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Summary

Secondary School in Hunstanton (pages 373—377)

In contrast to the other secondary schools built in England after the war, the various rooms, with few exceptions, are not housed in many small but in one large building. Only the gymnasium, the kitchen and the three workshops, which are also used by adults, are located in special buildings. The large two-storey building measures, in the plan, 88.5 x 31.4 m. It comprises a central lobby and two patios each measuring 21.8 x 15.8 m. The lobby serves not only as an entrance but also as a hall for school functions. Glass walls on both sides of the lobby disclose views into the patios. On the sides of the lobby corridors communicate with the WC on the south and with the administration offices and utility rooms on the north. On the narrow east side are the gardening classrooms and on the west side the janitor's flat. The 13 classrooms, the physics and chemistry room, the domestic science room, the art room and the library are located on the first floor. The steel skeleton framework was welded on the building site and set in place on the foundations by means of a travelling crane. The spans of the two-storey-high frames of the main building measure from 6.7 to 7.3 m. Before the frames were set up, front frames were welded on to the outer flange of the supports and girders. These frames serve as transverse reinforcement and facilitate the installation of the window frames; at the same time they were used to cover the girders in front of the ground-floor ceiling and the roof cornice. The 88.5 m. long building is divided into three parts by two extension joints. The joints were caulked with impregnated strips of fibre. The south and west elevations have single, the north and east walls double glass panes; the parapet panels were fitted with wire-reinforced glass. Not only the single but also the double panes are fixed immovably in the front frames. Pre-stressed rib slabs were laid on section irons to form the ceilings, the section irons being welded to the steel girders. After insulation mats were laid the heating coils were installed and the floor base laid down. The main heating ducts are run beneath the ground level floor in lined, reinforced concrete. In the classrooms on the first floor there is installed ceiling, and in part, floor radiation, with copper tubing; there are built in along the windows coils of tubing or radiators. The hot water for heating is introduced exclusively in radiators and coils in the lobby, the gymnasium, the workshops the kitchen and the flat. In the lobby and the gymnasium, in addition, there are heating installations with hot air, fresh air and exhaust ducts.

High School in San Angelo, Texas (pages 378 —382)

The American high school can not be compared with the European secondary school. The high school assumes the functions of the trade school, the classical secondary school and a school providing practical training courses, mainly for girls. The high school is an image of modern American civilization; it embodies the ideal of equality, which demands that all young people be given equal opportunities. The high school with its manifold tasks runs the risk of indiscriminate levelling; it may distract the gifted student from a serious course of study or may encourage one-sided specialization. In smaller schools especially, which are not in a financial position to recruit the required number of qualified teachers, it may occur that promising students are not prepared sufficiently to pursue more advanced studies. From the American point of view, the high school of San Angelo with its 2400 students has an optimum size. The campus is a tangible expression of the educational programme and of the idea of a school community. The three grades are located in three separated buildings set in an axial relation to one another, and with the library and the building containing the cafeteria and the administration offices forming an open plaza.

Montessori High School in Rotterdam (pages 383—387)

The school was able to choose the building site. It settled on a plot of land which lies between a sportsground and the railway yard of the central station. Decisive factors in this choice were not only the broad expanse of green of the sportsground, which is not used during school hours, but also the immediate vicinity of a large work site, such as is to be found in the railway yard. The students will thus come into daily contact with work performed by adults. Upon complete electrification smoke will no longer be produced; the noise is bearable; and the high-speed trains travel on the rails which are farthest removed from the school. The communal hall not only serves for theatrical and musical performances, but also for general instruction and, above all, for work in groups. The ground plan is so disposed both spatially and constructionally that all spatial elements and series are closely related, but can be separated whenever this is required. The relationship of spatial groups which belong together is indicated by several shades of colour. The educational theories of the Montessori method are expressed by means of the spatial series. The reinforced concrete structure is faced with grey-yellow bricks. In the classrooms thermolux glass is set in each of the upper window strips and the parapets. The two glazed walls of the communal hall are, with the exception of the window strip at eye-level, carried out in thermolux.

A Teachers' Training School above a Garage (page 388—390)

A school above a garage is certainly an unusual architectural assignment. The ground-floor is reserved for the garage concern. On basement level are situated a roomy bicycle storage area and the garage supply rooms. The main entrance leads into a broad stairwell furnished all the way up, on the street side, with a continuous glass wall. The unusual presence of a school in the midst of the city necessitated out-of-the-ordinary solutions: the gymnasium on the 3rd floor, the auditorium on the 4th floor, among others. In spite of the grave difficulties which the approved plan presented from the standpoint of practical operation, a structure has been created which is not merely a more or less functional disposition of rooms and corridors but a unified spatial entity from which emanates a truly living atmosphere.

University in Baghdad (pages 391—392)

The commission to design the new University of Baghdad was combined with the unique opportunity of being able to plan a large educational establishment for 12,000 students to stand on land recently made accessible as a self-contained architectonic and scientifico-pedagogic unit. The design's dominant feature lies in the equilibrium maintained between unity and variety, and integration and differentation. This equilibrium has been sought in order to transmit to the students the outcome of intellectual activities of the east and west. Dykes approximately 3 m. high have been constructed along the banks of the Tigris, and these give the land, which is completely flat, its characteristic stamp. These run into a number of terraces, which enclose the main square and offer a view of the surrounding buildings from various elevated points. All instructional and administrative premises are disposed in buildings grouped round the central square. All the buildings include patios of varying sizes. These contain plants, pools and fountains. The roofs are cooled with the aid of irrigation plant. The internal configuration of the individual buildings and their relation to the outer surfaces, which have been designed along the lines of a garden, with their fountains and the deep shadows caused by projections and notches barring the path of the dazzling sunlight, will lend a specific rhythm to the whole scheme, a rhythm which will express the meaning of "university" (totality, generality) and at the same time offer the students a fitting background for creative living.

University in Karachi (pages 393—394)

When the University of Karachi was being designed a wide range of given factors had to be studied, just as in the case of the University of Baghdad: the large number of students (7,000), the creation of a university city with its own public buildings (mosque, stadium, etc.,), the climatic similarities, the same building materials available (brick and concrete), the same principal religion with its pronounced influence on studies, the same pressure of western culture on an oriental one. Like Gropius' team, the Paris group has selected for emphasis from the general plan a centre holding a mosque, library, theatre and administration. TAC arranged the living quarters round the instruction buildings, but in Karachi they have been placed at some distance from the latter and have been connected to sportsgrounds and club houses, whereas in Baghdad the sportsgrounds are somewhat farther off. In Baghdad the centre is rather more clearly emphasized, comprising as it does a complex of spatial series (study and residential quarters) which cannot be taken in at a glance. In contrast to this spatial constriction, the layout in Karachi is on a larger scale; it is true to say that this lacks spatial density at the centre, but with the groups of faculties it broadens out with patent clarity. This is the contrast provided by Latin lucidity and sobriety to a more symbolic conception of things. In tropical countries it is necessary to protect buildings with a double roof and sunbreaks. However, in Karachi it is more important to break the force of the wind which blows in continually from the sea; for this resaon all the buildings (with the exception of the laboratories, which have air-conditioned rooms) have been set against the wind and—unlike the Baghdad project—arranged in a spacious manner.

Study Centre of the French Petroleum Institute in Rueil Malmaison (pages 395—397)

When the first experimental drillings for oil were carried out successfully in France and the government became aware of the significance that they presented to the country's economy, the French Petroleum Institute developed in a completely unanticipated way. In the course of the past six years numerous buildings have been constructed in the park of Rueil Malmaison, which belongs to the Institute. To facilitate the training of a large number of engineers, new establishments had to be built which could take up the students, whose number increases year by year. To this end the Petroleum Institute acquired more parklike property in 1957. The problem facing the architect was to construct a building with a ground surface of 2,500 m² within the park without disfiguring it or impairing an Empire style house. It was decided, therefore, to have a building in the shape of an angle, which could lie at the edge of the property. In this way the park as a whole remains unaltered and access to the Paris—St. Germain highway and to the street joining the two Petroleum Institute properties could be maintained. The roof construction of the short section was developed with the help of Jean Prouvé, who also participated in the design of other buildings (see design sheet). The roof is in the form of a span resting on two purlins supported for their part by joints which are always able to compensate for any change in the shape of the roof. The under section of the roof skin consists of pressure-glued three-ply cruciform boarding. The roof is covered with aluminium strips.

The Machine Testing Laboratory of the Polytechnic of the University of Lausanne (pages 398—399)

The basement contains the research laboratories which have to be protected against large fluctuations in temperature and vibration. On the first storey are the laboratories with light equipment, and in addition a large open terrace where research on changes and alterations in building materials caused by atmospheric influences is possible. The building of the metal department has been planned bearing in mind the research carried out in various similar laboratories in some large Swiss industrial firms.

Institute of Design, Ulm (pages 400—405)

The first and largest construction stage has been complete and put into operation since 1955. Since then no further progress has been possible for financial reasons; thus the whole complex is at the present time still unfinished. The layout rises in echelon order, in five sub-groups, up to the crest of the hill commanding a view to the south into the valley of the Danube. The groups of buildings are dispersed in open country so that at no point are there concentrations of large architectural volumes. This arrangement is in keeping with the function of the plant, i. e., to serve as an environment for the envisaged educational programme. At first glance the complex gives the impression of a group of different houses built according to similar structural principles. These principles consist in the selection of uniform building materials and in the application of a coordinating unit of measure, which was brought into harmony with the previously determined functions. Bill, as architect, not only had to erect buildings for a definite programme, but at the same time had the opportunity to harmonize his own pedagogical views with the planning of the buildings. The sole restriction, which to be sure is a considerable one, was the insufficient financial means in proportion to the dimensions of the plan. This entailed a renunciation of unnecessary frills. On the basis of a generous grant from the German cement industry, the decision was to execute the whole project in raw concrete, which, poured in smooth slabs, was employed for all structural parts, all outside surfaces and many interior walls. The simple wooden window frames with light metal runners and the galvanized roof cornices, along with the raw concrete—all these material textures and colours combine with the green of the surrounding landscape to create an effect of unity. The execution plans were carried out by a student team under the direction of Friedrich Pfeil, not only for reasons of cost but also for training purposes. The five-storey student dormitory, standing alone up to now, is connected with two rows of studio flats at ground level, under which an open passageway communicates directly with the dining hall. The staff houses constitute a self-contained group south of the school.