Zeitschrift: Bauen + Wohnen = Construction + habitation = Building + home : internationale Zeitschrift

Herausgeber: Bauen + Wohnen

Band: 22 (1968)

Heft: 5: Holland, ein Land plant seine Zukunft = Hollande, un pays planifie son avenir = Holland, a country plans its future

Rubrik: Summary

F. C. de Weger, Rotterdam
M. Duintjer, Amsterdam

Bâtiment principal de l'aéroport Schiphol

(Pages 180–185)

Voici les principaux chiffres qui figuraient à l'origine de la planification de d'aéroport, en 1962:

80.000 mouvements d'avions par année,
30 places de stationnement pour les avions,
33 déplacements d'avions par heure,
40 millions de passagers arrivant et partant par année,
2.200 passagers arrivant et partant par heure,
3,5 millions de personnes par année qui accompagnent des passagers ou visitent l'aéroport,
1.000 places assises dans le hall central des passagers,
5.000 places de stationnement.

Pour l'organisation et la planification, il fallait tenir compte des exigences fondamentales suivantes:
Les délais d'attente et d'embarquement doivent, si possible, être extrêmement courts.
Le transport et la distribution des bagages des passagers doivent s'effectuer rapidement et sûrement.
Les passages que les voyageurs doivent suivre à l'intérieur du bâtiment doivent être parfaitement et rapidement reconnaissables.
Les passagers qui se rendent du bâtiment à leur avion doivent être à l'abri des intempéries, des véhicules, du bruit des réacteurs et de l'odeur du kérosène.
Les autorités douanières exigent une séparation distincte entre les passagers qui arrivent et ceux qui partent.
Les avions doivent atteindre leur place de stationnement (entrée et sortie des passagers) par leurs moyens propres.
Le bâtiment principal ne doit abriter que les bureaux nécessaires au service des voyageurs.
Tous les groupes de locaux et les places de stationnement des avions doivent se prêter à un éventuel agrandissement. Les possibilités d'agrandissement sont basées sur les prévisions de l'an 2000.
Les passagers arrivant et partant sont dirigés sur deux niveaux différents. Les voyageurs atteignent les avions au moyen de quais couverts reliés aux avions par des ponts mobiles. Le long des quais, on peut actuellement disposer 25 avions. Les deux quais latéraux pourront être agrandis de sorte que l'on pourra y placer de 35 à 45 appareils.
L'aéroport est relié à une autoroute de six pistes à la sortie de laquelle il y a 5000 places de stationnement pour véhicules. Une cave souterraine, en dessous du bâtiment principal peut également abriter 350 automobiles.

Koenraad van der Gaast, Utrecht

Toiture de la gare de Tilburg

(Pages 186–188)

Afin de provoquer un libre croisement du chemin de fer et de la route, la voie ferrée a été surélevée et le bâtiment de réception de la gare de Tilburg reconstruit.
L'intention de l'architecte était d'ériger une gare transparente édifiée entre la rue de la gare et les installations ferroviaires. Ainsi, le bâtiment de service est en grande partie vitré et la toiture séparée de la construction.
Le toit repose sur quatre fondements intérieurs en béton. Il est suspendu à six étais pendulaires extérieurs. Il couvre une surface de 147×46 m. La toiture épouse la forme d'un paraboloïde hyperbolique dont la surface fondamentale correspond à 21×21 m. Les éléments du toits sont fabriqués en profilés d'acier. Dans l'axe longitudinal de la toiture totale, les points bas des coins des éléments reposent sur quatre pilons de fondement.

Van den Broek et Bakema, Rotterdam

Le Plan Pampus

(Pages 189–196)

Le plan Pampus constitue une contribution en vue de résoudre le problème de la surpopulation dans les villes hollandaises, en particulier à Amsterdam. La ville existante actuellement est disposée de façon radiale et tous les agrandissements effectués jusqu'à présent furent inspirés par cette disposition.

«Pampus» est une petite île dans «l'œuf» de l'eau qui est formé par la terre ferme à l'est d'Amsterdam et par le polder du sud-Flevoland. Le lac-«œuf» n'a en moyenne qu'un mètre de profondeur. Le plan Pampus prévoit la création de quatre îles sur lesquelles est prévue une ville linéaire de 350.000 habitants. Cette ville, directement reliée au centre d'Amsterdam, serait donc créée dans un magnifique paysage de lacs.

L'élément principal de la ville linéaire est l'artère de circulation sur laquelle sont raccordées les installations de service telles que les bureaux et les magasins de vente. Sur les deux côtés de l'artère de circulation et après les installations de service suivent les zones d'habitation ordonnées en groupes de bâtiments avec écoles, églises et centres d'achats. Ces groupes d'habitation sont basés sur une série de propositions de van den Broek et Bakema. Chaque unité comprend environ 10.000 habitants, la densité étant de 150 appartements par ha. Entre la zone l'habitation et l'axe de circulation, il y a les zones de repos: terrains de jeux, jardinets, places de sport, promenades, bassins de natation et port de yachts. A Pampus, les zones d'habitation, de travail et de détente sont reliées les unes aux autres.

La distance entre les appartements et les axes de circulation est couverte en 5 minutes aux maximum par les piétons. Les centres des quatre villes se trouvent à environ trois kilomètres les uns des autres.

La première ville, située à près de 6 kilomètres de la gare centrale d'Amsterdam est prévue pour 55.000 habitants. Sur la deuxième île, il y a 65.000 habitants, un centre d'achat et un port. La troisième, la plus petite, est prévue pour 30.000 habitants ainsi qu'un centre commercial au-dessus de l'axe de circulation.

Les zones d'habitation ne sont pas séparées par des routes mais par des superficies d'eau et de verdure. Toute la ville de Pampus est formée de 25 zones d'habitation toutes érigées selon le même principe mais ayant un caractère architectonique différent.

L'artère de circulation se compose d'un monorail, d'une autoroute, d'une route parallèle à chaque côté de l'autoroute et de pistes pour vélos et motos. Le monorail a une capacité d'au moins 40.000 personnes par heure, l'autoroute de 8 pistes de 15.000 personnes ou 10.000 véhicules par heure, tandis que les pistes pour vélos et motos offrent une capacité de 10.000 personnes par heure.

Les principaux arrêts du monorail sont situés au centre de chaque quartier.

L'ensemble du système des routes ainsi que le système des conduites pour l'alimentation en énergie sont extrêment courts en comparaison des systèmes habituels. La longueur des routes avec les conduites varie aujourd'hui entre 6 à 10 mètres par appartement tandis que dans le projet Pampus cette moyenne est ramenée à 1 m. De plus, ici, il n'y a que deux croisements de routes par 1000 appartements. Toutefois, il semble que la planification urbaine au moyen de bons systèmes de circulation et de systèmes rationnels de conduites n'obtiendra une chance de réalisation courante que lorsque les politiciens auront compris que l'on pourrait construire à bon marché non seulement dans les superstructures mais encore dans les infrastructures.

Summary

Franz Füeg, Solothurn

Holland – a country plans its transformation

(Pages 157–160)

For more than 80 years Dutch architects contributed considerably to the development of modern architecture. At the present time, we believe that we can detect the end of this phase. Architecture, in fact, is involved in a crisis. Architects are concentrating more and more on formal problems at the very moment when difficulties are arising which are more insoluble than ever. This is the situation in the Netherlands too, but it can be said that Dutch architects are planning more and better than is the case elsewhere, or so it would seem. Thus scientific research and a vast program of general planning in depth are in the process of bringing about the transformation of the country. The importance, the consequences and the working methods of the Delta plan are, for example, comparable with the space programs of the United States or the Soviet Union.
There is no doubt that the Dutch are carrying out their general planning programs on a grand scale. Over a period of 700 years thousands of square kilometers have been snatched from the sea. Before 1932, the coastline measured 2500 km. The present main sea dike is shortening it to 1800 km., and the Delta plan envisages a further reduction of 700 km. Thus, in 1978, the Dutch coastline will be only 1100 km. long. In 46 years the Dutch, then, will have shortened their coast by at least one half.
The Zuider Zee, formerly a body of salt water, has been transformed into the Ijsselmeer, whose water is fresh. Moreover, more than 1200 sq. km. of the Ijsselmeer have been rendered arable, and, by 1980, this area will be doubled thanks to two other polders.
For some time now, there has been serious discussion of a plan connecting the western Frisian Islands by means of an immense dike. There would result an inland lake whose salt water would be transformed into fresh water, and then the lake itself would be converted into arable land.
The planning of seaports constitutes an important task. The closing off of the inlets of the sea in the delta region of the Province of Zeeland presents unlimited opportunities to develop the industries and the harbour areas of this district. The Delta project is coordinated with the development of the port of Rotterdam. Within two years ships of 270,000 tons burden will be able to enter Europort. At the Hook of Holland there is planned an expansion of the harbour area and the creation, in the sea, of an anchorage for super-tankers of 300,000 to 500,000 tons.
Parallel to the construction of new waterways and port expansion schemes, there is being developed the highway system and the airlines network.
The Dutch have thus made their entire country the object of a general planning scheme. For them planning is a sine qua non in their struggle for existence against the sea and in their effort to develop their natural resources.

Jörn Janssen, Düsseldorf

Experimental construction in the Netherlands

(Pages 161–164)

The mouths of the Rhine, of the Meuse as well as of the arm of the Scheldt which divide the southwestern Province of Zeeland into several islands will be sealed off and separated from the sea by means of a number of dikes constructed between Walcheren and Voorne (ill. 1).
This scheme will achieve four results:
1. The protection of the country from the tides will be ensured by means of short but high dikes. The coastline will be shortened by 700 km.
2. The underground water table, which is so important for agriculture, will lose its salinity. In fact, after the construction of the dikes, all the water coming from the Rhine and the Meuse will run through two drainage sluiceways so that the water table will become independent of climate and seasons.
3. The economic situation of the islands, which have been underdeveloped so far, will improve thanks to new communications possibilities.
4. This construction will increase the production of fresh water and will contribute to the development of recreation areas for the people of the country as well as for tourists.
This immense and costly project (the dikes and sluiceways are estimated to cost 3 billion guilders) was elaborated in detail after the catastrophic storm tides of February 1953, during which approximately 200,000 hectares of land were flooded and 500 km. of dikes destroyed.
This is an experimental construction in the sense that it represents a renewal of the classic attempt to harness natural forces for human ends.
The special situation of the Netherlands at the mouths of the Rhine, the Meuse and the Scheldt offers optimum conditions for industrial development in so far as the standing menace of the sea here can be eliminated.
For the planning of the project, there has been established a Delta service which concerns itself exclusively with the construction of dikes and sluiceways to close off the inlets of the sea.

Franz Füeg, Solothurn

Stichting Architecten Research

(Pages 165–170)

The Foundation for Architectural Research (SAR) was established in 1964 by nine of the principal Dutch architectural offices and by the Architectural Association of the Netherlands.
The executive committee is made up of a representative from each of the nine offices, of two delegates from the Architectural Association and a chairman. Among the members of the executive committee we find, in particular, the architects Bakema, van den Broek, Choisy, van Embden, Grossman, de Jonge, E. H. Kraayvanger, Maaskant,

van Tijen. The research office, directed by Prof. N. J. Habraken, has its headquarters in Eindhoven.
Up to the present time, research has had to do solely with housing. An attempt has been made to determine the conditions of the so-called "supporting" structures which it will be possible to build and introduce in housing units with elements that are fabricated on an industrial basis. The distribution of the tracts, the quality and the size of a housing unit as well as the sanitary installations and others ought to be adapted to the wishes and the requirements of the occupants, which, in 1980, will be different from today. The interior parts along with the façades and the rough construction ought to be fabricated industrially. The housing unit, the flat, is no longer the creation solely of the architect, but takes into consideration the wishes of the occupants and industrial potentialities. That is why a working arrangement between industrial producers and planning people is proving to be a vital necessity, and it is with this end in view that the Foundation for Architectural Research proposes two rules: dimensional coordination and large-scale planning.

Reinder Blijstra, Amsterdam

Contemporary Dutch architecture

(Pages 171–174)

The gulf separating the architects of the older generation from those of the new one is at the present time very wide. It can be said that many of the old architects and the old-timers of the CIAM are continuing to defend the principles of functionalism, while others are, in their projects, producing evidence of a mediocrity that is quite general throughout the world and that can be encountered especially in the building of office premises.
The great men of former years are dead. The older men who possess real stature, as a general rule, receive few commissions. Van Eesteren, professor of urban construction at the Institute of Technology of Delft, is in retirement, Rietveld, van Dillen, Merkelbach and Elling are dead. Stam no longer works. On the other hand, a number of large offices have come into being, such as Maaskant, Groosman and Duintjer. The big concert hall, "De Doelen", in Rotterdam is the fruit of collaboration between Hein F. Fledderus and the Kraayvanger brothers.

It cannot be seriously maintained that architecture is at a high level in the Netherlands at the present time. Although many buildings have been erected, the results remain mediocre from the standpoint of architecture and of town-planning. As for the expansion of the cities, only the experiment of Emmen is worth mentioning thanks to the fact that the principle of a garden-city neighbourhood has been successfully realized. Cooperation between two town-planners who are totally different, N. A. de Boer and André de Jong, has produced a number of neighbourhood complexes comparable with the English New Towns, the Halen colony near Berne or the Neue Vahr colony near Bremen.
The Netherlands have passed up a fine chance with the creation of their new towns and villages on the polders of the Ijsselmeer. Only Nagels on the north-east, polder, planned in its time by a CIAM group including van Eesteren, bears witness to a striking will to give a new shape to the character of a village of our age.
Beside the old architects who have not had sufficient opportunities and those who have hardly profited by theirs, there is still another group whose outstanding figures are van den Broek, Bakema and Aldo van Eyck. As regards van Eyck, he has had a great influence on the younger generation owing to his work at Delft, but, and this is really shameful, he has for a long time received no more commissions in the Netherlands. The office of van den Broek and Bakema enjoys considerable fame in the country. Nevertheless, up to the present time these architects have not yet been able to demonstrate their great talent in the field of town-planning. Their very ingenious Pampus, plan (expansion of the city of Amsterdam) is not only original but also capable of execution. However, the plan was turned down by the competent authorities because of a number of technical objections.
F. van Klingeren is one of the younger generation connected with the functionalists. He was successful with a community centre et Dronten in north Flevoland, one of the polders of the Ijsselmeer. Onno Greiner and E. J. Jelles are representatives of functionalism. The best creation by Greiner is the multiple-function theatre of Hoogeven, that by Jelles, a pavilion in the Gleve Park in Amsterdam.
Many young architects do not enjoy the fame they deserve, especially Hazewinke, Giraud, Rötling, Brinkman, Klundert and many others. With the building of the colleges at Enschede, young talents were given a chance to express themselves, in particular P. Blom, J. van Stigt and L. Tummers.
To round out the picture of contemporary Dutch architecture, it is important to emphasize that there is no dearth of talent but that it is not sufficiently called on. Neither the authorities not private builders have the courage to try new experiments. The fact that town-planning and architecture have lost their importance in the Netherlands is to be explained by the want of foresight and the self-satisfaction of the Dutch people.

Van den Broek and Bakema, Rotterdam

Auditorium Building of the Institute of Technology of Delft

(Pages 175–179)

The building, the exterior of which suggests the shape of an animal, is made up of four groups of tracts:
The auditorium with 1300 seats (ill. 1 right),
the four auditoriums with seating capacities of 250 and 350 (ill. 1 left),
the stairway lobby, with foyer and senate room, on three stories (ill. 1 centre),
finally, the covered entrances leading to the main auditorium and to the ground-floor auditoriums.
The building accommodating the auditoriums will, later on, be surrounded by special institutes, structures of varying heights.
The students reach the four auditoriums via the second floor, the staff members enter via the first floor. Lecture demonstrations will be facilitated by direct access via a covered bridge from the neighbouring engineering buildings. On the first floor, in the centre, there is located the foyer-canteen (330 seats) and on the second floor we have the senate room of the Institute.
This building is characterized by an interweaving of different functions which are not only determined by the spatial program but also by other requirements. Thus, the auditorium building offers numerous utilization possibilities: inaugurations, promotions, conferences, lectures, festivals, debates, etc.
The centre structure comprised between axes 18 and 25 (ill. 7) is a skeleton construction with a large basement below. The auditoriums running between axes 25 and 38 rest on 16 supports. The lower part of the main auditorium rests between axes 6 and 7 on two supports and, behind, on axis 13, on the centre wing. These three spatial groups are covered with a folded roof erected in situ, whose concrete deck (400 kg./sp.m. and 12 cm. thick) constitutes excellent acoustic insulation.

F. C. de Weger, Rotterdam
M. Duintjer, Amsterdam

Main terminal building of Schiphol Airport

(Pages 180–185)

Here are the principal figures on which was based the planning work for the airport in 1962:

80,000 plane movements per year,
30 parking sites for planes,
33 movements of planes per hour,
40 millions passengers arriving and departing per year,
2,000 passengers arriving and departing per hour,
3.5 million persons per year accompanying passengers or visiting the airport,
1,000 seats in the central passenger hall,
5,000 parking sites.

The over-all planning and organization were based on the following fundamental requirements:

The times required for waiting and boarding ought, if possible, to be extremely brief. The transport and distribution of passenger baggage ought to be effected rapidly and efficiently.

The passageways to be used by passengers inside the building ought to be clearly and instantly recognizable.

Passengers going from the building to their plane ought to be sheltered from the weather, from vehicles, from the noise of jets and from the odour of engine fuel.

The customs authorities require a distinct reparation between arriving and departing passengers.

The planes should reach their parking site (loading and unloading of passengers) under their own power.

The main terminal building ought to house only offices necessary for passenger service. All groups of tracts and plane parking sites should be so designed as to be capable of later expansion. Expansion possibilities are based on forecasts for the year 2000.

Arriving and departing passengers are handled on two different levels. The passengers reach the planes by means of covered docks connected with the planes by travelling gangways. Along the docks there can be handled 25 planes at the present time. The two lateral docks can be expanded so that 35 to 45 planes can be serviced there.

The airport is connected with a highway (six lanes), at the exit of which there are 5000 parking sites for cars. A basement level area, below the main terminal building, can also accommodate 350 cars.

Koenraad van der Gaast, Utrecht

Roof of the railway station of Tilburg

(Pages 186–188)

In order to create an intersection-free crossing of the railway line and the highway, the railway was elevated and the station building of Tilburg reconstructed.

The architect's intention was to erect a transparent station set between the street and the rail lines. Thus, the service buildings is to a great extent glazed and the roof structure separated from the rest of the building.

The roof rests on four interior concrete piers. It is suspended on six exterior swinging props. It covers a surface of 147×46 meters. The roof takes the exact shape of a hyperbolic paraboloid, whose basic area corresponds to 21×21 meters. The elements of the roofs are of steel sections. In the longitudinal axis of the total roof, the low points of the corners of the elements rest on four foundation pilings.

Van den Broek and Bakema, Rotterdam

The Pampus Plan

(Pages 189–196)

The Pampus Plan is a step towards resolving the problem of overpopulation in Dutch cities, especially in Amsterdam. The presently existing city is laid out on a radial plan, and all the expansions undertaken to date have been inspired by this pattern.

"Pampus" is a small island in the "egg", a sheet of water bounded by solid ground east of Amsterdam and the polder of south Flevoland. The "egg" lake has an average depth of only one meter. The Pampus Plan envisages the creation of four islands on which there is planned a linear town of 350,000 inhabitants. This city, directly connected with the centre of Amsterdam, would thus be called into being in the midst of a magnificent region of lakes.

The principal element of the linear city is the traffic artery on which are concentrated all the service installations such as offices and shops. On both sides of the traffic artery and behind the service installations come the residential zones gouped into neighbourhoods with schools, churches and shopping centers. These groups are based on a number of proposals made by van den Broek and Bakema. Each unit comprises around 10,000 residents, the density being 150 housing units per hectare. Between the residential zone and the traffic axis there are recreation areas: playgrounds, small garden plots, sports grounds, promenades, swimming-pools and yacht harbour. At Pampus the residential, working and recreation zones are interconnected.

The distance between the housing units and the traffic axes is covered in a maximum of 5 minutes by pedestrians. The centres of the four towns are about three kilometers from one another.

The first town, situated around 6 kilometers from the central station of Amsterdam, is planned for 55,000 inhabitants. On the second island there are 65,000 inhabitants, a shopping center and a port. The third, the smallest, is planned for 30,000 residents as well as a business centre above the traffic axis. Finally, the fourth island, the largest in area and in number of inhabitants, will accommodate 200,000 people.

The residential zones are not separated by roadways but by water and green belts. The entire city of Pampus is made up of 25 residential zones, all of them erected in accordance with the same principle but possessing a different architectural character.

The traffic artery is composed of a monorail, a motor highway, a road running parallel to the highway on each side of it and lanes for bicycles and motorcycles. The monorail has a capacity of at least 40,000 persons per hour, the highway has 8 lanes with a capacity of 15,000 persons or 10,000 vehicles per hour, while the lanes for bicycles and motorcycles have a capacity of 10,000 persons per hour.

The main monorail stops are located in the centre of each neighbourhood. The secondary stops for express trains are at the intersection points of the residential zones.
The whole roadway system as well as the power mains are extremely short in comparison with the customary systems employed. The length of the roads, with the mains, varies at the present time between 6 and 10 meters per flat, while in the Pampus project this average drops to 1 meter. Moreover, here, there are only two road intersections per 1000 flats. However, it appears that urban planning by means of good traffic systems and rational power main networks will have a chance of realization only when politicians have understood that building could be done cheaply not only in superstructures but also in infrastructures.