

# ON THE WAY TO THE SECOND MILLENNIUM: IMAGINATION AND REALISM IN TOWN PLANNING

By

I. PERÉNYI

Department of Town Planning, Technical University, Budapest

(Received December 15, 1979)

World War II caused great changes in the social and economic life of our globe, followed by a rapid, though extremely uneven growth of the population. The change in professional conditions, the concentration of rural population in towns resulted in the sudden growth of town population followed by an increasing trend to agglomeration.<sup>1</sup>

Urbanization involves considerable urban development: new towns are built, the existing ones reconstructed. The most important problem is housing with the connected and rapidly increasing investment of communal building, traffic and public utilities. The character and success of urban development is, of course, a true mirror of the economic possibilities, the resources and the social and political platform of a country, hence its diversity. It is a general problem, however, that the increasing concentration of industry and population has led to the pollution of environment, especially in cities, and has reached a critical point. That is the reason why the number of realistic and unrealistic theories, experiments and research dealing with the accommodation of the population, the establishment of settlements, their structure and aesthetic appearance has increased to a considerable extent.

Many essays have been published, especially in the recent decades, trying to outline the future trend of social life and its setting: the future system and structure of the settlements.

As for the futuristic works, essays based on the analysis of future development are taking the place of the earlier publications of journalistic or science-fiction character. The works of FRITZ BAADE, A. CLARKE, B. WARD and others contain a lot of valuable observations, important statements.<sup>2</sup>

<sup>1</sup> From 1950 till 1975 the population of the world grew from 2500 to 4000 millions, i.e. by 60% in 25 years. This growth is unequal: while it was 0.58% in Western Europe between 1970—75, it was 3.21% yearly in Central America. The proportion of city dwellers compared to the entire population grew from 19.4% in 1920 to 39.4% by 1970, so it was doubled in 50 years. This process is accompanied by the agglomeration of large cities: while there were 71 cities in the world with more than 1 million inhabitants in 1950, their number grew to 181 by 1975.

<sup>2</sup> FRITZ BAADE: *Der Wettlauf zum Jahre 2000, 1951*; Denn sie sollen satt werden,

Particular attention is due to the *first* report "The Limits to Growth" published by the group of scientists known as the *Roman Club* in 1972. It is based on the work of the *Massachusetts Institute of Technology (MIT)*. This comprehensive report tries to set up prognostic views for the modern processes of economic development.<sup>3</sup> This first report was followed by the *second*, "Humanity at the Crossroads" and the *third*, "The Change of International Order". Though the second and the third contain numerous corrections compared to the first, their suggestions are still contradictory and sometimes even unrealistic.<sup>4</sup>

We think that the social and economic development of our time will continue to be dynamic and there is no need to expect any stoppage or interruption of any length in the development of industry or transport, or in any field of national economy. As for the future tendencies to be expected we may conclude that the development of industrial production, the change in the regional location of industrial productive forces, the intensity of agricultural production, the extension of chemization and mechanization, the further acceleration of the urbanization process, the development of urban and inter-urban traffic can be considered as factors unfavourably influencing human environment while being results of social development themselves. They may lead to new damage centres besides keeping up the old ones and may result

---

Hamburg 1964. ARTHUR C. CLARK: Profiles of the Future, 1962. BARBARA WARD—RENÉ DUBOS: Only one Earth, 1972.

<sup>3</sup> In April 1968 thirty outstanding personalities met in Rome, invited by Dr. AURELIO PECCER, to discuss the present and the future situation of mankind. This meeting was the origin of the *Roman Club*. The report they published analyses five groups of questions: the growth of population, food production, industrial development, environment pollution and the use of irreproducible natural resources. The report reckons with an exponential growth in all of these fields. On the basis of this analysis they tried to construct a world model, since the above mentioned five factors are in permanent connection with one another. The conclusions of this experiment are generally distressing, though, as we think, not always well-founded. They ignore the results of social development and change, the possibilities offered by scientific, technical and technological progress. Even their calculations as to the raw material supply are contestable, as they do not think of exploring new resources of energy, or of the re-use of raw materials, or of utilizing industrial refuses etc.

DONELLA H. MEADOWS—DENNIS L. MEADOWS—JORGEN ROUNDERS—WILLIAM W. BEHRENS: The Limits to Growth. New York, 1972.

<sup>4</sup> In 1974 the *Roman Club* published its *second* report, where the authors emphasize, for the first time, the economic and social problems that can be witnessed in the present conflicts of international economic relations. In this way they acknowledge the fact that the social and economic development of mankind cannot be stopped. They think, therefore, that it is necessary to coordinate on a global scale the functioning of all economic systems in all the states of the world.

In 1976 the *third* report of the *Roman Club*, "The Change of International Order" urges the establishment of supernational mechanisms: by creating new specialized international institutions they wish to restrict the sovereignty of the states. While the report rightly deals with important problems like the armaments race, environment pollution, world trade systems, the use of the world ocean etc. it starts from the false conception of a conflict between "North" and "South" instead of starting from the totality of the social conditions in the capitalist world, and it does not take into consideration the existence of the socialist world order. These reports, though of great importance, are unable to guide public opinion and to show realistically how to carry out their own suggestions.

in expanding the damage process in the soil, the air, the watercourses and other elements of human environment as well as complicate the conditions of defense against the damage. According to certain data, environment pollution may rise to the six- to tenfold of the actual one by 2000. If there are no radical measures taken, the situation may become catastrophic indeed. That is the reason why we must attribute a great importance — in the interest of environment protection — to taking the proper measures preventing any further continuation of this process.

Social and economic development may enable mankind to create the conditions necessary for the re-establishment of the balance of human environment, and scientific and technical revolution may supply the necessary means. It would be of particular importance to proceed to a policy or practice of regional planning and development that would turn the whole process into the right direction and would use its influence — besides economic effects and social evolution — to further environment protection and its reasonable use. As a matter of fact, the damages affecting environment are not simply results of industrial development or urbanization. Thus the solution of this problem cannot be found in the decrease of population or production. The danger lies in the fact that, very often, industrial development and urbanization involve speculation, spontaneity, individual interests prevailing over common interests. But we think that in societies that have attained a high degree of production and productivity, that are in possession of ever more up-to-date scientific and technical discoveries and inventions, the actually limited or seemingly exhausted supplies of energy, raw materials and food may be recovered and new resources may be found. We hope that mankind will be able to solve — in spite of a continuous growth of population — the problem of creating and protecting its own environment, an achievement badly needed in our time of painful contradictions and distortions.

\* \* \*

If we want to group the views prognosticating the formation, the transformation of settlement systems, we can divide them into three categories containing one common feature.

The authors of the *first* group search for new forms instead of the existing towns. Carried away by the technical possibilities of our age they conceive a lot of unreal, abstract ideas and illustrate them by structures and formations of various plans, forms and types. Within this trend many people have been dealt with different solutions of the so-called “spatial town”, from the trussed structure variety set on fundamentals above existing towns up to the “floating” city “suspended” in the air. Technical development, modern engineering allowed YONA FRIEDMAN, PAUL MAYONT and WALTER JONES to plan their

systems. The first worked out a system suspended on framework, the second conceived another one suspended by the aid of sails and cables, while the third planned a "city of the future" consisting of crateriform basic units. The most remarkable of them are the conceptions of Yona Friedman of surprising originality.<sup>5</sup> One can meet here plenty of ideas concerning bridge-towns or towns lying on water or underground and underwater cities. Even the so-called "biological" towns belong to this group, like the one conceived by PAOLO SOLERI, who builds his city on biological analogies, projecting on it the system of human organism.<sup>6</sup>

The *second* group comprises the experts who prophesy the decline and fall of cities and suggest a system of settlements covering almost the entire surface of the Earth, then the oceans, the air . . . These are essentially desurbanistic ideas refusing to admit the very right for existence of towns and claiming that they are outraced by telecommunication. These conceptions can be found in the early desurbanistic tendencies of the Soviet avant-garde period (M. A. OKHITOVITCH, N. L. MISHTCHERNIKOV and others).<sup>7</sup> Later others conceived "Galactic cities" dispersed in nature, like FRANK LLOYD WRIGHT, RUDOLF SCHWARTZ, MICHEL RAGON, RAIMUND LOPEZ, JEAN FAYETON — to mention only the most famous architects. Their conceptions differ only in

<sup>5</sup> YONA FRIEDMAN who wanted to push off the surface of the earth suggested to make "well built covers" over the old towns. They would rest, at 18—25 meters above the town, on pylons spaced at 35—50 m. with stairs and lifts within them. The "cover" with a steel structure and curtain-walls would constitute 50—60% of the town in the air, the rest of the space would remain empty, thus allowing a good insolation and the use of movable structural units according to the needs of the inhabitants. The same principle is adopted by KENZO TANGE in his *Tokyo* plan. But these plans do not answer the question what will become of the old settlements.

<sup>6</sup> The *Mesa City* of PAOLO SOLERI, to be built on a 35 km long and 10 km wide half-desert plateau, would have 2 million inhabitants. It is planned with special buildings receiving and utilizing cosmic energy, radiation, water, wind etc. The essentially linear spine would contain the university centre surrounded by institutions of secondary education and encircled by a large park. Connected with this centre and organized into clusters there is a long row of villages with central institutions and fields and gardens around them. To the east and to the west of the town densely inhabited residential areas would be situated. The core of the town would accommodate the complex of towers containing central institutions. It is easy to see the lack of motivation and foundation and the eventuality of this plan.

<sup>7</sup> Many important architects of the Soviet avantgarde period reject the very idea of a town and profess the view that towns should be replaced by detached residences scattered all over the territory of Russia. They think the network of energy distribution would be the most important factor, because it would allow the establishment of factories at any point of the country. M. A. OKHITOVITCH proposes to put lots of standardized and movable houses with garages at a distance of 50—100 m from one another along communication lines of tens or hundreds of kilometers. This conception of neither town nor village meant a total rejection of any concentrated settlement. OKHITOVITCH, M. A.: *Ne goroda. noviy tip rasseleniya*. Moscow, 1930.

In the opinion of N. L. MESHTCHERNIKOV towns can exist only as working places, so the residential areas or settlements may be built at a 50—100 km distance, depending on the development of traffic. MESHTCHERNIKOV, N. L.: *O sotsialisticheskikh gorodakh*. Moscow, 1931.

The authors of these plans meant to accomplish in no time what might have been achieved only as a result of a long economic and historical development: the cessation of the difference between town and country.

small details, and they all agree in one essential point, considering the "de-concentration", the "dissolution" of the town in its natural environment as the only possible trend of development.<sup>8</sup>

The partisans of the *third* group are those who claim that the unlimited development of towns is a law of the evolution of life. This is the conception of the open town, the permanently growing town. These ideas are not quite new, they go back to the last years of the 19th century — see the so-called ribbon-town of the Spanish ARTURO SORIA — and to the works and plans of several Soviet avant-garde architects of the '20s (L. M. SOBISOVITCH, N. A. MILYUTIN, LEONIDOV and others), where these ideas play an important role.<sup>9</sup> The forms of future cities, the future network of settlements are studied also by the so-called *Ascoral* group of the CIAM led by LE CORBUSIER, suggesting a structural system based on regional principles.<sup>10</sup> This conception is represented most plastically in the works of C. DOXIADIS, who used the term *ekistics* for his theory. This concept gives a wide and complex interpretation of the spatial arrangement of settlements serving as a living space for human society. Doxiadis indicates, in his urbanistic theory, the future system of settlements to be an Ecumenopolis, i.e. a gigantic agglomeration of settle-

<sup>8</sup> Thus, the leading idea of FRANK LLOYD WRIGHT's plan was a continuous urban territory with scarce population, where the functions of town, centralized before, were spread along a linear system of traffic and communication. The use of the territory according to functions was solved in five continual belts of development, with a parallel road and regional railway system. The zone nearest to the central traffic line contains the industrial and commercial establishments. The next zone is used for agriculture. The third one is the residential area followed by the zone with the social and cultural establishments as well as sports halls, hospitals, offices, services, theatres and colleges. The last zone is the recreation area. This plan can be carried out only on the basis of a gigantic national system of transports and communication, of economic and industrial decentralization.

<sup>9</sup> The representatives of this avant-garde trend thought that the new towns should be built cell-like, with commune houses, where the traditional homes are replaced by a wide range of rooms for people living in highly developed communities (canteens, nursery schools, infants' nurseries and other rooms of collective life). As these "combines" can satisfy all material and cultural requirements of their 1500—2000 inhabitants, the authors of the plans claim that such towns are not very problematic: they consist of commune houses and have neither centres nor suburbs. In this way they meant to have achieved an important object of socialist society: the cessation of the contradiction between town and country, since these "combines" can serve as homes for agricultural as well as for industrial workers.

L. M. SOBISOVITCH: *Gorod budushchevo i organisatziya sotzialisticheskovo bita*. Moscow, 1929.

N. A. MILYUTIN's starting point is the open linear city. In his conception the framework of the "residential zones" is composed by the main roads and the secondary roads, containing the housing, the secondary centres, the central areas of collective services, cultural life and recreation plus the central park.

N. A. MILYUTIN: *Problemi stroitelstva sotzialisticheskikh gorodov*. Moscow, 1930.

<sup>10</sup> The statements of the *Ascoral* group are of morphological character. In their opinion — the *ring-radial* structure is that of an administrative, commercial, cultural, scientific center built on existing cities;

— the *linear* structure is characteristic of an industrial town built on main roads of traffic and transport;

— on the *green islands* within the network created by these two types are agricultural settlements.

LE CORBUSIER: *Les trois établissements humains*. Paris, 1959.

ments growing or grown together.<sup>11</sup> Recently several studies of this kind have been published in the socialist countries; the most outstanding ones are the conceptions of A. BABUROV and his group. They try to establish the functional and structural system of the repartition of population in future society.<sup>12</sup>

We think there is no need to evaluate the above views and conceptions as they represent a certain process interesting us not so much in their details as in their entirety by giving a good illustration of the wealth of actual urbanistic ideas.

In our opinion the research, the hypotheses dealing with the future distribution of population can be based, above all, on the scientific research of the future way of development. The future system of settlements can be deduced from social development, from the changes of the future way of life, from the possibilities offered by technical-technological revolution. The fundamental system of the structure of future settlements is determined by the potentialities of a certain country or a certain network of settlements and by its economic and social program. This will lead — in our opinion — to a well-balanced though differently conceived, multiple-stage, hierarchical system growing dynamically into an open structure.

The question emerges whether the present system of settlements suits the new social and economic order, whether it is reasonable to keep up a town-and-village system that has existed since the earliest times of civilization, goes back to the age of slave society and has developed in the course of the history of different class societies. The answer to this question was given by the great philosophers of the last century, who determined and foresaw the laws of social development and refused the idea of maintaining the present system of settlements in its unchanged form.<sup>13</sup>

<sup>11</sup> DOXIADIS, C. figures the following phases of the development of future towns: as a result of linear development — the *dinapolis*; through the parallel and perpendicular development of a few *dinapolis* — the *dinametropolis*; then — through the development of a huge agglomeration, — the *dinamesopolis*; the final balanced uniform, static system — the *Ecumenopolis*. The author characterizes the *Ecumenopolis* in the following way:

— it will cover the whole territory of the earth as a continuous network of human residential areas;

— it will be a static settlement, in balance with the free and open country.

C. DOXIADIS: *Ekistics*, London, 1968.

<sup>12</sup> The author departs from the intensity and the character of human creative relations, thus distinguishing three types of interconnected social unities and processes:

— scientific complexes (scientific institutions, universities etc.);

— housing complexes (houses with public institutions);

— production complexes (industrial and agricultural complexes).

These three units constitute an interrelated spatial system. The authors make an extensive study of their system by examining its details and correlations. A. BABUROV and others: *Noviy element rasseleniya*, Moscow, 1966.

<sup>13</sup> FR. ENGELS writes that only a society uniting its productive forces on the basis of one great central plan enables industry to establish itself in the different regions of the country according to a system which is best suited for its own development and for the support of other branches of production. So the cessation of the antagonism between town and country is not only a possibility but also a necessity for industrial production as well as for

This view is still valid. Since that time great changes have been witnessed as a consequence of social and economic as well as scientific and technical development. Now the world is going to witness even more radical changes. Thus, as a result of the development of production and productivity, agriculture is becoming a branch of industrial production resulting in the integration of industry and agriculture. This fact and the social and political program of the new social order are going to further an increasing approach in the way of life, in the material and cultural possibilities of industrial and agricultural workers. Nothing can justify, therefore, the still existing and striking difference between the two types of settlements, between their facilities of housing, public institutions, public utilities and communal systems. This difference is not so much a result of the character of the settlements, but rather a consequence of the diversity in the living standard and the way of life of town and country people.<sup>14</sup>

Thus, town and village can be said to be historical categories resulting from class societies and we can assume that they will fade away and will be followed by another system of settlements. This system is due to give birth to a new spatial order concerning the distribution of the population so as to suit better the requirements of the new social and economic system while making allowance to local conditions. A new network of settlements ought to be established, varying according to countries or even provinces (regions), but basically uniform, well-proportioned, hierarchical as well as various, but never antagonistic. This will be, of course, a lengthy process, the new system cannot be developed from one day to the other, but only step by step, quite gradually. Such a transitional planning system is under way of being created and introduced in several socialist countries.

This planning method based on *group-systems* of settlements aims at a parallel development of town and country settlements of different sizes, which constitute territorial and spatial unities with common transport, public

---

agricultural and public health. He thinks that the restoration of polluted human environment also depends on the new system of settlements: "The present poisoning of air, water and soil can be stopped solely by means of a fusion of town and country . . ."<sup>15</sup> He also refers to the fact that putting an end to the differentiation of town and country is not a utopia, as it depends, essentially, on mass industry evenly distributed all over the country. Only a well-balanced distribution of the population in the country, the basic unification of industrial and agricultural production, and, as a consequence, the necessary expansion of transport — assuming, at the same time, the cessation of the capitalist mode of production — will enable the rural population to step out of the isolation and ignorance in which it has been vegetating invariably for many thousands of years.

ENGELS, F.: *Herrn Eugen Dührings Umwälzung der Wissenschaft*. Marx—Engels Werke, Bd. 20. Berlin, 1962.

<sup>14</sup> For instance, as a consequence of the structural changes in the system of settlements in Hungary, due to the economic development in the thirty years after World War II, the major part of our country population does not work actually in agriculture. Even if we examine only the comfort level of the peasants' houses we can see radical changes: 33% of the houses have bathrooms, 76% gas, 87% washing machines, 84% TV sets, 65% refrigerators etc.

utilities and other kinds of infrastructure, with a common central system, cultural and social services and recreation centres and an easy accessibility of the central settlement.<sup>15</sup>

The establishment of such group-systems of settlements allows:

- the complex development of the area on the basis of the development of production and the well-balanced distribution of the population;
- the concentration of production without cramming industry in big cities, simply by establishing subsidiary companies in smaller settlements;
- the possibility for the population to choose the places they prefer for work, recreation and entertainment;
- a more economical development of transport, public utilities, social and cultural services, i.e. of the infrastructure at the working places and in the residential areas;
- a better use of the different regions and areas, the protection of environment;
- a regional coordination of the different territorial and network systems.

In order to introduce this system it is necessary:

- to pay attention to the systems in the course of economic planning, in the field of establishing industrial investments and developing industrial branches;
- to establish industrial plants far from big cities, in medium-size and small towns;
- to remove establishments furthering urban development from big cities and found subsidiary companies in smaller settlements;
- to carry out the reconstruction of the industry of large cities without increasing labour;
- to develop transport, public utilities and other kinds of technical infrastructure;
- to set up new cultural and social centres;
- to set up common bases of building industry for town and country.

In accordance with the plan of development and distribution of the productive forces — the so-called national plan of regional development — or as a part of this plan, a scheme of distribution of the population can be set up, comprising the old settlements as well as the up-to-date settlement

<sup>15</sup> As a result of thorough examinations in the Soviet Union, 61 larger, 119 medium-size and 323 smaller groups of settlements have been classified in this way.



systems: the group-systems. This scheme is based on the following three objects:

The *first* object is to create the urbanistic conditions furthering the manifold development of man, that is: the limitation of the growth of big cities and the improvement of the living conditions of their population; the acceleration of the development of medium-size and small towns by building up and extending urban services; the accessibility of national and regional institutions for the population of medium-size and small towns and villages; the accessibility of the zones of recreation and resorts for the population of all kinds of settlements; the cessation of positional and territorial disparity within the networks of settlements.

The *second* object is the creation of favourable urbanistic conditions for the distribution of productive forces, the intensive and selective development of social production in view of scientific and technical progress. This can be achieved by creating a cooperation of the settlements as a condition of territorial and productive integration, by developing certain forms of settlements furthering the concentration of industry, transports and agriculture as well as the establishment of industrial zones; by distributing the population in a way to accelerate the productive and infrastructural building processes that are best suited for the specific production of certain regions, for the living conditions of their population; by increasing the use of labour, the skill and the faculties of workers, by using more economically the areas best suited for agriculture and by giving them the proper means for urbanization.

The *third* object is to develop the towns and villages together with the improvement of their environment. It seems to be expedient, therefore, to organize the distribution of the population in a way to further the concentration of production while diminishing environment pollution. Urbanization and tourism are to be developed without endangering the protection of landscape. The ecological balance is to be supported or re-established in the agglomerations and other intensively used territories. Towns joining or growing together are not to be permitted in the interest of protecting nature.<sup>16</sup>

\* \* \*

<sup>16</sup> In 1971 the Hungarian government issued a decree confirming the conception of the development of the settlement system in this country. This conception classifies the settlements, based on their functions in the social and economic organization and direction of the regional division of labour, according to their fields of activity regarding services and supply as well as to their sphere of attraction, the number of their population and the level of their technical equipment, into special centres and categories. In the different centres, population and production are to be provided with the necessary infrastructure and other supply on a level appropriate to their classification. Certain centres may even share these duties with each other.

Human environment is not exempt from the influence of the revolutionary changes in the social, scientific, technical and technological development of our time. This requires a permanent adaptation of the arrangement of settlements to the constantly changing conditions. Thus we have to establish an environment system that is not closed and finished, but open, dynamically developing and fit for transformation. We must take into account that the requirements and the ways of meeting them are varying, complex and differentiated. Our aim should be the development of a human environment helping the formation of communities, and collective education. Last not least we should strive to set up a harmonious and aesthetic environment granting the good morale of the population and an increasing sense for beauty. At the same time it is important to consider the problem of economical building and operation and the best means of execution: i.e. highly developed building capacities and their efficient use.

We think of a new system of settlements consisting of complex groups for housing, which should meet the complex requirements in the spheres of work, everyday life and relaxation. They are composed of specific and well-defined areas and networks open for any necessary change and they form a comprehensive system which is, at the same time, part of a higher (national and also regional) system, a definite component of an overall network.

This complex function of the system, the necessity of supplying the population with up-to-date equipment require an increasing number of establishments of different kinds for the regions and the entire network. That is the reason why we must try to create a definite spatial order; it is desirable to set up the buildings constituting the *units of the regions and the network system* in certain interconnected groups (e.g. houses with the connected gardens, roads and playing grounds). These *micro-environments* are spatially limited and grouped in certain parts of the settlements and they meet all the requirements arising from the functions of the settlements (housing and work), thus constituting *units of the regions and the network system*. The establishment of micro-environments helps and determines the rational use of the territory and the optimal structure of the network systems. The units of the regional and network systems are generally the following:

- *the system of residential areas*, its fundamental requirement being an arrangement offering the best living conditions: the good insulation of the houses, their sheltering from the wind, their accessibility, the rational use of the public institutions etc.;

- *the system of industrial areas* concentrating and grouping working places in factories with the purpose of allowing rational production, the economical building of supplementary establishments and the protection of the residential areas from harmful effects;

- *the system of agricultural areas* providing a good accessibility of arable

lands, a rational disposition of industrial units and supplementary buildings, and organizing their relations economically in the interest of production;

— *the system of green belts* providing favourable microclimatic conditions for recreation and relaxation;

— *the system of transport* establishing an efficient traffic between the different areas of the town and with the suburbs, organizing the inside traffic and pedestrian traffic with the utmost care;

— *the system of city-centres* serving as a base for a hierarchically organized, multiple-stage system containing several building areas for public purposes; the essential character of such a system depends on the central role, size, character and structure of the settlement;

— *the system of services* supplying the population with a sufficient number of public institutions, communal buildings, public utilities and other services.

A good cooperation of the above systems is a basic condition of the up-to-date functional development of environment required by settlements.<sup>17</sup>

Concerning the structure of settlements or groups of settlements we want to emphasize the necessity of an *open* system. This means a tendency for change, development and a high degree of mobility. The entire system and the structures it contains are to be formulated in a way to be open to meet the permanent requirements of further development (building reconstruction). A settlement built up compactly and homogeneously — whether it be a residential or an industrial area or a resort place — cannot really fulfill its destination. Thus the requirement of *systematic division* is of fundamental importance, it is to be considered from several aspects in the course of the planning. On the one hand it is necessary, according to the numerous functions of the settlement, in the interest of functional subdivision, to attribute definite uses to certain parts of the settlement. On the other hand, a differentiated spatial division, a looser arrangement of the areas are fundamental requirements of traffic, health and security. The large number of functions, the manifold character raise problems that can be solved by establishing a multiple-stage, hierarchical system. While developing any of these settlements or groups of settlements we must remember the importance of

<sup>17</sup> One of the basic requirements regarding the up-to-date city fabric has remained the suitable arrangement of the territory according to the functional units of region and network, so that the functions of the city should be executed smoothly. We think, however, that — in opposition to the *Athens Charter* — this differentiation does not mean necessarily the total separation of the above mentioned functions, as city life does not demand such a kind of separation, which may be harmful in certain cases: in big towns it may result — e.g. as a consequence of heavy traffic with special places of destination — in traffic disturbances. The demarcation of such functional units means only the use of the respective city areas according to their *fundamental* destination.

*differentiation*, both for the development of the different areas (residential area, green belts etc.) and the network systems (traffic, public utilities etc.).

The optimal solution must meet the social and ecological requirements as well, i.e. the well-known conditions of an up-to-date environment structure. At the same time we have to take into account what can be realized under the given economic conditions, or what is indispensable. As a matter of fact the provision of the population with services cannot be expected to be complete as yet. On the other hand, there is no bargaining about certain demands, like the size of protection belts or the purity of air, soil and water.

As a matter of course, the different dimensions, features and central functions give a different character to each of the settlements and set up particular requirements for their future development.

We think that the essential basis of the planning is identical with the up-to-date tendency to unify the functional, aesthetic and economic aspects of future settlements or groups of settlements. This is a fundamental principle for up-to-date planning and affects the entire settlement as well as any of its parts. The systematic division of the area, the tracing of the networks, the position of the important buildings, their correlation to each other and to the landscape, all these factors have a considerable effect upon the economicalness and efficiency of industrial production and transport, on the healthy living conditions of the population as well as upon the appearance of the settlement.

\* \* \*

We think that the above ideas contain acceptable conclusions as to the development of future systems of settlements, but we cannot say that it is possible to formulate definite fundamental rules now, correct and valid in all their details. Many things are unclear concerning the future way of life, the services and the effects of environment. So we cannot yet set up in its entirety the up-to-date complex system of requirements concerning the formation, the development and the functioning of settlements. Further research is needed and we want to suggest a few ideas for this purpose.

*We must refer, above all, to the necessity of carrying out research concerning the position and the changes of the way of life in large cities*, thus laying the base of research work connected with the formation of environment. The structure, the contents and the appearance of a settlement are organically connected with social and economic, scientific and technical progress, the changes of social and economic order; it determines e.g. the organization of working time and free time, i.e. the form and the contents of work, life and recreation. The increase of spare time, the extension of cultural demands and physical training, the development of collective life etc. cause permanent changes in urban life and environment. In the course of research special

attention should be paid to facts concerning life in large cities, these problems should be raised more emphatically just because they appear in a different light. Thus the length, the structure and the way of spending one's spare time in a big city differ considerably from the same problem in any other kind of settlement (e.g. the population of a big city needs more time for getting from one place to the other while only few people have the chance to live in family houses surrounded by gardens). The most difficult problems are those related to the sphere of recreation, which requires green surfaces in the city and around it as well as the establishment of certain supplementary services. The psychological influence of metropolises and their environment is not yet revealed. There is a particular problem here: how to help the adaptation of the people to urban environment, who worked, only recently, as farmers in small villages and who are working now in industry or in the field of services. The psychological influence of collective education has a great importance in such cases.

*The microclimatic conditions of towns and their influence on the environment (people, plants, buildings) must be subjected to a comprehensive research.* The microclimatic conditions of a town are determined by the factors of landscape and urbanization: ground, soil, waters, plants, the density and mode of construction, surfacing materials, air pollution etc. All these factors have a considerable influence on the conditions of the town, especially on the physical and mental state, health and working capacity of the population. Their importance is still greater in a large city, where the unfavourable situation is gradually destroying the microclimatic conditions. The larger the city, the greater the difference of its environment from the natural state of urban environment. As for the question, how much insolation is needed in the areas and the rooms we know about a large number of suppositions and methods of determination, the same as we know the general conclusions for the orientation of, and the space-volume ratio between, buildings. However, these questions are not so well known regarding the actually dominating high-rise and medium-rise buildings, or too long building complexes with straight, broken or curved line configurations. We do not know much more about the effect of the different kinds and groups of plants on the current of air. Further research is needed also to solve the problem of the mutual influence of insolation and radiation. Noise as a harmful concomitant to present-day city life raises another serious problem. The protection of residential areas from such bad effects should be provided by the differentiation of city traffic, the establishment of green belts, the regulation of car parking, the appropriate choice of the volume, the configuration, the grouping, the finishing etc., of the buildings. But an extensive analysis of all these effects is still ahead.

*It is necessary to determine precisely the town planning concerning the formation of flats and houses by considering the following fundamental aspects:*

- social (demographic, professional) requirements or demands concerning the use of spare time or the needs connected with family life;
- prescriptions for health protection (insolation, noise, temperature);
- requirements of urban architecture.

First of all, there is an urgent need to examine flat and house as units of the micro-environment, because they constitute, as a result of their equipment and interrelations, not merely the totality of definite structural units, but they are also components of a functional spatial system that may lead to structures of housing more or less different from those we have today. Thus we need various formations of buildings and their environment in case of lower or higher built-up in the case of row houses or detached houses, because the relations, the connections with the environment are also different. Another requirement must be met by examining how to solve the contradiction between the restrictions of building technology and the requirements of town planning. The demand for economy is known to set certain limits to functional and town planning requirements, but to what extent such limits are to be set is a question that can be answered only after a profound examination of the future residential area. It is extremely dangerous to impose technological or real or supposed economic requirements on the principle of adequate house grouping.

Social and economic development involves an increasing living standard, which is manifested in the harmony of the actual requirements and their satisfaction in the field of services. We may reckon with an increasing development of mass traffic and expect up-to-date public services (institutions, public utilities etc.) to be established. The differentiation of transport, its security and speed, the large variety of services and their high level will change fundamentally the whole life in a city, and make it more comfortable, fuller and more pleasant. The development of services and supply demand the establishment of public institutions of higher capacity, built in the residential area. Increasing spare time, the growing importance of community life may even require certain public institutions for the satisfaction of demands that are actually sporadic or totally ignored. It may generally be expected that the effect of functioning networks of public institutions and different types of public buildings will be intensified by means of increasing their capacity, by the mechanization of auxiliary work, the development of self-service and the do-it-yourself movement etc. This leads to different important questions, as uniting the public institutions in one block, the formation of larger units, their flexibility and the integration of services needed at different hours of the day inside the same establishment. The rational methods of such planning must be examined and studied.

Finally we would insist on furthering the research connected with town management. A lot of problems arise in connection with the establishment and work of organizations dealing with the maintenance of buildings, the running of vehicles of transport, the upkeep of green surfaces, the parking of cars, the removal of refuse etc. This means, essentially, working out the optimal model, the town planning conditions of functioning towns.

As a last remark we want to say that the experts of town planning all over the world have learnt to speak a common professional language, as it was witnessed at the UN world conference in Vancouver.<sup>18</sup> And the ambitions are also the same. But the realization of these up-to-date conceptions is determined, above all, by the economic possibilities, the industrial potential, the traditions, the natural factors and, last but not least, the social program of a given country. That is the reason why we should avoid, despite the common fundamental principles of town planning, despite the identical feature, the nearly uniform architectural style, any excessive standardization. We think that the different social orders, geographical zones, groups of peoples cannot help producing various solutions because of the difference of their conditions, aims and circumstances.

<sup>18</sup> The *United Nations Organization* has arranged, in the last decade, several world conferences dealing with plans for the future and the development of human settlements. They have convened e.g. a conference discussing the population growth, another one treating the food supply of the world, an international conference of industrialization, a conference of human environment and, in 1976, the world conference in Vancouver, dealing with human settlements. The latter, where 132 states were represented by official delegations, accepted a manifesto about human settlements, an international cooperation program and the program of national actions, which is, essentially, a recommendation for the member-states of the UN, related to the distribution of the population and the up-to-date building of settlements. It contains six themes: the strategies of settlement policy, settlement planning, organizations and direction, housing, infrastructure and services, areas, participation in the life of the community. We believe that this enumeration shows in itself the extensive, complex way of discussing these problems.

## Summary

In the recent decades, several publications have been dealt with the trend of settlement systems determining the way of life of future society, and with the question of how to build these settlements of the future.

Views of the authors prognosticating the development and transformation of future settlement systems according to their main characteristics belong to three categories. The *first* group relies on the recent technical possibilities and conceive a lot of unreal, abstract ideas, including the so-called "spatial city". The *second* group predicts the decadence and fall of the towns and suggests to set up a system of settlements covering nearly the entire territory of the earth. These are, essentially, desurbanistic ideas, negating, in view of the high level of communication and the technical achievements of our time, the very right for existence of the cities. The *third* group claims that the unlimited development of towns is concomitant to the development of life.

The future distribution of the population, the future system of settlements is, however, to be deduced from social development, from the changes in the way of life and the possibilities offered by scientific, technical and technological revolution. The basic structure of future settlements is determined by the features (the network of settlements) of a country. A well-balanced, multiple-stage, hierarchical system of various types of settlements has to be developed, growing dynamically into an open structure. These settlements and groups have to meet the requirements of work, life and recreation. Establishments are needed as territorial elements of the settlement and parts of its network. A system is always part of a higher (national or regional) territorial or network system.

Prof. Dr. Imre PERÉNYI, H-1521, Budapest