Zeitschrift: Bauen + Wohnen = Construction + habitation = Building + home : internationale Zeitschrift

Herausgeber: Bauen + Wohnen

Band: 13 (1959)

Heft: 8: Betonbau = Construction en béton = Concrete construction

Inhaltsverzeichnis

It is interesting to see that Americans meeting the problem of historical environs in Europe for the first time stumble over the principles of modern architecture which have caused headaches to many an uncompromising European, who has thereby been led to glance enviously at much-praised America.

Three-Dimensional Forms (pages 287—288)

In recent decades types of supporting structures — three-dimensional surface supporting structures—have been developed, which have extraordinary load capacities, in spite of their thinwall construction, because of the spacious vaulting employed. Their predecessors are the vaults and domes which for long periods in the history of architecture were the only means of covering spaces greater than the length of a log. Up to the present time, however, only spacious supporting structures of a pronounced beamlike character were able to be carried out on a wide basis, and for this reason we have the long cylinders and shed skins, which are nonetheless beams, but which, however, possess a certain lateral extension. For although the means are at hand for large-scale spacious structures, ideas are generally embedded in the concepts of the "beam age." In the following, a typical large construction is given as an example; the buckled skin—a three-dimensional thinwalled skin with a square or rectangular ground plan, which only has to be supported at the corners. The skin can give spans of up to 40 ms. in both directions and cover an area of 1,600 m² without support. Large complexes of sheds can be covered with a minimum of support at low cost. A block of four has only one internal support, for example. Daylight can come through large openings, in the crown of the skin into the shed. It has been found with examples already carried out that each skin only needs a five-metre opening, for the skin skylights were far more effective than windows which let light in from the sides. Domes of seamless synthetic materials are used in skylights and with them the light comes in diffused and with no dazzle-effects.

Mannesman High-Rise Building, Düsseldorf (pages 289—298)

The 48 x 70 m. building site is bounded on the west side by the street running alongside the Rhine and on the east by a park with a small lake in it. So as not to fill the gap completely between the two existing buildings with the new structure, it proved desirable to orientate the long side of the recessed building perpendicularly to the Rhine. All the east, west and south sides consist of office rooms—small offices in the core section towards the south, and large offices towards the east and west. The entrance and reception hall is located on the ground-floor and mezzanine. A connecting bridge leads from the mezzanine to the older buildings. The offices are housed in twenty-two storeys. Fourteen tubular steel supports encircle the ground-floor—each is separated from the next by an interval of 7.20 ms. and has a diameter of 48 cms. and a wall thickness of 30 mm.—they are connected to a steel box girder at intervals of height of 8.50 ms. The 1.20 m. high encircling peripheral girder rests in freely articulated plates, which are visible from outside, and which are located on the tubular supports. The tubular steel construction (which is made from Mannesman tubular steel) is built on this peripheral girder and has an axial interval of 1.80 m. These tubes are socketed stanchions and have articulated joints every two storeys. Steel girders, which form the ceilings of the storeys, are led by means of knuckle joints to the core, where they are suspended in a shoe which takes up the tolerances between concrete and steel. All open steelwork has been sprayed with plaster as a protection against fire.

Inhaltsverzeichnis