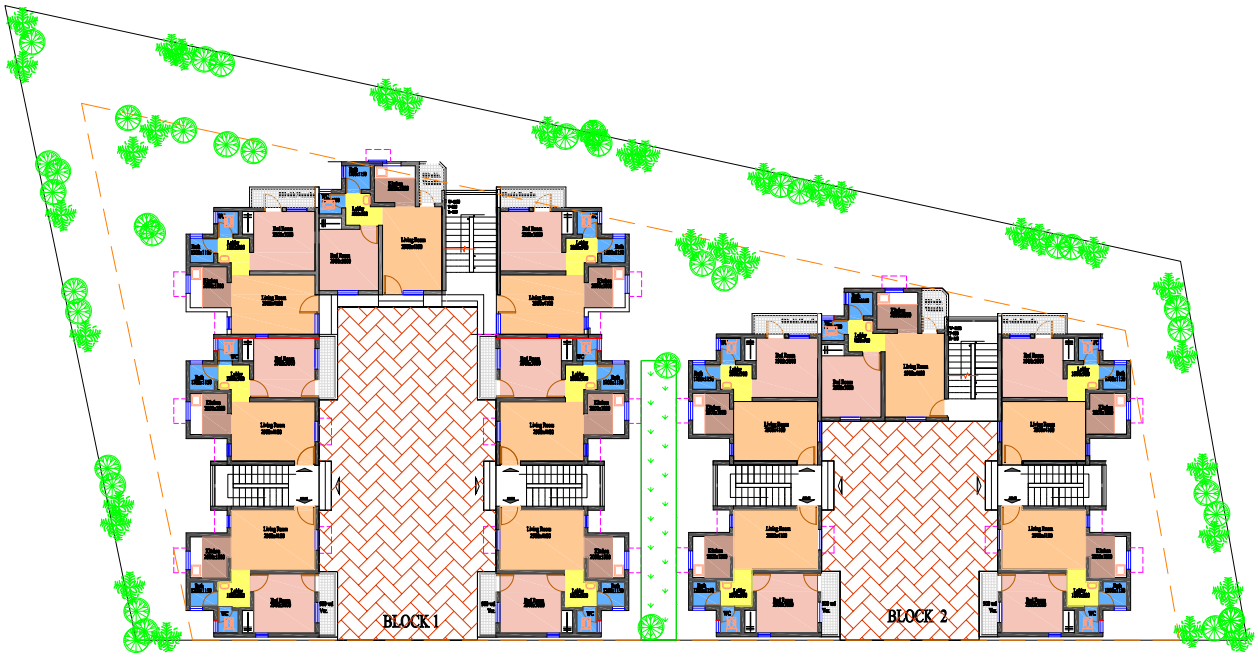
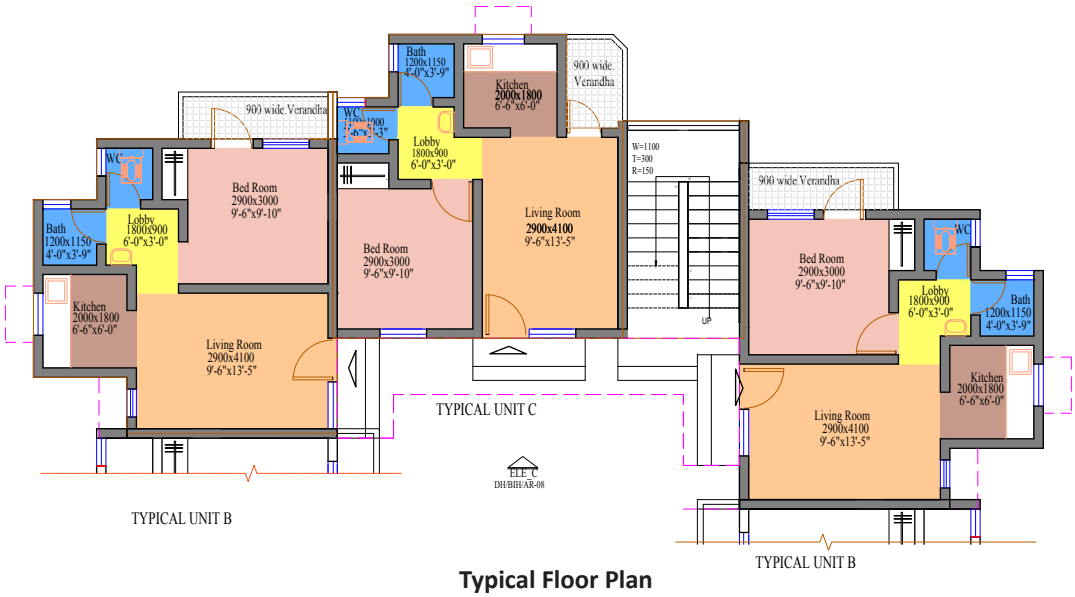
DHP AT BIHARSHARIFF, BIHAR

The Urban Development & Housing Department, Govt. of Bihar through Biharsharif Nagar Nigam allotted land measuring 1350 sqm. for the Demonstration Housing Project in Biharsharif. The technology, plan, sections, layout plan of Demonstration Housing Project were approved by Biharsharif Nagar Nigam. BMTPC has completed construction of 36 Demonstration Houses (G+2) using emerging technology namely, STAY IN PLACE FORMWORK SYSTEM - Structural Stay In Place Steel Formwork System.

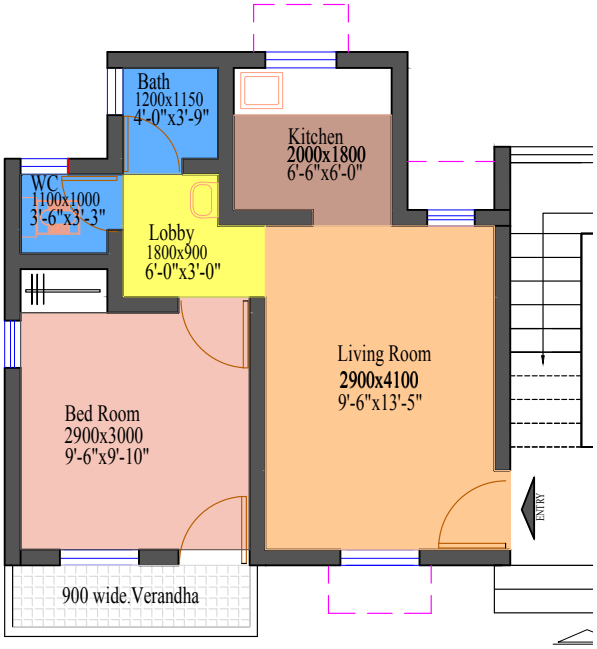
Besides Pradhan Mantri Awas Yojana (Urban), the other Partnering & Funding agencies for the project are Department For International Development (DFID) & National Housing Bank (NHB).



Layout Plan



Typical Floor Plan



Unit Plan

Project Profile

- Location: Sohan Kuan, Mauza Chakhajiyan, Biharshariff, Bihar
- State Level Nodal Agency : Urban Development & Housing Department, Govt. of Bihar
- Land Allotted by: Biharsharif Nagar Nigam
- Usage : Sports Hostel & other social welfare activities
- Plot area of project : 1353 sqm.
- No. of houses : 36 (G+2)
- Carpet area of each unit : 29.67 sqm.
- Built up area of each unit : 46.65 sqm.
- Total built up area : 1640 sqm.
- Technology Used: STAY IN PLACE FORMWORK SYSTEM - Structural Stay In Place Steel Formwork System
- Each Unit consists of One living room, one bedroom, kitchen, Bath, WC and balcony.
- Includes Earthquake Resistant Features.
- Infrastructure facilities : Pathways with concrete pavers, CC road, boundary wall, septic tank, water supply work, tube well, horticulture work, UGT, drainage & disposal and external electrification using solar panels, rain water harvesting, etc.
- Year of completion : January 2019
- Cost per sqft. without infrastructure : Rs.1645
- Cost per sqft. with infrastructure : Rs.1895

About the Technology

This patented structural stay in place formwork system is known as 'Coffor' to build load bearing monolithic concrete wall structures based on shear wall concept. The formwork system comprises of two filtering grids made of rib mesh reinforced by 'C' channel vertical stiffeners. The grids are connected by rebar which act as horizontal stiffeners and connector which act as a shear link. The grids on both faces act as sacrificial formwork in which concrete is poured in-situ.

After the erection of formwork panels in alignment, corners, edges of doors and windows frame are closed with rebar positioning & concrete of required grade is poured in the panels. The concreting is done with a pump, bucket or with a shovel loader. The inside and outside walls are finished with cement plaster of suitable grade. The panels are prefabricated according to a structural plan (based on architectural plans) designed by structural engineers.

In this project, this system has been used as load bearing panels with infill of cement concrete. The thickness of panel is 140mm and 20mm cement plaster on both side of wall.

Technologies/Specifications for Demonstration Houses

Foundation

- Isolated column foundation

Wall/Slab/Roof

- Structural Stay-in-Place CR Steel Specially Designed Formwork System (Coffor) for walls (load bearing) with infill of concrete
- RCC Slab

Door frames & Doors

- Pressed Steel Door Frame instead of wood

- Flush door shutters as wood substitute
- PVC door frame & shutter in toilet

Window frames

- MS Section window frame with guard rail and glazed shutter

Flooring

- Ceramic tile flooring in rooms
- Ceramic tile flooring in WC & Bath
- Kota stone flooring in passage and staircase

Kitchen Counter

- RCC cooking counter top with marble and steel sink

Wall finishes

- Oil bound distemper on internal walls
- Weather resistant paint on external walls

Others

- Pathways with concrete pavers
- Boundary wall

The structural design of the DHP has been vetted by IIT Mumbai and technical evaluation of the project was carried out by Indian Institute of Technology (IIT), Roorkee.


BLOCK A