

- [4] Le Corbusier (1957) *La charte d'Athènes*. Paris, Minuit.
- [5] Banik Schweitzer, R. (1999) Urban Visions, Plans and projects, 1890–1937, in: Blau, E., Platzer, M. (eds.) *Shaping the Great City: Modern Architecture in Central Europe 1890–1937*, p. 62. Munich, London, New York, Prestel Verlag.
- [6] John Ruskin and William Morris were typical opponents to the industrial development. In 1877 William Morris founded the Society for the Protection of Ancient Buildings, which indirectly influenced the creation of the later National Trusts, the most important British non governmental organisation for the protection of monuments in GB.
- [7] Howard, E. (1898) *Tomorrow, a Peaceful Path to Real Reform*. London.
- [8] Sitte, C. (1889) *Städte Bau nach seinen Künstlerischen Grundsätzen*. Vienna.
- [9] Jencks, C. (1977) *The Language of Post-Modern Architecture*. New York, Rizzoli.
- [10] Duany, A., Plater-Zyberk, E. (1991) *Towns and town making principles*. Cambridge, Mass: Harvard University Graduate School of Design.
- [11] In the letter to Marjan Mušič Fabiani says that one third of his blood is Slovene, in: Pozzetto, M. (1997) *Maks Fabiani – vizije prostora*. Kranj, Libra.
- [12] Wagner, O. (1895) *Moderne Architektur*, Vienna.
- [13] Nace Šumi published this letter in the *Art History Journal*, Ljubljana, 1991, pp. 121–122.
- [14] Relle, A. (1899) Die Assanierung der Städte in Österreich-Ungarn, in: *Zeitschrift des Österreichischen Ingenieur- und Architekten Vereins*, Vienna.
- [15] In the memorial book *Ljubljana 1895–1910*, edited by Fran Govekar and Miljutin Zarnik and published by the Municipality of Ljubljana in 1905, one can read that 10,3 % of buildings had to be demolished after the earthquake and that almost all other buildings had to be repaired.
- [16] Fabiani, M. (1895) *Regulacija deželnega stolnega mesta Ljubljane*. Dunaj; german edition: Fabiani, M. (1895) *Erläuterungs-Bericht zum Entwurfe eines General-Regulierungs-Planes der Stadt Laibach*. Wien.
- [17] Die Concurrenz für die Ausgestaltung des Karlskirchenplatzes, *Wiener Bauindustrie Zeitung*, 1898, pp. 185–187.
- [18] The project was published in the magazine *Der Architekt*, 1900/6, p. 29.
- [19] Fabiani, M. (1899) *Pojasnilo k načrtu za osnovo in preosnovo severnega dela mesta*. Dunaj.

## References

- Blau, E., Platzer, M. (eds.) (1999) *Shaping the Great City: Modern Architecture in Central Europe 1890–1937*. Munich, London, New York, Prestel Verlag.
- Choay, F. (1965) *Urbanisme; utopies et réalités*. Paris, Seuil.
- Donnachie, I. (2000) *Robert Owen. Owen of New Lanark and New Harmony*. Tuckwell Press.
- Duany, A., Plater-Zyberk, E. (1990) *Towns and town making principles*. Cambridge, Mass: Harvard University Graduate School of Design.
- Fabiani, M. (1895) *Regulacija deželnega stolnega mesta Ljubljane*. Dunaj; nemška izdaja: Fabiani, M. (1895) *Erläuterungs-Bericht zum Entwurfe eines General-Regulierungs-Planes der Stadt Laibach*. Wien.
- Fabiani, M. (1899) *Pojasnilo k načrtu za osnovo in preosnovo severnega dela mesta*. Dunaj.
- Fabiani, M. (1899) *Regulierung der Stadt Bielitz- Erläuterungsbericht zur General-Regulierung Plane der Stadt Bielitz*. Wien.
- Garnier, T. (1888) *Une Cité Industrielle: étude pour la construction des villes*. Paris, P. Sers.
- Howard, E. (1898) *Tomorrow, a Piecefull Path to Real Reform*. London.
- Jencks, C. (1977) *The Language of Post-Modern Architecture*. Rizzoli, New York.

- Le Corbusier (1957) *La charte d'Athènes*. Paris, Éditions de Minuit.
- Manuel, F., Fritzie, M. (1979) *Utopian Thought in the Western World*. Cambridge, Mass., Belknap Press.
- Pozzetto, M. (1983) *Maks Fabiani 1865–1962: Ein Architekt der monarchie*. Wien, Edition Tusch.
- Pozzetto, M. (1997) *Maks Fabiani – vizije prostora*. Kranj, Libra.
- Pozzetto, M. (ed.) (1988) *Maks Fabiani. O kulturi mest: spisi 1895–1960*. Trst, Založništvo tržaškega tiska.
- Ruskin, J. (1981) *The Stones of Venice*. Boston, Little Brown.
- Sitte, C. (1997) *Umetnost graditve mest*. Ljubljana, Habitat, d.o.o.
- Šumi, N. (1954) *Arhitektura secesijske dobe v Ljubljani*. Ljubljana, Mestni muzej.

Mojca ŠAŠEK DIVJAK

# Urban planning for the strategic spatial development of Ljubljana

## 1. Introduction

### 1.1 City planning of Ljubljana in the past

The beginnings of modern city planning of Ljubljana date back to the period after the earthquake in 1895 when Ljubljana was a provincial centre in the Austro-Hungarian Monarchy and had 36,000 inhabitants. In the period of reconstruction the municipality council invited the Vienna architect Camillo Sitte to carry out a general regulation plan for Ljubljana. Max Fabiani, Slovenian architect, also proposed his plan on his own initiative. Both architects were members of the Vienna cultural circle but belonged to different urbanistic orientations. Sitte defended the cultural tradition and was not in favour of geometrically regular shapes of new towns with the 'American' road grid. He envisaged Ljubljana's development for the next fifty years in the same area within the limits of the southern railway. Fabiani was more advanced and boldly treated series of problems concerning the city's development, its organisation, traffic regulation and its shape. He also presented to the municipality a regulation plan for the northern part of Ljubljana (today the southern Bežigrad). That period was a turning point in planning and construction of the city and its development became the topic of open discussions in Ljubljana for the first time.

After the Monarchy's break-up the role of Ljubljana increased, it became the administrative, political and cultural centre of Slovenia. Thirty years after Fabiani's proposal of a city ring, Plečnik added a new broader ring beyond the city centre to the plan of Greater Ljubljana, which also included nearer villages and settlements. Plečnik devised Ljubljana as a concentric city, spreading radially from the centre outwards. Nevertheless, his concept of the regulation of Ljubljana and



Figure 1: Regulation Plan of Ljubljana, by Max Fabiani (1895). (Source: Pozzetto, 1988: 43)

its surrounding areas has not had such an impact on the city's development as Fabiani's plan, except for the area of Bežigrad.

In the plans of both architects, Fabiani and Plečnik, the influence of Otto Wagner can be easily made out (his regulation plan for Vienna in 1892), as both were Wagner's close collaborators. The influence is clearly noticeable in Plečnik's regulation plan for the Svetokriški kraj in Bežigrad.

In the period between the World Wars I and II, the city grew rapidly and reached the number of 100,000 inhabitants. A competition for the regulation of Ljubljana was launched in 1940. The city's technical bureau produced a regulation draft and an outline of the main road system (1943) on the basis of the results of the competition. The winning competitor, Edvard Ravnikar, was also invited to participate in working on the plans. However, the results of the competition had not a significant impact on the city's growth after the Second

World War, because only two of the four priority assignments (housing, workplaces, recreation, traffic) were implemented on a more important scale: housing and industrial infrastructures.

A series of studies and urban researches of the city emerged after the Second World War. They served as a basis for the elaboration of the General Urban Development Plan, which was approved in 1966. It introduced zoning and coordinated regulation of the infrastructure development. It aimed at a harmonious growth of the entire Greater Ljubljana, but in reality, it focused mainly on the development of the narrower city area (Internet 1).

A long-term plan of the communes and the city of Ljubljana for the period 1986–2000 was completed in the 1980s and is still a valid spatial development document, entitled briefly 'Ljubljana 2000'. It paid attention to the morphological features of the city and has built on them a new discernible



Figure 2: Study of regulation of Ljubljana and its surrounding areas, by Jože Plečnik (1929). (Source: Mihelič, 1983)

shape of the city. Green wedges as important elements of open space were introduced between radially running thoroughfares. It already envisaged the construction of a city tramway.

### 1.2 New spatial documents of the ML

The City of Ljubljana adopted a document entitled The Concept of Spatial Development of the ML in 2002 that determines conceptually further spatial development of Ljubljana at a strategic level. It defines the main distribution of activities and land use, important systems of infrastructure, especially of traffic, and the protection of heritage and of natural and other goods. It incorporated a broad circle of the professional public and local residents that contributed numerous suggestions, initiatives and opinions. It represented a professional basis for the preparation of new spatial documents of the city.

After more than twenty years later, in April 2008, a comprehensive spatial plan of the ML was carried out and exhibited to the public. It encompasses two parts: the strategic and implementation sector. After the period of public discussions, analyses of remarks and initiatives will be made and supplements introduced. It will presumably come into effect until the end of 2008, after the City Council's approval.

In the framework for the preparations of new spatial documents of the ML, the Urban Planning Institute (together with the firm Urbi d.o.o. and the Faculty of construction of

Ljubljana University – Traffic Technical Institute) has elaborated the Strategic Spatial Plan of the ML (SSP ML) with the collaboration of more than 40 experts. The work was coordinated with the leading group of the client in the Department of Spatial Management of the ML.

## 2. Strategic spatial plan of the ML

*"Any somehow essential special regulation problem of a town could only be satisfactorily and perfectly solved if the picture of a town is seen in its complete wholeness." Maks Fabiani, 1895. (Pozzetto, 1988: 35).*

### 2.1 Starting points and objectives

The contents of the SSP ML consists of several basic parts, besides the above mentioned themes, it also comprises the concept of spatial development (settlement, traffic and landscape), guidelines for determining land use, the concept of public infrastructure, urban and architecture design. Land use deals with housing, production sector, central services with social public infrastructure and special areas (shopping centres). The public infrastructure comprises traffic, telecommunications, energy sector, water supply, sewage and rain-water systems, water treatment plants, etc. The last chapter contains provisions for spatial operational conditions with general guidelines for shaping the city and for urban and architecture design.

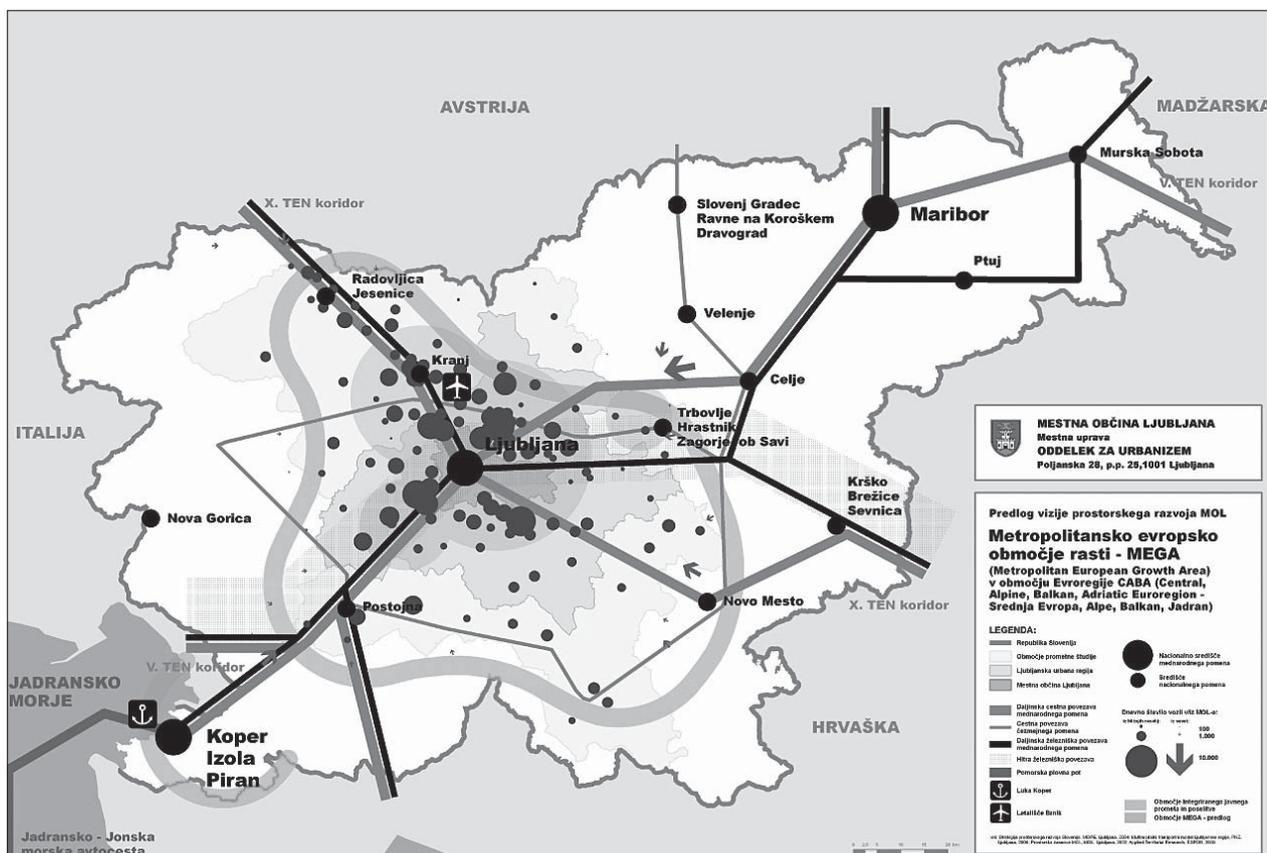


Figure 3: The ML and the European Metropolitan area of growth – MEGA. (Source: MOL, Oddelek za urbanizem, 2007)

To present the strategy and vision of spatial development of the ML means to plan and envisage what the city will be like in the future, i.e. in the next fifteen to twenty years (until 2027). We have proceeded from the principles of contemporary urban planning by taking into consideration sustainable development, the present situation and problems which are being solved by upgrading already urbanized areas (developing the city inwards, renewal) and the amelioration of dispersed construction and other unsuitably used surfaces. Where there is a need for the growth of the city, we also extend housing construction on the basis of chosen criteria (traffic and communal infrastructure, land use, etc.) and we complete the social and economic infrastructure.

We have taken into consideration the role of Ljubljana in Europe and stressed its significant strategic position on the crossroads of the fifth and tenth pan-European traffic corridor and the links to the Adriatic Sea as well. The Central Slovenian Region should strengthen its role in the Central Europe and should represent a more important area of growth (Figure 3). The ML should resume a more important role as regards coordination at national and regional level, as there is a need for cooperation between communities in numerous projects of importance (integrated public transport, anti-flood protection, landscape parks, waste management, etc.). We wish that Ljubljana would grow into a pan-Slovenian metropolis, a modern city with rich historical heritage, fine arts, culture and science; a safe, healthy and green city ...

Protection, upgrade and the growth of the quality of urban environment and identity of the city are determined as the key elements of spatial development. In order to make possible a sustainable development of the city, more suitable social, economic and environmental parameters are needed.

We have taken into account that the use of informational and telecommunication technology is permanently increasing and causes changes in the organisation of physical space. Residential environment, workplace, educational and leisure-time activities have become intertwined. Lifestyle has been changing, telecommuting, E-shopping and other forms of digitalised services are becoming more and more important, especially under the influence of the world website. They dictate new relations in land use and spatial mobility. In spite of all those facts, individual car traffic increases. That is why the central city needs integrated measures for its limitation and for the improvement of public transport at the same time. The city could thus regain pedestrian areas that would make various social interactions possible. We have emphasised the importance of an open public areas network that would connect the city and resuscitate life in squares, streets, riverbanks and walkways.

### 2.1.1 Basic demographic data

As regards its size, Ljubljana can be compared to medium size European centres, it has 267.000 inhabitants today. Major demographic issues are: decreasing number of population due to moving into neighbouring municipalities, low fertility and population ageing. Projection of the resident population plus migration saldo of 1.000 persons/year shows that Ljubljana

will have only 250.000 residents by 2025. The city should offer better conditions for living and work and in such a way stop moving from the city, especially of young families.

In reality, Ljubljana has more inhabitants, if we take into account 56.000 university students, from which only a small part figures in the total number of residents, and 12.000 Slovene citizens with provisional residence permit. There are also a considerable number of commuters on a daily basis (cca. 70.000, the number is increasing) and daily school migrants. In this way, Ljubljana has in fact more than 300.000 inhabitants and reaches up to 400.000 residents on weekdays.

### 2.1.2 Environmental data

A sustainable development is the basic principle of guidance in planning that is why spatial planning is directed to the preservation and upgrading of natural qualities. Limitations for housing construction are: protected forest areas and good quality agricultural areas, protected water sources areas, flood-prone areas, etc. The document stresses the guidance that new housing should not be directed to flood-prone areas typical of the southern part of Ljubljana until planned anti-flood measures are implemented (systems of flood retention, flood releases, flood regulation). A special attention is given to urban ventilation and to easily accessible natural areas in landscape parks and in the hinterland. There are three existent landscape parks in the ML: Polhograjski Dolomiti, the complex Tivoli-Rožnik-Šišenski hrib and Zajčja Dobrava. But there are some more in the process of listing: Šmarna gora, Rašica, Dobeno and Ljubljansko barje.

## 2.2 The conception of spatial development in the ML

As Ljubljana has spread outwards from its historical core along the radial road system, it has a characteristic star-like shape, typical of **regional urban development**. Greater Ljubljana agglomeration has been growing into a conurbation that is why a harmonious growth of the whole city has been taken into consideration (Figure 4). In order to promote sustainable development of the city, the principle of a decentralised concentration of settlement has been adopted. It comprises the growth of a compact city with its historical core (the renewal of existing city surfaces and improvement of urban fabric) and decentralised concentration along the lines of public transport in the suburban areas, especially along the light rail.

**The city** still preserves the characteristic combination of a concentric and star-like model with intensified growth along thoroughfares and with green wedges between them (Figure 5).

**The network of centres** was designed in view of the level of services and the position in the hierarchy of the city. Their functional gravitational areas are relatively autonomous urban entities and well-equipped and distinctive city quarters. We have paid attention to the multi-centrality of the city's organism, where function are equally distributed and intertwined: work, living, recreation and transport. Mixed land

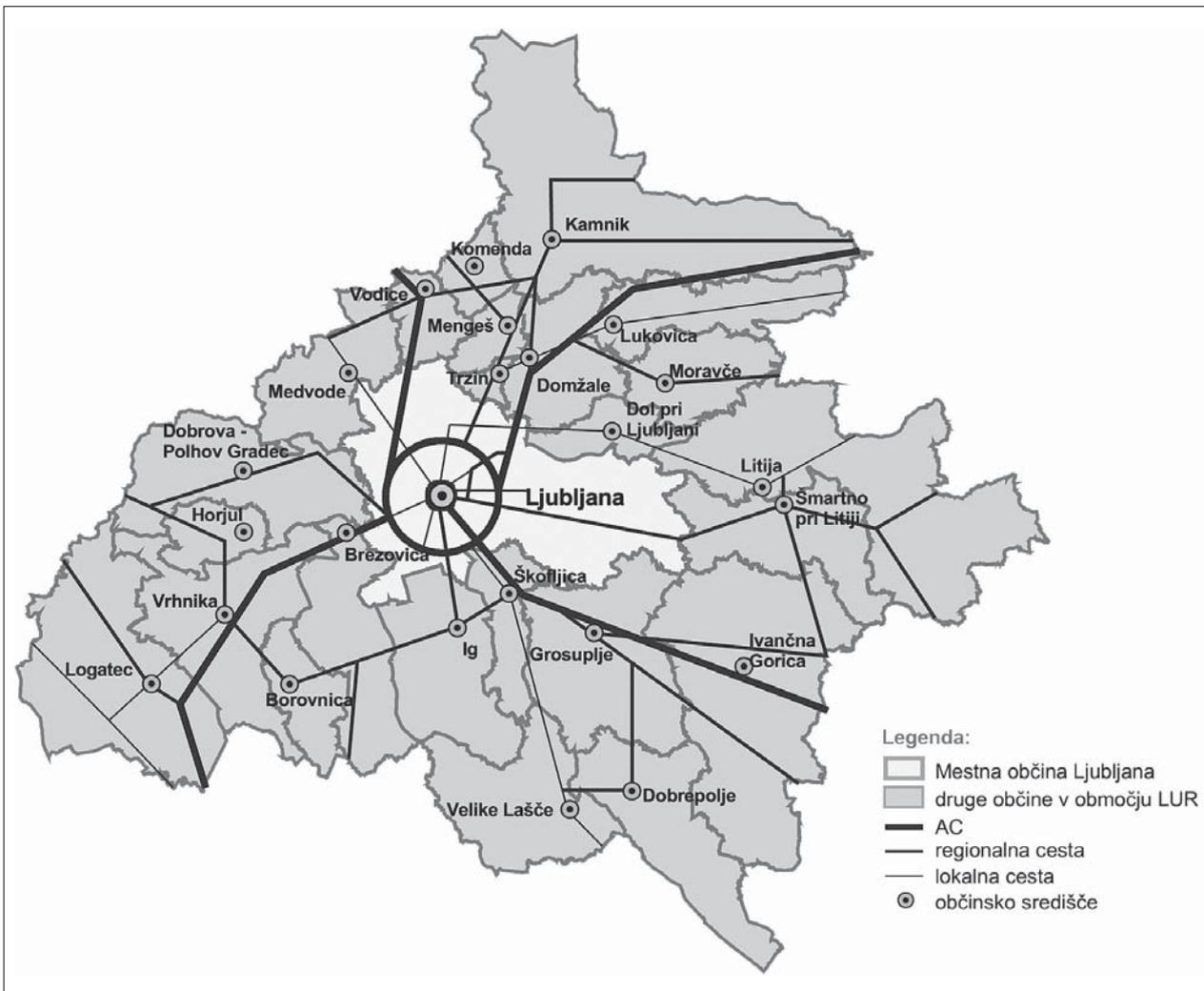


Figure 4: Development of a regional city with Ljubljana as a gravitational centre. (Source: Šašek Divjak et al., 2008)



Figure 5: Intensified growth of the city along the thoroughfares and preservation of green wedges. (Source: Šašek Divjak et al., 2008)

use is typical for all central areas where social and business activities, public services and housing programmes are interconnected.

### 2.2.1 The concept of spatial development of the ML

The notion of spatial organisation as a method of urban management has been adopted in three typical areas of the ML: the compact city, the suburbia and the hilly hinterland (Figure 6). This division is merely schematic as it would be difficult to demark these areas where the contents are intertwined.

**The compact city** consists of the areas of compact settlement, particularly within the motor road by-pass, and of the areas of greater density beyond the by-pass (Dravlje and Ježica/Ruski car). The morphological structure of Ljubljana shows different historical periods: a Roman town that developed in the plain of Ljubljana 'door', mediaeval town squeezed between the Castle Hill and the Ljubljanica River – they both determined the present city's centre, and the modern city that has been spreading organically along four main city thoroughfares (Celovška, Dunajska, Dolenjska and Tržaška Roads). The star-like model of the city has been enlarged by new branches. The Styrian branch has been developed along the Šmartinska Road. Dunajska Street, by a prolongation to the south (Barjanska Road), gains in importance as a rich and well designed boulevard. To the east of Ljubljana, the fifth branch is being built, especially along the Zaloška and Litijska Roads. The city centre extends to the north, to the south and to the east. In the central city areas the renewal, the revitalisation and the transformation are envisaged within the existing urban surfaces.

**The flat suburbia**, the crossroads of urban, cultural and natural landscapes, is the space of rapid changes, strong pressure for housing construction and problems with suburbanisation (dispersed construction, inadequate land use, unorganised construction of low density building). For this area, we propose a rational use of land with a concentration of construction within the existing urban areas, prevention and amelioration of dispersed construction and extension of settlement where it is necessary for the city's development.

**The hilly hinterland** of Ljubljana consists of thinly populated areas: Polhograjsko hribovje in the west, Šmarna gora, Rašica. Dobeno in the north, and Posavsko hribovje in the east. New housing construction in the hinterland is directed to existing settlements, to the available and insufficiently used areas (fill-ins, round-offs, old village cores renovation). For the open landscape the ecological and social functions are becoming more important (recreation, trekking and tourism).

### 2.3 Guidelines for the development of housing construction

We are primarily concerned with the priority areas of restoration, new development areas and restoration of dispersed construction.

#### 2.3.1 The priority areas of renewal

Renewal in the broadest meaning is a measure to improve a town's physical conditions and its architecture, to improve its social and economic structure and to strengthen the identity

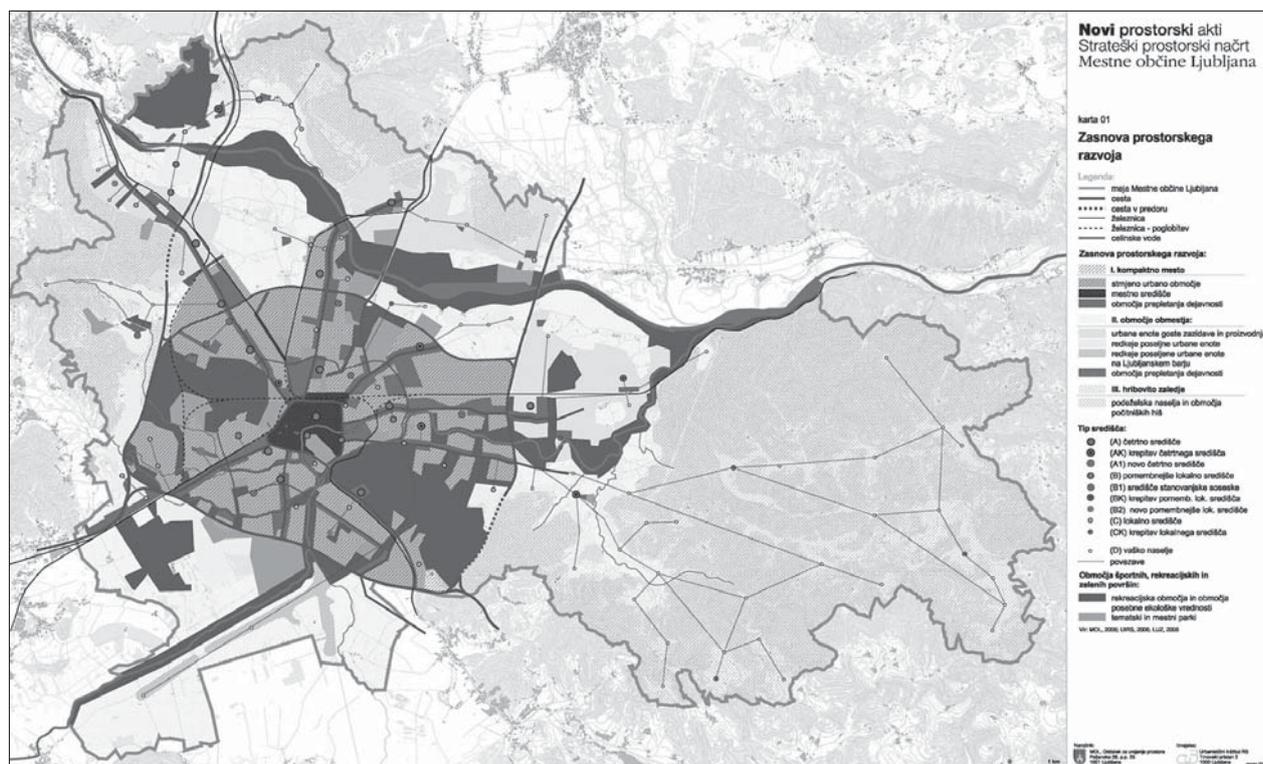


Figure 6: Concept of spatial development of the ML. (Source: Šašek Divjak et al., 2008)

of an area (genius loci). We have determined the priority areas of renewal from the point of view of distinctiveness of the city's structure: characteristic areas of the built space, connecting structures of open space and the areas of landscape structures, where open and built up spaces intertwine.

Priority areas of renewal are also degraded areas due to economic, technological and social changes such as abandoned industrial sectors and railway complexes, military compounds and grey zones (underdeveloped and deprived areas). As a general rule, an overall renewal is expected to be implemented in all those sectors.

To priority areas of renewal also belong the sites that were built up in older periods when different regulations and standards were in force but which do not meet the requirements of contemporary living standards today, e.g. poorly equipped areas (the lack of services, basic supply, infrastructure, etc.) with inadequate housing. They include some suburban areas, older housing settlements and housing colonies, urbanised villages and also some older housing neighbourhoods.

### 2.3.2 New development zones and enlargement of housing construction areas

For extensive development projects or interventions demanding larger areas, new development and housing construction areas have been defined. They are today mainly vacant or un-built. In general, new zones that demand complex construction, compact re-structuring and park and

recreational surfaces were envisaged in the spatial vision of 'Ljubljana 2025'.

### 2.3.3 Amelioration of dispersed construction

The main characteristics of dispersed construction and illegal urbanisation, widespread in Ljubljana suburbs, are irrational use of land and very often inadequate communal equipment (problems with sewage and waste water management, etc.). Such areas of low density construction generate a lot of private car transport (daily commuting) that cause traffic problems and traffic jams in the whole city and have also negative effect on the environment.

The main objectives are the amelioration and the preventing of dispersed construction (by concentrating housing sites, various urban activities and by developing adequate infrastructure).

### 2.4 The concept of the network of open public space

The basic strategic objective is to create an interconnected and transparent network of open public spaces of high quality in the whole territory of the ML and primarily, to ensure content related and variegated public spaces and to give the city the character of a metropolis. The network includes areas (e.g. city centre, programme areas, recreation areas, etc.), linear spaces and particular locations. In the Strategic Spatial Plan these elements are categorised in view of users.



Figure 7: The network of open public spaces. (Source: Šašek Divjak et al., 2008)

The network system consists of two closed circuit links and radial connections from the centre to the hinterland (Posavje Region, Šmarna gora, Ljubljansko barje). The circuits are: the existing Walkway of Memory and Comradeship (popularly known as the PATH) and a new continuous connection that consists of a path along waterways (the Sava River, the Ljubljana River, Gruber's Canal, the Špica Bank, the Gradaščica and the Glinščica Brooks) and the links between them (field paths and new connections). This structure is connected to particular locations of public spaces in order to evenly serve the entire city. Locations concentrate towards the centre where they form the city centre. The component parts of the network are also recreational zones (e.g. Šišenski hrib,

Golovec) and programme areas (Ljubljana University, the Zoo and shopping Centres).

### 2.5 The concept of green spaces in the city

Green spaces are very important structural elements in Ljubljana that help create the image of the city and are crucial for the achievement of high living standards in Ljubljana.

The basic idea is to preserve **five green wedges** that run from the hinterland to the city centre. They are interconnected by circular and transverse green links as well as by a

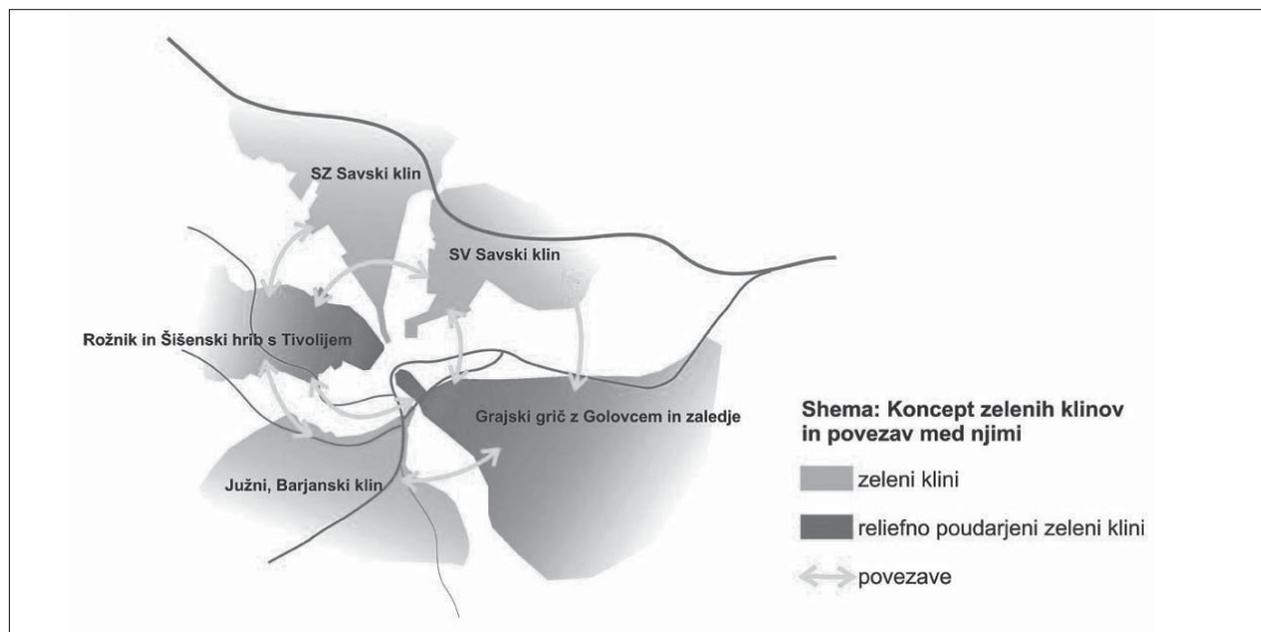


Figure 8: The concept of green wedges and connections between them. (Source: Šašek Divjak et al., 2008)

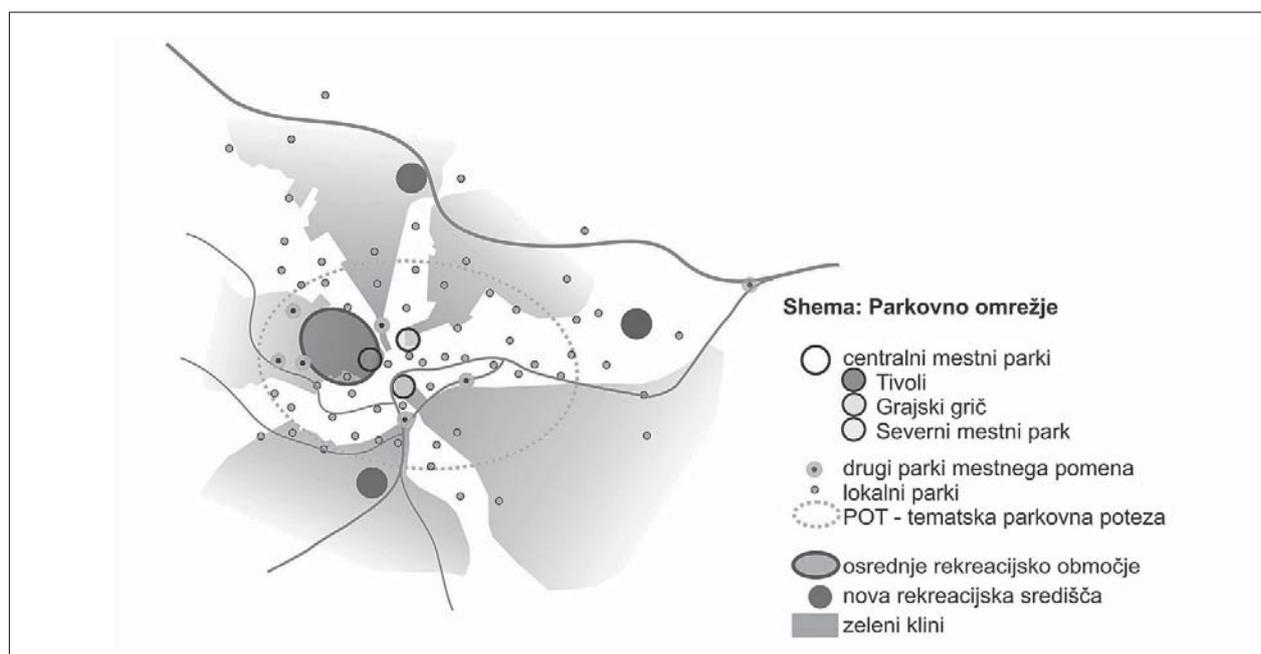


Figure 9: Park network. (Source: Šašek Divjak et al., 2008)

point-like network of parks. Special elements of urban design are **stretches of green spaces** and their connections to the water and the adjacent areas.

**Green wedges** penetrate deeply into the city's centre and are linked to the landscape in the hinterland. They are particularly important to the city from functional as well as from ecological aspects. They create micro-climatic and mesoclimatic conditions, enable ventilation of the city and represent natural corridors leading to the hinterland. Each of the wedges has its own unique significance that is why they should be preserved. They are designed in accordance with their character and significance for Ljubljana.

Establishing a network of parks is a significant step forward for the improvement of the quality of living. Tivoli, Grajski hrib and the northern city park Navje are designed as city's central parks. Other park surfaces of urban importance are: Koseški bajer (natural history park), Špica Embankment, the Botanical and Zoological Gardens, the confluences of the Sava River with Ljubljanica River and the Sava River with the Kamniška Bistrica River. Besides the existing recreational parks (the central parks of Rožnik and Šišenski hrib), there are some newly designed: Savski park, Barjanski park in the south and Zajčja Dobrava. A programme upgrade of the existing smaller park areas is envisaged as well as a network of special thematic (Station Park, ecological park in Zalog) and local parks with a recommended five-minute walking distance.

**The stretches of waterways** (the rivers: Sava and Ljubljanica, the brooks:

Glinščica, Gradaščica and Mali Graben) are important parts of the green system of the city and they also constitute a system of open public spaces. The most important continuous connection on a large scale is the PATH that is of great cultural and historical importance for Ljubljana. It links natural sites and the existing and newly designed programme nodes. The PATH is also linked, as spatial conditions make connections possible, to the local and topic parks.

The concept of green spaces also establishes the areas of the green system regime. There are included all green surfaces in other land use, which are importance for the green space system because of their physical features and/or ecological values. These surfaces are mainly situated within green wedges. Adequate directions for protection and management are defined for such areas.

## 2.6 Guidelines for defining land use

Areas for basic land use (Table 1) were determined in the guidelines for the housing construction, landscape and economic public infrastructure development.

In the concept of activities distribution in the area and by determining land uses, we have given priority to the development of housing construction in the inner sectors of the city as well as to a complete restoration that total 74 % of the areas intended for housing purposes until 2027. Settlements enlargement represents 26 % of surfaces.

**Table 1:** Basic land use distribution.

Building plots	8648 ha	31.5 %
Agricultural land	7531 ha	27.4 %
Woodland	11.284 ha	41.0 %
Water surface	20 ha	0.1 %
Other	14 ha	
<b>ML – total surface</b>	<b>27.497 ha</b>	<b>100 %</b>

Source: Šašek Divjak et al. (2008)

### 2.6.1 Housing

Ljubljana experiences a marked lack of housing: in recent years, approximately 900 housing units a year have been built in Ljubljana. It is expected that the number of new housing units will gradually increase to ca 2,000 a year. Areas meant for housing in the existing residential environments (Galjevičica, Rakova Jelša), will encourage concentration, amelioration or complete renewal. Reconstruction or change of land use will be carried out in degraded urban sectors (Parmova ulica, Tobačna tovarna, Kolinska, areas alongside Šmartinska Road ...). New construction is envisaged in Hrušica, Stanežiče, Ilovičica, Stožice, etc. A complete renewal of older housing stock has been planned for houses and housing neighbourhoods built in the 1960s and 1970s.

New flats with special services for senior citizens and retirement homes will be evenly distributed (Trnovo, Fužine, Šmartinska Street, Podutik ...). Homes for the elderly will also be provided in newly planned larger neighbourhoods (cca. 10–15 % of the total number of new homes).

### 2.6.2 Central activities and the network of social public infrastructure

Central activities include state and public services, commercial public services and social services; they are described in detail as central and mixed activities and social infrastructure. Central activities are: state and public administration, post offices, banks, shops, hotels, theatres, cinema, libraries, etc. Social infrastructure comprises universities, schools, kindergartens, hospitals, community health care centres, etc.

Zones of mixed activities include various complementary or non-disturbing programmes. As it is written down in international documents and shown in good examples of urban reconstruction, integration and mixing of various activities (workplaces, housing and leisure time activities) in selected zones are a suitable condition for ensuring vitality and attractiveness of city sections. Good accessibility (proximity) of such programmes brings the reduction of private motor car transport and improves the overall quality of living.

Evenly distributed activities (administrative, educational, health care, cultural activities ...) contribute to a sustainable development of the city and provide for a better quality of living conditions in various city sectors.

### 2.6.3 Production activities

Social and economic changes that we have witnessed recently have relatively great influence on production areas as regards development and stagnation of some production activities. Zones, designed for production by a valid plan, show noticeably a quick growth of business, service and commercial activities, even at the expense of production areas that are diminishing. For this reason and because of the abolishment of larger production zones in the ML, we establish new zones for production in line with the Lisbon Strategy that stresses the importance of growth and creation of new workplaces in the enterprise sector.

The concept of zones for production (production zones) in the ML determines business areas, production areas, energy distribution areas, industrial areas and technological parks as well as a transport logistics terminal in Zalog. Enterprise sectors (Nadgorica, Brnčičeva Street and the south of Ljubljana) are dedicated to the craft industry, warehouses and to the transport, commercial, business and production activities as well. Those activities need adequate infrastructure and good traffic accessibility with connections to the motorway and to railroad systems. Development of industrial sites and technological parks (Brdo, Litostroj ...) is vital for the growth of the whole economic sector at the regional and national level. High professional and innovative work is thus made possible with the cooperation of universities and research institutes and the results could be transferred to production and servicing structures.

### 2.7 Guidelines for traffic development

A well-organised **public passenger transport (JPP)** is the basis for the improvement of traffic and living conditions in the city, in addition to the planned and to already constructed road network (Figure 10). On account of the enormous number of daily migrants from the region, its organisation cannot be limited only to the areas within the municipality borders, but should also include the regional centres. The use of public transport should be increased because it greatly diminished in recent years and represents only 13 percent of the entire transport flow in the city while in more developed countries it represents 30 percent.

The concept envisages three sorts of public transport lines. Basic lines interconnect major city sectors by streetcars or by a rapid bus service. Additional lines connect neighbouring areas of the city by articulated buses or regular buses. Mini buses are envisaged to be in service in smaller closed areas. A relatively simple solution would be free mini buses ('shuttles') that meet the highest criteria of environmental protection and safety and would operate in the shape of an eight-like line within the inner circle.

**The railroad infrastructure** is obsolete and needs a thorough reconstruction. Among the most important (urgent) city projects are the construction of a new Passenger Centre Ljubljana and lowering of the rail tracks. Those interventions will have great impact on the organisation of the central part of the city (Figure 11). Level road links could thus be established between the central part of the city and Bežigrad and Šiška, as well as walkways leading directly to Tivoli Park. Moreover, new important areas would be acquired for the

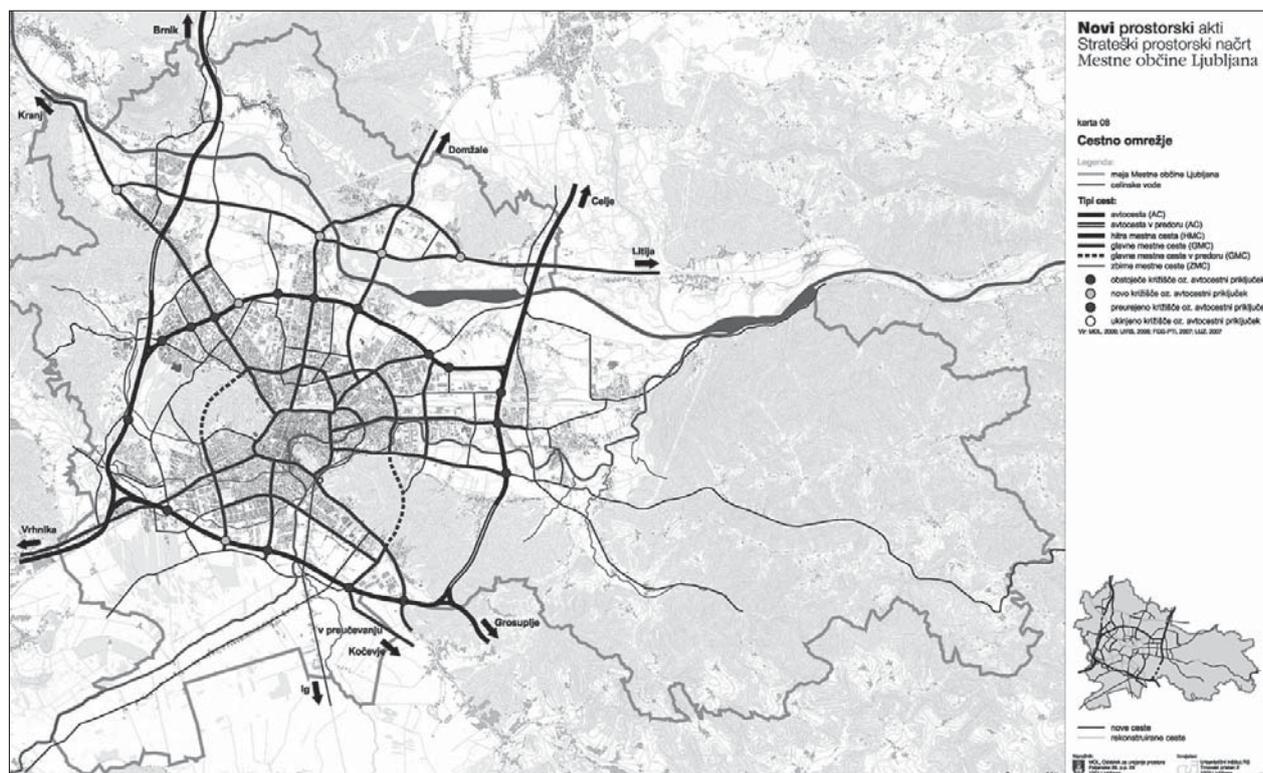


Figure 10: Road Network. (Source: Šašek Divjak et al., 2008)

re-urbanisation in the narrower part of the city centre. The proposed variant of the northern by-pass freight railroad (Trata-Črnuče-Polje) represents a serious problem and is less acceptable, because it would block spatial development needs and would also be less acceptable from the environmental point of view (it would run through the water protection area).

As regards other means of transportation, a special attention is given to **bicycle transport** that could become a significant section of the city's transit in a well-organised transport network.

## 2.8 Guidelines for urban design and architecture

In planning the spatial development of the ML, we start from the existing natural, cultural and functional values that create the city's identity and its potential for a quality growth. The conservation and development of **the urban environment quality and its identity** are vital conditions for the successful economic growth and cultural importance of each European city. In the present time of intensified globalisation, we are constantly reminded of these facts by new scientific information and by the experience of successful European cities. These are the reasons why protection, upgrading and development of a quality structure of Ljubljana, either of the whole city or of its characteristic areas, are determined as crucial centres of gravity in the spatial development.

The strategic spatial plan offers more detailed guidelines for management, urban design and architecture at different city levels (suburbs, the compact city and the city centre).

At the **suburbia level**, we preserve and strengthen the star-shaped development of the city and link it with the network of local centres by preserving the landscape values at the same time. At the **compact city level**, we preserve and reinforce the radiocentric morphological model with concentrated construction along the city thoroughfares with green wedges between them and the renewal of characteristic city sites. At the **city centre level**, we preserve and upgrade the existing morphological model consisting of the concentric city core between the Castle Hill and the Ljubljana River and the orthogonal part of the city between the core and the inner ring. By protecting and renovating the cultural heritage we enhance the historical and cultural identities of Ljubljana (Ljubljana of the Baroque period, Fabiani's, Plečnik's, Ravnikar's Ljubljana ...).

The protection and the improvement of the crucial views and the silhouette of the city, particularly in newly created spatial identities of high-rise buildings, are two important objectives in shaping and managing the city. The strategic spatial plan protects characteristic views of the Ljubljana Castle and the landscape dominants, New high-rise vistas are concentrated on the entrance sites leading into the city (traffic coming from the motorway ring), on entrance squares leading into the city centre, in local centres along the thoroughfares, at significant functional nodes/programme focuses and as the conclusion of far-distance views. The sites suitable for the construction of higher-rise buildings lie in the northern and east-northern parts of the compact city (Figure 12).

The protection, upgrading and development of the **recognisable structure** of the city are basic for ensuring identity and context in the renewal, re-structuring and growth of the

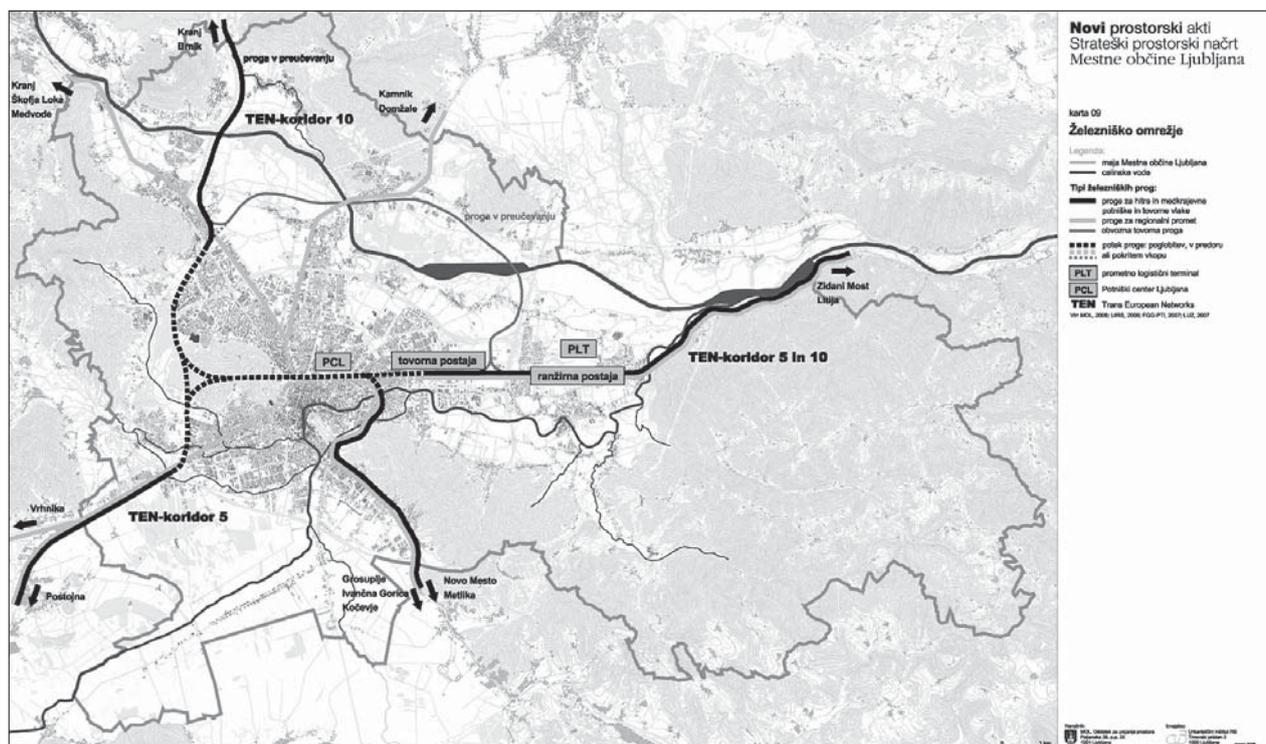


Figure 11: The railroad network. (Source: Šašek Divjak et al., 2008)

city. The strategic spatial plan determines the following basic elements of the recognisable structure: characteristic areas, connecting structures and large landscape structures.

**Characteristic city areas** are either the sites that were built and grew organically following distinctive regulations in a given historical period (mediaeval city core, mediaeval suburbs and extra-urban villages) or were built by a uniform urban plan (city districts dating from the 19<sup>th</sup> century, the area of organised housing construction, housing neighbourhoods, public activities complexes). We have identified them on the basis of their topological, morphological and typological characteristics. These are priority sites for the complete renovation because of the richness of cultural heritage and/or because of their extraordinary architectural and urban qualities.

**Connecting structures** are systems of streets, squares, parks, waterways; briefly, open spaces that link built areas to the city fabric at the suburb, compact city and city centre levels. Connecting structures or city features of the built spaces of the highest quality are the constants of the city's development; they shape the identity of the city centre and co-create its morphological structure. These features (leading features of the city centre, inner road ring, city arterial and thoroughfares, motorway ring, the PATH, river banks of the Ljubljanica River and the Sava River) should be protected, renovated and their programme and design well upgraded.

**Large landscape structures** are the sites of the cultural landscape where the landscape structure and significant elements of the natural and cultural heritage are protected. These mainly include the Castle Hill with Golovec and the green hinterland of Janče and Orle; Tivoli Park, the Rožnik and Šišenski Hills connected to Polhograjsko Hills

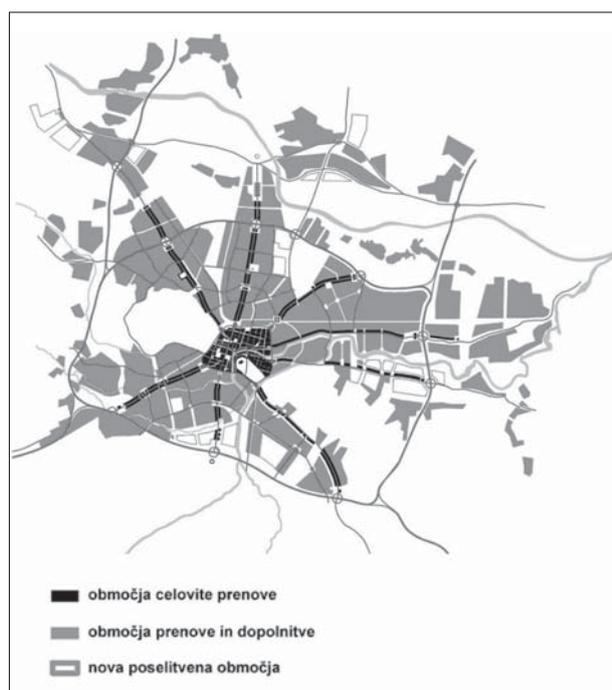


Figure 12: Morphological Plan of the city. (Source: Šašek Divjak et al., 2008)2008)

and Ljubljana Marshland. In these areas, ecologically significant sites are protected, the recreational character of the woodland is preserved, the programme variety is stimulated by creating new thematic parks and overall accessibility is improved.

### 3. Conclusion

We have presented only some programme features from the strategic spatial plan. One of the basic objectives of this document is to preserve and upgrade a quality environment suitable for living and work. We thus wish to retain a greater number of young people in the municipality which should become as attractive as possible and competitive Europe-wide. We have also stressed the importance of renovation of the existing public and green surfaces and of laying out new ones. The river banks of the Ljubljanica and Sava Rivers should become systematically organised city surfaces. The construction of hydroelectric power stations on the Sava River and new dams will offer new possibilities for recreation and sports, however, environmental requirements should be met and natural values protected.

In Ljubljana, as well as in other cities that are focuses of development, numerous needs, problems and interests are mingled together. Besides new plans and visions, there have also remained a good many important municipal plans that have not been realised. That is why we once more repeat the sentence of Max Fabiani, written down on the occasion of planning Ljubljana urbanism in 1895, which directly touches the provisions and guidelines of the actual strategic spatial plan, namely, that it is also necessary to have in mind the image of the city 'in its complete entirety' in planning each particular area.

Dr. Mojca Šašek Divjak, Architect, Docent  
Urban Planning Institute of the Republic of Slovenia  
E-mail: mojca.sasek@uirsi.si

### References

- Internet 1: <http://ppmol.org/urbanizem5/submain.php?get=123> (sneto 24. 4. 2008).
- Mihelič, B. (1983) *Urbanistični razvoj Ljubljane*. Ljubljana, Partizanska knjiga.
- MOL, Oddelek za urbanizem (2007) *Predlog vizije prostorskega razvoja MOL*. Ljubljana.
- Pozzetto, M. (ed.) (1988). *Maks Fabiani. O kulturi mest: spisi 1895–1960*. Trst, Založništvo tržaškega tiska.
- Šašek Divjak, M., Dimitrovska Andrews, K., Bizjak, I., Cotič, B., Goličnik, B., Golobič, M., Gulič, A., Jakoš, A., Kerbler, B., Kozamernik, J., Mihelič, B., Mladenovič, L., Mujkič, S., Mušič, B., Nikšič, M., Plevnik, A., Praper, S., Sendi, R., Stanič, I., Šuklje Erjavec, I., Gubina, F., Gubina, A., Hočevar, M., Juvanc, A., Kavaš, D., Koman, K., Kos, D., Marc, D., Panjan, J., Prelovšek, A., Slaček, M., Stojčič, Z., Šantej, B., Trček, F., Uršič, M., Žura, M. (2008) *Strateški prostorski načrt Mestne občine Ljubljana, Dopolnjeni osnutek*. Ljubljana, Urbanistični inštitut Republike Slovenije.