastages in every raw material as it is manufactured in controlled environment with automated machines reducing errors.
- Reduction in manpower by 60%.
- Eliminates use of plaster
- 50% faster construction speed
- Seismic stability: Suitable up to Zone: 04
- Acoustic Performance: ≤45 dB
- High performance concrete of grade M - 40 and above

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ECONOMIC ASPECTS

- Faster construction speed.
- Reduced wastages.
- Manpower reduction.

SUSTAINABILITY ASPECT

- Reduced use of water.
- Reduced necessity for plastering.

SUITABILITY AND AVAILABILITY

- Suited for all weather conditions.

LIMITATIONS (IF ANY)

- Heavy machinery required.
- Unsuitable for small scale projects.

MARKET LINKAGES

- Available Pan India.

MAJOR PROJECTS

- Light House Project (LHP)-Ranchi (under construction)
- Shell Retail outlets Pvt. Ltd.,
- SRF, KCIL, Panoliintermediates.

CERTIFICATION/INDIAN STANDARD/ENDORSEMENT

- Recommended technology under GHTC