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

Herausgeber: Bauen + Wohnen

Band: 13 (1959)

Heft: 9

Rubrik: Summary

Summary

Luminous and Acoustic Ceilings (page 298)

The "Atlas Panalume" ceiling consists of the actual luminous ceiling, which is hung from the real ceiling, and fluorescent tubes and additional apparatus. Z-profile elements are inserted into a main girder, which is fastened to the ceiling with loops and a supporting framework is suspended from these elements. PVC diffusing panels are clamped to this framework. Any ceiling section which is not used for illumination can be covered with hard or acoustic panels. If the acoustics of the luminous ceiling are to be improved, vertical sound dampers can be mounted under the ceiling. These dampers are made of cast metal and filled with glass wool (for details of construction see design sheet).

Prefabricated House (pages 299—301)

The architect, in his capacity as Professor at Michigan University, was in charge of extensive research which led to the formulation of a general constructional plan for prefabricated school buildings. The aim of this research was to design a three-dimensional frame construction for the Chicago firm, Unistrut. This construction was to act as a bearer skeleton, and in it, it was to be possible to incorporate wall sections and glass. This system was also used in the assembly of the architect's own house. It is built on a module of 1.25 m. The three-dimensional metal skeleton is screwed together and the joints clamped. The roof headers are assembled on the ground and brought into the position desired by means of a crane. The framework rights itself and equalizes any displacements with the aid of an ingenious system. The tolerance limits, however, are not more than a fraction of a millimetre.

Two-storey House of asbestos cement slabs (pages 302—303)

Walter Sanders, like Theodore Larson, lectures at the School of Architecture in the University of Michigan, and was also advisory consultant to Unistrut while their three-dimensional construction system was being developed. The two-storey structure is made from the same elements as those found in Professor Larson's house (see design sheet). The external wall and roofing sections are made of asbestos cement, the ceilings and inner wall sections of veneered wood fibre panels. The floors are partly covered with coloured asphalt and partly laid with Vinyl tiles. The walls and roof are insulated with glass fibre matting. A pipe system set in the floor helps to bring warm air into the rooms.

Canteen in Eternit Ltd., Berlin (pages 304—305)

The building was so designed that upper storeys could be added to it later. Building upwards was then demanded whilst construction was in progress, but not as an extension to the canteen but for office space. All the rooms can be reached from the main entry by way of the stairway hall. The workers' canteen is also accessible from the factory side. The building is constructed in the form of a steel skeleton of standard rectangles measuring 5 x 7.5 m. The force of the wind is taken by reinforced concrete slabs. The floor ceilings are made of reinforced concrete ribs. A purlin construction of steel with a corrugated asbestos cement roof covering is set on basalt wool matting for heat insulation and is used for the upper ceiling and roof. Throughout the building various products from asbestos cement have been employed. In addition, the door frames, the ducts for the air-conditioning plant, the convector coverings and others have been made from corrugated asbestos cement. The outer skin of the building consists of sheets of coloured "Glasal," which are partially incorporated in the elevation elements and partly fitted as a covering in front of the wall sections and ceilings.

House of Light Concrete Slabs (pages 306—307)

The following three problems were called upon to be solved: **1.** Prefabricated walls to be made of light concrete slabs, 2. The construction of a house with several types of open air patios on a small plot of ground in the suburbs, 3. The design of an individual building within the limits imposed by mass-production. The floor and ceiling slabs are made of light concrete units, 10 cm. thick and 61 x 244 cm. in size. These units are framed in steel. Both frames and slabs are so made that the upper surfaces of the floors and ceilings are smooth. 2.44 m. high light concrete slabs, glass panels or fitted cupboards are set between the ceilings and floors, as the occasion demands. The open-air patios and kitchen are partially covered with translucent sections of synthetic materials, which are either set fast or else mounted as sliding windows. The terraced house seen here stands on a plot of ground, 23 m. wide by 46 m. in length. The terraces are divided into six different types of open-air patios, each of which connects with a room inside the house. Each patio is different from its neighbour in matters of garden layout, illumination and style of enclosure, as well as in area. As the floor, roof and steel frames are the only fixed elements, a terraced house can be planned according to the needs of the people who live in it. The system is eminently adaptable and allows for the construction of a "growing" house.

Prof. Niels Bohr's House for his Guests (pages 308—309)

Every room is decorated with handprinted friezes. The lighting units and chairs on the terrace have been designed by the architect. The house is raised above the ground on three concrete beams as a protection against moisture. The windows can be closed with large folding walls; a strip skylight is so arranged, however, that even when these walls are closed, some daylight can come into the room. The folding walls, when open, offer protection against sun and rain on the terrace.

Office Building for Ron Bacardi Co. Ltd., Santiago, Cuba (pages 313—315)

The completely glazed working area, which measures 42 x 42 m. and 8 m. in height, is covered with a roof whose side-length measures 54 m. It can thus be seen that the roof projects 6 m. beyond the glass skin on all four sides. The roof is executed in stressed-concrete and set on four pillars. The four ribs which form the roof's edge are 60 m. wide and 1.50 m. high, whereas the other ribs are each 15 cm. wide, the second and third 1.50 m. high, the fourth and fifth 1.75, and the nine inner ribs 2 m. high. Seen from within, the roofing is 10 cm. over the outer rib sections, 12 over the two subsequent sections and 14 cm. over the core. In this way, too much flexure at the centre of the roof is avoided. The roof is jointed to the eight cruciform pillars. An access road leads from the street to the car park and basement; in the latter are the conference rooms, cloakrooms, toilets and filing rooms.

Administrative Building, Ron Bacardi Co. in Mexico (page 316)

Unlike the reinforced concrete office building in Santiago, Cuba, this project for the administrative building in Mexico City will have a steel skeleton construction. On the ground-floor there are only two installation shafts, the large entrance lobby and its two staircases. The offices and conferences rooms are all at upper floor level. The floors in the lobby and upper storey are laid with terrazo. The ceiling is plastered, and the inner walls of the upper floor veneered with Palisander. A truly harmonious building!

Cullinan Room of the Houston Museum of Art (pages 320—323)

The ground-plan and photographs show what is being added to the existing museum building as the first stage of a larger extension project. The Culinaan Room has been built in the courtyard of the old, symmetrically disposed museum, and is completed by two small wings. The main entrance, which was formerly on the south side, is now on the north. The reinforced roofing rests upon four steel girders, 24 m. long and 1.5 cm. thick. The height of the room comes to 9 m. The north elevation and two side-entrances are covered with greyish sheet glass set in steel frames. Unplastered bricks have been used in the execution of the walls of the wings. The inner walls have been plastered, however, and the floor of the room and the inner stairs laid with terrazo.
On the south side, a garden for works of sculpture has still to be laid out.

The Restaurant in the Zurich Art Gallery (pages 324—325)

Shortly before the opening of the Zurich Art Gallery, the architect was commissioned to design a restaurant to stand between the huge columns on the ground-floor.
The task of subordinating the restaurant to the rest of the building and of heeding what was architecturally given was not easy. The external walls were constructed entirely of glass and the utility rooms sited below the ground, and in this way it was possible to ensure that the ground-floor's character was not altered and that the view on to the square from the open tables was not obstructed. As there is no "rear elevation," the bar, cloakroom facilities and gangways have had to be situated in the middle of the restaurant. 130 freely-arranged chairs are lined up along the windows on three of the sides.

Trends in Contemporary Architecture (pages 326—332)

The widespread view that design is determined by function is not borne out by experience, which shows that irrational factors are of decisive importance in this field as well. We are faced today by a vocabulary of design different from that of the twenties, but it remains one, nevertheless, which has been just as much developed from the nature of the building materials used as was the case in the earlier period.
The Industrial Exhibition built in Prague in 1930 may be quoted an example of the tendencies current in the twenties (Ill. 1, 2). Sober, right-angled design elements are the conditioning factors in the building's appearence. The horizontal stratification is the principal feature to be found in the design of the elevations. The seven-storey building is made of reinforced concrete, and the main girders and supports frame the structure at the level of the floors. Above the second storey each floor projects outwards, holding the wall at its end, so that it is completely free and has no supporting function to fulfil. This projection gives rise to the horizontal stratification—the constructional system and design are identical.

Alterations of Spatial and Formal Concepts from 1920 until Today

The main problem in any style of architecture is the organization of space. As regards the spatial concepts of the twenties, Mies van der Rohe has given us an impressive example in the Tugendhat house in Brünn. The living-room is a continuous area limited by level surfaces and is divisible into separate rooms by movable walls.
Another type of spatial awareness is seen when we look at the Finnish Pavilion at the New York World Fair of 1939. In place of the sober spatial construct cut off by level surfaces, we find a mobile treatment of space, where the positioning of the walls lends a rich variety to the whole; these walls are no longer distinguished by the aesthetically elaborated alternation of supporting and non-supporting materials.
The chapel at Ronchamp (1950—55) displays quite another handling of form. Concave and convex bodies supplement one another, and the right angle has lost its predominance as a principle of design.
If the current interpretation of modern architecture is carefully studied, it will be noticed that there is a preference for design based on the right angle. A great variety of aspects are overlooked in this way which also belong to modern architecture. The second feature, in which connection it may be permitted to group differing trends, is not to be defined with the same exactitude. But this much can be said: order based on simple shapes is opposed to the universal demand of the artist, which excludes the right angle as the sole principle of design. Rather does it seek parallels in nature. This leads on the one hand to emotional and indirectly subjective fragmentary design, and on the other to a heightened awareness, through insight into those structures to be found in nature, of what methods are open to architecture. The "organic" or "organically inspired" design must be set alongside those stemming from geometry.

The Twenties

Development in the twenties tended first of all to stress architectural tendencies towards simple and uncomplicated design. Harmony, according to the strict theories of the Stijl school, comes from contrast. As the right angle is the most elementary form of contrast to be found in the intersection of two lines, planes or bodies, it was made the foundation stone of the Stijl's aesthetics.

Alvar Aalto

Towards the end of the twenties Alvar Aalto's work began to take on increasing importance. Aalto is bound to the tradition of the twenties, but he introduces variations into the frequently rigid forms of this period, related them to their natural surroundings and once again makes use of natural materials.
Whereas the buildings in Viipuri and New York still display a lively spatial treatment but enclosed in a boxlike framework, Aalto today employs suspension methods for the external walls of a building as well (Helsinki Palace of Culture, 1955).

Ronchamp and its Forerunners in the Work of Le Corbusier

Such spatial design as is found in the chapel had long been implicit in Le Corbusier's work. Le Corbusier, whose architecture is generally regarded as the pure embodiment of the ideas prevalent in the twenties, raised the demand in his theories of the aesthetics of architecture for the free design of the ground-plan.
When it came to the chapel at Ronchamp, Le Corbusier had given up the idea that the external design should be related to the right angle, and had developed—as did Aalto later on—a plastically modulated structure.
Various Modern Trends in Design
Similarities in external design should not lead us to fail in differentiating separate trends. The formulae already offered, such as "dynamic architecture" or "loosening of the exclusive connection between shape and cube, prism and right angle" etc., are seen to be too imprecise on closer examination. The various points of departure are too disparate, and so are the forces at work, for such summary labels of this kind to be sufficient to cover them all.
Still, there is a natural desire to distinguish the individual aspects of differing trends and to group related phenomena together. Thus, all those architects in the twenties who attempted to vary the principles of architectural design can be thought of as a group.

Space as a Neutral Continuum

Another architectural trend, which has lasted to the present day, came from the twenties and is to be seen in the work of Mies van der Rohe and his students. Right from the days of the Tugendhat house, it was apparent that Mies van der Rohe, unlike Gropius, was struggling against that concept of design which maintains that any given building has a specific functional role to fulfil. It can be seen from his later buildings that Mies van der Rohe has increasingly abandoned any form of specific functionalism and design; his buildings have tended to become abstract structures, in which the most various patterns of behaviour can operate.

Organic Architecture—Organically Inspired Construction

However, yet another design possibility differing from the concepts of Mies van der Rohe was open to modern architecture. Form here is quite secondary, for it stems from the individuality of task involved and—especially in the case of Hugo Häring—the exterior design is evolved organically. Organic architecture and organically inspired construction are the concepts which have been formulated by their exponents, F. L. Wright and Hugo Häring. Both ideas indicate that there should be an intimate relation with nature, and they point to an architecture in which functional demands are satisfied in a way similar to that found in nature. These two concepts, however, have nothing whatsoever to do with the imitation of natural forms.