2.4 BEHAVIOR OF FRAME IN PRECAST STRUCTURES

Roof and floor slabs:

- The roofing / flooring system consist of RC planks and joists.
- The planks are casted to a standard size and they are connected with RCC joists which are provided at a regular interval.
- The loads from planks are transmitted to RCC joists and then to main beams.
- The main beams are provided with channel sections 10cm projections on the necessary side with the spacing of joist.
- The joists are seated in the channel and bolted together.
- The loads from slabs to the main beam will come as point loads.
- The roofing / flooring slabs system consists of planks which are supported over RCC joist.
- The planks can be made in any one of the following form with or without prestressing. According to the span and loads.
- The usual widths of these of slabs are 0.5m and spanning to the requirement up to a maximum limit of 5m without prestressing.
- The thicknesses of planks are casted in two steps with different mould to access monolithic action with adjacent slab by putting necessary reinforcement and concreting.

Beams:

- All the main and secondary beams are the same size of 300 mm x 300 mm varies reinforcement are provided at various conditions according to the moments.
- The beams are casted for the clear distance between the columns.
- A square of 10 cm x 10 cm hole for a depth of 10 cm are provided on either sides to achieve the connection with other beam reinforcement or column reinforcement by proper welding.

- After welding the concrete has to be done at the column and beams, it is necessary to put site concreting.
- For the purpose the top ends of the beams are tapered so that it will give access to site concrete and for needle vibrators to get proper compaction.

Wall panels:

- The wall panels are casted with all fixing like door, ventilator, and window frames.
- These wall panel are non load bearing wall. Therefore neglect solid rectangular cross section wall panel with RCC from the view of thermal effects and safety the minimum of 150 mm is provided as wall thickness.
- This wall is a sandwich type that is cellular concrete blocks of 75 mm thick is sandwiched by RCC.
- M25 grade concrete to a thickness of 37.5 mm on either face with minimum reinforcement.
- Since, the walls are in steel moulds there will be no need for plastering on either face of wall. This is one of the advantages of precast wall panels.
- The main design factor is handling stresses in wall panels.

Columns:

- Many types of columns available in prefabricated system. Grooves are provided on the required faces to keeps the walls in position.
- This groove will act as a part of columns, and since the area of column has been increased due to tibs, will give addition moment carrying as well as load carrying capacity of columns.
- At the same time this grooves give a mild ornamental look to our building.

ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY
PALKULAM, KANYAKUMARI
OBSERVE OPTIMIZE OUTSPREAD