Examples of chapters:

INTRODUCTION

This book you are holding now is unique in its presentation and deep analysis of a large capital city, which includes the most advanced types of development and organization of street and road networks.

The idea of the project is to combine modern trends of urban development, European, American and positive soviet experience in the planning field and present trends of urban development in one project.

The goal of the project is to create a genuine urban environment, saturated with all the functionality inherent in a modern metropolitan area, to thoroughly study its structure, and internal interrelationships, identifying development problems and developing approaches to their solution.

The author's metropolis urban planning project with its complete analysis will allow us:

— To draw up recommendations on equitable development and effective use of territories in modern conditions, including recessionary depressed "buffer zones",

— To consider this project in the context of the existing urban planning legislation to provide additional graphic information without emphasizing the functional zoning.

The main part of the book consists of the designed city atlas, which includes five parts: a general map of the city with a public transport route diagram showing the integral functional-planning structure and the traffic framework, a city map and an enlarged map of the central part displaying all the small details of the project. The atlas also presents two hypothetical city history maps from 1800 and 1870, showing the process of major changes in the city structure and the turning points of scientific and technological progress that influenced this process. At the end of the book, there is a CD (also submitted to cloud storage) with a full 3D model of the designed city with all its buildings.

Chapter 1. PROJECT CONCEPTS

By the 1970s, after the dominance of modernist urbanism, which broke away from the local context, the Western tradition began to develop a concept of urban planning based on the contradictory interaction of "traditional" urban planning regulations (historical and pseudo-historical perimeter blocks, buildings and squares) and diverse modern facade architecture. This approach has become known as "critical reconstruction" - it allows strengthening the "sense of place" and overcoming the fragmented nature of the urban structure.

The key elements of this urban planning strategy are thickening of the housing structure, architectural enrichment, simplification and distinct subdivision of the urban environment.

At present, new methods of urban planning such as "space-saving development" and "new urbanism" are being implemented in Western European countries. The concept of "space-saving development" involves the planning of dense, but mostly middle storey projects, and "new urbanism" is about shifting the functional zoning. That is why concepts like functional zoning, rationing of construction density and number of stories (derived from the modernist approach) are now being criticized and revised in some projects in certain Western European countries.

In the actual urban planning experience of Western Europe, there are pragmatic trends in urban planning to notice. "Now is not the time to create perfect fundamental theories and scientific reports. Based on the accumulated knowledge, we must offer strategies here and

now," said Jean Nouvel in his Manifesto for the Greater Paris Master Plan project. The basis of Jean Nouvel's planning solutions is the idea of "double-action", which only lies in the renovation of existing neighbourhoods, particularly in the acquisition, extension, compaction and development of urban functions.

In the architect's opinion, the functional zoning should be dropped except in cases related to heritage protection and conservation issues. So, there would be a convergence of functions like trade, housing, offices, and environmentally-friendly facilities. Development of each particular corner of the city will be considered separately, in the context of the current situation.

Historically, the overwhelming majority of European cities were characterized by small-quarter residential development and compact planning structure due to ownership rights and limited land resources. The exception, in this case, is micro-district development widely spread in postwar Eastern Europe, where communist governments promoted the adaptation of modernist urban ideas for the "new society".

Nowadays it’s typical for post-Soviet cities to not have individual dwelling zones with developed civil engineering infrastructure. Although low-rise building quota is 40% of total input squares every year, this housing development is conducted fragmentary and far away from main urban parts. New house building in individual dwelling zones is not stylistically regulated, not equipped with engineering communications and it often looks chaotic.

In spite of pulling down and transformation of microdistricts in the cities of West Europe and USA, the overwhelming territory of big cities is built up with dwelling formations of microdistrict type. Existing individual dwelling zones in the cities of post-Soviet countries, as a formation of pre-microdistricts epoch, is endangered by demolition. Because of the fact that city authorities are planning to build microdistricts almost everywhere, it’s forbidden for people living in individual dwelling zones to rebuild houses and that leads to total territory decay like this one.

In spite of some advantages of microdistricts, it makes monotonous and high-density human medium (about 20000 people for one square kilometer) and logically it generates problems with parking near the houses and on the streets (because of the little density of trunk road network in microdistricts it’s about 8 kilometers for one square kilometer). Moreover there is not such a thing in microdistricts like closed private space for tennants, feeling of local community, on which developing it’s paid so much attention by the program of sustainable developing UN-HABITAT.

Not many know that before the 1950s the town-planning USSR went on the way of developing low-rise buildings. Owing to deep studies on this matter, the definition «One-storied USSR» is suggested by authors and examined in this paper.

In the end of XIX century cities in the Russian Empire mainly were minor dwelling zones with one or two-storied individual dwellings. The Empire was one of the most urban-weakest countries in Europe, there were a few big cities, but most of the people were rural in contrast to Europe where urbanism was systematic. In many respects it’s explained with late elimination of serfage.

But in the beginning of XX century, because of the increased urbanism, the main migration flow has become immigration from rural living areas to the cities. Especially after the revolution, in the period of 1920-1990s, about 90 000 people in the USSR moved to the cities. It is explained by the fact of the industrialization in 1920-1940s and the postwar urban expansion with redistribution of population to the eastern USSR regions.

During the 1920s housebuilding was a primary goal for Soviet architecture in the discussions of urban development. It has been reflected in the discussion on the matter of socialistic resettlement 1920-1930s. But in light of the undeveloped construction base, these years urban people have built wooden off-the-grid houses in the uptown, according to the

wooden architectural traditions .Therefore «one-storied USSR» was formed, but already included urban planning solutions such as an orthogonal grid of streets that was spread in country towns since Catherine the Great. And alongside this it is also central squares management accounted for fests and parades.

Closer to the beginning of 1930s there were built the first big municipal buildings, multistorey apartment buildings for party bosses and also communal buildings for workers. These buildings were built in the central part of the soviet cities. After WWII there were destroyed about 1710 cities and settlements, 70000 villages and 32000 industrial enterprises. One of the major and primary targets has become a provision of housing for a great number of people who had lost their houses and therefore lived in rough living conditions. With the advent of new industrial enterprises, energetic power improvement and transport development, there have begun to form workers settlements consisted of wooden barracks that were not corresponding with people's needs. Some of these buildings were made by prisoners of war. Essentially it was a part of «One-storied USSR».

The task of quick and economical way of people's resettlement from the barracks and ramshackle buildings with no utility system and also development of constructional base in USSR in 1950-60s – it all helped the further extensive use of cheap panel housebuilding and it is allowed to build houses using the whole urban territory and providing housing for everyone who are in need. What worked well with this idea was the Athens Charter concept, in which one of the main changes was a move from building urban quarters with individual dwellings and a small amount of multistorey houses to the building microdistricts only with multistorey houses. This method could be called hyper-quarter building. Quarters like this were understood as a unique dwelling unit that is possible to use and spread about.

The idea of microdistrict allowed placing all social objects in the quarter's center by forming the core. Besides dwelling houses in the structure of the dwelling unit were added day nurseries, kindergartens, schools, shops and other services for the dwelling unit. But the main thing was a green garden disposing for communications of all who live in the hyper-quarter. The role of microdistrict was understood as a creation of local dwelling formation in the social unity. The new conception was close to the ideology of socialist countries and that was a move for its quick spreading.

By urban reconstruction the microdistrict's structure was based on the combination of a few existing quarters for the sake of placing new schools and kindergartens in a new-formed territory.

The deal is that the definition of «microdistrict» has two conceptual directions:

- Social-economical: as a basis for microdistrict construction it was placed family life sceneries and its functional intension;
- Territorial: economical dwelling unit that unifies the whole one.

As the problem research shows it's clear that main reasons of choosing the way of microdistrict building in 1950s are following:

- Big territorial formation (microdistrict) has minimized and made easier the building of transport and engineering infrastructure that was a good corresponding with economy policy in these years in the USSR;
- People have got a relatively level playing field with no kind of social differences that inevitably appears by living in individual dwelling houses.

But why does the USSR not follow the American «suburbia» model by developing peripheries and providing every family with their own house, land property with developed engineering and transport infrastructure? There are some reasons for it which are antipodes for reasons chosen by the USSR in building microdistricts that was described above.

During the cold war in 1946-1991s there was an expansion rise in the USA. Fear before the spreading of communistic ideas has led to spreading anti-communistic idea. The country

was ruled by authority and business on mutual agreed conditions. This idea of «suburbia» was a pure political move, because if a man had land and his own house – he wouldn't be the communist, he just wouldn't have time for it.

Suburbia has got an opportunity to fulfill all people's needs in dwelling zones. It was comfortably located for an automobileist and has a minimal necessary infrastructure. «One-storied America» approach has begun not with building houses, but with building infrastructure: highways, and providing a utility system. In the second half of XX century suburbia in the West Europe countries has also territorial increased.

It's typical almost for all American and European cities to have a small-quarter town planning pattern with a lot of compact zones of dwelling zones which is connected with the historical ownership title and respect for private property. In the second half of XX century in many West European cities a small number of dwelling formations of microdistrict type were made in pure form.

Nowadays in foreign town planning processes, incredible metamorphoses are happening: during the last 20 years it's clear that there's a tendency of combination suburbia, historical town parts and microdistricts. In the town-planning it uses a pragmatic approach in creating design models. For example, in West European cities new town-planning methods are developed such as «Compact building» and «New urbanism». The «Compact building» concept is as follows: it's a creation of compact, but mainly mid-rise building by using a traditional urban quarter network. The «New Urbanism» is a combination of specific land rises. That is why in some Western Europe countries and in the USA some definitions such as land rise, compact building and number of stories are being criticized and watched over in some projects.

For example, the basis of planning solution by architect Jean Nouvel in the statement for the project of general layout of the Paris conurbation – it's an idea of double action which involves using «New urbanism» and «Compact building», so it's meant the renovation of existing quarters – in the uptaking, upperworks, impaction and development of urban functions. In this manner it'll be a combination of functions of trade, dwelling, office and ecological pure manufactures. The development of every place in the city will be examined in particular, in the context of the existing situation.

One way or another, whether it is suburbia or «New urbanism», objective town planning parameters are the most important for further comfort living. So in this manner the average density of population in new dwelling parts in the cities of West Europe – it's 5000 people for one square kilometer, providing a primary highway system – till 15 kilometers of streets for one square kilometer. Moreover in European town planning it's always suggested a reserved private space for inhabitants which create a feeling of local community.

The idea of microdistrict building had solved the following important problems in the urban reconstruction:

- The boost of sanitary-hygienic standards by the rising the quality of existing dwelling houses, deconcentration, quarters vastness, building parks, square gardens and artificial lakes, and also city lightning;
- Management of modern highways furthering safety in mechanized movement, management of mass transport and infrastructure that is necessary for the city;
- Equipment of dwelling and municipal buildings with plumbing, hot water supply, electricity, canalization, heat and gas supply system;
- Creation of necessary social infrastructure: cultural, educational, medical and trade objects.

This problem was possible to solve only by the whole housebreaking of «one-storied USSR», built in 1920-1940s, because of the fact that these years all the edges were built up of wooden houses that hadn't any engineering communications. By this housebreaking it was

easy to create a necessary infrastructure for the city. The fact that the land was the national property, this housebreaking of existing dwelling houses didn't cause any trouble. We can conclude that existing inertial type of microdistrict building in post-Soviet is an effect from two main reasons:

- Soviet building legacy – big existing microdistrict where all infrastructure of the periphery is made for a service of the formation like this, it leads to extensive tradition continuation in new dwelling placing;
- Low level of dwelling provision per capita (about 20 square kilometers per head that is 2-3 times less than in European countries) because of the late urbanism in post-Soviet countries. Such dwelling provision creates a request for flats in dwelling groups of microdistrict types with 10/25-storied buildings, in spite of the building monotony and transport problems. It is also because of the fact that the major part of urban territory is built up with microdistricts and these territories are not understood like ghettos among the people.

For the next restoration of the territory of Ukraine, it will be important to know the following.

As a matter of American and European experience, it's possible to conclude that Ukrainian town-planning needs to use a new approach, similar to «New urbanism» and «Compact building» - it's meant to build mid-storied buildings till 6 floors in «historical» centers and actively combine functions. It's also worth doing that in the case of the small-quarter planning structure of the streets. In the periphery it's possible to build microdistricts (5/12-storied houses) and also individual dwelling groups.

As practicing city planners by research institution, authors mean that the problem of inertial microdistrict building and slow development of individual dwelling zones could be solved only by strong political decision to create conditions for development of these zones:

- Impact of land renting value for low-rise developers;
- National economic policy worthwhile for mass production of lite building elements for low-rise buildings;
- Changing the character of academic program in architectural universities moving up in designing dwelling zones of not-microdistrict type;
- Experience exchange with developed countries in the field of town planning and changeover project organizations in creation general layouts of the cities with mix building;
- Liberalization of national town planning policy to the existing individual dwelling zones;
- Active awareness-building among the population, proving all the advantages of low quarter building.

For the replacement of some percent of developed individual dwelling zones it's necessary to have a complex economic approach. Among the others it's needed to name following actions:

- Changeover to the new technologies in low-rise construction that makes its price minimum 30-40% lower and provides its flexibility in architectural and planning urban solutions;
- Providing districts with necessary infrastructure: water and gas systems, canalization, electrification, communication lines;
- Providing the territory with guaranteed transport infrastructure with objects in the areas of health service, education, culture and all of it according to the urban development master plan.

Chapter 2. WAYS OF SOLVING URBAN PLANNING PROBLEMS ON A CITY PROJECT MODEL

1.

Only a comprehensive study of the urban environment as a whole of all its components (social and economic, administrative and public, historical, architectural, urban planning and other components) under the sustainable development lens allows elaborating universal mechanisms for a quick transition of cities into a new way of growth, creating models for the functioning of urban systems.

There is a hypothetical capital city. The objective of the project is creating a comfortable capital city for living, examining the structure of the urban system, identifying the problems, and possibly being helpful with my ideas to solve some problems in urban space. The project — concept is created as a city — template that can be constructed given adaptive changes to correlate it to the terrain. This project is a conceptual research «what is the modern capital city and how to make it more comfortable for life». It promotes collaboration of disciplines, not only because the urban planning — is a science between the diverse range of disciplines, but also because the project helps to think about philosophical aspects — what is the biggest city, it`s population, their influence on each other.

The main factors that influence the implementation of the urban project now is the project`s ability to develop sustainably (the possibility to expand the urban area, the most economical version of the project, but meets the needs of society, capable of change in the long run). The main idea of the project is the attempt to integrate modern trends of sustainable development, global experience for urban planning in the local context in a single project. Ecology, social orientation, and advanced transport infrastructure is crucial for the project. In the process of projecting, the city, comparable with large capitals was formed.

Now, the world population is growing quite rapidly and is more than seven billion people. If the biggest city were to be designed right now, its size would be larger than the size of the average cities, but not huge, not to lose connection with nature. This city would be able to stand almost on one level with Vienna, Prague and Minsk in the short term.

Practice shows that in spite of the popularity of modern symbolic planning systems, most people love to spend time in old cities, which often have circular layouts. Maybe the circular layout organizes city life in the best way? This is one of the oldest systems which proved to have survived.

This project is based on planning «neo-historical» principles of the city, even if it is a new capital city. I think that people would be proud of such a capital city as it was planned as a polycentric structure, but with the main city center. Apparently, quite a big city with a localized center generates more accurate ideas of what the capital city is in the minds of the population and representativeness of the capital city, which is very important.

The capital city influences the minds of politicians, as a planned polycentric city, the capital city increases confidence in the country and in the success of people. Also, the proposed capital city makes the tone, style and forms some important images. Therefore, this capital city would be an indicator of sustainable development. It would also be pleasant for people to live there.

In the architectural sense, a project of the city is the urban structure that has a circular shape with a north — south diameter of about 13,7 kilometers. This city has a mixed radial — circular and chord structure. In the west, the city has five ring roads with major road junctions.

The network of streets on the east of the city has a different composition. Developing the ideas of architects J. Steuben and O. Wagner, who considered that the best system is a radial-circular system, in the project radial — circular and chord structure are implemented.

According to J. Steuben, the city has as strict straight lines, as not straight streets, which is very important, in his opinion, to the picturesque perception of the city. The development of the city on the west is by semicircles, which can then close the full circle to the east. This form is considered the most appropriate for Austrian architect Theodor Fritsch. Main districts are linked to each other and with the city center by freeways. The time to get from the city outskirts to the city center is about ten minutes. There are numerous local streets which prevent the occurrence of traffic jams on main streets.

The concept of urban system may be called as «The concept of four»: Firstly, there are 2 main directions of city`s development that are crossed in the city center. So, the city develops in four directions from the city center. It`s clear, that this model of the development is the most applicable for the city, which has a compact size and mixed radial — circular & chord structure. Secondly, four main directions of roads are similar to four main directions of development. Thirdly, according to the directions of development, the river has free accessible zones for ports and recreation areas in the north and south. Fourthly, the industrial zones are grouped into 4 clusters that are located in the places of divergence of main directions of development. So, this planning structure looks like the Sun with rays.

The Cityrail was created to provide almost full coverage of the city by lines. Main districts are linked to each other by lines and are linked with the center of the city too. For the sake of economy, the Cityrail runs underground only in the city center.

As for climate changings, they fully affect the northern hemisphere. Therefore, large areas of solar panels and wind turbines were implemented in the project in the west and south — west (they are marked on the master plan). Also, the conditions of climate (the rumors about the collapse of energy in 2012–2015) in the project large areas of parks and green spaces for agricultural purposes were created, in the case of temporary supply of the population by agriculture. Presence of houses adjoining plots in separate houses or terraced promotes it as well. Regarding food security, there are warehouses of food safety around railway lines in the west.

Social objects are presented on the master plan and placed in free accessible zones. Planning decisions take into account easy accessibility of administrative, business and shopping centers. Housing problems are reduced through a combination of several types of houses for different social groups depending on their income, age structure and number of residents. Big areas of semi-detached & terraced houses created medium — dense urban space. But on the other hand, ecological influence on the city decreased significantly, in comparison to the cities with numerous blocks of flats.

The city has a food industry, nanotechnology and computer industry. On the master plan the electric power transmissions, gas pipelines are shown. All industrial clusters consist of eco — friendly factories.

The master plan of this project is a comprehensive master plan with elements of regional planning, detailed drawing of houses, social facilities, parks, industrial areas, warehouses and stores. On the master plan the directions of traffic on streets and junctions, schemes of traffic on freeways are marked, the main objects of socio-cultural, domestic, industrial, recreational, commercial applications are shown. On the master plan almost all basic elements of infrastructure that are necessary for a modern city are shown, including the Dog Training Centre and nursery. Also, in the city 138 schools, over 50 major markets and shops were designed.

Our goal is to consider this model in the context of the existing urban planning legislation to develop additional methods of providing graphic information without emphasis on functional zoning.

2.

The issue of the extent of applying functional zoning and zoning methods in territorial planning documents is being raised in modern urban planning. The hypothesis of reducing the role of zoning at the master plan stage to obtain the most complex and comprehensive conclusions about the development of cities is considered plausible.

In the last thirty years, the problem of monotony and poor representation of graphic information in master plans and the dilemma of duplication of master plans diagrams by land use and construction rules have not been solved in domestic urban planning, as in legal practice.

The core of this problem lies in the different origins of European (complex, based on historical approach, intensive, with urban planning restrictions) and American (basic, extensive, with block grid, without any urban restrictions — which resulted in the land use and construction rules) general planning school.

I suppose that in the course of the urban planning process the role of multifactorial analysis of the urban territory in terms of housing typology, quantity and quality of public and recreational areas, population density, etc. should be increased., as well as the structure of the street and highway network and all types of public transport, which is a very urgent challenge of our time in terms of combining comprehensive planning and transport system design.

This analysis involves creating a comprehensive overview map in the planning process of architects and urban planners similar to the one in this book based on technology.

I would recommend making some changes in the town planning legislation aimed at returning the detailed layout map for the whole town to the graphic materials of a master plan, displaying all existing buildings and structures, alongside with the projected objects. All newly built and reconstructed territories on such map should be taken as a basis for creating a more detailed document, for instance, an area planning project, in which the building layout will be improved and adjusted for the following document downstream – the general layout of the land lot (for cities where it is not legally necessary to show the location of buildings on the layout projects).

Therefore, a detailed layout map for the entire city within the master plan will create a kind of "working" variable map of the entire city specification, solving the problem of poor architectural and planning relationship between its parts, including in the "buffer zones", setting the development vector of urban planning stylistics.

It would be difficult to overestimate the importance of a map like this, on the one hand, this component is a creative part of master planning (although it is not present in all master plans, and is sometimes interpreted very freely), and on the other hand, it is to some extent an element from socialist urban planning school formation stage.

The specificity of this element can be expressed in the set of objects (existing and projected) to be represented, in particular:

- Outlines of buildings and structures,
- Park areas with the general layout,
- Streets and roads with junctions and directions of traffic drawn,
- Tracing of extracurricular transport lines with stations and transfer hubs,
- Preliminary planning of public and business premises.

This additional map would become a legally necessary and significant element of the master plan materials with recommended but not obligatory requirements to the location of buildings and tracing of passages to the subordinate town planning documentation.

Our goal is to work out a directive on the homogeneous developing process regulation and effective use of territories in modern conditions.

3.

The main goal of creating a detailed city map as part of the master plan is to provide a detailed study with correlation of functional and planning characteristics of existing and planned construction both when the city is adding new territories (as mentioned above) and in the renovation of existing depressive "buffer zones".

Chapter 3. CREATING A METROPOLITAN CITY PROJECT

With my permanent interest in urban planning, while working at the largest and oldest research center in St. Petersburg, I came to understand that urban planning cannot be considered perfect, because the finished urban product undoubtedly turns out to be high-quality, but without a share of creativity that I would like to embody in it. That is why I came up with the idea of creating a project of a city with metropolitan functions in a form different from the standard master plan, i.e. a comprehensive drawing in a freer form - with buildings rendered and infrastructure objects detailed.

Originally I had a conceptual outline of street and highway network of the city, which was designed based on the classic principles of European capital city planning structure - a city located on both sides of a river, both mixed and circular planning systems involved. I should mention that initially, I wanted to create a large metropolitan center to accommodate as many types of residential buildings as possible, types of transportation systems and infrastructure for detailed study of each one during the designing process.

Modern urban planning doctrines indicate some objectives of town planning, which revealed the relevance of the draft city project, as the following points were taken into account:

— Transition from a rigid functional division to an integrated planning structure that allows you to combine residential and working areas,

— Transition from the massive free land use on the outskirts to reconstruction within all territories as the major direction of urban planning activity,

— Transition from extensive to intensive type of city growth, which will lead to a specific reduction of consumed resources.

While studying the experience of the projects of some «ideal» cities, it is clear that there are big differences between that and this project. The old «ideal» cities were made according to the principles of baroque compositions with expressive axes and ornamental systems of planning. For example, Walter Burley Griffin, the author of Canberra, was a landscape architect and has placed in his project a good relationship with nature. Even though the project of Canberra is based on a system of eight-pointed stars (reminiscent of the plans of «ideal» cities of the Renaissance), Griffin has introduced inno-vations for his time — a relief to the project by placing major dominants at higher elevations. The second was the creation of a polycentric system of the city with a clear specialization in each area. The architect saw the city as a prototype of the future. In many ways, he was right.

Experiences of modern cities, built specifically for the implementation of the metropolitan functions with a certain modernist symbolic plan (the aeroplane-shaped Brasilia for instance) shows that real-life requires a much larger area of the city, in particular for housing. For example, the city of Brasilia has outgrown its original size in recent decades in a completely chaotic and traditional way, having lost its famous contour of an aeroplane.

So the experience proves that despite certain symbolic trends in the town planning which have always existed, the real process of city development and construction is more trivial and contextual. Moreover, the main determinants influencing the implementation of an urban development project at present are the project's ability to evolve sustainably (ability to

change in the long term at the lowest cost). Ecology, social guidance, and well-developed transport infrastructure are of crucial importance for a project.

I suppose if a big city with metropolitan functions were built right now, its size would be larger than medium-sized cities, but not too big to lose contact with nature. A city like this would be able to compete with Vienna, Prague and Minsk in the future.

I would like to emphasize that the urban planning approach based on computer models of traffic flow regulation, people movement, building parameters of this or that territory, street and highway network configuration is underdeveloped and often gives controversial results that sometimes contradict common sense and real observations. Perhaps the problem with this approach is the inability to upload a rapidly changing variety of metadata across the city to a virtual model (all migrations, points of attraction, urban trends, etc.) to calculate a predicted or preferred result. Therefore, the city, as a living multifactorial environment, is still developing in many ways either contextually or retrospectively.

It is also impossible to create a plausible model of a city without incorporating its development history - its legend. That is why the project creation process was carried out by designing the districts as if they were built in different historical periods with different planning and functional structure. Afterwards "historical" maps of different periods - 1800 and 1870s were created (fully presented in 4-5 parts of the atlas). These maps show the main pivot points in changing the city's planning structure under the influence of scientific and technological progress. By the way, these maps are available for independent study and comparative analysis with the "modern" map.

For example, in the modern version the center of the city (atlas, part 3) is very clearly divided into a low-rise housing center (its north part) and a high-rise building downtown (its south part). On the map of 1870 (atlas, part 5) you can see the main part of the city with its low-rise part near the castle, while the southern parts were built up with factories, docks and workers' houses. Subsequently, this part was reconstructed at the beginning of the XX century and received a modern late historical high-rise type of buildings. The north parts of the city, which gravitated to the castle and the adjacent low-rise areas, were occupied by mansions and gardens, while the riverside areas were covered with docks, factories and bathhouses. Four bridges spanned across the river, three stone bridges upstream, closer to the original center, one pontoon bridge and one ferry crossing to run the port, which was then located in the south part of the Seymen Canal. The map shows streetcar tracks, which covered all parts of the city at that time. It shows the main municipal zone - aeration station, the first power plant - to be formed in the north-west part of the city. In the middle part of the city on the right bank, we can see the remains of the city wall that surrounded the city earlier (see atlas, part 4 - 1800). But let's return to the main map of the city.

As the experience shows, most people like to spend time in old towns or cities built upon the "double-action" concept. Therefore, the project is based on neo-historical principles of functional-planning structure. Based on the world practice of urban psychology, a large enough city with a distinct center generates a more objective idea of its "capitalness", which is very important. That is why the main attributes of a big city and its statehood are formed (parliament buildings, museums and a postcard view from the river - pic. 10). In my opinion, a city like this influences the minds of politicians and increases people's faith in the country and its success. Also, a capital city sets the tone and lifestyle of a certain country. This way a city can be an indicator of sustainable development.