Cities within the city

Proposals by the Sommer Akademie for Berlin

The model of the city in the city was organized on a general basis during the Sommer Akademie of Berlin in 1977 by Cornell University; it was designed by the senator in charge of building and housing systems, by the IDZ and by the Kunstlerhaus Bethanien.

The villa as a form of town housing and the city in the city were the subjects discussed at that Sommer Akademie. Cornell University architectural students drew up proposals for an urban villa during an eight-week course held at the Kunstlerhaus Bethanien. The results of the Sommer Akademie are contained in a specially published volume.

Taking part in the rough drafting and elaboration of the city in the city theme were: O.M. Ungers (Berlin, Köln, Ithaca, N.Y.), Rem Koolhaas (London), Peter Riemann (Ithaca N.Y., Berlin), Hans Kollhoff (Ithaca N.Y., Karlsruhe), Artur Ovaska (Köln, Boston).

Thesis 1: Berlin's population drop

The following evaluations predict a drop in the population of Berlin during the 1980s equal to more than ten per cent of the present figure which is between 2 and 1.7 million inhabitants.

Comment

If we start from the assumption that these estimates are fairly exact, then it must be borne in mind that the real figures may exceed the estimated reduction because when the decrease is in progress it ends up by causing a bigger effect. A certain percentage of anxiety-prone inhabitants in fact allow themselves to be caught up in the end by an exodus psychosis with the result that the population slips below the estimated figure. Experience, however, has shown that this figure will subsequently tend to swing back upwards on the assumption that a simultaneous improvement in the quality of life occurs and that the city becomes a more congenial place to live in after a reorganization of the urban environment. In fact, without a radically improved offer no one will want to stay of his own accord in a decommercialized city, or still less, to go back there.

Conclusions

Any future planning for Berlin must therefore come to grips with the problem of a city in the process of depopulation. Since Berlin occupies a limited territory and political reality is such that it can be neither reduced nor increased, future strategies have got to be devised that will take into account a controlled decrease in the population density, without jeopardizing the general quality of the urban environment.

Thesis 2: Criticism of current design theories

The current opinion whereby the historic quarters of the city can be preserved and saved only through additional and integrant building stems from erroneous assumptions and is therefore illusory.

Comment

There are two urban design tendencies to be avoided on the theoretic and operative plane, due to their illusory character: one is that of starting from the assumption that the city can be restored to its former historic substance and configuration. Programmes of this kind are, in the best of instances, the result of a misunderstood wave of nostalgia. As the statistic forecasts seem to indicate, it will not be possible in this way to make up for future necessities. The depopulation process, however, cannot be left to chance. The inevitably untidy development that would ensue not only spells chaos but would ultimately have disastrous consequences for the city. The realisation of the idea of "repairing" the city which, if wrongly interpreted, may in practice be transformed into a destruction of the city, implies an inevitable thrust towards an increase in buildings, homes, shops, social services and so on. The concept of repairing the city denies an established fact, namely, that most areas have by now ended in ruins precisely because, in almost all cases and especially in Berlin, there was never any real necessity to increase their density. In effect, recommendations of this kind lead to a general confusion of real necessities and to a consequent outburst of Kitsch produced in the name of goodwill and good taste, because the supposed necessity is just as contrived as its ensuing results.

Conclusions

In Berlin in particular the consequences of the theory of a restored city, in the sense of an historic reconstruction, would be the reverse of those expected, since the inexorable depopulation process would only be camouflaged and all action taken to improve reality would be pointlessly deferred, to the consequent disadvantage of the city.

 $2^{ ext{tesi}}_{ ext{thesis}}$

Thesis 3: The problem of the population drop

At Frankfurt a number of social democratic councillor politicians met recently to discuss the problem of the population drop in big cities and to draw up the necessary countermeasures.

In the majority of big German cities this tendency is regressive. As in America, here too the exodus to surburban areas is mounting. The consequence of this constant efflux is a general impoverishment and, in a broader perspective, a partial decay of the city centre. The depopulation process in some major cities like Cologne, Frankfurt, and Berlin, which have a high percentage of foreign labour, is already in progress.

Comment

Clearly, however, the reasons for this flight from the city also result from a changed way of life. As shown by a recent survey by the Demoscopic Bureau of Allensbach, big cities are

steadily losing their residential value.

The enquiry shows that 74% of the population prefer an apartment in the country to an apartment in the city. Country life seems to offer more attractions. The car and television play an important role in this respect. Moving to the country is much more than a flight from society. With the improvement of transport both the spatial and the psychological distance has been considerably reduced. This process of depopulation does not apply only to Berlin either. Most of the big cities of the world, with very few exceptions, have been hit by the same phenomenon. Since 1970 the population drop in the City of New York has amounted to 650,000 inhabitants, and this trend seems likely to continue. In some parts of the city more than sixty per cent of the inhabitants have left, with the result that entire districts have virtually been wiped off the map. In their place the city council now plans to instal agricultural concerns, or "urban farms". More than one thousand are scheduled at present, in a once highly populated district of Brooklyn.

Conclusions

Since, as the examples mentioned show, this fall-off is not a local phenomenon but, rather, a sign of a much more general tendency, the future task is going to be not only to plan the growth of cities but also to develop new proposals and concepts for dealing with this exodus by protecting the better aspects of cities. Faced with this assignment, urban planners today are unprepared and certainly incapable of solving the problem with the means that have been employed hitherto. Berlin, which has such radical and idiosyncratic features, is particularly well suited, within this problematic, for use as a workshop.

Large cities are characterised by an overlapping of many opposite and divergent conceptions. Therein lies the difference between them and villages, rural populated areas, urban districts, and small or medium towns. Here the chief characteristic is expressed in the predominance of a single basic principle or, if there are more than one, these will nevertheless be complementary to each other. The ideal would be to find an order for the city in which there is both a convergence of principles and a climate of functionality.

Comment

A structure loses its functional capacity in the measure in which its monolithic character increases, both in economy and in the state, in nature and in the urban environment. When for example General Motors became too big and ungovernable, the management decided on a transformation of production into a compound of reasonably sized units. When Europe's largest industrial complex, the British National Coal Board, reached a no longer functional dimension, the monolith was divided into a group of semi-independent units, each with different tasks and motivations.

The situation is not different in the city. Although it is difficult to establish what the reasonable size of a city is, it is still clear that a convenient size is somewhere around 250,000 inhabitants. Zurich, Florence, Trier or Freiburg are places in which the atmosphere that one breathes far exceeds the commercial aspect. These examples show that size does not mean an improvement in the quality of life. In Tokyo, New York or London the millions of inhabitants do not raise the effective value of these cities; and instead they create enormous technical and organizational problems, while basically only ruining the human environment. Today we suffer from a sense of universal respect for giantism, perhaps because we think that what is big must be better. Reality has instead shown that reduction and diminution also make for better quality, and not least in the quality of life itself. For this reason small, restricted units ought to be created. This applies to production and the way of life as well as to any other environment.

Conclusion

These considerations suggest that if within the context of a selective programme for the reduction of urban over-population, or even of a partial demolition of those districts that are superfluous and work badly, the reduction of the population in Berlin may not perhaps provide an outstanding opportunity to redevelop zones that no longer satisfy, technical, social and structural demands. Simultaneously those zones that deserve to be preserved should be identified, or, at the outside, their characteristics should be underlined and, if incomplete, completed. These enclaves liberated from the anonymity of the city would in their quality of quasi-islands, form a green urban archipelago in a natural lagoon.

4 tesi

Thesis 5: The idea of the city in the city

The idea of the city in the city is the basic concept for a future urban replanning of Berlin. It is substantiated in the image of Berlin as a city-archipelago. The urban islands will have an identity in keeping with their history, social structure and environmental characteristics. The city as a whole will be a federation of all these single towns with different structures, developed in a deliberately antithetic manner. A decisive factor in the choice ought to be the degree of clarity and comprehensibility of the existing basic and design principles.

Comment

The first step to be taken ought to be to pick out and select those districts of the city that possess clearly identifiable features likely to justify their preservation and accentuation. These so-called identity-spaces should not be established on the basis of a particular taste or of aesthetic conceptions. The second step towards a redevelopment is the completion of fragments to be preserved which in the course of this process must receive their architectural and definitive urban planned form. This first step leads to the development of a whole series of integrative and complementary measures of a clearly not sentimental kind. In quarters having a high building density the existing bulk of building ought to be diminished through the creation of free spaces, as city parks, public gardens and squares; whilst districts having a low density, for example, the western parts of the city, could be intensified by the integration of residential centres. The architectural and planning intentions for the future consist solely in enucleating the true configuration of each single island-inthe-city on the basis of which it was first chosen. It is essentially a matter of establishing, in a way, the "physiognomy" of that part of the city taken into examination, and to impregnate it, in such a way that it will receive a configuration of its own. Each part of the city taken in itself will receive an identity of its own that will diversify it from that of the others.

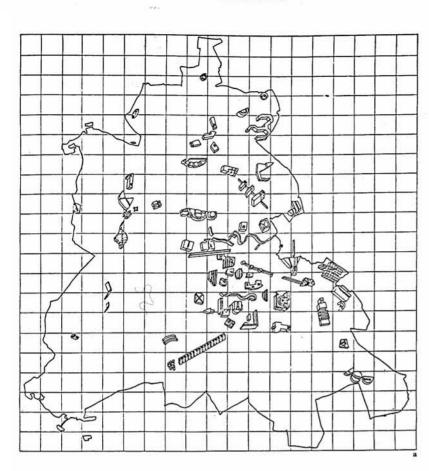
Substantially, therefore, the Märkische Viertel, Westend, Kreuzberg and Lichterfelde are included in this project and should be regarded as complementary elements with different characteristics having the capacity to raise the supply and hence the

freedom of choice.

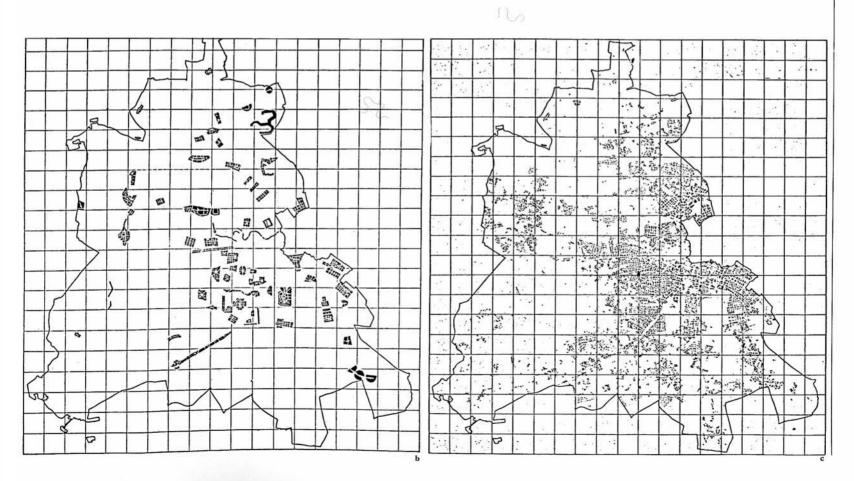
Conclusions

The pluralistic project for a city within the city is in this respect in antithesis to the current planning theory which stems from a definition of the city as a single whole. This corresponds to the contemporary structure of society which is developed more as a society of individuality with different demands, desires and conceptions.

The project also involves an individualization of the city and therefore a moving away from typization and standardization. This should be applied on the one hand to all possible openings and on the other to the multiplicity that springs from them.



- a) carta della sostanza edilizia di Berlino b) pianta delle isole urbane
- c) le città nella città
- a) chart of housing structure in Berlin
 b) plan of urban island
 c) towns in the town



Thesis 6: Establishment of the area of city-islands

The phase of the establishment of the area of so-called islands-in-the-city is both the result of a programme and a formal and urban design job. Not all the new integrations have to be planned afresh. With analogisms and confrontations it is possible to acquire knowledge than can be employed in a typological sense.

Comment

Upon a preliminary analytical examination a number of zones in the city leap to the eye; they stand out from the others by their characteristics and importance. Areas of the city that are examplary by their closed structure are the southern area of Friedrichstadt, Görlitz station, the Schlosstrasse, Siemensstadt; and Spandau, what is known as the "city", but also the Märkische Viertel, the Gropiusstadt and centres like the Tempelhofer Feld, the Hufeisen Siedlung, Onkel Tom's Hütte, but also the cultural zone around Kemperplatz which is a reproduction of the historic Museuminsel. The zones just mentioned represent a compound of extremely different structures in content and form; they contain buildings in blocks but also single, radial, linear and reticular forms, open and close systems, a network of regular and irregular streets, whilst also having different graphic, spatial, functional and social characteristics.

Conclusions

To establish the characteristics of the city a number of typical cases might be taken into consideration, which were designed at other times for other occasions and may have comparable typological features. For example, the ideal project of Karlsruhe, with its radial axis, might serve as an example for a configuration of the southern part of Friedrichstadt, of the project for Manhattan's Central Park might be transferred just as it is into the Görlitz station zone. The urban planning structure of the Schlosstrasse is identical to the Baroque structure of Mannheim. The linear design of Leonidow for Magnitogorsk is similar from a typological point of view to the structure of the buildings along the Under den Eichen.

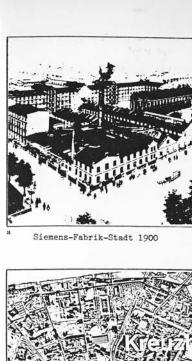
Comparison of urban structure

a) urban island, towns in the town, historic examples

b) Friedrichstadt Sud-Karlsruhe

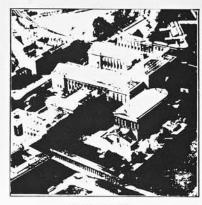
c) Görlitzer Bahnhof - Central Park New York

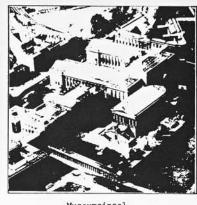
d) Unter den Eichen - Magnitogorsk





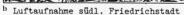






Museumsinsel







Lageplan südl. Friedrichstadt



Stadtinsel südl. Friedrichstadt



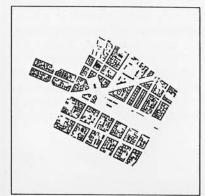
Stadtplan Karlsruhe



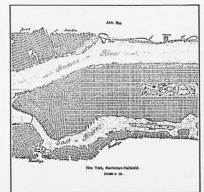
Luftaufnahme Kreuzberg



Lageplan Kreuzberg



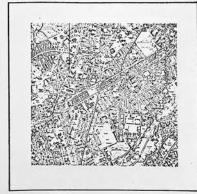
Stadtinsel Kreuzberg



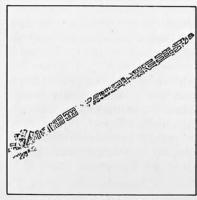
Stadtplan Manhattan N.Y.



Luftaufnahme Lichterfelde



Lageplan Lichterfelde



Stadtinsel unter den Eichen



Stadtplan Magnitogorsk

Thesis 7: The green archipelago

The project for the city in the city, formed by a group of different units, is completed antithetically, by the surfaces in between the islands-in-the-city. In fact, the structures here, by now valueless, ought to be allowed to be gradually retransformed into natural zones and pastures, without any rebuilding. This concerns in particular the areas of Kemperplatz, the stations of Görlitz and Potsdam, and at a later stage, the Tempelhofer airport zone.

These islands-in-the-city would, in other words, be divided from each other by strips of green, thus defining the framework of the city in the city and thereby explaining the metaphor of the

city as a green archipelago.

Comment

The green interspaces form a system of modified nature and preserve a series of characteristics that range from suburban zones to parks and to wooded areas up to the urban developed

zones or those for agricultural use (Schrebergärten).

The surfaces earmarked for agriculture could penetrate all parts of the city and at the same time create an additional source of industry and employment as already planned, for example, in New York. The natural grid ought also to welcome the infrastructure of this technologicalized age in which we live, that is to say, it should embrace a motorway extended network to link up the islands-within-the-city to one another; it ought also to include supermarkets, drive-in cinemas, drive-in banks and similar services connected with the car just as any other typology of the twentieth century which depends not only on space but on mobility.

Next to suburban zones with a different density, wooded areas, shooting preserves, natural parks, gardens, family allotments, urban agriculture and infrastructural services of the modern age, it should also be possible to rely on green zones for "parking" temporary mobile facilities. What is hoped for here is a new type of town in which the main interest is that of the employment of leisure time and which will show a predilection for living in tent-houses and in mobile units. These inhabitants, then, do not remain attached to any fixed spot, but their existence is indeed

stimulated by a transitory way of life.

Conclusions

In the open zones between the blocks projects should be

realised to improve urban characteristics, viz:

— the building of areas for detached dwellings with a low density in accordance with Hilberseimer's recommendations for Chicago — the building of zones for temporary inhabitation with mobile homes to replace living in the city centre and as an alternative to living in green areas and to a certain way of experiencing leisure time

— the building of sports facilities, recreation and free time facilities, beginning with park and play areas and extending to shooting preserves and to artificial landscapes, and to amusement zones of the Disneyland type and National Parks for the friends of nature

— the setting aside of production areas in the "industrial parks" style of American cities with leisure time facilities and for play and sport for the workers.

Thesis 8: The urban villa as a form of residential building

Residential building in general has hitherto been limited to two types of buildings: the detached dwelling and the apartment block. Leaving aside the transformation of the detached home into series-houses, we are left essentially with these two types. To an ever-growing extent the apartment block is seen as a renunciation of the detached dwelling. Various researches have shown that nearly seventy per cent of the population prefers a detached home to one in a block.

Comment

In the last few years the tendency towards detached homes has risen in step with the increased affluence, although in this way considerable troubles and higher costs, longer streets and poorer services perhaps have to be accepted. At the same time, however, precious areas for recreation, particularly on the out-skirts of the city, are occupied by detached houses, thereby pre-venting that land from being enjoyed by the community. The real underlying reason for this aspiration to have one's own house is not so much the fruit of commercial reflections as, rather, the desire for independence and the need to develop one's personality more freely, in other words, a greater need for individualisation and for an improvement in the quality of life. The apartment block cannot fulfil this wish because it imposes certain obligations upon those who live in it and cuts down their living space. And so it is no coincidence that the building of apartment blocks is continually diminishing to the advantage of detached homes. The problem therefore is whether between these two extreme forms of dwelling there may be one that offers the advantages of a detached home whilst avoiding the disadvantages of the apartment block. The answer is that the old rented villa type of home is the one fitted to this purpose. It is a type of house with four to eight homes of different structures within it. On account of its limited volume and of its consequent adaptability to the particular wishes of its occupants, this type of house allows an absolutely individual structure. Outwardly it comes close to the fin-de-siècle type of villa and satisfies the need for individuality more than other well known forms of housing do.

Conclusions

In residential building the construction of town houses as rent-villas ought to be encouraged more than before. The transformation of historic villas for the reduced requirements of today have demonstrated that this type of home is not suited only for residential purposes but also lends itself to other functions. It satisfies both the desire of those who use it for a stronger individualization of the environment in an ideal way, as well as the interest of the collectivity in the measure in which this concerns the social infrastructures and concentration. Houses similar to these villas with a limited number of dwellings and with an individual structure are fairly easily fitted into an historic pattern of a city that has been enlarged. Whilst the building of big blocks does in any case result in a redevelopment of the surface concerned with all the ensuing social, economic and planning disadvantages, in the case of the urban villa all this is avoided because it is more an integrative than a substitutive element.

8 tesi



Wohnhausentwurf K.F.Schinkel 1798



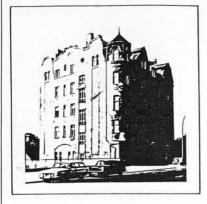
Villa Pflug von E. Knoblauch 1859



Haus Victoriastrasse 9 von F.Hitzig 1858



Villa Rosenburg 1902

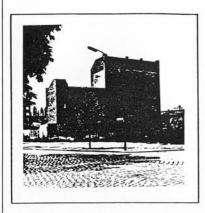


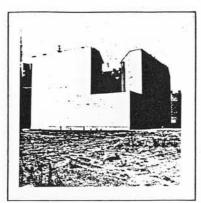


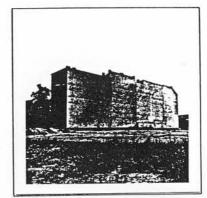




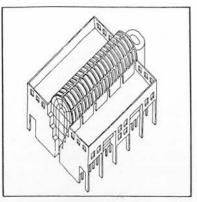




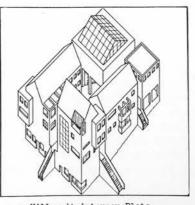




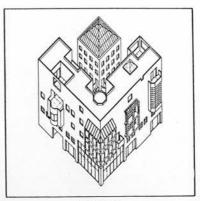




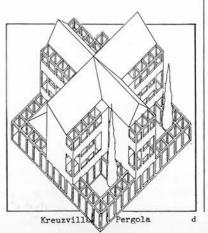
Villa mit Kaufpassage

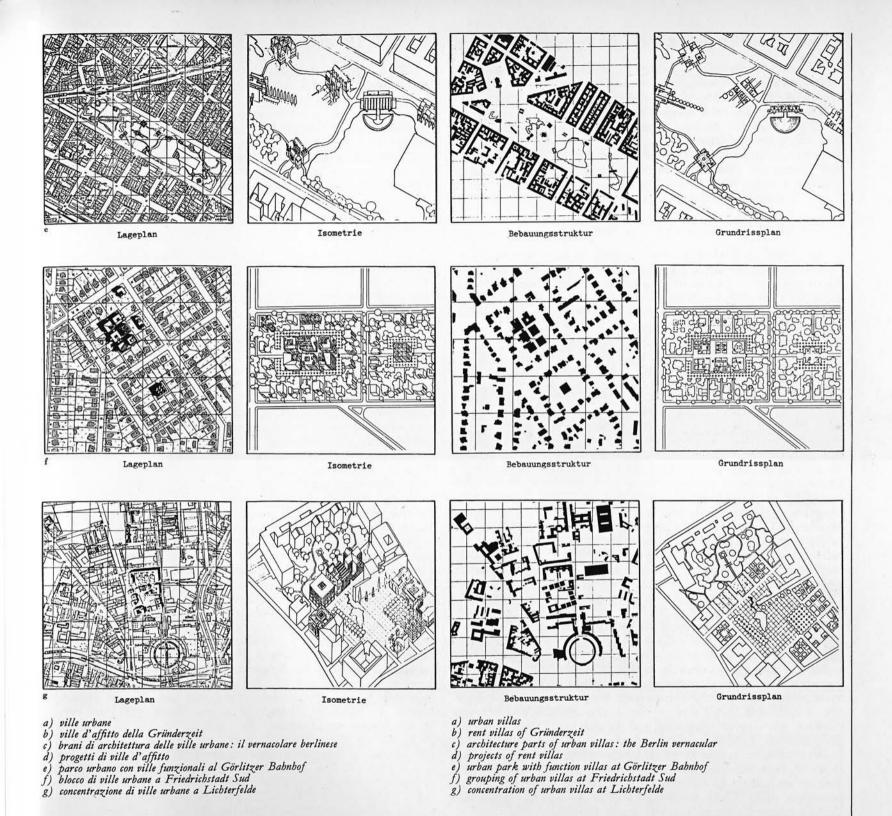


Villa mit internem P'atz



Eckvilla





Thesis 9: Transformation of the city in the course of history

The history of Berlin shows us the development of a city of many different zones. The difference and multiplicity of its historic quarters express the importance of Berlin and are its main urban design feature. It is a city in which contrasting elements, that have always been articulated in an attempt at cohesion, did not manage to blend together under one single principle.

Berlin has never followed one idea alone, but has been formed

on divergent ideas. Theses and antitheses coincide here like

breathing in and breathing out.

Comment

The history of Berlin is the history of the transformation of one type of city into another. In the course of seven hundred years Berlin has been several different cities. It began by being two cities, Berlin and Kölln, the one for fishermen and the other for traders. It soon became a market city, then a residential one, a capital and in the nineteenth century an industrial city. Finally it became a metropolis and ultimately once again a double city. Already in the eighteenth century Berlin was formed by six different cities: Berlin, Kölln, Friedrichwerder, Dorotheenstadt, Friedrichstadt and the eastern suburbs. The different quarters had their own administration, different planning structures and independent functions. Berlin was the commercial town, Kölln the industrial town, Friedrichwerder the administrative and Do-rotheenstadt the residential one, whilst Friedrichstadt was the military town and the eastern suburbs were the town of the factories. Together they formed a kind of federation of towns. At the end of the nineteenth century greater Berlin was a network of towns, small and medium, stretching over a wide area. The motor-car, the railway and industrial progress had driven the population to move, thereby increasing the number of homes and work places in the outskirts of the historic centre. These were to some extent quite new settlements, and in part they were completions set up alongside already existing populated areas. Districts like Spandau, Friedenhan, Lichterfelde, Siemensstadt and Charlottenburg have quite different arrangements and are the visible explanation of the "city in the city" project.

From a historic point of view this model also transforms the project drawn up by William IV for the Havel landscape between Berlin and Potsdam. Here in the nineteenth century a humanistic cultural landscape was formed with historic commemorative monuments of different epochs in which the romantic fragment of the Pfaueninsel castle, the neo-classical Heilandskirche, the country church of Saints Peter and Paul which recalls Islamic architecture, the classicist objects of Glienicker Park, the neo-Gothic castle of Babelsberg, the Hofgärtner and the Maschinenhaus of Stüler conceived in the late Italian style, and finally the classicist monuments of Potsdam, were inserted as places in themselves, thus forming an archipelago of architectonic phenomena. The architecture of the Havel landscape in itself encloses the key to regarding Berlin as an archipelago of

many different places.

Conclusioni

La sovrapposizione di idee, concezioni, decisioni, casualità e realtà lungo l'arco di sette secoli hanno dato alla città la sua forma attuale. L'assetto attuale è un libro di avvenimenti in cui sono rimaste ben visibili le tracce della storia. Non è un'immagine unitaria ma un collage vivo, un'unione di frammenti. La vicinanza contemporanea di elementi opposti è da un punto di vista storico l'espressione del processo dialettico in cui la città si è sempre trovata e si trova tuttora.

Il progetto di antitesi critiche e di una molteplicità divergente è il senso profondo e la caratteristica di Berlino.

- a) progetto di Guglielmo IV per il paesaggio della Havel
- monumenti storici commemorativi inseriti nel paesaggio della Havel
- c) fasi di sviluppo storico

Konzept von Wilhelm dem IV für die Havellandschaft

Conclusions

The superimposition of ideas, concepts, decisions, casualities, and reality across the arc of seven centuries have given the city its present form. The current plan is a book of events in which the traces of history have remained clearly visible. It is not a unitary image but a living collage, a union of fragments. The contemporary vicinity of contrasting elements is from an historic point of view the expression of the dialectic process in which the city has always found itself and still does.

The project for critical antithesis and for a divergent multiplicity is the profound sense and characteristic of Berlin.

- a) project by Wilhelm IV for the Havel landscape b) commemorative historic monuments in the Havel landscape
- c) stages of historic development

Architektonische Erinnerungsstücke eingelagert in die Havellandschaft







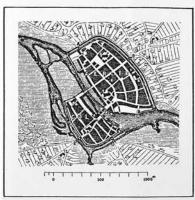
Heilandskirche von A. Stüler



Kasino im Schlosspark Glienicke K.F.Schinkel

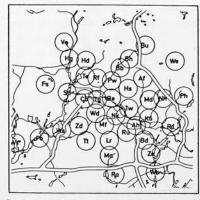


Hofgärtner u. Maschinenhaus in Glienicke von L.Persius

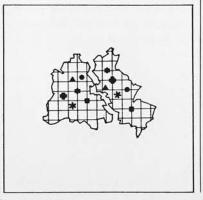


Doppelstadt Berlin - Kölln





Städtekollage am Anfang des 19. Jhdts. Regionales Städtenetz des Industriezeitalters



Die geteilte Stadt

Thesis 10: Standards and definition of objectives for the future

The inevitable drive towards the reduction, improvement of planning characteristics, the preservation of the historic substance, the individualisation of architecture, the humanization of living space in the city and the improvement of the environment are themes barely mentioned, which will need to be discussed within the framework of the reconstruction of the city and for whose solution new proposals must be developed.

Comment

The problem is no longer posed as the designing of a completely new environment, but rather as the rebuilding of what already exists. Not the discovery of a new order for the city, but the improvement of what is already there; not the discovery of new conceptions, but the rediscovery of proven principles, not the construction of new cities but the re-organisation of the old ones — this is the real problem for the future.

There is no need for a new Utopia but rather to create a better reality. And this is something that applies not only to Berlin but also to the majority of other major cities. Berlin might, however, prompt other initiatives that could go beyond its own particular problems and thus assume a more general role of leadership.

Conclusions

The creation of an archipelago in the city is the answer to a series of fundamental planning necessities of the following kind:

— the solution to the problem of reduction which goes hand in hand with that of an improvement of the city in antithesis to the constant growth and unlimited enlargement with the loss in quality that ensues from it

— the improvement of the city in the sense of a vital space and

of multiple and more varied activity

- the creation of a pluralistic system of reciprocally unresolved contradictions by comparison to a unitary and centralized system
 the reconstruction of an identity for the urban environment
 the close link between city and country, which means a new way of considering the relations between culture and nature
 the intensification of places as also the conservation of the collective heritage and of the historic conscious in the sense of a continuity in space and in time
- the individualization of architecture and hence the simultaneous improved adaptability to the desires and expectations of in-

habitants

— the necessity for smaller units for the creation of living spaces and for more delimited activities, in a scale with the city and its individual buildings.

Thesis 11: Scheduled project times

The project ought to be carried out in several stages and over a long period of time. The first phase includes the formal description of contents of the city's characteristics. The second phase deals with the development of alternative models. The third phase is concerned with the evaluation of different models and of planning formulation. The fourth phase is the design phase and the fifth is that of the actual realisation. If for each of these a year is estimated it will take at least five years to complete the whole project.

Comment

The results of the first phase, which consists essentially in a cataloguing of elements and structures, ought to be presented and discussed during the Bauwochen. From the point of view of method this research should be scheduled as a system of fairly open morphological lines so as to allow integrations during the work.

The second phase, the development of alternative models, serves to go more deeply into the architectonic and urban planning vocabulary. The possible Utopias for the future should also be compared and contrasted with each other. The alternatives serve for the preparation of the decision-making phase. The hypothesis should be formulated to the Popper and in the successive phases either confirmed or modified or even rejected on the basis of criteria of critical and realistic appraisal. The appraisal of these alternatives would be, in its general outline, the task of political groups and also of the individual citizen. The results of the two phases could be later discussed in public meetings and then published. The formulation of the programmes is followed by the designing of the islands-in-the-city stage and that of the green zones in between them, and this ought to avoid showing a preference for a unitary architectural style. Rather, the rule of maintaining as wide as possible an architectural spectrum should be adhered to.

Conclusions

An exact realisation of the prototypes of the project as a whole might be the purpose of an exhibition in the 1980s. Meanwhile, during the Bauwochen, expositions of the separate phases of development might be staged in a continuation of the Sommerakademie for architecture.

The first time, this year in Berlin, the individual themes could be analysed and elaborated from a theoretic standpoint. International architects and planners should be invited to stay for long periods in Berlin to work on these projects. For the organization of the entire planning an independent group of experts should be set up. tesi thesis 11