

mitories and the South part between the Gradaščica River and Tržaška and Aškerčeva Street for research institutes. The city centre began to create a new central place with the construction of the Revolution Square, within the complex in front of the Slovenian Assembly ... Significant dynamism was brought here and elsewhere into the city's skyline and the new tall buildings gave it a new image ... The evident lack of a uniform and promising urban development concept became clear ... in 1961 the District agency for urbanism in Ljubljana was established. « Ljubljana 1945–70; The Ljubljana city archive, books in the Historical archives of Ljubljana, Ljubljana 1970.

- <sup>16</sup> The following estates in Ljubljana: Housing estate ŠS-6 Ljubljana Šiška (urb.: LUZ, Vovk, Šarec, arch.: Arnautovič, Peršin, Prinčič, Sulič, Stegu, 1964–69), housing estate BS-7-Ruski car (urb.: V. Mušič, Bežan, Starc; arch.: Bežan, Štrukelj, Lavrič, 1966–70 and later), Koseze (urb. and arch. Pust, 1968–74), Štepanjsko naselje (urb.: Mrva; arch.: Brezar, 1972–78), BS-3 (urb.: Jernejc, arch.: Arnautovič, 1969–75), Ferantov vrt (Ravnikar, 1964–69) Nove Jarše (urb.: Štor, arch.: Reya et al., 1987–81),...
- <sup>17</sup> Kos, Drago (1984): Unused potentials of the Fužine estate; RSS, Ljubljana, pp. 13.
- <sup>18</sup> Examples of collective low density housing in Ljubljana: Sneberje (Pust, 1970–73), Črnuče (Pust in Pavšek, 1978), Rudnik RS1, RS2 (urbanism.: Rems, architecture.: Lapajne et al., 1978).
- <sup>19</sup> Pust, Viktor, et al. – eds. (1984) Actual issues of housing construction in Slovenia, AB No. 68/69.
- <sup>20</sup> The quality of living and the living environment are being increasingly stressed, however when we as the users walk along Večna pot towards Šiška past the new housing estate we wonder, where are all the measures and principles?
- <sup>21</sup> Horden, R. in Vogler, A., (1998), Bauen mit Systemen, Detail 5, Institut für internationale Architektur, München, pp.761–766.
- <sup>22</sup> Wohnbebauung in Rödental-Spittelstein, (1997) Detail 1, Institut für internationale Architektur, München, pp.41–45.
- <sup>23</sup> Wohnanlage in Ballerup, Dänemark, (1998), Detail 3, Institut für internationale Architektur, München, pp. 348–351.
- <sup>24</sup> Wessely, H., Einfaches Bauen in der Schweiz, (2001), Detail 3, Institut für internationale Architektur, München, pp. 394–395.
- <sup>25</sup> Vorgefertigte Wohnhäuser in Vorarlberg, (2001) Detail 4, Institut für internationale Architektur, München, pp. 628–629.

### Illustrations

**Figure 1:** *Is this the answer to modern, comfortable living? The wish of all inhabitants of our planet is to live in one's own home, on one's plot with an access path and of course swimming pool. Hereby as users we ask ourselves: will we need a special code to find our own home in such an environment ... how important will the aesthetical image of the building be in the future ... isn't a more comfortable and real option for the overstressed individual of the present a multi-apartment building, which inherently contains all humane principles of the contemporary society?*  
(Source of photos: Salazar, J., Gausa, M. (1999): *Single-family Housing; the Private Domain; Birkhauser publishers, Actar, Barcelona*).

**Figure 2:** *From the first models by Howard, the idea of the Garden city even today endures, repeats itself, changes and adapts ... Howard's first sketches present the main idea – joining the city with the countryside into a »pleasant social environment«*

(Source: <http://www.library.cornell.edu/Reps/DOCS/howard.htm> and <http://www.leitchworthgardencity.net/>)

**Figure 3:** *Housing estates planted in »the middle of open green spaces« as industrial estates in greenery, i.e. dislocated areas in pleasant green environments, offering labourers pleasant living. A – the site of the built housing estate Strnišče (Kidričevo), arch. Fürst, B – model of Strnišče (Kidričevo), arch. Ravnikar, C, D – Housing estate Šiška, Ljubljana today*  
(Source: A, B – Arhitekt No.1, 1951; C, D – photo: author, M. Z. S.)

**Figure 4:** *New multi-apartment estate in Ljubljana – Mostec or Koseški bajer. The estate tries to unify the ideas of the garden city – pleasant living in nature, and the neighbourhood – added offer within the estate, self-sufficiency of the multi-apartment unit. An estate that integrates socially diversified housing units within the framework of un-innovative technology.*

**Figure 5:** *A building built according to ecological principles and constructed from environmentally- and human-friendly materials and elements that can be easily replaced, dismantled after use, sorted and reused or recycled.*  
(Source: Horden, R., Vogler, A.: *Bauen mit Systemen, Detail 5, 1998, pp.761–766*).

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## Traditional values, quantitative growth and qualitative development Key Study for Master plan of Osijek

### 1. Introduction

This scientific research of the town of Osijek in Croatia presents the implementation of principles of urban rehabilitation. The concept of urban rehabilitation of Osijek has radically changed because of new geopolitical and economic circumstances and negative demographic processes. The new concept is based on redevelopment of built structure, as well as principles and goals of ecological planning and environmental protection. Osijek is particularly valuable in terms of its architectural heritage and park design. It is necessary to prevent such reconstruction of certain town areas that could allow inappropriate relations, which could obstruct high quality city design, both in terms of traffic regu-



lation, as well as in terms of its structural and functional aspects. The existing junctions should be functionally and structurally reconstructed or some new ones created. The area along the railroad is mostly dilapidated and should be given special consideration and redesigned together with the area around the future town railroad stops. The reconstruction of areas along the river would greatly improve the town's image. It is necessary to retain the town centre's recognizable silhouette by keeping it relatively low with few prominent points. The protected historical nucleus of the town should be carefully renovated preserving stylistic and structural values of the architecture and the area itself.

## 2. Critical reviews and suggestions for the renovation of Osijek

Osijek is the regional centre of Slavonia with distinct administrative functions and should receive full support in developing its economy, traffic, tourism, education and culture. Being situated at the intersection of important international roads, railroads and river transport flows, naturally entails the need to develop traffic links as well.

The main reasons for the town's renewal are:

- geopolitical changes in the region
- new economic strategy
- private property
- new legislation on space development
- considerable war devastation

This paper consists of two parts: the first is theoretical, dealing with the strategy of town reconstruction in general and the second is related to the »Key Study for the Master Plan of Osijek«

## 3. Basic strategy of urban rehabilitation

Urban rehabilitation is a continuous process of cityscape development, which also requires changes in some town functions. It lies beyond market economy criteria, which can also change social interrelations while changing the space. Therefore rehabilitation of the city cannot be based only on market economy but more on social programmes. Such development concerns social problems such as poverty etc. and not only physical aspects of the town.

The basic strategy of urban rehabilitation depends on finding an appropriate answer to the following questions:

- What is the position of urban rehabilitation in large-scale plans?
- What effect will rehabilitation produce in particular parts of the town?
- Which financial programs support rehabilitation?
- What results can be expected?

Key elements involved in the town's rehabilitation are: understanding the intended purpose of a particular space, evaluating regional and local significance of the planned actions and meeting the needs of the local inhabitants. Important issues of town rehabilitation must be the concept and time flexibility - making open systems and justification of running local rehabilitation projects.

General goals of planning and rehabilitation of a town are to:

- Emphasize and promote regional development,
- Include into the planning process functionally and spatially formed areas and not administration zones,
- Establish security and increase the standard of living,
- Gradually allow the growth of economy, affirm and enrich tourism.
- Develop land use policy and adjust planning to possibilities, but also empower owners of the properties or provide adequate compensation.
- Plan the town development according to realistic demographic expansion.
- Slow down the processes of internal emigration by increasing the quality of life in all settlements, providing good connections and decentralising functions.
- Plan construction with respect to the ambience of the settlement, and consider realistic needs of expanding the town's space and infrastructure.
- Establish and maintain the town's identity and structure and stop linear spreading of the town along the major traffic roads.

Direct goals in rehabilitation are:

- Protection of the built heritage and archaeological localities - determine the most valuable areas for protection.
- Maintaining the valuable structure of settlements, especially the built heritage and parks.
- Keep and stimulate multipurpose structure of land uses in the town core by keeping and advancing the housing.
- Active guiding and increasing public ownership in the town.
- Facilitating investments by joining local administrations and private capital.
- Increasing the quality of infrastructure.

## 4. Short review of the town development

Osijek is particularly valuable in terms of its architectural heritage and landscape architecture.

Within the area of the town there are several archaeological sites dating from various prehistoric periods and cultures such as the Late Stone Age, Copper Age, Bronze Age and Iron Age. Having conquered this part of Pannonia, at the site of what is today the Lower Town the Romans formed a military camp, which later became the civilian settlement of Mursa. Mursa was given the status of a colony in 133 by emperor Hadrian. The fortified Roman town was rectangular in shape and enclosed by double walls with an orthogonal grid of streets. The town was demolished by the Huns in 441.

The medieval Osijek developed west of the Roman Mursa settlement. Before 1198 there is no reference to its existence in the recorded town history. It consisted of the fortified castle and the town centre. In 1526 it was seized, devastated and burned down by the Turks who later rebuilt it in the oriental manner. During the Ottoman period, Osijek was widely known for its eight kilometre long wooden bridge, considered at that time as one of the wonders of the world.

Osijek was freed from the Turkish power in 1687. The town's defences were strengthened. Later star-shaped walls were built whereas the city nucleus was formed around a large baroque rectangular square.



Because of the need for building new star-shaped defensive walls, indigenous inhabitants were partly moved West of the fortress; consequently, another town entity called the Upper town was formed in 1692. At a similar distance, beyond the artillery range and East of the fortress, a third town entity, called the Lower town, was built in 1698. In 1786 the Fortress, the Upper and Lower towns were united into the town of Osijek which remained the largest Croatian town until the mid 19th century.

The protected historical nucleus of the city should be carefully renovated, preserving stylistic and structural values of the architecture and the area itself. An effort should be made to make these values recognised both regionally and internationally (Tvrdja, Kopacki rit).

The regulation and urban plans ranging from 1912, 1934, 1960, 1975, to 1988 show the planned town development in different periods. Among these, the 1975 master plan stands out with its unrealistic anticipation of town expansion along the left bank of the river Drava. By comparative analysis of the town's development we traced the effects of all the important urban plans from 1912 to 1988 and investigated the scope of newly planned areas compared to the already built up areas.

The 1912 plan defined the development of a new industrial area as well as development in the vacant area around the Fortress. The master land-registry plan from 1936 defined the expansion of the industrial area whereas the area around the Fortress was envisaged as a new town centre. The eastern part of the town was planned as an industrial area. The 1947 plan aimed at completing the central town area, spreading the town along the left riverbank and developing large industrial areas. The master plan from 1960 anticipated significant expansion of the town, thus spreading the residential areas along both riverbanks as well as spreading the existing industrial areas and planning new ones. The master plan from 1975 further aimed at spreading the planned residential and industrial areas. The master plan from 1988 reduced the newly planned residential areas but increased the industrial areas.

Considering the elements of planning the town, derived from the analysed urban plans, a new set of activities and regulations concerning the town's development was devised with the aim of protecting the historical and natural assets of Osijek.

## 5. Some facts about future needs of the city

Critical evaluation of demographic changes is the basic factor in determining physical planning of Osijek. Demographic growth has not reached its assumed potential. The comparison between the 1971 census and the one from 2001 indicates that the population of Osijek has remained approximately the same. Such circumstances are likely to slow down the city development. Current needs of the city point out reconstruction of town areas, provision of some missing functions and improving technical standards related to traffic and communal infrastructure.

The systematic and harmonious linear concept of the city development in the 20<sup>th</sup> century is the basis for further consideration. It is estimated that there might be an increased

interest in spreading the city westwards (direction route V. c) which might consequently bring about considerable changes in the wider western region of Osijek, as well as in the areas further south. Osijek was not created on a longitudinal axis. Its outline is more linear owing to the fact that it has been gradually growing along the Drava River. The new international route V. c. West of the town might significantly affect the linear development of Osijek because it will thus help form a new West town entrance.

The relationship between the town and the river has been changing throughout history. In its history the town has never been oriented towards the river whereas today a small part along the Upper Drava bank is. The regulation of the river itself, with its banks being shaped as a promenade, has created completely new relationships between the river and the town. Some parts of the town by the river need to be reconstructed and functionally and structurally redefined (Donji grad / Lower-Town).

Town areas should retain their identity. The outskirts of the town in the direction of the Drava River and the by-pass should be redesigned. Reconstruction of dilapidated parts along the river would greatly improve the image of the city. Restoration of this area would help to functionally and visually integrate Tvrdja (with Krunska utvrda). The area along the railroad is mostly dilapidated and should be given special consideration and redesigned together with areas adjacent to the future town railroad stops. It is necessary to retain the recognizable silhouette of the town centre keeping it relatively low with a few prominent points

Special consideration should be devoted to the preservation of the architectural heritage, historical parks and natural values of the city area. It is necessary to retain the identity of particular town areas by neutralizing the tendency towards blurring the distinction between them in terms of their particular structural characteristics and identity.

## 6. Selected elements of spatial town development

Types and building structures of the town were analysed in various periods pertaining to the time they were built. Structural diversity of architecture was analysed throughout the town's history with its planned and unplanned housing developments with the aim of recognizing and preserving the urban identity of place and setting.

The existing residential developments should be renovated. New housing developments should be planned on a limited scale in partly built-up areas. Housing should be planned within the rehabilitated built-up areas, as well as in the form of minor interventions in the area south of the by-pass. New housing construction should be planned with predominantly low buildings (up to 3 levels plus the ground floor), but also with rationalised space usage.

The existing industrial zones should be used more rationally and their expansion should be limited. Present industrial and warehouse areas should be used more rationally. New industrial areas (warehouses and services) should be planned in the West part of the town with easy access to the corridor V. c. Big shopping centres should be planned only on the outskirts.



It is necessary to ensure better communication between different town areas, improve traffic flow efficiency in the east-west direction and to provide new north-south communications in order to connect parts of the town separated by the railroad. The mastering yard for freight railway traffic should be planned on the outskirts of the town. Existing railroad tracks in the town can be retained but with slightly modified routes with the purpose of using space more rationally. These railroad tracks can be used for long-distance traffic as well as for fast inner-city railroads. It is necessary to plan shorter pedestrian links complemented with a variety of functions between different town parts.

Pedestrians should be given priority in the city centre. It is equally necessary to ensure a continuous promenade along the river. Traditional links with the right riverbank should be renewed. Another pedestrian bridge is necessary across the Drava River while road bridges should be planned in order to enhance safety for pedestrians and cyclists. The existing parks and sport facilities should be integrated into a unique system. On the left riverbank it is necessary to expand the capacity of recreation facilities and to enhance the quality and variety of services.

The concept of urban rehabilitation must be based on the protection of public interest, heritage, renewal of built structure, principles and goals of ecological planning and envi-

ronmental protection, realistic income from the economy burdened with renovation, privatisation and restructuring. For the realization of the plan it is necessary to have a concept, clear legislation and such financial framework that will link all participants – the town, planners and developers.

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**Illustrations:**

**Figure 1:** Newly planned areas in regulatory documents and urbanistic plans of Osijek

**Figure 2:** Expansion of industrial functions in Osijek

**Figure 3:** Parks, greenery and environmental protection

**Figure 4:** Typological patterns and built-up structures in the city

**Figure 5:** Image of the city – areas and edges

**Figure 6:** Image of the city – knots and landmarks

**Figure 7:** Directions of physical development of Osijek

**Figure 8:** Sketch of Osijek's spatial organisation

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