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générale et la direction commerciale avec ses différents départments. Ces deux étages sont totalement climatisés. Les problèmes acoustiques dans la grande salle furent résolus par l'installation de plafonds et de tapis amortissant le bruit.
L'étage inférieur abrite les vestiaires du personnel des bureaux, les archives, les abris anti-aériens et les installations techniques.
Les divers étages de l'aile de fabrication sont destinés à des fonctions particulières. L'étage supérieur contient principalement les départements de travail de la mécanique de précision et le montage. Au rez-de-chaussée, nous trouvons la tournerie, le fraisage, l'aiguisage et l'ébarbage.
L'étage inférieur contient tous les locaux annexes tels que les vestiaires, les douches, les installations et appareils, le réfectoire et le dépôt. Un noyau intérieur d'escalier et d'installation relie les trois étages. Tous les locaux sont totalement climatisés.
Les deux bâtiments ont une ossature en béton armé coulée sur place et des plafonds massifs servant de construction porteuse.

Bâtiment des bureaux en relation avec les services communaux

Exemple:
CVE-Centre de Voirie, Genève
Jean-Pierre Dom, François Maurice, Genève
Planification: 1963
Exécution: 1965-67

(Pages 26-28)

Les premières études concernant le projet du centre de voirie ont été effectuées en 1963. A cette occasion, on a déterminé les exigences définitives en superficie et le système de circulation. A la base de ces avant-projets, le maître de l'ouvrage a établi le programme d'ensemble qui fut réalisé en une seule étape.
Ce programme prévoyait les groupes de fonctions suivants:

- Garages pour 60 véhicules lourds avec installations nécessaires de nettoyage et ateliers de réparation.
- Locaux pour l'administration de l'entreprise de voirie.
- Locaux sociaux et séjour pour les employés.
- Dépôts couverts et halles.

Ces groupes de fonctions ont été disposés sur trois niveaux. Le problème de raccorder les locaux administratifs aux halls a été résolu de telle façon que le hangar des véhicules lourds, le secteur de l'administration et celui des dépôts ainsi que les locaux sociaux ont été groupés autour d'une cour. Cette dernière sert d'accès aux groupes de fonctions de sorte que les chemins conduisant au bâtiment administratif sont courts.
Une autre liaison entre les corps de construction existe au sous-sol. Là se trouvent les dépôts et les locaux techniques et ceux destinés au personnel. L'ensemble de l'installation a été planifié sur une grille référentielle de 5,875 m des deux côtés.
Le sous-sol a été réalisés en béton coulé sur place tandis que les parties de construction situées au-dessus sont en éléments d'acier largement tendus et montés sur le chantier auxquels s'ajoutent des éléments préfabriqués pour la finition.

Bâtiment des bureaux avec cellules en relation avec les salles publiques

Exemple:
Centrale de la Banque d'escompte SA de Berlin
Günter Hönow, Berlin, en collaboration avec F. Koch
Conseil technique bancaire: Département de la construction de la Deutsche Bank, Dusseldorf
Direction: H. Blume
Collaborateurs: L. Schraermeyer, W. Kampmann, W. Graiser, H. Klaar, Ch. v. Hopfgarten, U. Schulz
Architecte paysagiste: W. Rossow
Statique: H. Dienst et G. Richter

(Pages 29-32)

Pour obtenir les plans en vue de construire leur nouvelle centrale, la direction de la Banque d'escompte de Berlin organisa un concours. Le jury porta son choix sur le projet de Günter Hönow. Le maître de l'ouvrage s'étant rallié à la proposition du jury chargea Hönow et ses collaborateurs de l'exécution. Grâce à sa situation favorable orientée vers la Ernst-Reuter-Platz, la construction revêt une signification particulière.
Les façades paraissent vivantes grâce aux pare-soleil disposés devant les murs extérieurs de telle façon qu'ils ne protègent non seulement les locaux de la lumière solaire mais encore qu'ils reflètent la lumière et améliorent ainsi considérablement l'éclairage intérieur.
Des galeries nées de la disposition des murs extérieurs en retrait servent de passage de sauvetage et facilitent le nettoyage des fenêtres. Ces façades présentent une forme architecturale remarquablement expressive. Pour la construction porteuse (une ossature en béton armé) à laquelle sont suspendus les pare-soleil et les galeries, on a utilisé des parties préfabriquées en béton armé. Les balustrades des galeries sont faites d'éléments préfabriqués en béton.
La maison-tour s'élève sur un socle-rez-de-chaussée renfermant le hall des guichets. Tout autour de ce dernier, sur les côtés des deux halls d'entrée, sont groupés d'autres locaux de guichets, des bureaux, des salles de conférence, les locaux du portier, etc. L'étage de la cave qui reçoit la lumière du jour grâce à un fossé circulaire, abrite la chambre forte, les archives, les dépôts et le passage pour le transport de l'argent. Le premier étage supérieur est réservé à l'installation IBM. Le 8ème étage abrite le réfectoire. Les locaux de la direction sont situés à l'étage le plus haut, c'est-à-dire le 13ème. Les divers bureaux sont répartis sur les autres étages. Les chambres fortes, le rez-de-chaussée, le centre de calculation au 1er étage et les étage occupés par la direction et le réfectoire sont climatisés. Les locaux des autres étages sont aérés au moyen d'impostes. Toutes les fenêtres sont en verre isolant. Les locaux sont munis de plafonds suspendus en métal dotés de matelas amortissant les sons et de luminaires incorporés.
A côté du bâtiment principal, à l'ouest, ont a édifié une «maison secondaire». Elle abrite, sur deux étages. des places de parc pour automobiles. De plus, le 1er étage contient le logement du concierge, un local en vue de l'instruction et des chambres d'hôtes.

Espace construit sans les galeries: 70,200 cmb
Surface utile brutte: 15,500 mq
Surface utile nette: 10,600 mq

Le bâtiment ne tient pas seulement compte de toutes les exigences pratiques, il a également été construit, dans tous ses détails, avec un sentiment sûr de la forme, de la couleur et de l'effet du matériel.

Bâtiment des bureaux avec diverses fonctions

Exemple:
Palaceside Building Tokyo
Shoji Hayashi, Tokyo

(Pages 33-36)

Le bâtiment Palaceside, l'un des plus grands édifices du Japon, est un exemple typique de mixtion des fonctions et des problèmes qui en découlent.
Le bâtiment abrite une gare de métro, des garages, une imprimerie de journaux, des rues couvertes, des dépôts, des étages de bureaux et des salles de conférences.
La superficie du terrain à bâtir étant entourée de routes, cela limitait le choix des formes possibles de la construction. L'architecte a finalement décidé une disposition dans laquelle deux corps de construction décalés l'un par rapport à l'autre dans la direction horizontale, donnent accès à deux éléments de circulation verticaux reliés par une rue intérieure. Les éléments verticaux abritent les ascenseurs, les escaliers et les installations sanitaires.
Les étages situés en dessous de la surface du sol abritent des parkings, des dépôts, des locaux techniques et l'imprimerie. Dans la zone d'entrée, des magasins s'étalent sur deux niveaux le long d'une rue intérieure reliant tous les passages aux tours d'accès. Ces niveaux sont reliés à une station de métro au moyen d'escaliers roulants.
Au-dessus des magasins, il y a 7 étages de bureaux, un étage avec salles de conférences et un étage technique. La surface du toit est utilisé comme jardin. Les surfaces des étages supérieurs sont divisées en secteurs presque carrés de 25,60 m de largeur et 23,60 m de profondeur. Ces secteurs sont loués séparément.
Autres caractéristiques de cette construction: la séparation stricte des systèmes secondaires tels que l'appareil-porteur, l'installation et l'accès ainsi que la remarquable variabilité du bâtiment.
Un des buts de la planification fut de réduire les endroits de contact entre des systèmes secondaires se transformant. Un second objectif fut la rationalisation du procédé de planification. Ainsi, conformément au portage, l'appareil porteur, l'accès et la finission furent planifiés en premier lieu. Pendant la réalisation de l'appareil porteur et de l'accès on commença la planification minutieuse de la finission. Cette dernière requit moins de temps que la réalisation de la structure primaire.

Summary

Friedrich Wilhelm Kraemer, Brunswick

The shape of office buildings

(Pages 1-4)

Behind all human activities lies the question of meaning. The given work representing the achievement of a given activity is an interpretation of the meaning of man's life. Architecture taken as the domain of human activities realizes by way of its configuration this conception of meaning.
We understand by the term "configuration" the harmonious relation between content and form, that is, the harmonization of the spiritual and the material realms. The sum of a swarm of isolated elements does not constitute this configuration, but all the elements are parts of the totality, and their relation and interpenetration on the inside of a network create the given configuration. The latter shows us how the isolated elements are formed. Moreover, it contains the structural make-up of the whole complex.
Thus, the given form, the design, is only the fashion in which the configuration appears. In architecture, design has an expressive import only as a part of the total "configuration". If the design is not in conformity with the content of the assignment, i. e., if the form and the content are in conflict, the general expression of the configuration becomes confused and incomprehensible.
Human perception expects that the configuration of a building be a reflection of its character, that it symbolize its content. "Symbolism is the representation of a state of affairs in another setting by means of structural resemblances" (Norberg-Schulz). This all leads to the conclusion that if the content changes, the form ought to or should be simultaneously transformed. The two in combination yield the new configuration, a typical configuration fraught with symbolic meaning. This system applied in the construction of office buildings means that the transformed office building, with the new forms of its new contents, presents a transformed configuration. However, this observation does not amount to saying that "form follows function", for form does not follow function, but function and form combine when they condition each other, to form a convincing configuration. Understood in this way, the word "formation", often falsely used, recovers its real meaning: to form does not mean only to be concerned with formal matters, but it has to do with the agreement realized between content and form.
Over the last few years, the new organization of administrative functions has given rise to a functional form which is replacing the old type of isolated office; what is involved now is the large-scale office space. Corresponding to this new procedure is a transformation in the architectural appearance of office buildings. Oversize offices are functional areas with numerous utilization possibilities, with free range for furniture arrangement. The function, the construction and the design of the oversize office unit are less dependent on one another than in the traditional office building with its office cells.
The multiple possibilities of design for large-unit office buildings are still little known. Among the important consequences as regards the modifications of the given assignment, mention has to be made straight off of the elimination of the right angle in the plan. Example of this innovation: the Nino de Zobel office building, whose design is free, polygonal (Ill. 12, 13).
In sum, the configuration of a building is the totality of its dependencies. Each part of the complex produces an effect on the others. Each transformation of a thing entails a transformation of another and, consequently, of the total complex, of the "configuration".

Arno Lappat, Hamburg

Planning methods in office building construction

(Pages 5-11)

To plan means to concern oneself methodically with the future. Planning is a process of decision making effected methodically with a view to preparing for future activities. Such a process ought to give up all intuitive approaches in order to arrive at precise planning results.
An office building is generally built for one or two generations, i. e., for 30 to 60 years. Absence of planning or a planning gap has repercussions on all the functions of the building, and it then proves difficult to remedy the defects. It is therefore indispensable to set up a careful planning program when office buildings are being erected in order, above all, to permit future rationalization of the work.
To create a planning situation, it is necessary first of all to have a sufficiently long time interval before commencement of construction for the study, the analysis and the organization of the components of the project.
At the present time, it is no longer possible for an architect or a group of architects to act alone in the planning of office buildings. Specialization and increasing interpenetration of activities represent for them insuperable obstacles.
The first stage of a planning project consists in determining the special role to be played by the object in question. This gives rise to the selection of competent individuals and teams for the job. Then a team of experts plans the construction program. This team should comprise from 3 to 6 specialists. Im more experts are necessary, it would be wise to institute other teams of planners. It is also indispensable to pick out among the planners one person entrusted with the coordination of the project. The whole planning team ought to be able to work in a large room so that they can lay out for inspection their results.
The chief tasks of a team of planners are as follows:
to elaborate work schedules and deadlines,
to carry out the planning work according to these plans and in conformity with the envisaged planning method,
to make analyses,
to determine norms,
to present the results of the planning work,
to inform the other instances involved of the planning details,
to call orientation meetings, and, finally,
to summarize the planning work in a report.
The director and his associates participate in the planning work. The latter ought not to remain purely theoretical and divorced from reality, but the planning results ought to be continually applied in the enterprise. These results should not merely operate partially in seeking practical application, but their realization should have a one hundred percent impact.
A planning project ought to be meticulously prepared even before the actual work gets under way. It is necessary first of all to determine the planning method to be adopted by all the planning experts. This condition

is a sine qua non if concrete results are to be achieved.
A minutious analysis of the administrative organization of the enterprise will lead to a decision on whether the erection of a new office building is necessary. A renowned planning expert once declared that nearly 50% of all new office buildings would not have had to be built if the administration of the enterprise had been fittingly organized and rationalized.

Office landscapes with artificial environment

Example:
Kamen mail order house/Westfalen
Architect: Firm's construction department
Organization consultant: Quickborner team
Lay-out: A. Wankum
Planning: September 1962 – December 65
Construction: October 1964 – December 65

(Pages 12–13)

The oversize office area, whose utility surface measures around 4,600 sq. meters or one tenth of the total surface of the complex, constitutes but one part of the construction assignment, which, moreover, comprises recreation facilities for the personnel, a dispatching warehouse, a stock room and the necessary loading installations. This large hall (60×80 meters) is the largest of its kind in Europe. There work here 342 employees, from the apprentices up to the department head.
Each work site measures 13.4 sq. meters. The average height is 2.8 meters. The 342 places, with 66 being reserved for stenographers, are arranged in 50 work groups and 35 conference areas each having 4 to 8 places. Moreover, in the tracts close to the outside walls, there have been installed 4 recreation rooms, cloakrooms and 39 relaxing areas.
Aside from the furnishings and the communications equipment, there are around 200 sliding partitions of different heights and 185 plant troughs which constitute some of the variable elements of the large hall.
The most important factors allowing for this variability are the controlled local climate, the lighting system and the avoidance of disturbances.
The air-processing units are distributed, depending on their size und purpose, in walled-in cubicles and in compact air-conditioning apparatus. As for the lighting, the entire tract is artificially illuminated (500 lux, service value). Acoustic insulation is ensured by the sound-dispersing ceiling, the perlon carpeting, the acoustic treatment of the partitions, the sliding partitions, the transparent fittings and the vibrators fitted to the telephones.

Office district with different environmental conditions

Example:
Office building of the Insurance Company of the Free City of Hamburg
Curt Siegel, Rudolf Wonneberg, Stuttgart
Associate: Hermann Hahn
Competition: 1963
Planning stage: 1964–66

(Pages 14–19)

This project was awarded first prize in its competition. At the present time, the rough construction stage has been reached. For several years the City of Hamburg had been reserving the business district extending to the north of the city for large-scale office buildings, which were unable to exband elsewhere. The insurance company dealt with here was also given a building site by the municipality, and, for this reason, found itself obliged to organize a competition.
The site measures around 14 hectares. The network of pedestrians routes branches out from the underground and suburban stations. Access is mainly from the west and the north. The basic surface coefficient is limited to 6.5 and that of the floor surface to 1.5. The spatial program envisages principally the use of floor area as big offices, except for the management office and the board of directors, for which separate premises have been installed. The total utility surface, including the kitchen, the recreation rooms and the storage facilities, etc. measures around 15,000 sq. meters, with 11,000 sq. meters for the large-scale office spaces accommodating around 1,100 persons. Even inside the large office areas there are lounging nooks and mobile cloasroom units.
The structure is relatively low, since it has 3 to 5 floors. The core separates the standard floors into two large offices measuring 2,500 sq. meters each. In these rooms there is more than 90% utility surface. The stairways are installed in the core, along with the lifts and technical facilities. External galleries and 4 external stairways serve as emergency exits.
The building is of reinforced concrete. The supporting skeleton and the decks are of pre-fab elements set up after the supporting core taking the horizontal loads had been poured in situ. The large grid measuring 8×16 meters meets the spatial requirements of large office areas.

Office building in combination with productions plants

Example:
Agathon office building and factory at Bellach near Solothurn
Bruno and Fritz Haller, Solothurn
Associate: H. Weber
Air-conditioning technique: E. Steck
Planning: 1963
Construction: 1964–65

(Pages 20–25)

This complex presents not only an undeniable aesthetic interest, but it also deserves our study for other reasons:
The existing building is not envisaged as representing a final stage but rather is intended to undergo successive expansions in accordance with the future development of the enterprise. This initial condition demanded a clear determination of the function of the envelope.
With a minimal cost the envelope sharply limits the disturbing influences of the external climate on the internal climate.
This enveloping skin permits the users of the building to have visual contact with the environment.
Easy dismantling is just as important as handy assembly. Finally, the skin, despite its aesthetic requirements, does not jeopardize the technical functions taking place on the inside.
The construction plan comprises the entire factory area, i.e. 15,000 sq. meters. The buildings involved here are arranged within the framework of this construction. The factory is capable of extension to the south as well as to the east. The office building can be extended towards the east. All the interior layouts, the arrangement of the supporting structure, of the external walls, etc. have been realized in such a way that future extenions will be tied in with the existing buildings in an organic fashion. Moreover, the construction of the external walls permits easy and relatively swift transformations. At any given time and in all the workshops and other work sites, there can be installed machinery and apparatus, which can be connected up with the central power mains. All these measures are the consequence of studies that had arrived at the conclusion that the production enterprises involved are subject to constant transformations and that all the installations which complicate these transformations ought to be reduced to a minimum.
The office premises in the administrative wing on two levels are, like the production shops, without any spatial subdivision. The work sites are separated one from the other by low partitions or filing cabinets. The management offices and the conference tracts are likewise accommodated in the big hall. The upper floor houses the management, the reception desk and the technical offices. A catwalk connects this administration wing with the upper level of the production tract. On the ground floor, there are the public recention facility and the commercial departments. These two floors are entirely air-conditioned. The acoustic problems of the big hall were solved by the installation of sound-absorbent ceilings and carpets.
The lower floor accommodates the office staff cloakrooms, the records, the shelters and the technical installations.
The various floors of the production wing are earmarked for special functions. The upper floor contains mainly the precision mechanics and assembly departments. On the ground floor we have the turning shop, the milling shop, the grinding shop and the trimming shop.
The lower floor houses all the secondary premises, such as the cloakrooms, the showers, the technical installations and equipment, the canteen and the storage sacilities. An interior core containing stairways and installations connects the three levels together. All rooms are completely air-conditioned.
The two buildings have a reinforced concrete skeleton poured in situ and solid decks having a supporting function.

Office building in combination with communal service

Example:
Municipal Transport car barn, Geneva
Jean-Pierre Dom, François Maurice, Geneva
Planning: 1963
Execution: 1965–67

(Pages 26–28)

The preliminary studies on the car barn project were made in 1963. At that time, there were determined the exact requirements relating to area and to traffic systems. The building contractor set up as a basis the global program, which was realized in one single stage.
This program envisaged the following groups of functions:
- garages for 60 heavy vehicles with the necessary washing and repair installations
- offices for the municipal transport authorities
- recreation rooms for personnel
- covered storage facilities and sheds.

These groups of functions were spread over three levels. The problem of connecting up the offices with the sheds was resolved in such a way that the heavy vehicle garage, the office sector and that of the storage facilities, as well as the recreation tract, were grouped around a courtyard. The latter serves as an access to the groups of different functions in such a way that the routes leading to the office building are kept short.
Another connection between the structures exists at basement level. Here is where the storage facilities and the technical installations are situated, as well as those intended for personnel use.
The total complex was planned on the basis of a grid measuring 5.875 meters per side. The basement was done in site-poured concrete, while the upper structural elements are of steel assembled in situ, plus pre-fab finishing elements.

Office building with cellular structure in combination with public rooms

Example:
Central building of the Berlin Discount Bank
Günter Hönow, Berlin, in association with F. Koch
Technical consultant on banking: Construction department of the Deutsche Bank, Düsseldorf
Management: H. Blume
Associates: L. Schraermeyer, W. Kampmann, W. Graiser, H. Klaar, Ch. v. Hopfgarten, U. Schulz
Landscape architect: W. Rossow
Statics: H. Dienst and G. Richter

(Pages 29–32)

To get plans for the construction of their new central building, the management of the Berlin Discount Bank organized a competition. The jury selected the plan submitted by Günter Hönow. The owners supported this decision and entrusted the execution of the project to Hönow and his associates. Thanks to its favourable location facing Ernst-Reuter-Platz, the structure has a very special importance.
The façades appear animated thanks to the sunbreaks arranged in front of the exterior walls in such a manner that they not only protect the offices from excessive sunlight but reflect the light and so considerably improve the interior lighting conditions. Galleries created by the arrangement of the exterior walls, which are recessed, serve as fire escapes and facilitate the cleaning of the windows. These elevations are remarkably expressive from the architectural point of view.
For the supporting structure (a reinforced concrete skeleton), from which the sunbreaks and galleries are suspended, there have been employed pre-fab reinforced concrete parts. The balustrades of the galleries are likewise of reinforced concrete elements, pre-fabricated.
The high-riser stands on a grade level foundation tract accommodating the tellers' windows. All around the latter, on the sides of the two entrance lobbies, there are deployed other groups of windows, offices, conference rooms, utility rooms, etc. The basement floor, which receives light through a light-shaft circular in shape, houses the strong room, the records, the storage facilities and the passageway for money transports. The first floor is reserved for the IBM installation. The canteen is located on the 8th floor. The management offices are situated on the top floor, i.e., the 13th. The various other offices are distributed over the other levels. The strong rooms, the ground floor, the computing center on the 1st floor and the floors occupied by the menagement and the canteen are air-conditioned. The other offices are ventilated by means of transoms. All the windows are of insulating glass.
The office units are provided with metal suspended ceilings fitted with acoustic baffles and with built-in lighting fixtures.

Office building with different functions

Example:
Palaceside Building Tokyo
Shoji Hayashi, Tokyo

(Pages 33–36)

The Palaceside building, one of the largest construction in Japan, is a typical example of combined functions and of the problems resulting therefrom.
The building accommodates an underground station, garages, a newspaper press, covered promenades, storage facilities, office space and conference rooms.
Since the site is surrounded by thoroughfares, the range of possible designs was limited. The architect finally hit upon an arrangement in which two horizontally staggered structures give access to two vertical communications elements connected by an internal street. The vertical elements accommodate the lifts, the stairways and the sanitary installations. The floors located below the ground level house the parking facilities, storage space, technical installations and the printing shop. In the entrance tract, there are shops spread out over two levels along an internal street connecting all the passageways with the access towers. These levels are tied in with an underground station by means of escalators.
Above the shops, there are 7 office floors, one floor with conference rooms and a technical floor. The surface of the roof is used as a garden. The surface areas of the upper floors are divided into nearly square sectors measuring 25.60 m. in width and 23.60 m. in depth. These sectors are let separately.
Other features of this building: the strict separation of the secondary systems, such as the supporting apparatus, the installations and the access as well as the remarkable variability of the structure. Moreover, in conformity with the theory of the metabolism of shapes, the secondary system have been separated into short and long life-span systems.
One of the aims of the planning was to reduce the points of contact between secondary systems. A second objective was the rationalization of the planning process. Thus, the supporting apparatus, the access and the finishing were planned first. During the construction of the supporting apparatus and of the access, the minutious planning of the detailing was commenced. The latter requires less time than the realization of the primary structure.