

Techniques and materials

The first type of apartment building (type 1) was constructed using largely the same techniques and materials that had already been in use for centuries. Apart from the emerging use of concrete and iron, and the new (but few) installations, this also applies to types 2 and 3. Similarly, the same techniques and materials occur in type 4 except for a different floor and staircase construction.

These first four types could be planned by architects/builders alone, possibly with the assistance of engineers for planning the drainage systems in the last two apartment types. Installation itself was left to authorised tradesmen.

In terms of the bearing and material properties of the structures, the applicable building legislation was formulated precisely on the basis of buildings being constructed as described. The requirements of the legislation were so precisely worded that only occasionally was the assistance of an engineer necessary; this could be in connection with calculations relating to reinforced concrete structures, for example.

Where iron beams were used, the sizing was carried out according to the manufacturer's load capacity tables, and the various types of hollow block floors could generally be constructed in each case by referring to the manufacturer's instructions.

The planning involved in type 5 is completely different. The hitherto dominant role of the architect in standard house building came to an end with the many experimental buildings of the 1950s.

The fifth housing type arises from a collaboration between architect and engineer. We now see engineers with different specialties, due partly to the extensive degree of pre-fabricated building elements, and partly to the different configuration of the legislation's requirements. At the same time, increased attention is being paid to a more methodical approach to changing widely accepted building techniques by involving the fundamental disciplines of building physics.

This type of housing necessitates a crane-serviced building site, though cranes had more or less become permanent features of building sites since the middle of the century. And not just cranes: hoists, metal gantries and a broad range of mobile lifting and transport equipment arrived on the building site, just as hand-operated, electrically powered tools became widely used by the relevant trades. In addition, there was a numerous array of machines for ground- and earthworks. Lastly, a growing number of vehicles were also required for transporting goods from the factory to the building site – vehicles which, over time, became increasingly specialised and load-bearing.

Finally, it became commonplace (and a requirement in 1969) for winter to be included in the construction period.