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# Summary

**Gatwick Airport** (pages 118—128)

The Gatwick Airport was constructed because London Airport is no longer adapted to the requirements and the scope of modern air traffic and because it is all too frequently closed down on account of fog. Gatwick was selected as site for the auxiliary airport because it has an ideal location for the air lines concerned, because there are good connections by road and rail to London and because it is sufficiently far from London for bad weather landings to be possible. In 1952 and 1953, 66% of all flights which had to be diverted from London could have been handled at Gatwick.
The airport is situated 40 km. south of London. It lies in wooded agricultural country. As the district is often flooded, it was necessary to create a large-scale drainage system. The principal roads are run over dikes to prevent their being flooded.
The basic specification was that the air terminal building be sited at the intersection of the runway, railway line and highway. Passengers who ordinarily come to Gatwick by train can be routed directly into the air terminal.
The terminal consists of the large rectangular reception building, the operations building and the extensive apron. The lay-out is so arranged and designed that 480 passengers per hour can be handled with speedy efficiency. Instead of a long elevation, requiring of the passenger a tiring hike in the open from plane to terminal, there is a covered and partially closed-in platform extending out into the field. In this way the terminal could be laid out in a manner not requiring any consideration to be taken of operations outside the building. The various sections are so accommodated in building and divisions thereof that the passenger not familiar with the place can see at once where to go. Gatwick is thus sharply distinguished from most other air terminals, which confront the traveller with such a welter of entrances and exits that, if left to his own devices, he has to stop and map out the whole complex in his mind before he knows which way to turn. Passengers walk from the platform directly into the large reception lobby, in which are located customs and the information desks of the air lines. Passenger's luggage is upon arrival—by air or rail—collected and sent through customs, while the passengers themselves remain outside the customs room.
On the first upper level is a gallery running around the reception lobby, on which gallery are located additional office premises and the restaurants. In the one-storey U-shaped operations building there is installed, along with other extremely complicated equipment, a semi-automatic electronic signal system. The reception lobby is connected with the six railway platforms by a covered over-pass. From the highway there is a cut-off leading into the parking area at the level of the reception lobby. The radar station along with other installations is installed in the control tower next to the runway. The floor of the reception building lies 6.85 m. above ground level. It spans the highway and the access road, the spans attaining dimensions of from 18 to 21 meters. The normal interval between reinforced concrete columns is only 6 m. The reception lobby is spanned by 2.12 m. high lattice girders and rests on supports at intervals of 25 m. A steel roof is placed on the lattice girders; they support a suspended ceiling of corrugated anodized aluminium and three continuous illumination strips consisting of a canal of pre-shaped glass fibre slabs and wire-reinforced blinds. The illumination strips are maintained from an access-board. The concrete supports and concrete ceilings of the reception building are not immediately obvious to the observer. The structure appears from the outside to be of steel elements.
The operations building and the two-storey platform is constructed entirely with steel profile sections. Steel frames with a span of 3.65 m. take lattice girders of 11 m. span in the operations building and portal girders of 14.53 m. in the platform. Other building materials utilized were glass and sprayed hard-wood slabs in partitions, fibre slabs in ceilings and linoleum on the floors. The organization of various services was partially determined only in the course of construction, as far as details are concerned. The location of the offices, for example, and their lay-out could be determined only in the summer of 1957, when construction was already well under way. The whole complex is so laid out that it can later be extended to double its area; other offices are to be constructed later in a five-storey block over the reception building.

**Airport Building, Edinburgh**
(pages 129—132)

The airport building of Edinburgh-Turnhouse has been built for passenger traffic on the site of a permanent RAF base.
It comprises the following spatially integrated groups:
a) the reception building, with travel offices, passenger control sections with a waiting room on the ground floor, and a bar with terrace on the first floor;
b) the building with rooms for customs control on the east side of the reception building, with customs offices and luggage corridor;
c) a two-storey office section on the west of the reception building.
Outgoing passengers go to the control counters in the reception building where passenger luggage and hand luggage is weighed. Passengers flying within the United Kingdom wait in the reception building; the others go to customs control and luggage inspection.
The main supporting elements are steel profile sections. The outer walls from the foundations to 90cms. above the ground and some gables have been bricked with sandstone or clinker stone and finished off with lime cement mortar. The inner dividing walls generally consist of 7.6 cm. thick light cement slabs and, in the reception building, are covered with hard wood. The additional expenditure of double glazing, which should have gone towards the improvement of sound insulation, was not considered justifiable. The noise in the reception building, in the restaurant, and in customs control is damped by means of sound-absorbent ceilings and wall-to-wall carpets.

**Air Terminal and Hotel, Copenhagen**
(pages 133—136)

The plan comprises the future Air Terminal in Copenhagen and a hotel.
Directly connected with the Air Terminal, which is located in the north section of the two-storey building, are the travel offices of SAS, and on the second floor, above the Air Terminal and the travel offices, are the office premises of SAS disposed around a gallery and a glass-roofed court. Part of these premises have already been finished.
The hotel and the hotel restaurant will take up the south section of the two-storey building and the high-rise building. The reception lobby on the ground-floor is flanked on two sides by shops and on the third side by a snack bar. The winter garden next to the snack bar, serving at the same time as glassed-in court, is a continuous space running all the way up to the second floor level. On the second floor are located restaurants, a bar, banquet rooms and, in an annex, the kitchen facilities for restaurants and room service.
The lower, recessed floor and the uppermost floor of the high-rise building will house the technical installations; in the lower full storey are office premises, in the second from the top storey resident hotel accommodations and in the other 16 storeys single and double rooms with bath. On the first basement level are located rooms for the employees, storage space, toilet facilities, a hairdresser's, etc., all shared by the hotel and the Air Terminal. The second basement level is designed as a garage. The court on the west side is to be used by arriving and departing buses to and from the airport, as a service entrance for the hotel, as access to garage and as parking area. The two-storey building is constructed of reinforced concrete with a conventional column and beam construction, whereas the high-rise building is constructed with reinforced concrete supporting walls in such a way that the transverse dividing walls are suspended as cantilever walls in the longitudinal partition wall elements. The two longitudinal partition walls are supported under the high-rise building by six columns, the two centre columns forming the wall structure around the lifts.
The elevations are constructed in the form of a glass skin with narrow aluminium profile sections. The parapets of the high-rise building are covered with light greyish-green glass and the projecting elevation of the two-storey building with enamelled steel plates of a dark greyish-green shade.

**Hagenholz Bus Garage, Zürich**
(pages 137—141)

It was necessary to obtain a larger number of vehicles and to build a new garage for 120 buses and trolleys for this plant extension.
The parking shed is entered through three electro-pneumatically operated folding doors. The driver waits in his vehicle at the entrance, goes through the automatic car-wash, proceeds to the filling station and afterwards stations his vehicle at its allotted place.
The automatic plant washes the side-walls of the slowly moving vehicle with rotary brushes. The operation of the plant is automatically controlled by ground contact. The front and rear ends are cleaned by hand during the short halt at the diesel pumps. At the same time the motor oil and water is put in. The cleaning of the interior, which is done by hand, takes place at the standing station during the night shift.
In the service bay, which can take fourteen vehicles, two double-pistoned hydraulic jacks are available. One of these is equipped with continuous bearing rails for articulated vehicles.
At the north end are two standing stations for the tyre service. Tyres can be transported from the basement to the ground-floor in a special lift.
At the head of the service bay there is the office for the garage superintendent and for the overseer, and the illumination and ventilation control booths. The sheds, the forecourt and the exit of the vehicles through the electro-pneumatically operated gate can be surveyed from the office. The free-standing service building is used by personnel. A small canteen has been installed on the first floor.
Behind the service building there are the covered stands for bicycles and motor bicycles. An emergency exit gate is built into the northwest corner of the parking shed. As the ground is not suitable for building, a piling foundation had to be constructed. The top layers of the site are peaty and have to be first removed and then replaced with a gravel fill.
This load on the weak subsoil requires a long period for settling, so that later subsidence of the sheds and yards, and damage to the conduits may be reduced to a minimum. The supporting elements of the elevations and the roof construction of the parking shed, whose surface area measures 91 x 96 m., are carried out in steel. The steel structural elements rest on reinforced foundations which lie above the piles.
The roof construction is based on a framework principle, and is supported by two W-shaped centre columns. The transverse headers suspended in the two longitudinal girders have a span of around forty metres. The minimum height of the parking shed has been set at 5.70 m. so that the necessary wires for trolleys can be built in later. The roof of the parking shed has a break on its longitudinal axis, on both sides of which skylights are installed. The pitch of the roof was determined by the roofing material selected. In view of the wide span, a light skin must be chosen. A 7.5 cm. thick wood-fibre slab lies above the steel rafters-this provides heat insulation. The under surface of this slab is furnished with pre-fabricated gypsum rendering. Above this slab lies a lath grid to which corrugated aluman strips are attached. The two front elevations have the same skin above the windows as the roof. The service shed is unsupported and spans around 21 m. The roof skin is composed of 10 cm. thick reinforced pumice concrete, 2 cm. thick cork slabs, and gravel stucco.
The heating of the parking shed (max. 6°C) is effected by air heaters; in the service bay (18°C) by air heaters, piped heating and radiators. The exhaust gases, which tend to be worst in the morning when the vehicles are leaving, are extracted by floor conduits and roof ventilators. In the service bay the air conditioning is effected by introducing fresh air at air heating points and by ventilators in the skylight. The exhaust pipes of the vehicles can be individually attached to an extractor. The water supply of the parking shed is provided by a circular system to which are attached the fire hydrants and the sprinkler system over the diesel oil service station pumps. In case of fire the sprinkler system can be set in operation with high speed valves. The three water aprons in the service bay, which divide the space into four sections in time of fire, are also attached to the circular water system. Further fire-extinguishing equipment is available. In the basement, where oil, grease and tyres are stored, a fire alarm has been fitted.

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Four or five minutes are necessary for entry in the shed, the external cleaning, retanking with diesel oil, motor oil and water, and the trip to the vehicle's standing place.

**IV. Traffic potential and dynamic traffic movements** (pages 142—145)

A spot check can no doubt inform us as to how many and what types of vehicles pass along a street at a given time and in a given direction. However, such random counts yield no data whatever on the points of departure, destinations and purposes of such traffic movements.
The moment we try to discover some meaningful pattern in traffic movements, we are compelled to investigate separately the possible or probable "traffic generators," i. e. the traffic potential of cities, districts or even individual houses and etablishments, otherwise traffic relationships cannot be ascertained, let alone planned.
In Article III (The housing settlement and its relationship to the place of work) we could ascertain in greater detail how manifold the relations between loci are (see differential density of relationships). In addition, we noted that the functional relationships place of residence — traffic point — place of work (w-c-c-o/o-c-c-w) were by far the most important fraffic generators (-c-c-)! It is no wonder then if we may now state that in cities, of all movements of motor vehicles, around 70% are (w-c-c-o) — or (o-c-c-w) trips. What's more, we wish at this point to determine, for urban conditions, how, with these very simple place of residence — place of work relationships, we can ascertain approximately the quanta representative of the entire traffic potential. In this connection, neither complicated nor costly interviews or censuses are employed.
It should be observed that there is involved in this case a mere approximation, in which the sole criteria of residential and working population along with purely geometrical distances between agglomeration centres of gravity are probably the most important (the same, moreover, as for density of relationships) but not the only features that would have to be taken into consideration in this case.
No one need be disturbed by the fact that the 1st approximation formula represented here for ascertaining traffic relationships in existing or projected urban zones of agglomeration is only plus-or-minus 10% correct. However, such valuable traffic planning conclusions can be derived from this rather crude law that they do suffice for the general siting of the traffic network and especially for the planning of housing settlement traffic.
The traffic relationships between two typical residential zones are very small (A—B)!
The traffic relationships between residential zones with relatively large working population (A), so-called mixed zones, and typical business zones (C) are very large.
The traffic relationships between purely residential zones and business zones are always significant (B—C).

**Personnel Building of the Wacker Chemical in Burghausen**
(pages 146—152)

The organizational program is composed as follows:

a) Hall for special occasions with seating capacity of 1500, with apron, stage and two adjoining rooms.
b) Dining-room for around 1000 workers with adjoining room for small banquets.
c) Dining-room for 300 office personnel.
d) Open-air terrace lounges in front of both dining-rooms.

e) Reception room, conference room and guest dining-room.
f) Large lobby as common entrance and access to the dining-rooms and the banquet room. Products of the company can be placed on exhibit in this lobby.
g) Kitchen with all utility rooms.
h) Caretaker's flat and personnel room.
i) A bowling alley in the basement, which is also used as a shooting range.

In order to make allowance for any subsequent alterations, the grid system of the factory building, 5 x 10 m., was applied. Within this system there are created spatial sequences which overlap. The plan reveals clearly that the constructive articulation of the whole lends itself readily to a wide range of possible uses. The under surface of the ceiling element is 4 m. high. All walls, free-standing next to supports, are 3.20 m. high. The remaining 80 cm. up to the ceiling is glazed. The smaller rooms for guests and employees are lower; the upper surface of their ceilings rests on the upper surface of the walls, i.e., at a height of 3.20 m., the lower surface at a height of 2.60 m. The glazed strips between dividing walls and ceiling tend to integrate the rooms harmoniously together. The rear wall of the banquet hall is entirely glazed so that the hall itself on great occasions can be extended outdoors. A service corridor along the large dining-room for the workers, despite the large areas involved, makes possible speedy, efficient serving. On this corridor are located the service hatches, the hall being subdivided into three units for 350 perons each, by free-standing wall elements thrust into the room.

On the occasion of special events in the banquet hall rooms can be used as a unit; the employees' dining-room can for example be used as a refreshment room. For banquets, the service hatch near the stage can be used. The roof has no pitch and is fitted with regularly distributed rain gutters. In the 4 m.-high rooms only the supports bear the load, as none of the walls are carried all the way up to the ceiling. The supports are hollow centrifuged concrete tubes with an outside diameter of 23 cm. and an inside diameter of 11 cm. In these supports are located, alternately, the rain spouts leading down from the roof and the electric power lines. The long walls of the large banquet hall are fitted with acoustic wooden boarding. Heating is effected by way of an air-conditioning system.

The principal intent of the architects was to show "how modern architecture ought to bring about maximum variability in a narrow compass. We believe that precisely by way of alternation between large and small, high and low, narrow and wide, structure and landscape, an extraordinarily vital spatial feeling can be created." The architects exercised extreme reserve in their colour scheme. Except for the supports (black), the dividing walls in the workers' dining-room (dark red brick) and the grey floor, all essential elements are white or the colour of natural wood.

**Billerica**

Studienarbeit der Meisterklasse der Architekturabteilung an der Harvard Graduate School of Design 1958, Cambridge, USA.
DieWohnquartiere werden vom Durchgangsverkehr nicht durchfahren, sondern tangiert. Jedes Wohnquartier übernimmt nur den quartiereigenen Verkehr. Die Durchgangsstraßen durchschneiden nicht mehr Wohngebiete, sondern trennen sie voneinander, und ein Wohnquartier wird mit einem dritten nicht mehr durch ein zweites erschlossen.

Projet d'étude des candidats aux finaux de la section d'architecture de la Harvard Graduate School of Design 1958, Cambridge U.S.A.
Le traffic ne traverse pas les quartiers résidentiels mais les touche tangentiellement. Chaque quartier ne contient que sa propre circulation interne. Les routes du transit ne traversent plus les quartiers résidentiels mais les séparent; et pour aller d'un quartier à un autre il faut contourer celui qui les sépare.

Study plan by honour's class of Architectural Department at Harvard Graduate School of Design 1958, Cambridge U.S.A.
Through traffic does not pass through residential districts but by-passes them. Each residential district takes only traffic destined for that district. The traffic arteries do not intersect residential districts, but divide one from the other. There is a possible access from one residential district to the third without crossing the second.

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