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Summary

Egon Eiermann, Karlsruhe
Associate: Eberhard Brandel, Karlsruhe
Contractor: Building Department, Berlin

German Embassy in Washington

(Pages 1–10)

We congratulate the authorities for having had the courage to select for the building of such a prestige structure a man whose works, like the pavilion in Brussels, the church in Berlin, etc., are giving rise to a great deal of fruitful controversy. It is all the more regrettable that the architect was not given the same free hand with regard to the interior appointments.
The restrictive building code applying to this site located in a residential district called for a number of clearly distinct levels, up to a maximum of three, and for parking lots at grade level for all employees. Moreover, it was important to respect the view from the ambassador's residence.
The program comprises offices, some reception rooms, an auditorium and a conference room.
This program, which is divided into groups of varying importance, as well as the small adjoining site, which is rather sloping, induced the architect to adopt a step plan. The Embassy is approached from the east side, where there are situated the caretaker's flat surrounded by trees, the parking lots and the entrance protected by a large projecting canopy. From the spacious lobby with the reception desk and seating groups there is access via a dozen steps towards the auditorium, which also serves as a banquet room, and, lower down, towards a bar and the canteen. A central core, comprising the lift, the stairs, the installation shafts and the lavatories, serves the entire building. Each recess of the volume constitutes a terrace, which is covered with a pergola, in front of the different levels, behind which are the offices. The records, however, are sited on grade level and set in the slope. Nevertheless, the plastic expression of this highly differentiated structure is characterized above all by a kind of second exterior skin of horizontal and vertical steel elements serving simultaneously as brise-soleil with natural wood slats attached to this steel grille, as access for window cleaning and as fire escapes, which are required by the American building regulations, these elements being made up of grid structures supported by triangular brackets.
Two fields of this exterior structure with horizontal guard-rail correspond to three face panels.
Since at the end of the floors and terraces the vertical rods are doubled, there is created an extremely lively façade rhythm, which will be even more effective when it is all covered with creeping plants. Thus, like Wright's buildings, this one too will be completely integrated in its natural setting with its stand of old trees.
Seeing that this is a diplomatic building, it was exempted from certain provisions of the building code. Thus, the exterior steel elements did not have to be protected against fire, which contributes further to the elegant effect produced by the faces.
The extremely restrained employment of materials, natural Oregon timber, steel painted light and dark grey, yellow brick (also greyish yellow and dull brown) and white curtains as well as electric bulb lighting throughout, cause this building to harmonize with the neighbouring homes; its total expression is one of subdued dignity.
The air-conditioning is divided into three independent systems, which permits a very rapid adaptation to abrupt variations in temperature. All the detailing is meticulous, and the architect claims that, contrary to the general opinion, American workmen are highly qualified and, in any case, work with as much precision as skilled German workers.
With the exception of the flooring material (ceramic tiles) and the window glass, all the structural elements were manufactured in the USA.
If we would attempt to classify this building among the creations of modern architecture, we can say that it is characterized by the same purity and precision as we encounter in the buildings of Mies van der Rohe, but it is also marked by a high degree of differentiation and the application of a human scale, which, along with the use of creeping vines, recalls the architecture of Wright.
The building has been awarded the following prizes: "AISC 1965 Architectural Award of Excellence" by the American Institute of Steel Construction, New York, in June 1965, bestowed at the beginning of November 1965, and it was for the second time honoured with the "Certificate of Merit for Excellence in Architecture" by the Metropolitan Washington Board of Trade, Washington. This award will take place on October 5, 1965.

Robert Probst and George Nelson, New York

The "Action Office" of the Hermann Miller Collection

(Pages 11–16)

Why have stand-up work-tables been completely replaced in the public's favour by tables with seats, where one can work sitting down? Doctors claim that many new ailments stem from the almost exclusively seated position of modern man: in his car, at work all day long, at table, etc.
Owing to the following findings, a stylist-consultant from the aircraft and woodworking industry was entrusted with a 4-year research assignment with Miller: when seated at work, the feet are in a bad position; work in progress goes from the desk to the draughting board; the wall surfaces near the work-tables inevitably become exhibition boards.
The research confirmed the relation, a direct one, between liveliness of mind and physical posture as well as the slightest bodily movements.
Working capacity declines where people are forced to remain in one single fixed position all day long. Also, conversations conducted by people when seated are not productive and give rise to distractions and entail loss of time. Moreover, there is a direct connection between seeing certain objects and being concerned with them. Present-day offices, which serve essentially as classification and filing centres, lack such obviously evocative objects, and therefore they kill off many ideas which might otherwise be inspired and so reduce creative capacity. For these reasons, Probst suggested desks on two levels permitting work seated in various positions and standing, with an additional mobile level serving as a paper rack.
The research program comprised analytical studies with questionnaires, expert opinions, the study of specialist literature and the planning of a prototype which was tested with all kinds of users (from the ordinary employee up to the company president), whose reactions were evaluated by psychologists.
The same work was tested in three different settings: in a dimly lit room, where the person was lying down; in an ordinary office with visual stimuli and in a particularly stimulating room with an exhibition board and changes in position, the test person being permitted to move freely about.
The results of this test show the direct interdependence among a changing physical climate, visual stimuli and the increase in working capacity.
Account was also taken of other tests concerning the plan, the size and the isolation of offices as well as the relation existing between regular and monotonous work and the symptoms of fatigue.
Other details, like the manner in which people rest their extremities and their heads, like the need to surround oneself with personal objects, like the ineffectualness of conversations conducted across tables encumbered with papers, which seem old-fashioned in any case, like the positioning of the work-table which permits the person to turn his back to visitors and which thus reduces interruptions, like excessive isolation which cuts down productivity–all these things were taken into consideration. The result of these analyses has eventuated in the new furniture series known as "Action Office".
This office furniture series permits work in diverse positions as well as control over the number of interruptions by third parties during working hours, without giving offense, and this represents a very important psychological factor in the climate prevailing within a firm. As jogs to the memory, objects can be placed on view on elements designed for that purpose. Surfaces that are pleasing to the eye, flap tops as well permit an unimpeded flow of work. Conversations take place in standing position. A large number of shelves accommodate informative material and card indexes. Mobile drawer-and-shelf units, suspended filing cabinets, etc., eliminate the piling up of useless expedited paper. The integration of the electric mains permits the doing away with certain cumbersome pieces of equipment. Special set-ups for dictaphones, computers and microfilm projectors are installed on the rear face of each work-table. Independent communications units guarantee a more efficient utilization of telephones. Built-in phone units provide room for directories, note pads, dictaphones and tape-recorders.
This furniture series will be the cause of a new atmosphere in the office, in which the work tempo will be accelerated with a simultaneous relaxation of mood.

Plan: Hans Maurer, Ernst Denk, Munich

Office Building in Königinstrasse, Munich

Execution: Hans Maurer, Ernst Denk, G. H. Winkler and C. Winkler
Associates: Dipl.-Ing. Gabor Pétery, Dipl.-Ing. Florian Wisiol

(Pages 17–24)

The old Munich re-insurance building, constructed in 1910 like a great country-house, with four wings and two closed in interior courtyards, continuing thus the eclectic tradition of Bavarian classicism, did not permit any immediate enlargement. The new building is situated on the opposite site which runs along the municipal garden. The present plan is the result of a restricted competition of Munich architects, guaranteeing the last open space in the centre of the city toward the park, which for some years now has been completely isolated by neighbouring buildings. Situated on the south side of the park, the building frees one of its principal entrances by forming a large approach beneath piling and a terrace looking on to the avenue and the park, where there is located a fountain in the shape of a crystal of aluminium, conceived by the sculptor Georg Brenninger, whence the water flows towards the terrace and the adjacent river.
So as not block the view on to the park from the old building, the new building is not sited in the same axis as the old one. A three-storey block, placed transversally to the road, rests on a glazed recessed ground level and on a garage basement level of stone. On the ends facing the road and the park, the reinforced concrete pillars of the ground floor are set in front of the elevation; on the other faces they are freely disposed inside the glazing.
The extremely light effect produced by the building is due to the elegance of the pillars and of the curtain-wall face of light metal, which is delicately articulated and exhibits a high degree of finish.
The offices are situated around a central core in elevation, the ground floor comprising the lobby and the computers with utility rooms.
The basement levels accommodate a garage for 100 cars, a service station, the technical installations and a connecting corridor running to the old building.

Construction:
The skeleton of reinforced concrete rests on a grillage with a thickness of 80 cm. The inter-axial space of the pillars is 8.40 meters on basement level and 2.10 meters for the articulated pillars on the upper floors, with a section of 20/20 cm. The wind bracing is assured by solid walls supporting the stairwell and by partitions between the offices situated on the side facing the interior courtyard. The decks are ribbed.
The faces are made up of sandwich panels 75 mm. thick, 2.10 wide and one floor high, whose exterior cladding on the parapets is of aluminium bolted on to U-risers, between which are the Venetian blinds. The windows

are made up of a fixed-pane central element and two pivoting casements above and below. The windows on the ground floor, also of insulating glass are affixed to a light aluminium structure. The cladding of the ground floor pillars is of aluminium sections 6 mm. thick. All the aluminium parts are eloxidized with Duranodic, dark brown and anthracite grey. All the partitions, of metal, between the offices are movable; the core partitions are clad in oak. The building is air-conditioned throughout. A high-speed air-conditioning system with 4 changes of air per hour with exhaust air vents in the ceiling can be converted into a conventional heating system.
For this reason it was necessary to provide casement windows.
A special circuit serves the computers and the garages.

Materials:
aluminium eloxidized, dark brown and anthracite, Brandenburg miocene, washed concrete of Isar gravel, Italian serpentino, oakwood as cladding, suspended ceilings and movable partitions of white metal.
Static calculations: Dipl.-Ing. K. A. Cronauer, Prof. Wilhelm, Munich; landscaping: Alfred Reich, Munich.

Harry Seidler and Associates, Sydney

Construction of a business center on Australia Square in Sydney

Consulting engineer for the realization of the high-rise units: Pier Luigi Nervi

(Pages 25–29)

On a lightly sloping site in the centre of the city the problem was to create a high-rise complex leaving the ground free for pedestrians. The 13-storey rectangular building and the circular 45-storey one do not get in the way of the existing structures and are not subject to the disadvantages arising with a building along a street. They surround a sunken plaza for pedestrians, from which there is access via stairways to the office buildings, to the business center and to the 400-car garages, the last floor of which also serves for shop deliveries. This type of architecture recalls that of Mies van der Rohe, Philip Johnson and SOM of the Seagram Building and of Lever House in New York, which also provide empty spaces between skyscrapers, giving the effect of a canyon. The high-rise unit has a round or polygonal plan. Its interior without supports comprises 6500 sq. meters for offices that are easily subdivisible, this necessitating less than 20% communications surface.
18 lifts serve this building at different speeds, stopping at different floors, two of them leading directly to the top-level restaurant and to the terrace; the lifts are situated in the centre of the building with the freight lift, the emergency stairs, the lavatories and the mains. The span from the glazing to the outer face of the core is 11 meters.
The lighting and the fixtures integrated in the suspended ceilings permit a maximum of flexible adaptation. The air-conditioning serves the interior, with reduced rate of flow, and circulates at high speed in a second exterior tract.
The first floor is intended as an international business centre. The deck has a resistance of 650 kg/cm².
The second level houses public premises: a cinema, conference rooms and the offices of the business centre The 14th and the 30th floors accommodate the technical installations where a double partition is placed behind the face.
To lend this building too a more significant plastic and structural importance, Luigi Nervi was called on to elaborate and articulate the structural conception.
For the three decks taking heavy loads on the ground floor, the first floor and on the roof, Nervi has selected a ribbed construction whose elements are curved, creating triangular and lozenge-shaped fields a little like those of his halls in Turin and Rome, whose cofferings are of pre-fab ferro-cement elements. This structure, which requires half the height of a standard structure, will be lighted from below.
As in the Pirelli building in Milan, the face pillars diminish upwards as the loads decrease. All the supporting elements are carried out in reinforced concrete with a white cement base, which forms a contrast with the dark pre-fab parapets, composed of an addition of visible agglomerates.
The double-paned outside insulating glass, intermediate slatted blinds and simpleglazed interior window (fixed) are cleaned at the same time as the faces from a mobile rig that can sweep the entire façade.
The 13-storey building 45 meters high has an open ground floor and comprises 800 sq. meters of office space to let per floor. The asymmetrical central core comprises the communications and the technical installations.
The construction of the upper floors is made up of rows of four pillars each, of which the two face pillars are thinner than those on the inside.
On the ground floor, the loads are received by 7 supports (V-shaped and asymmetrical), because the loads of the building are greater in the centre, where the stiffer interior structure carries the loads more directly to the ground. These supports carry pre-stressed stringers situated at a height of 7 meters. The plastic effect of this ground floor is very dramatic, especially at night, because of the indirect lighting located in the pillars.
All parts of the structure appear dark, and the face elements as well as the cladding of the superstructure are of pre-fab concrete with light-coloured agglomerates. The window-frames are of aluminium, and the suspended ceilings are coated with an absorbent layer sprayed on with a gun.
The ventilation is a low-velocity system for the whole building. The sunbreaks are curved, affixed to the east face and composed of a mobile part and a fixed part on the west face. These sunbreaks, which are vertical, are continuous, of dark grey eloxidized aluminium, and they greatly enliven the façades.
The walls of the superstructure are also curved, to form an element matching the neighbouring round tower.

F. W. Kraemer, Günter Pfennig, Ernst Sieverts, Brunswick
Heinrich Rosskotten, Edgar Tritthart, Josef Clemens, Düsseldorf
Associates: F. H. Wenger, Klaus Gerlach, Hubert Schneider

Municipal Savings Bank in Düsseldorf

(Pages 30–36)

In a restricted competition, 9 architects had to present an internal organization project and an urban plan for this new building, which is situated in the heart of the city on a secondary business thoroughfare. The site, unoccupied and 130 meters in length, furnished the last chance to create a plastic accent in this monotonous street.
In order not to disrupt the activity on the lower levels by setting up a closed face corresponding to what is ordinarily found in banks, there was selected a plan which sites only the windows for accounts current and transfers on the ground floor, which is much frequented, and which lets the remainder of the surface available to shops, and which puts the main teller's window hall, along with the utility rooms, the manager's office and the conference rooms on the first floor, accessible via escalators. This program was worked out only after the competition, in which Kraemer and Rosskotten succeeded in imposing this American type of plan (identical with that of the Manufacturers Trust Company in New York). It furnishes, plastically, a broad foundation on three levels, on which is placed the high-rise structure (16 floors), which accommodates the management of the bank as well as office premises to let, and, at the top, the canteen, the kitchens and the technical installations. This large complex of volumes creates a lively architectural accent in the skyline, due respect being observed for the required intervals and the proper relations being established to the adjoining buildings.
The basements accommodate the parking facilities, the technical installations and the safes.
On the outside this building has the appearance of a prestige edifice, and on the interior there is a pleasant atmosphere which inspires confidence.
The large windows, which serve to integrate indoors and outdoors, have been equipped with the corresponding installations, such as air-conditioners, sound-proofing and automatic brises-soleil. The bank with its offices and safe deposit vaults takes up 110,000 cubic meters of constructed volume, the garages 3000 sq. meters and the shops 2000 sq. meters.

Rudolf Rümmelein, Berlin

Three-dimensional metal rod constructions

(Pages 37–42)

The production of tensions is one of the most important basic principles in the conception and expression of any aesthetic creation.
Up to the present time there has been little theorizing in this field, and there are no syntheses for application to buildings.
For rod constructions, the architect or the engineer tries to produce these tensions by various methods, by various combinations of basic elements. Nevertheless, such systems, whose sole variant was the span, entailed the freedom of an artistic conception. For these restrictive reasons, perhaps, the architects rejected the idea of such structures.
The present report seeks to show what are the unexplored possibilities that permit the application of such structures composed of rods, which can thus constitute the original element of certain constructions.
An over-all picture given by model photos and sketches reveals the large number of new forms which permit a free application thus contributing to the more generalized use of three-dimensional structures. The models represent basic shapes, the sketches yield combination possibilities. Naturally, a partial application alone of these shapes is thoroughly within the realm of possibility and can lead to new solutions. A complementary publication shows that these shapes are not simply the result of purely intellectual speculations, which are not calculable or realizable, but are the outcome of electronic computations, which are well able to give rise to such structures. It is beyond the scope of this report to go into the mathematics involved (it is a question of high degree hyperstatic systems), because what we want to do here is to elucidate the practical possibilities of application. All these structures composed of rods have a factor in common: there are involved systems based on rights angles on three planes, where these right angles form tangents to third degree algebraic curves.
It is known that a third degree curve can tend toward three points in infinity. Thus, the three-dimensional structures executed up to now represent, from the mathematical point of view, a special case of the structures presented here.
On the basis of geometrical structural shapes, based on mathematical formulas, it is possible to develop technically viable constructions, whose expression will possess a general value which, owing to their logical beauty and their crystalline purity, will counter the purely sensational effects of a stylish formalism, "for the beauty of architecture consists in the perfect harmony of these elements, where nothing can be added or taken away" (Alberti, 16th century).
From the aesthetic point of view, the rods or the metal tubes constitute an excellent means of rendering the structures light and almost immaterial, where the observer no longer thinks of the existence of a heavy roof, but where he feels drawn by the "movement" unleashed by the play of light and shadow. These structures yield a fascinating dynamic impression which is expressed in the arrangement of the rods.
Such structural shapes, based on mathematics, signify an enrichment of the range of formal possibilities for the creative architect, and offer more plastic means of expression with grandiose effect.
This effect will grow out of a perfect harmony between artistic considerations and purely geometrical ones. These metal rod structures, which are three-dimensional, give the impression of weightless constructions, resting on but a few points, whose arrangement will depend on the utilization of the given volume.
Now then, these structures are economical, for they offer a favourable relation between weight proper, spans and employment of material. These structures express the aspirations of modern architecture, which reduces to a minimum the supporting elements so as to obtain an effect of lightness, which seeks a unity of exterior and interior expression as well as an interpenetration of spatial volumes, and which leads to a new spatial conception given by the relation between the sections of the elements and their span.
These structural shapes, based on synthetic research, leave sufficient play to the architectural imagination, to transform into reality artistic ideas based on the sense of forms, which, finally, is responsible for the aesthetic aspect of the constructed end product.
Perhaps the architect will be interested in knowing that the continuous and discontinuous curves of the third degree can be obtained by a linear graphic representation: these curves are obtained by a continuous movement of the constructive mechanism from points or tangents based on the sole characteristics of a right angle.
Moreover, there is the possibility of determining triangulated systems on the basis of the basic hexagon.
If by these observations we have succeeded in introducing the notion of a new category of three-dimensional structures which, in comparison with the old systems of structures, offers structural and aesthetic possibilities that are more complex, and if by that means we have been able to inspire architects in this new direction, the aim of this article will have been achieved.