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Summary

F. Joachim Friedrich, Munich

Experiences gained from the distribution diagram technique in the construction of the research building of the Osram Enterprise in Munich

(Pages 233–236)

The methods of the distribution diagram technique as means of planning and supervision of large-scale building projects have become increasingly applied over the last few years. If up to the present time the distribution diagram technique has not been employed everywhere in building, this fact is due mainly to the circumstance that those drawing up the distribution diagram engaged by the building contractors have not been able to profit from sufficient experience, because the offers have to be draughted within extremely brief time limits. The distribution diagrams having to do with several hundred activities, even though this is the case in medium-sized projects, cannot be successfully calculated without the use of rather large computers. Nevertheless, there are only a few completely automatic distribution diagram systems at the disposal of contractors, which, for example, effect optimum planning computations.
However, in many cases, the advantages of the distribution diagram technique have been recognized and utilized successfully for supervision work.
A research centre accommodating 400 scientists, engineers and technicians is a relatively complex structure to plan because of the complex and highly varied power mains installations it comprises. This complexity in planning and the brief construction period wished by the owner were determinants in adopting the distribution diagram technique.
The three basic methods of the distribution diagram technique are the CPM (Critical Path Method), the PERT (Program Evaluation and Review Technique) and the MPM (Metra-Potential Method). It has been our experience that the CPM method offers the greatest advantages both from the point of view of time and of money. That is why we have opted for this method.

Walter Henn, Brunswick

Research and Development Centre of the Osram Enterprise in Munich

(Pages 237–239)

The problem, in this plan, was not only to concentrate the research and development activities of Osram but also to impose on them a new form of organization. The location and the area of the site on which the administration building already stands offer several advantages for the research building: proximity to the university and the professional schools, good road access to the city.
It was stipulated at the outset that the facilities of the institute had to be adapted to new assignments, to the improvement in communications and the rapid transmission of information. After preliminary examination, it was decided to erect a 5-storey building (dimensions 76×37 meters), with access via an asymmetrical core extending over the entire length of the structure. On one side of this core, there are the isolated laboratories, on the other, the experimental tract. The roof level accommodates the bulb testing rooms. The far-flung installations systems required minutious and detailed planning. Thus, the arrangement of the installations around the supports and the various power main outlets at the lab tables were studied at great length by means of a test room built to a scale of 1:1. All the ducts and mains are situated in the core tract. The facilities are entirely air-conditioned.

Walter Henn, Brunswick

Biophysical-Chemical Research Centre of the Max Planck Society in Göttingen-Nikolausberg

(Pages 240–241)

For modern scientific researchers, rational organization of research institutes is of major importance. It is within this context that the detailed planning work and the lengthy deliberations proceeding the building of this new research centre have to be considered. Among the requirements obtaining, we could single out for special mention the factor of variable utilization of the facilities of the institute and the possibility of future expansion.
The building site measures 25 hectares and possesses a level differential of around 50 meters. The principal points of the complex are the laboratory tract and the workshops. The latter are situated in a foundation structure built up in terraces, with 7 other structures set on top and housing the labs. The laboratory towers and the foundation structure are closely linked by means of vertical communications. At the main entrance to the grounds of the institute there is another group of buildings housing the general installations, especially the library, an auditorium seating 300, seminar rooms, the administration and guest accommodation.

Horst Lange, Munich

Building for the research of tomorrow

(Pages 242–243)

The mounting importance of research and the study of the problems posed thereby for scientists is leading to new forms of cooperation in research institutes. The result is new conditions for the organization and programming of work, conditions which are having repercussions on the structural conception of the building designed for research. The owner, the architects and the engineers thus find themselves confronted by new problems the solution of which can only be found in intensive and coordinated planning.
In the first part of his article, Horst Lange divides up his "analytical considerations on contemporary research" into four sub-sections: research understood as a technical unit; research as economic unit; research as cybernetic unit and, finally, research as sociological unit. The second part, "Bases of the constructive conception", is divided up into: 1. Organization and programming of work in a research centre. 2. Disposition of the building and its facilities. 3. Power supply.
Finally, the last part of his article deals with the transition from the planning stage to the completion of the structure. It comprises: 1. Composition, assignments and functions of a planning team, 2. draughting of the project and 3. programming of the construction.
Since the best plan is inevitably subject to human weaknesses and since technological development is ceaseless, three possible sources of error have to be borne in mind:

1. Errors of planning resulting from supplementary structural transformations.

2. New research assignments will become known only during the actual building project.

3. Technological progress in construction methods.

Foster Associates (Norman Foster, Wendy Foster, Richard Rogers) London

Electronic Apparatus Factory Reliance Control Ltd., Swindon

(Pages 244–249)

Here are the preliminary conditions set up by the owner:

1. The period between awarding of the contract and commencement of production in the factory was not to exceed $10^1/_2$ months.

2. Construction costs were not to exceed DM 500.–/sq. meter.

3. It was necessary to guarantee sufficient flexibility to the complex to make possible external expansion and internal transformation. The development of the next 10 years was to be planned.

4. The disposition of the plant was to constitute an interpretation of the social structure transformed in terms of industry.

The building under discussion here is but a first construction stage of a long-term planning project. The assignment was to create a structural framework for the production of electronic apparatus and to allow, at the same time, for any change in production methods likely to emerge in the future. The building is of steel construction with conventional structural elements. The exterior appearance can be interpreted as a direct consequence of the specific requirements of the building programm: The construction only constitutes the design. The economy of effort here is visibly demonstrated. The easily recognizable assembly procedure is the result of a strict adaption to the "industrial principle".

Yorke, Rosenberg, Mardall, London

Furniture Factory, Bath

(Pages 250–252)

The assignment here was as follows: For the linear production line of an already existing furniture factory, it was necessary to erect a structural skin capable of housing the different stages of the production process. The owner required:

a) the availability of a neutral utilization surface of 6,000 sq. meters for the different production stages (polishing, stocking, shipping),

b) a maximum of flexibility for the different dispositions of the production surfaces,

c) possibilities in view of future modifications in the production process.
The result of the planning is a neutral skin above a production surface measuring 5,700 sq. meters. It is a longitudinal structure, since fabrication runs from west to east. The hall is covered with a tri-dimensional lattice based on a referential grid of 14.5×14.5. Despite the use of the tri-dimensional lattice, stretching widely, it appeared more advantageous, in view of possible extensions, to start with a small basic unit.

Lenz architects + engineers, H. J. Lenz

IBM-Germany, Mainz factory

(Pages 253–256)

In March 1965, the planning specialists and the owner drew up the first criteria for the general planning, the building program, the functional plans, etc. Construction got under way in August of the same year, and 8 months later already production could begin. These astonishingly short periods are the result of the adaptation of the planning and construction to the methods of industrial planning and production.
The first building phase comprises an area reserved for production of around 20,000 sq. meters as well as an independent power station and surfaces reserved for storage and shipping. A second phase includes 12,000 sq. meters for production as well as the expansion of the storage and shipping shed. There is then provided the installation of the administration, a canteen, other production tracts, training facilities and laboratories. The production tracts of the first and the second stages are to be allotted to the assembly and checking of DP machines and systems. Operations proceed in the following manner: delivery of the parts, assembly of certain types of machines, systematic tests on these machines and checks on product quality.
The sheds first put up have been disposed in such a way that their functioning is not interfered with by later expansion.
The plan of a standard shed consists of two parallel surfaces 35 meters deep separated by a central aisle 10 meters wide and rising to a height of two stories. The upper floor accommodates the large air-conditioners and serves as a main distributor for all the power mains.

Suter & Suter, Basel

The Ciba Klybeck Canteen in Basel

(Pages 265–269)

At the beginning of this year there was inaugurated the Klybeck Canteen, the largest staff restaurant of Ciba S.A. in Basel. The square structure which rises to a height of two stories is situated in the centre of the Ciba grounds. This canteen will serve around 4000 persons.
After very detailed studies, the idea was abandoned of serving meals in the traditional manner. On the other hand, there has been adopted a new system in which the meal is all ready at the start and delivered by means of conveyor belts. Thanks to this rationalization, each belt can serve a meal every three seconds. This calculation is based on the supposition that of the 600 persons on one shift who are to be served in 15 minutes 350 approximately will wish the same meal. There remain, then, around 200 employees who will select the second fixed meal, and 50 generally will prefer a cold snack.

Jürgen Joedicke

Functions of the theory of architecture

(Pages 270–272)

The expression "Theory of Architecture" designates, in fact, the recognition, based on reason, of architecture, of its means of expression and of its effects. The general presentation of architecture and the theory of architecture go together. In order to be able to interpret architecture, it is necessary to resort to concepts and to methods that are to be found precisely by way of the theory of architecture.
Even at the present time, misunderstanding on the aims of the theory of architecture is as widespread as its false utilization. This theory, subject to the general requirements of a scientific statement of theories, comprises three main functions: the original function, the critical function and the constructive function. The first deals with the following problems: representation, e.g., formulation of methods, definition of concepts and determination of a terminology. In the empirical domain, it is a matter of experimental procedures. Thus, in the original function, there is carried out basic research. The critical function has to do with problems of appreciation, of ascertainment, of selection, of utilization of criteria involving an already existing object or theory. The critical function involves the investigation and assessment of existing theories in architecture. Moreover, it has to do with the determination of documentation procedures. Finally, the constructive function concentrates on problems of decision and development of new methods of planning and realization. These three functions are interdependent and connected in a circuit of reciprocal reactions. If the indispensable critical control no longer exists, there will be a dearth of new data and development will be stopped. The theory would thus turn into an ideology.