

CATEGORY

PROVEN TECHNOLOGY CATEGORY



PRODUCT / TECHNOLOGY



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Technology Detail

PRECAST CONCRETE CONSTRUCTION SYSTEM – PRECAST COMPONENTS ASSEMBLED AT SITE

*Alternate to conventional RCC framed structure with
bricks/blocks as infill walling material*



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Video

CONTACT DETAILS

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SHIRKE

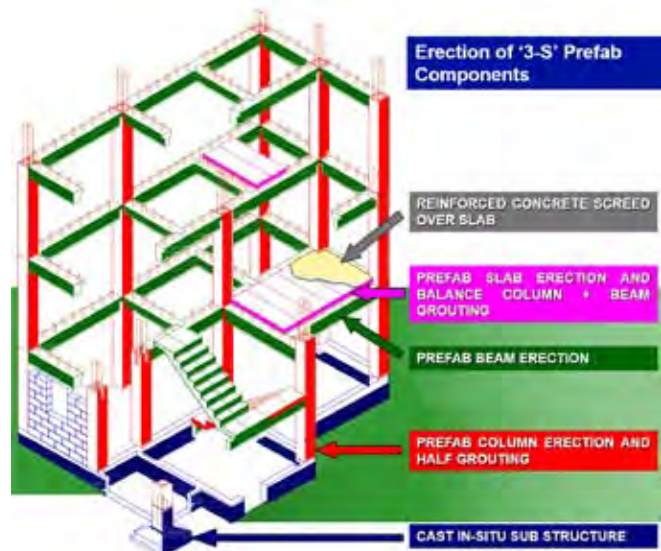
BRIEF

'3-S' Prefab Technology/ Pre-cast Concrete Structural system comprising of pre-cast column, beam, precast concrete / light weight slab, AAC blocks/ infill concrete walls. Structural members are cast in the factory and assembled at site.

3S system incorporates precast dense reinforced cement concrete hollow core columns, structural RCC shear walls (as per design demand), T/L/Rectangular shaped beams, stairs, floor/roof solid Precast RCC slabs, lintels, parapets and chajjas. AAC blocks are used for partition walls. Hollow core columns are erected above substructure, over which beams are integrated in the column notches followed by erection of slabs.

3S Prefab Technology completely eliminates the use of timber and forest produce of any category. On the contrary, use of fly ash and GGBS enhances the sustainability. The thermal and acoustic insulation provided by the AAC block masonry, facilitates reduction in energy towards maintaining comfort level temperature within enclosed habitat space. Also, considerable reduction in dead load is achieved due to use of form finish precast components & AAC material resulting into better performance under seismic loads.

All the structural components are pre-engineered and manufactured in factories / site factories with objective quality control resulting into dimensional accuracy, correctness in spacing of reinforcement, uniform protective cover, full maturity of components and assurance on design strength due to use of design mix concrete having minimal water-cement ratio which ultimately results into durable structure. Plants & Machineries for production of Components available in Pune, Mumbai, Bangalore and Delhi. These can be setup at / nearby project site within very short time.



SALIENT FEATURES

- Precast construction use causes reduction in construction time.
- The controlled factory environment brings resource optimization, and improved quality, precision & finish.
- Reusing factory waste as fly ash, etc., conserves natural resources.
- Increased safety on site
- Reduced wastage.
- Decreasing dependency on skilled labours
- Increasing numbers of parallel activities
- Minimizing air, water and noise pollution at work site
- Very minimal requirement of water for construction
- Non-generation of construction debris
- Elimination of use of timber / wooden scaffolding/ Shuttering.
- All weather site execution
- Cost saving due to compressed completion time and rental cost reduction
- Sync with the objectives of 'Swatch Bharat Mission'
- Skill up-gradation of workers



ECONOMIC ASPECTS

- Reduced uses of scaffolding and shuttering.
- Cost effective due to reduced completion time and rental cost reduction.
- Less skilled manpower required.



SUSTAINABILITY ASPECT

- Reduces wastages considerably owing to better quality / process controls and repetitive task.
- Reuse of industrial wastes such as fly ash.
- Less use of water.
- Reduced environmental pollution.
- Reduces use of forest products.

SUITABILITY AND AVAILABILITY

- Due to centralized precast facility, storage of raw materials and requirement of concrete is mainly at one place.
- This ensures better controls on material management.
- Suitable in all weather conditions for mass housing.
- Tested for earthquake resistance for seismic Zone-IV. Not ready for Seismic zone –V.
- Turnkey projects only anywhere in the country

LIMITATIONS (IF ANY)

- Huge project size is required (at least a 1000 DU) since for construction production facilities are to be set up at site.



DEMONSTRATION HOUSING PROJECTS (DHPs) under PMAY(U)

BIHARSHARIFF, BIHAR



LUCKNOW, UTTAR PRADESH



PROJECT PROFILE

- Number of Houses 36 (G+2)
- Usage: Sports Hostel & other social welfare activities
- Technology: Structural Stay-in-Place Steel Formwork System (Coffor)

PROJECT PROFILE

- No. of houses : 40 (G+1)
- Usage: Rental basis to Hospital patients & their attendees
- Technology: Stay in Place EPS based Double Walled Panel System (SISMO)

DHPs under PMAY(U) : 256 demonstration houses constructed

DEMONSTRATION HOUSING PROJECTS (DHPs) under PMAY(U)

AGARTALA, TRIPURA



AHMEDABAD, GUJARAT



PROJECT PROFILE

- No. of houses : 40 (G+1)
- Usage: Shelter for Destitute Women
- Technology: Structural Stay In Place Steel Formwork System

PROJECT PROFILE

- No. of houses : 40 Nos. (G+2)
- Usage: PMAY(U) Beneficiaries
- Technology: Precast construction System - Integrated Hybrid Solution-One

DHPs under PMAY(U) : 228 demonstration houses under construction

MARKET LINKAGES

- Plants & Machineries for production of Components available in Pune, Mumbai, Bangalore and Delhi.
- These can be setup at / nearby project site within very short time.

MAJOR PROJECTS

- Light House Project (LHP) at Chennai (under construction)
- Mahada, Marsova, Mumbai.
- Judicial Quarter, Bangalore.
- DDA housing in Delhi.

CERTIFICATION/INDIAN STANDARD/ENDORSEMENT

- ISO 9001-2015, ISO 14001 – 2015, ISO 45001-2018

