

PRECAST BUILDING FRAMES

MULTI-STOREY BUILDINGS

Housing and apartment buildings are normally built as **wall-frame structures**. The walls support the vertical loads from the walls and upper structure.

Multi-storey precast concrete frame structure can also be made with **skeletal frames** and infill walls.

Multi-storey precast concrete frames are constructed with columns and beams of different shapes and sizes, stair and lift shafts and floor slabs. The joints between the floor elements are executed in such a way that concentrated loads are distributed over the whole floor. This system is widely used for multi-storey buildings.

Floors are made of hollow-core slabs or solid precast slabs. Facades are of sandwich elements, the inner leaf of which may be load-bearing.

LOW-RISE INDUSTRIAL AND COMMERCIAL BUILDINGS

Normally, the skeleton of a single storey industrial building composed of series of basic portal frames. Each frame comprises two columns with moment fixed connections at the foundations and a pin-joined roof beam. Skeletal structure systems are very suitable for buildings which need a high degree of flexibility, because of the possibility of using large spans and to achieve open spaces without internal walls – a very important factor in industrial buildings, shopping halls, parking structures and sporting facilities, and large office buildings.

In this system the roof is made with hollow-core slab or light TT-slab, or steel sheet deck.

Another solution for large halls is to use large span roof units supported with rows of columns and straight beams. The roof units are saddle (pitched) TT-slabs or straight TT-roof units. For straight TT-units, the roof slope is obtained by alternating the height of the supporting beam rows. At the facades, the roof slabs can be supported on beams or on load bearing walls.