

# LVIV AND ŁÓDŹ

AT THE TURN  
OF 20th CENTURY

Spatial Development  
and Functional Structure  
of Urban Space



WYDAWNICTWA

UNIwersytetu  
Łódzkiego

Edited by  
Mykola Habrel  
Anna Wojnarowska

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ŁÓDŹ 2013

Mykola Habrel, Anna Wojnarowska – Sub-Department of Spatial Policy  
Department of the Built Environment and Spatial Policy  
Faculty of Geographical Sciences, University of Łódź  
90-142 Łódź, Kopcińskiego St. 31

REVIEWER

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*Iwona Gos*

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*Zofia Trębacz, Piotr Wójciak*

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phone (42) 665 58 63, fax (42) 665 58 62

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## PREFACE

The attempt to make a comparative study of Lviv and Łódź in search of certain regularities seems at the first glimpse rather far-fetched, because apparently there are rather few analogies between the city of Lviv with its long history and multifunctional tradition and the monofunctional, rather young, industrial city of Łódź. But deeper analysis shows that despite many differences in the course of the history of both cities, some common tendencies can be traced, such as dynamic demographic and spatial development in the second half of the 19<sup>th</sup> century based on introduction of railway transport, the building of socio-economic and spatial structures of these cities by multi-cultural local communities, and going through half-a-century period of centralized socialist economy after the Second World War. Lviv and Łódź regained political independence almost at the same time (1989 in Poland and 1991 in Ukraine) and entered the route of democratic development, undergoing political and socio-economic transformations during the last 20 years. As a result of these processes as well as the influence of globalization, today we can observe in Łódź and in Lviv similar problems and phenomena, influencing their spatial development and functional restructuring.

Lviv and Łódź currently have similar populations – above 700 000 inhabitants (Lviv – 757 300 in 2010 and Łódź – 722 022 in 2012), but they differ substantially regarding their city areas within administrative boundaries, and, consequently, average population density, which in Lviv is almost twice as high as in Łódź (4298 persons/sq. km in Lviv, compared with 2462 in Łódź). So we can conclude that Lviv,

having an area of 171.01 sq. km, is a much more compact city than Łódź, which occupies an area of 293.25 sq. km.

After the Second World War both cities faced significant growth of population and area due to the development of the industrial function. During this time huge housing estates were constructed according to the modernist concepts adapted to the requirements of socialist economy, and isolated industrial zones. Strict zoning was introduced in urban planning of both cities. However, the spatial development of both cities was shaped by complex socio-economic processes, and despite the similarities they led to different results depending on the local specifics.

During the post-Soviet period in Lviv and the post-socialist period in Łódź there were analogical processes of deindustrialization and formation of new social stratification in new political conditions. These phenomena led to the need to undertake actions aimed at revitalization of post-industrial sites abandoned by production, and at mitigation of the spatial symptoms of social imbalance – enclaves of wealth and poverty ghettos. In both cities transport pressures have occurred, requiring solutions to improve the effectiveness of public transport and to restructure the traditional road system, especially within the historical cores and central areas of the cities. New built structures have appeared in both cities, erected by private investors, differing from those of the socialist era by their considerable individualization of forms and new technological solutions. As regards urban regeneration processes, the difference in the implementation scale is undoubtedly due to Polish membership in the EU, which since 2004 has been a major driving force through co-financing of urban regeneration projects. Still, both cities are lacking a comprehensive approach to urban regeneration, which is called integrated in the planning phase and envisages tasks of socio-economic character, but in most cases is implemented only in its spatial aspect. Another common problem is the lack of adequate social participation in revitalization processes.

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In Łódź, as well as in Lviv, one of the key problems is protection of the cultural heritage, which, however, differs significantly – Lviv is a city which has a historic center of unique value, inscribed on the UNESCO World Heritage List, while the assets of Łódź in this field consist of historic post-industrial structures and Art-Nouveau architecture.

Although so different in their historical course of development, both cities encounter at the moment many similar problems and challenges, facing the necessity to create their future prosperity through exploiting their specific local potentials and to continue their best traditions of urban growth in all aspects – spatial, social, cultural and economic.

*Anna Wojnarowska*

*Mykola Habrel*



**Oksana Morklyanyk**

Lviv Polytechnic National University

# **1. DEVELOPMENT AND FORMATION OF RESIDENTIAL ARCHITECTURE IN LVIV IN POST-SOVIET PERIOD**

## **1.1. Introduction**

The post-Soviet urban architecture in Lviv has undergone certain changes and this process is still going on. The social transformations which took place at the beginning of the 1990s in Ukraine as well as in other countries of the former *socialist camp* have directly influenced the processes of architecture development and formation. Change of the political system, change of societal stratification, establishment of market economy – all these processes not only influence, but also determine the ways of architecture formation: with the change of the paradigm of state development there is also a change in urban architecture priority areas.

This chapter provides a concise analysis of the development and formation of Lviv's urban architecture in the post-Soviet period (from the beginning of the 1990s up till now). To achieve this goal the following issues are discussed:

- short review of the concepts of architecture development in post-Soviet urban planning in Lviv (1940–1980);

- a brief analysis of social, economic and political changes in the post-Soviet period, which directly influenced urban architecture;
- analysis of urban development of Lviv, from the beginning of the 1990s up till now;
- identification of dominant types of urban housing and the latest style-forming tendencies in the architecture of post-Soviet Lviv buildings.

## **1.2. Presentation of research material**

### **1.2.1. The Soviet period in Lviv (1940–1990)**

The Soviet period in Lviv was marked by dramatic social transformations, the main characteristics of which were change of the political system, implementation of a centrally-planned economy, change of the population's nationality composition and its social structure. Architecture, in particular urban architecture, was an effective tool of Soviet propaganda in this period, which was reflected in architectural theory and practice of that time.

Change of the city's image towards the socialist model became the main idea of Lviv's master plans of 1940 and 1946. In their concepts there are consistently implemented ideas, developed and approved in Soviet urban planning: the priority of industry development, functional zoning of the territory, transformation of the existing radial structure of the city into the radial-ring network model. When Soviet authority became established in Lviv, a completely new concept of urban planning and design was created, involving changes in architectural theory and practice, including new building rules and norms. Implementation of typical planning became the most important idea. Another important tendency was the construction of buildings with enlarged floor space of apartments, intended for communal housing for the citizens and for families of the party elite. In implementing Soviet methods of urban planning the architects



purposely ignored the achievements of Lviv Architecture School of the interwar period (1919–1939).

The construction of main set of the totalitarian period buildings in Lviv began in 1948. Since the city was not significantly affected during the Second World War, in its central part were built houses in the form of infills on vacant sites between existing buildings. On the outskirts of Lviv the construction of complexes of low-rise residential buildings and settlements (based on typical projects) for the working class started. Industrial enterprises were developed by reconstruction of the existing production areas. Urban architecture of the central part of Lviv reflects the principles of stylistic standards of that time: the development of socialist realism ideas with definite domination of historicism and use of symbolic beginning in architectural image creating. In the compositional and architectural design of urban housing the *palace* principle prevailed, which was expressed in creation of symmetrical, orderly compositions and use of classical architectural decorations.

In the concepts of the 1956 master plan for Lviv were reflected two main tendencies in the development of urban architecture of that time: low-rise detached buildings and typical planning. From the urban design perspective the low-rise townhouses represented the transition from individual projects of the post-war period to the standard projects of multi-apartment houses of the 1960s. During 1957–1959 there was intensive construction of multi-apartment houses with small apartments. In this period the principle of *free planning* for residential areas of Lviv was implemented, which was considered a reflection of progressive trends in the development of Soviet urban building.

According to the next master plan, adopted in 1965, it was envisaged to functionally unburden the historic area of the city and to increase the housing production capacity through creation of construction enterprises. Along with the housing development program, division of the city structure into 5 districts (central, northern, southern, eastern and western) was planned. At the same a so-called

housing ring of large residential areas around the central part of Lviv was to be created. This concept of urban housing development was realized until the beginning of 1990.

Therefore, in the period from the end of the 1940s to the 1990s several stages in the development of Lviv urban architecture can be distinguished:

*Stage I:* end of 1940s – mid-1950s – building of infills in historically formed center and separately situated low-rise houses in outlying suburbs;

*Stage II:* end of 1950s – early 1960s – beginning of the industrial method of building and construction of the first five-storeyed, large-panel apartment buildings with small apartments;

*Stage III:* mid-1960s–1980s – construction of higher apartment buildings with different types of flats.

This short review of the development of urban architecture during the Soviet period in Lviv provides a basis for analysis of urban architecture of the post-Soviet period.

### **1.2.2. The post-Soviet period in Lviv – from 1990 up till now**

With the declaration of independence of Ukraine on 1<sup>st</sup> December 1991 the society went through new transformations, the main elements of which were the change of the political system from totalitarian to democratic and transition from a centrally planned economy to a market economy. Human rights and freedom of speech became priorities of social policy of the State. As far as democratic changes are concerned, it is justified to say that social transformations are not finished yet, though their tendencies have democratic character. It should be pointed out that the transformation led to change in the consciousness of the society as a whole as well as its individual members. Research has enabled identification of these main changes, which can be characterized the following way:

- problems of social and spiritual adaptation of people to the new conditions of existence;

- change in human mentality, which is connected to the process of its socialization in new circumstances (Morklyanyk 2010, pp. 73–83).

The main characteristics of the transformation process are deinstitutionalization and establishment of new social institutions, and formation of new social stratification of the society, which is radically different from the one which was in the Soviet society during many decades. At the present moment, social stratification in Ukraine is not yet clearly formed, but sociological research shows that in Ukraine exists the so-called *low middle class*, which is typical of post-Soviet and post-socialist countries. Therefore, the democratic tendencies of society development can be traced, which is observable in clear stratification of society and recognition of this stratification at the State level (Habrel, Morklyanyk 2004, pp. 38–43).

The market changes which took place in Ukraine starting from 1990 led to a severe crisis in the construction industry. One of the crucial elements of the shift in urban policy towards market economy is the housing reform: its main aim lies in creation of the housing market, which would afford possibility to implement the right of each person to choose the apartment.

### **1.2.3. Normative framework of housing development**

The process of social differentiation of Ukrainian citizens determines differentiation of housing, types of buildings and apartments. With the switch to market relations in our country in the mid-1990s began the differentiation of society roughly into three large groups. The first group are citizens who could not socially adapt to the new environment; the price of apartment is the only barrier to improving their living conditions. This problem has already become the cornerstone of social policy in Ukraine. The second group are citizens with middle level incomes who require various types of housing loan. Certainly, apartments for this stratum of society must differ

in the level of comfort, but typological and construction solutions for such housing have not been formed yet. The third group comprises rich citizens of Ukraine who can independently provide accommodation for themselves without waiting for assistance from the government.

Based on this, it can be assumed that the main problem is to identify the principal, functional and architectural differences which characterize social and commercial housing. The analysis of theory and practice of social and commercial housing provision allows the identification of the main directions of its development and improvement:

- typological structure of housing, which is differentiated according to the level of comfort;
- use of existing housing fund, adjustment of the housing structure to present requirements;
- incorporation of new functions in the apartment structure;
- improvement of the methods of house planning in the big city.

The main directions of government policy regarding housing development are determined by the following goals:

- social-economic goals – provision of housing of varying types and quality standards for different groups of society according to their financial possibilities;
- urban development goals – increase in the quality and artistic value of urban fabric, and consistent, comprehensive development of the city.

An important factor is that at the government level the necessity of differentiation of apartments in terms of their comfort level is recognized. In particular, in the new Ukrainian DBN Standards V.2.2.-15-2005 *Residential houses. The main provisions* (effective since 2005) were implemented regulations concerning differentiated types of housing:

- first category (commercial);
- second category (social).

Based on the minimization principle, a norm for total floor space of a flat in social housing was set, which is 21 sq. m/person. This standard does not apply to commercial housing. Classification of housing into two categories determines the development of new planning solutions, and the improvement of the regulatory basis provides the basis for housing quality improvement.

Therefore, we can see that there is direct influence of social changes on the development of housing policy of the country (more detailed discussion of this process is in the previous work – Habrel, Morklyanyk 2004, pp. 38–43); these changes became a background for the development of Lviv and new types of housing in architectural practice.

#### **1.2.4. Urban development of Lviv from the beginning of the 1990s up to the present**

A number of factors preceded the adoption in 1993 of a new master plan for the development of Lviv as a change of the existing one passed in 1965:

- expiration of the current master plan;
- discrepancy between actual indices and the planned ones;
- critical deviation in the planning structure of the city;
- necessity of effective use of land within the city borders.

Social changes in second half of the 1980s and the beginning of the 1990s, that is in the period of development of the city's master plan, led to revision of some of the provisions and previously developed concepts related to the issues of spatial development and urban planning.

In the new master plan some restrictions were introduced depending on their use (three groups). *The first group* included restrictions which excluded the possibility of mass construction (the territory of Lviv State Historical and Architectural Reserve, historical area, territory around the historical area, architectural monuments

outside the reserve, green areas and suburbs). *The second group* of restrictions was of temporary character, depending on the decisions taken (restrictions on development around the historical reserve, sites of industrial enterprises, areas of noise impact of the airdrome, railways, highways, open electric power stations, areas of electromagnetic emission sources, technical corridors). *The third group* of restrictions related to complex engineering-building conditions. As a result of analysis of all the groups of restrictions, spatial development of the city was possible only in several directions:

- in the northern direction in the region Zboyishcha;
- in the western direction in the region Bilogoshchi and Ryasne-3;
- in the southern direction in the region of Zubra;
- in the north-eastern direction in the region of Lysynychi and Pidbirtsi.

Also, some reserve areas were designated for new residential development among existing buildings, and reconstruction of low-rise buildings in the middle city area was permitted.

The severe crisis of the 1990s has stopped the intensive development of the city, which led to the reconsidering of its further functioning. Most of the large production enterprises have terminated their activity; on unused sites of former manufacturing activity a number of small private companies are operating, mostly engaged in trading. These processes have resulted in a change of priorities in economic activity, which shifted to the non-production sphere. The bankruptcy of enterprises caused the need to review the functional use of urban land, projected in the master plan of 1993 (*Correcting of Lviv City Master Plan 2001*).

Consequently, by the year 2000 a number of failures in master plan realization were revealed, which became a reason for development of a new concept of urban design for Lviv. In the year 2001 was developed the *Concept of the Development of Lviv* and it was approved in 2005. The main reason for its development was the fact that the prognosis on the development of the city contained

in the former master plan differed significantly from the tendencies revealed in the process of its realization, which was caused by the change in social and economic conditions in the country (*Correcting of Lviv City Master Plan* 2001).

One of the main indicators of meeting the housing need of the citizens is the housing provision index, which in the year 1991 was 14.4 sq. m/person; the master plan of 1993 anticipated increase in this indicator to 23 sq. m/person (by 2010). In 2005 it reached 19.3 sq. m/person (this is connected to increase in housing construction in 2001–2005) and at the beginning of 2008 – 17.6 sq. m/person (table 1.1). This index is much lower than in developed European countries.

**Table 1.1.** Statistical indices of housing development in Lviv from 1991 up to the present

Characteristics	1991	2001	2005	2008	Master plan standards 2010–2025
Population, in thousands	786.9	725.1	727.1	732.8	750.0
Housing construction, thousand sq. m	285.0	79.0	130.0	158.8	300.0
Housing fund, thousand sq. m	–	13 881.8	–	12 914.5	17 214.5
Residence provided sq. m/person	14.0	–	19.0	17.6	20.6–24.2 (for II category)

Source: *Correcting of Lviv City Master Plan* (2001).

Therefore, a low level of housing provision indicates a housing shortage, which defines further increase in residential construction. In the *Concept of City Development* of 2001, the housing standard was proposed according to formula:  $\kappa = n + 1$ , meaning the number of living rooms in the apartment is equal to the number of household members plus one common living room, which would give average housing provision of approximately 27.7 sq. m/person.

A similar calculation was carried out with taking into account the indices of the State building norms in DBN Ukraine V.2.2-15-2005 *Residential houses*. The main provisions (approved in 2005) set the limits for apartments in social housing (II category):

- lower limit – 26.4 sq. m/person;
- upper limit – 29.8 sq. m/person.

It is obvious that the standard calculated by use of the formula  $\kappa = n + 1$  for the period to 2025 will not be achieved, therefore in the master plan of 2010 for this period a transitional standard was set for social housing using the formula  $\kappa = n$  (number of rooms is equal to number of household members):

- lower limit — 20.6 sq. m/person;
- upper limit — 24.2 sq. m/person.

For category I apartments (commercial) the upper limit of floor space is not standardized and will be defined by market circumstances (*Correcting of Lviv City Master Plan* 2001).

Therefore, the forecast of possible development of housing is defined by the following periods:

- *transition period* (2001–2010) – creation of a system of residential construction financing by long term loans; no significant increase in housing construction was foreseen in this period, the reason being low incomes of the majority of citizens; approximate total floor space of new construction is 125 000 sq. m;

- *growth period* (2010–2020) – increase in the construction capacity of building enterprises, development of building industry, new building technologies, preparation of areas for residential development; new housing construction is forecast to increase to reach 300 000 sq. m (approximate floor space of new housing is 225 000 sq. m);

- *stabilization period* (2020–2030) – stabilization of new housing provision at the level of 300 000 sq. m of floor space is expected (*Correcting of Lviv City Master Plan* 2001).

Work on stage II of master plan revision started in 2008. There were extensive consultations, taking into account comments and recommendations of the supervisory bodies and public opinion on



the basis of the *Concept of the Development of Lviv* (master plan approved on 4<sup>th</sup> October 2010 for the period to 2025). In the new master plan (of 2010), on the basis of analysis of existing development, the functional use of territory and city-building conditions, were defined groups of planning restrictions (actually, the same as in the former master plan of 1993). The result of this is a lack of land for new residential construction, so the master plan envisages redevelopment of territories within city borders which are currently ineffectively used: the sites of bankrupt enterprises, military areas, collective gardens etc. However, redevelopment of this land will not eliminate this problem, so it was planned to expand the area of Lviv: mass residential building is possible in the directions foreseen in the former master plan, embracing the bordering settlements: Sokilnyky, Bryukhovychi, Zubra, Pasiky Zubretski, Rudno, Pidryasne, Ryasna-Ruska, Lysynychi, Pidbirci, Zymna Voda, Sknyliv, Malekhiv, Soroky Lvivski (according to city-building system *Large Lviv – 2025*).

### 1.2.5. Housing types in modern architectural practice of Lviv

At the beginning of the 1990s, the spreading economic crisis resulted in gradual increase in the number of housing construction carried out by cooperatives and on the basis of citizens' funds. The decrease in government investment started in 1980 and this trend continued after Ukraine's Independence.

Therefore, new social-economic reality led to development of different housing types. The use of typical projects in contemporary architectural practice virtually stopped – the majority of projecting was carried out individually by private architects.

The analysis of housing types in current architectural practice of Lviv shows that at present there are *two dominant tendencies*:

- building of detached houses or infills;
- building of housing complexes.

As regards the height of buildings, the following types of residential buildings prevail:

- low-rise (1–2 floors);
- medium height (3–5 floors);
- high-rise (6–9 floors).

In terms of the *functional use*, new residential buildings fulfill:

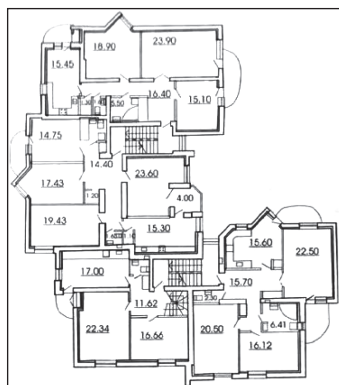
- only residential function;
- multiple functions (offices and flats, commercial and residential etc.).

The first houses of post-Soviet time in Lviv in the historically shaped part of the city were built in the mid-1990s. In the process of their construction a number of failures became noticeable in respect of comprehensive planning and development of the urban environment, planning of residential development and quality of housing construction. An important point is that there has been a significant change in demand for residential buildings.

Whereas before the 1990s priority was given to quantitative indicators, the focus in the present period is on the quality of housing.

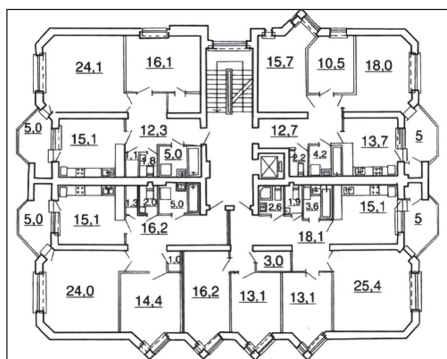


general view



plan of typical storey

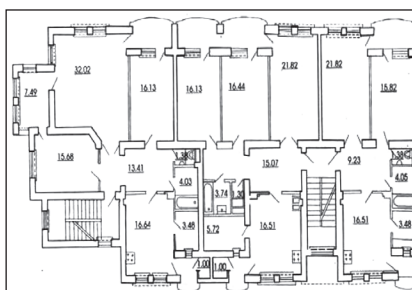
A. Residential house Peremyska Street (architect V. Kozachuk, L. Korolyshyn)



general view

plan of typical storey

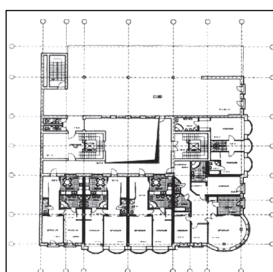
**B. Residential house Samiylenka Street (architect Y. Dzhygil)**



general view

plan of typical storey

### C. Residential house Chuprynky Street (architect Y. Mastylo)



general view

plan of typical storey

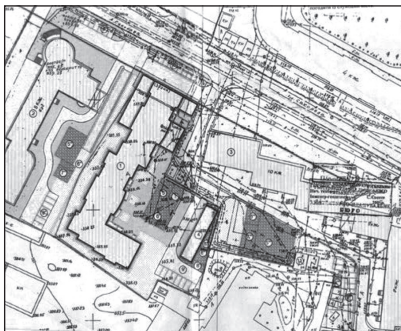
#### D. Residential house Valova Street (architect O. Bazyuk)

**Figure 1.1.** Examples of residential buildings in post-Soviet Lviv

Source: phot. O. Morklyanyk



A. Residential complex in Povstanska Street  
(architect V. Marchenko)



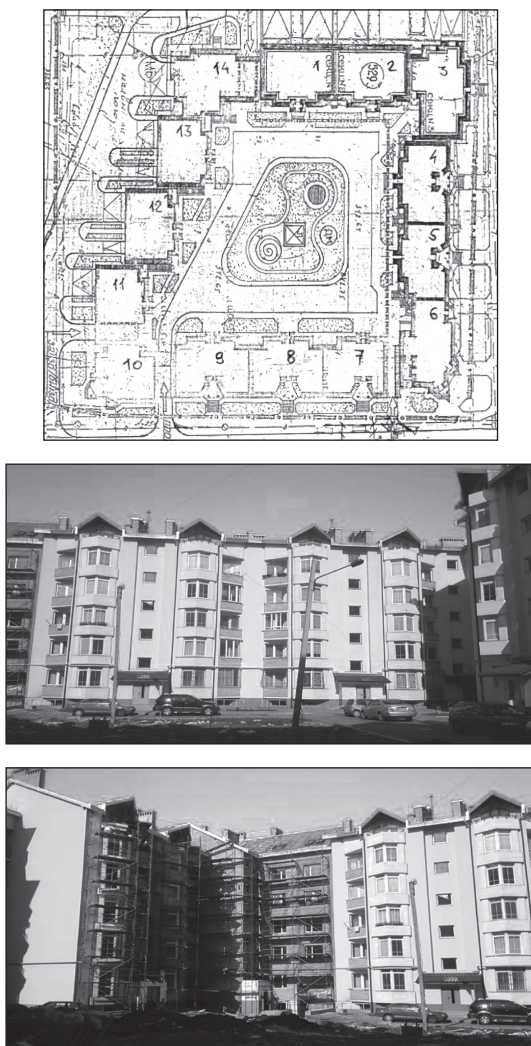
**B.** Residential complex in area  
Konovaltsya–Rudnytskogo–  
–Chuprynky–Hordynskyh  
(architect L. Korolyshyn)



**C.** Residential complex  
in Sakharova Street  
(Architectural workshop  
Metropolis Ltd.)







D. Residential complex in Dragana Street  
(SPE "World")

**Figure 1.2.** Examples of residential complexes  
of post-Soviet Lviv

Source: phot. O. Morklyanyk

Starting from the 1990s, construction of detached houses and infills clearly dominates in housing construction in Lviv. The examples are:

- apartment house in Peremyska Street (architect V. Kozachuk, L. Korolyshyn) (figure 1.1.A). The house is  $\Gamma$ -shaped and consists of two sections. On each floor there are two apartments, while on the last floor apartments are situated at two levels;
- apartment house in Samiilenka Street (architect Y. Dzhygil) has a compact form (figure 1.1.B): this is a 5-storey building; on each floor there are 4 apartments with a different number of rooms;
- apartment house in Chuprynky Street (architect Y. Mastylo) (figure 1.1.C).

An example of infill-type buildings in the historically formed environment is an apartment house at Valova Street No. 15, planned in 2002 (figure 1.1.D). The construction of this building has completed the ensemble of historical buildings in Valova Street. It was erected on a plot which was vacant after demolition of an old building in very bad condition. Location of a new house in the structure of historical buildings has determined not only the choice of style, but also design typical of the turn-of-the-century housing. The building has a closed structure with inner courtyard. On each floor are five apartments mostly consisting of two rooms, only the corner apartment has three rooms. The windows of living rooms are overlooking Valova Street, while the utility rooms are grouped around the inner courtyard.

It should be mentioned that until the beginning of 2000, there were practically no reserve areas in the central part of the city; this resulted in housing construction in regions situated close to the city center as well as in peripheral areas, where relatively large spaces for residential development are available and building regulations are less strict. In general, this encouraged construction of residential estates of medium and high-rise buildings (3–5, 6–9 storeys).

Typical examples of this type of housing developments are:

- housing complex at 12 Povstanska Street, built in 2001 (figure 1.2.A). It is П-shaped and forms a semi-closed courtyard, which is a representative area. A new element in the structure of this complex is a combination of gallery and selective types of housing. The entrance to the apartments is at the first floor level. The central building is two-storeyed, while the side buildings are four-storeyed. In total, there are 29 apartments. Classical elements (oriels, arches) dominate in decoration of the facade;

- complex of residential buildings located in the area of Konovaltsya–Rudnytskogo–Chuprynyk–Hordynskyh streets (figure 1.2.B). The project was completed in 2001. This multi-apartment building, located on a former industrial site which is rather narrow for residential development purposes, consists of two Г-shaped parts forming a rectangular courtyard;

- complex in Sakharova Street (figure 1.2.C) was built in 2004–2007. The complex is formed by two 10-storey houses parallel one to the other. There are only two apartments on each floor (an example of superior comfort housing);

- complex in Dragana Street (Sykhiv blocks) (figure 1.2.D) – built in 2002–2006. The complex consists of fourteen one-section 5-storey houses, which form a closed planning structure of the quarterly type. Individual designs of each section create a stylistic unity of the complex;

- complex in Yunakiva Street – built in 2005–2007. The main concept of the complex is that on a small plot was created a comfortable modern housing complex with developed infrastructure, which gives the inhabitants access to a full spectrum of services. The complex consists of 11 buildings of 6–9 storeys, containing 300 flats;

- complex in Lazarenka Street – created in 2001–2003 – the biggest one in Lviv, providing 450 apartments.

To sum up, the following stages in the development of post-Soviet urban architecture in Lviv can be identified:

*Stage I:* 1990 – mid-1990s – construction of low-rise individual houses; building was carried out by individual customers, while construction of multi-apartment houses was terminated;



*Stage II:* mid-1990s – beginning of 2000 – construction of medium height buildings; the main types of housing were detached houses and infills in the historical core of the city;

*Stage III:* 2000 – up to the present – domination of residential complexes and multi-apartment buildings in housing construction; no undeveloped sites in the central part of the city, so construction activity is concentrated in peripheral areas, where high-rise housing is permitted.

### **1.2.6. The stylistic pluralism in the development of modern housing architecture of Lviv**

The visual inspection of urban houses built in Lviv in the post-Soviet period shows that views regarding esthetic values of architecture have changed significantly. The buildings are no longer uniform or typical, each project is oriented at uniqueness and individuality. This causes significant diversification of architectural solutions used in residential construction. Nevertheless, irrespective of all the diversity in stylistic solutions they can be divided into two major groups: so-called *post-Modern* and *late-Modern* traditions in architectural development.

As it is known, *Postmodernism* is a general term which unites in architecture development the stylistic trends based on principles of time- space- and contextual openness. In practice this applies to any historical styles and forms of the past in actual creativity. Postmodernism in architecture emerged in the late 1960s as a reaction to the orthodox functionality. Impoverishment and materialism of the architectural environment have prompted the architects to search for architectural vision enrichment, drawing on cultural inheritance. At the end of the 1950s the renaissance of historical architecture became the topic of wide discussions among English and Italian theorists and practitioners. Postmodernism is not a specific and coherent stylistic direction – it is a way of viewing architecture.

The analysis of stylistic solutions used in urban housing construction shows that at present two stylistic trends are dominating in residential architecture of Lviv, based on the use of historical past in modern art: Historicism and Neovernacular. In the architecture of Lviv buildings we also encounter direct reproduction, though in non-residential buildings, e.g. a hotel at 45 Svobody Avenue, or a bank in Mitskevycha Street; in these examples the architects repeated in detail the forms and techniques used in the former buildings.

*Historicism* in Lviv's urban architecture is based on the architecture prototypes from the city's own architectural heritage. The most characteristic examples of this approach are:

- townhouse at 15 Valova Street (figure 1.1.D), where the architect has interpreted techniques of modernistic architecture. The general composition of the facade practically copies the famous house built according to a project of architect A. Zakhariyevych and Y. Sosnovskyy. This building is an example of a successful solution in the context of a historic street;
- the theme of Lviv Modern is clearly seen in the architecture of a house in Samiylenka Street: the form of attic and windows (figure 1.1.B);
- the architectural solutions used in an apartment house in Chuprynky Street (figure 1.1.C) are also based on the forms of historical heritage, though in this case these are free interpretations of motives of French Neorenaissance (high mansard roofs and dormer windows).

*Neovernacular*, as a direction, was widely spread in modern housing architecture of Lviv. Its characteristic features (on the Lviv base) are high tiled cascade roofs (reminiscences of the Carpathian style), wooden parts in the composition of facades, use of brick. The examples are:

- housing complex in Povstanska Street (figure 1.2.A);
- residential building in Peremyska Street (figure 1.1.A).

The examples referred to are not examples of pure Neovernacular; as a rule, Neovernacular motives are combined with elements of historic architecture.

Reasons for the presence of Historicism and Neovernacular in contemporary urban architecture of Lviv are a topic for separate research, so this issue is not explored in this study. It is, however, obvious that turning to the historic heritage is a reaction to decades of domination of the large panel and Modernism, which led to loss of identity of the architectural environment of the city. Therefore, Historicism in this case is a way to give to the environment a new architectural identity, which is based on continuity of historical tradition. On the other hand, Historicism gives architects opportunity of free self-expression of individuality after decades of ban on their own creativity. This trend appeared in Lviv approximately 25 years later than in Western European countries. It might therefore be expected that urban architecture of Lviv must pass the same stages of formation and development which were characteristic of Western Europe.

The other direction in European architecture development is *late Modernism*. During the 1960s almost simultaneously in all architectural environments of Western European countries new tendencies connected to the rejection of orthodox functionalism arose as a leading trend in architecture. The analysis of examples of Lviv urban building in the context of stylistic trends of late Modernism shows that this trend is not yet widely used, although in the architecture of residential building designed in 2000 it can be found more often and obviously with time its popularity will grow. A typical example of late Modernism approach in construction is a complex of residential buildings in Sakharova Street (figure 1.2.C), built in 2004–2007.

The weak presence of late Modernism trends in Lviv architecture is connected with the lack of advanced building technology (in the case of Historicism it is possible and even advisable to use traditional building materials), rejection of new architectural forms by clients and often unwillingness on the part of architects to think and work in this direction.

### 1.3. Conclusions

The Soviet period in Lviv (1940–1990) is characterized by radical social transformations, the result of which was remodelling of urban planning and architectural theory and practice. The outcome was implementation of the principles of micro-zoning, typical planning and housing construction, and proximity of residential architecture and environment.

The post-Soviet period in Lviv (beginning of the 1990s – up to the present) is characterized by change in housing policy as a result of social transformations of this period. The processes of social changes of democratic character are still continuing and are directly reflected in architectural activity and creativity: the diversification of types of residential buildings and stylistic pluralism in architecture of housing is progressing.

The research on statistical indicators relating to residential building during the period studied provides an understanding of stabilization and gradual development of housing. This allows for an optimistic prognosis regarding increase in these indices with the flow of time.

The analysis of residential architecture of the post-Soviet period and its typological structure reveals a tendency to increasing diversity of housing types.

The visual inspection of residential buildings of the period under study shows a change in aesthetic views of architects. The trends and tendencies which are seen in present-day housing architecture indicate democratic processes of stylistic pluralism.

This study reviews and analyzes the development and formation of residential architecture of post-Soviet Lviv. The author is aware that the spectrum of unanswered questions regarding this issue is quite wide, and therefore it is necessary to conduct further research in this area of study.

**Katarzyna Milewska-Osiecka**  
**Agnieszka Ogrodowczyk**

University of Łódź

## **2. HOUSING IN URBAN SPACE OF ŁÓDŹ**

### **2.1. Introduction**

Development, location and planning of residential areas in cities are important contemporary issues addressed in urban geography, spatial planning and urban management (Słodczyk, Klimek 2003, p. 56), because the spatial structure of housing in cities is the result of complex and often long-term socio-economic processes. They affect the spatial development of cities, but local specificity of urban areas, too, modifies these processes – the same mechanisms may lead to different results, depending on different local conditions (Sagan 2000, p. 40).

In Poland, just as in other countries of Central and Eastern Europe (CEE), urban areas were strongly shaped during the period of the centrally planned economy and socialist urbanization (1945–1989), manifested in development of multi-family housing. Among the main factors affecting the development of housing in Polish cities in these years, the housing shortage should be mentioned first of all, as well as an imposed political system (nationalization of almost the entire economy, lack of self-government and many other elements of the system) and socialist industrialization, generating

immigration of rural population to urban areas, which further deepened the already huge demand for housing (Słodczyk 2010, p. 18). New urban standards, commonly used to accelerate the development of housing and to ensure uniform housing conditions, were associated with application of large-panel technology in housing construction. This way of solving the housing problems resulted in specific spatial development of cities (Gaczek, Rykiel 1999, p. 31).

Socio-economic transformation in Poland in the 1990s influenced significantly the conditions of housing development in cities, as evidenced by changes in their spatial structures. In addition to the introduction of a market economy (based on private property, which resulted in the need for clarifying the legal status of many properties<sup>1</sup>), the formation of local governments in 1990 (*Ustawa...* 1990) and the new legal regulations that changed the principles of spatial planning in Poland (*Ustawa...* 1994, 2003) affected the housing situation of urban areas.

The housing reform in the 1990s involved withdrawal of the State from the financing of housing construction, communalization of flats belonging to the State and state-owned companies, abolition of the monopoly of cooperatives in housing construction, creation of Social Housing Associations, introduction of housing allowances for low income households, and creation of new forms of financing housing construction. The new policy providing that the State should only support citizens in their efforts to meet their housing needs contributed to the fact that the private sector gained the position of the main investor in housing construction. It began to be primarily affected by demand for housing, which, on the one hand, reflected the housing needs and preferences of the society (visible in the rising standard of newly-built flats), and on the other hand illustrated its financial capabilities (prices of flats were often too high to be affordable for the average household) (Marszał 1999b, pp. 7–8).

At the beginning of the 21<sup>st</sup> century, Łódź, one of the largest Polish cities, is characterized by insufficient housing development

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<sup>1</sup> In 1990 the communalization and privatization of the housing stock was initiated, treated as an opportunity to reduce public expenditure on housing.

(while suffering the housing shortage) and poor housing conditions (Milewska, Ogrodowczyk 2010, pp. 51–72). This is undoubtedly the result of the intense housing development in the periods of increasing industrialization and migration influx, which first occurred in this city in the early 19<sup>th</sup> century, and then, like in other Polish cities, during the reign of socialism.

The main objective of this article is to identify the general characteristics of the spatial structure of housing in Łódź, and more specifically, to examine the spatial differentiation of the housing stock located within the administrative boundaries of the city. Analysis of the entire housing stock, carried out mainly at the level of residential administrative units (figure 2.1), is focused on the distribution of buildings and housing density, including, among others, such aspects as period of construction, type and size of residential buildings, increasing architectural individualization of new investments and creation of gated communities.

Particular attention has been paid to the ownership structure due to the significant changes that have occurred in this field during the period of the political transformation. With respect to the analyzed housing stock, the authors applied the classification of ownership forms consistent with that adopted by the Central Statistics Office (GUS), which includes: private construction,<sup>2</sup> cooperative construction,<sup>3</sup> company construction,<sup>4</sup> municipal construction,<sup>5</sup>

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<sup>2</sup> Housing construction realized by natural persons (regardless of whether they conduct economic activity), foundations, churches and religious associations, designated for the use of the investor and the investor's family or for meeting the residential needs of the investor's employees or for sale or rent (in order to earn a profit).

<sup>3</sup> Housing construction realized by housing cooperatives, designated for the members of these cooperatives.

<sup>4</sup> Housing construction realized by workplaces of the public or private sector (excluding construction of natural persons conducting economic activity, included in private construction), designated for meeting the residential needs of the employees of these enterprises.

<sup>5</sup> Housing construction primarily with a social or intervention character, realized entirely with communal funds for the residential needs of low income households.

public building society construction<sup>6</sup> and construction designated for sale or rent.<sup>7</sup>



**Figure 2.1.** The division of Łódź into residential units

Source: own elaboration based on data from Łódź City Council

<sup>6</sup> Housing construction realized by public building societies (operating on a non-profit basis), utilising credit from the National Housing Fund.

<sup>7</sup> Housing construction realized in order to earn a profit by various investors (e.g., development companies, communes), excluding construction by natural persons conducting economic activity, included in private construction. This form of construction also includes construction by public building societies, realized in order to earn a profit (from rent or the commercial sale of dwellings), designated in full for building rental housing.



The analysis is based on rich statistical material. The authors used information from periodic statistical registration of housing stock in Łódź, data available online<sup>8</sup> from the Local Data Bank (BDL), statistical materials published by the Statistics Office of the Voivodship of Łódź, and the results of National Censuses of 1988 and 2002. The above-mentioned information has been supplemented with source material obtained from the City Council of Łódź, housing cooperatives, Widzew Public Building Society, Municipal Centre for Geodetic and Cartographic Documentation in Łódź, District Construction Supervision Inspectorate for Łódź, as well as information received from developers operating in the area of Łódź.

## **2.2. Historical aspects of housing development in Łódź**

Contemporary spatial structure of housing in Łódź is primarily the result of many complex economic and social processes, which, operating for several centuries (especially in the 19<sup>th</sup> and 20<sup>th</sup> centuries), significantly transformed its constituent parts. By the end of the 18<sup>th</sup> century, Łódź, like most urban areas in Central Poland, was a typical small town whose built environment resembled that of a village. Only after 1823 the first brick houses were built – it was the result of a decision on the location of a new settlement unit for drapers, coming to Łódź mostly from Silesia and Germany. The area of New Town was rather small and consisted of four urban blocks located next to the town square. Housing in this area was comprised of houses built according to a few imposed, typical projects and it was generally very modest. However, in the case of buildings constructed beside the square there was a requirement to construct 2-storey brick houses, covered with tiles (Rosin ed. 1988, p. 159). Another settlement – Łódka – was formed in 1824, and its housing stock, as in the New Town, consisted of only a few types of buildings – mostly one-storied, made of bricks, wood or with timber framing,

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<sup>8</sup> <http://www.stat.gov.pl/bdl>

with characteristic roofs covered with tiles or shingles. In nearly all houses in this area, the residential function was accompanied by manufacturing (Rosin ed. 1988, p. 168).

The simple fact is that in the early 1840s Łódź became the most important center of the textile production in Poland, and its population had tripled, compared to 1830. The area of the city was then enlarged, as a result of the creation of New District, where 300 building sites were set out. Spatial development of housing in this area was initially limited to the streets closest to the oldest parts of the town, however, the massive influx of new inhabitants resulted in the shortage of undeveloped building plots and industrial areas in the late 1850s and early 1860s. The lack of vacant building sites has contributed to the exploitation of the areas of cultivated fields and gardens for construction purposes (French, Hamilton eds. 1979), as well as to the appearance of the first suburbs. The spatial development of housing in the city was not confined to greenfield investments only, but also included the exchange of buildings – a few-storey, brick tenement houses were often erected on parcels previously occupied by small houses of spinners and weavers. In the mid-1870s they constituted only 1/3 of the total number of buildings in Łódź, while 20 years later it was already 3/4 (Rosin ed. 1988, p. 183).

The lack of dwellings and the poor technical condition of a substantial part of the existing housing stock resulted in the need for some new solutions of the housing problem. In the interwar period some new concepts of housing development were implemented (Słodczyk 2010, pp. 17–18). The problem of housing shortage in interwar Łódź, just as in other Polish cities, was resolved by building housing estates with multi-family blocks of flats. Generally, the principle of setting buildings perpendicular to the communication routes was applied, to reduce the burden associated with the presence of streets (Słodczyk 2010, p. 18). After 1945, when the socialist system was introduced in Poland, the concept of development of multi-family housing was adopted as an obligatory doctrine in the area of housing (Słodczyk 2010, p. 11). Starting from 1956,

large new residential estates were built, including: (1) before 1970 – Nowe Rokicie, Kurak, Dąbrowa, Zarzew, Doły, Włady Bytomskiej, Staromiejskie, Koziny; (2) in the period of 1970–1980 – Retkinia, Widzew, Teofilów, Żubardź; (3) in the period 1981–1990 – Radogoszcz, Chojny, Olechów. Since the 1970s, housing construction has been dominated by mass production of standard housing units built of prefabricated concrete bricks (Kaczmarek 1997).

It is also worth mentioning that the dynamic development of housing estates after the Second World War was the principal factor behind the increase in built-up areas within the city (from 3598 ha in 1945 to 5996 ha in 1974 – according to data from the City Council). As a result of the enlargement of urban area in 1988, there was a significant increase in agricultural land within the administrative borders of the city – up to 14 810 ha, but at the same time, due to further expansion of residential areas and the development of the service sector, built-up areas grew to 9192 ha. Consequently, since 1990 there has been a continued upward trend in the size of built-up areas (9765 ha in 2009, including 4134 ha of residential areas ).

### **2.3. Location of residential areas within the contemporary boundaries of Łódź**

The 1990s political transformation resulted in substantial changes in housing development of Łódź, with the determining role played by exogenous conditions (Marszał 1999a, p. 69). The city's housing stock in the period of socio-economic transition grew steadily, but at a slow rate, conditioned mainly by the development of various forms of housing ownership. The number of dwellings increased from 318 000 in 1990 to 337 600 in 2009 (an increase of only 19 500 – 5.8%).

At present (2009), the housing stock of Łódź consists of 37 066 residential buildings, and single-family houses constitute over 60% of this number (table 2.1), however, they contain less than 7% of all flats.

**Table 2.1.** Residential buildings by the number of flats in Łódź, 2009

	Total	Number of flats									
		1	2	3	4	5	6-9	10-19	20-49	50-99	100 and more
b	37 066	22 452	3 306	1 040	756	501	1 781	2 225	3 173	1 550	282
f	328 161	22 452	6 612	3 120	3 024	2 505	13 283	31 021	97 868	104 797	43 479
b	100.0	60.6	8.9	2.8	2.0	1.4	4.8	6.0	8.6	4.2	0.8
f	100.0	6.8	2.0	1.0	0.9	0.8	4.0	9.5	29.8	31.9	13.2

Note: b – buildings, f – flats.

Source: own elaboration based on data from the Statistical Office in Łódź.

In consequence of the economic and spatial development of the city in changing political conditions, its residential areas are located mostly in the center (Stare Miasto, Żubardź) and also in big housing estates with multi-family blocks of flats outside this oldest part of the city (e.g. Teofilów, Radogoszcz, Doły, Widzew Wschód, Olechów, Zarzew, Dąbrowa, Dąbrowa Zachód, Chojny Zatorze, Kurak, Nowe Rokicie and Retkinia) (figure 2.2). In built-up areas where detached houses dominated, housing density was much lower. Quite a large area of single-family housing is a distinctive feature of the units: Rogatka, Kochanówka, Radogoszcz, Marysin-Rogi, Stoki, Nowosolna, Andrzejów, Górki, Ruda, Lublinek-Pienista, Smulsko, Żłotno and Huta Jagodnica.

The spatial arrangement of the housing stock in Łódź can be compared to a concentric-sector pattern – the central zone, where the majority of dwellings are located (especially in the unit Stare Miasto-Bałuty), from which sectors of strong concentration of post-war multi-family housing spread in various directions (Milewska-Osiecka 2010). Within these sectors, there are five units covering the biggest residential areas in the city, namely: Retkinia (31 300 of dwellings), Teofilów (19 100), Radogoszcz (16 100), Widzew Wschód (17 300) and Chojny Zatorze (11 900). Outside these areas is the majority

of peripherally located residential units of single-family suburban and agricultural buildings (units characterized by less than 1000 dwellings).



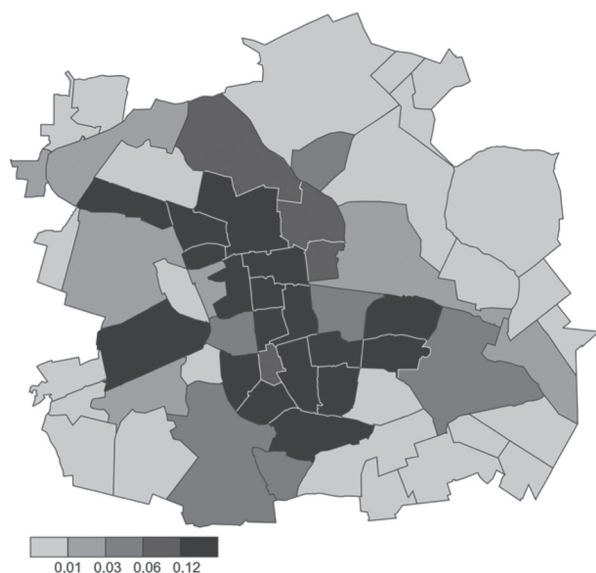
**Figure 2.2.** Residential areas of Łódź by types of buildings

Source: own elaboration based on the *Studium...* (2010)

Data from the National Census of 2002 enabled the presentation of housing density in Łódź at the turn of the 20<sup>th</sup> century (figure 2.3). This density, measured by the ratio of usable floor space of dwellings to total area, indicates a weak inverse relationship between housing density and area of residential units ( $r = -0,25$ ) (Dieciuchowicz 2011, p. 120).

The spatial structure of housing density is characterized by the distinct central zone (ratio above 0.12), expanding from north to south, with radially extending sectors of the largest residential units – Teofilów, Retkinia, Widzew and Radogoszcz. In areas located between the sectors, especially dominated by dispersed single-

-family housing, the density ratios often fall below 0.01. A higher concentration of residential units of this type is found in various, peripheral parts of the city: north-east (Nowosolna, Łagiewniki, Nowe Moskule, Nowy Imielnik, Wilanów, Sikawa, Mileszki, Wiączyń Górny, Sącieszno), south (Górki, Bronisin, Wiskitno, Huta Szklana, Feliksin), south-west (Srebrna, Lublinek, Łaskowice, Chocianowice) and north-west (Sokołów, Zimna Woda).



**Figure 2.3.** Housing density in Łódź

Source: own elaboration based on data from NSP 2002

Most of these units are former rural areas incorporated to Łódź in 1988 (with the exception of Łagiewniki, Sikawa, Górki and Chocianowice). Furthermore, low housing density is also a significant feature of some residential units located closer to the city center (Teofilów Przemysłowy, Park Ludowy, Dąbrowa Przemysłowa).

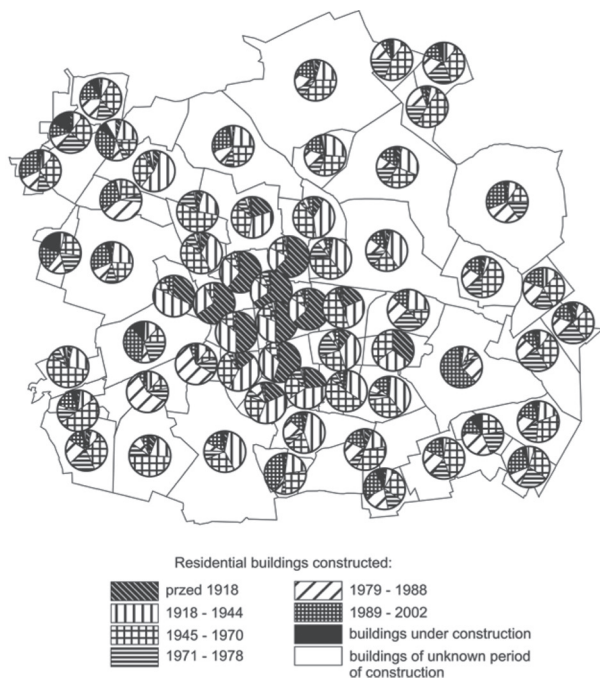
The changes in the size and distribution of housing stock in Łódź, which occurred in the last 20 years, lead on the one hand to the weakening, on the other hand to the strengthening of the observed spatial trends. In recent years, the decrease in the housing stock has affected primarily the residential areas located in the city center, characterized by a large number of the oldest buildings, constructed before 1945 and often largely depreciated as a result of neglected renovations. Reduction of the housing stock has occurred also in some industrial and warehouse districts, while its dynamic growth took place primarily in the peripheral zone, in areas with vacant and attractive building plots, equipped with technical infrastructure and located near green areas (especially the residential units of Olechów, Romanów and Ustronna, where more than 3-fold increase in the number of dwellings has occurred).

#### **2.4. Spatial structure of age and ownership of the housing stock**

Despite major changes in housing development introduced in Poland in the period of transition to reduce the housing shortage, the spatial structure of the age of the housing stock situated within the borders of Łódź has not changed significantly, which is largely due to the small number of newly-built dwellings. Large parts of the city center are still occupied by tenement houses built in the late 19<sup>th</sup> and the early decades of the 20<sup>th</sup> century. A particularly high proportion of old buildings (constructed before 1918) is a typical feature of residential units located in central parts of the city, within the railway track (Fabryczna, ŚDM, Górna Rynek, Centrum, Nowe Miasto, Politechniczna, Zielona, Towarowa) (figure 2.4).

Medium and high blocks of flats, built during the period of centrally planned economy (especially in the 1960s and 1970s) are situated in large but compact residential areas outside the city center (Retkinia, Teofilów, Dąbrowa, Widzew Wschód). Residential administrative units containing large housing estates are also

the sites of new housing development projects (especially Retkinia), however, the largest number of newly completed dwellings is in peripheral units (Olechów, Nowosolna, Ustronna, Huta Jagodnica, Romanów, Kochanówka).



**Figure 2.4.** Spatial structure of the age of housing stock in Łódź

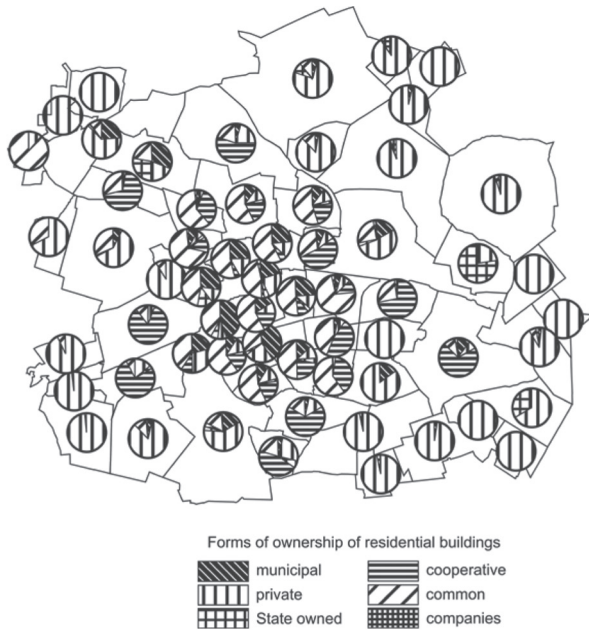
Source: own elaboration based on data from NSP 2002

The development of market economy has stimulated the creation of new forms of ownership of the housing stock. The ownership structure of dwellings situated within the area of Łódź is characterized by large spatial variability, which is perfectly illustrated by the results of the NSP 2002 (figure 2.5).

Private construction is currently the biggest part of the entire housing stock of the city (13% of the total number of flats and 65% of the number of residential buildings) (table 2.2) and it dominates



in the peripheral zone of dispersed, single-family, suburban or rural houses. Particularly typical examples of such areas are residential administrative units: Huta Szklana, Nowy Imielnik, Sądziecno, Sokołów, Wiączyń Górny, Wiskitno Las, Zarzew Przemysłowy and Zimna Woda.



**Figure 2.5.** Spatial structure of the ownership of housing stock

Source: own elaboration based on data from NSP 2002

Municipal housing construction (slightly over 9% of the housing stock), dominated by old tenement houses, is mostly found in residential units located in the central parts of the city (Centrum, Fabryczna, Nowe Miasto, Górna Rynek, Politechniczna, Towarowa and Zielona). A high proportion of dwellings managed by the commune (over 20%) is also found in a few peripherally located units (Kochanówka, Nowe Sady and Teofilów Przemysłowy). New, affordable municipal housing, erected primarily by the Widzew Social Housing

Association, appeared also in some residential units in central or peripheral locations (Centrum, Olechów).

Spatial distribution of buildings belonging to the State, which represent only 1.6% of the housing stock of the city, is characterized by strong dispersion. It also should be pointed out that only in four residential administrative units the share of dwellings owned by the State exceeds 10% of the total number of flats (Felixsin, Mileszki, Teofilów Przemysłowy and Towarowa).

Cooperative construction (accounting for 7.5% of the total number of buildings and 35% of dwellings) is situated mainly in large housing estates, where it is a dominant form of housing ownership. Such a situation exists in some residential units located outside the central zone: Chojny Zatorze, Olechów, Radogoszcz, Retkinia, Teofilów and Widzew Wschód. This form of ownership is also strongly represented in two outlying residential areas of single-family housing – Lublinek-Pienista and Ustronna.

**Table 2.2.** Ownership structure of the housing stock

Specifi- cation	Total	Form of ownership							
		private	coope- rative	municipal	state	compa- ny	social housing assotia- tions	shared	other enteties
Buildings									
Figures	37 066	24 206	2 767	3 387	588	226	28	134	5 730
%	100.0	65.3	7.5	9.1	1.6	0.6	0.1	0.4	15.5
Flats									
Figures	328 161	43 269	115 008	31 368	5 368	1 867	530	1 043	129 708
%	100.0	13.2	35.0	9.6	1.6	0.6	0.2	0.3	39.5

Source: own elaboration based on data from Statistical Office of the Voivodship of Łódź.

In the period of political and economic transformation there was an increase in the number of flats in buildings owned by condo-

miniums.<sup>9</sup> This form of ownership is in 50% or more of the housing stock in the following residential units: Centrum, Fabryczna, Nowe Miasto, Stare Miasto, Towarowa, Zielona, Dąbrowa, Dąbrowa Zachodnia, Doły, Koziny, Kurak, Nowe Rokicie, ŚDM, Widzew Zachód, Żubardź, Romanów (Dzieciuchowicz 2011, p. 127).

Housing belonging to companies and other entities does not represent a significant share of the housing stock of Łódź. Larger groups of buildings owned by enterprises are located in residential areas of: Andrzejów, Koziny, Nowe Miasto, Nowe Moskule, Olechów, Teofilów and Widzew Wschód. However, housing owned by other entities is concentrated in the areas of: Nowosolna, Nowe Miasto, Olechów and Stare Miasto (Dzieciuchowicz 2011, p. 127).

## **2.5. Spatial structure of housing built by particular groups of investors**

### **2.5.1. Cooperative housing**

Housing cooperative is a voluntary and self-governing association of members, conducting economic activity aiming at satisfying the housing needs of its members and their families, by providing structurally separate dwellings or single family houses as well as premises designated for other use to the members.<sup>10</sup> Housing cooperative pursuing its activities acquires the necessary land (ownership or perpetual usufruct), builds houses and apartments in order to transfer the ownership to members, allocates or rents apartments in owned buildings and also renovates them. Funding

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<sup>9</sup> Building having several legal owners found in land and mortgage register. If part or even all dwellings in the building constitute separate properties, certified by a record in land and mortgage register, then the owners of separate dwellings automatically, by force of law, become co-owners of the real property, and in notarial deed on establishing a separate ownership title to a dwelling, the dwelling owner's share in property owned by condominium is specified.

<sup>10</sup> [www.stat.gov.pl/gus/definicje](http://www.stat.gov.pl/gus/definicje).

for these activities comes partly from its own resources, housing contributions and also from bank loans or assistance of the State.

Just as in the socialist economy, so now housing cooperatives still are one of the largest investors in the housing construction sector in Poland. The decrease in cooperative housing construction noted in recent years is due to the fact that construction is mostly funded by members of cooperatives. Despite the enactment of the *Act on Supporting Housing (Ustawa... 1995)*, which allowed the funding of the construction of cooperative tenancy housing from National Housing Fund, a small number of cooperatives has used this opportunity.

In early 2011, there were 2767 buildings owned by housing cooperatives within the administrative area of Łódź. However, there is considerable differentiation in the number of buildings owned by particular coops – the largest cooperatives with over 100 residential buildings are: Chojny, Bawełna, Teofilów, Radogoszcz Wschód, Osiedle Młodych, Zarzew, Łódzka, Bolesława Chrobrego and Retkinia Północ. Altogether, they possess over a half of all cooperative buildings located in Łódź. The group of smallest cooperatives comprises those entities that have less than 10 residential buildings: Lokator, Miejska, Staromiejska, Ustronie, Łódzka Spółdzielnia Środowisk Twórczych, Rogatka and Nauczycielska (Dzieciuchowicz 2005, pp. 69–94).

Data from the Central Statistics Office shows that cooperative housing stock in Łódź comprises a total number of 115 000 flats. The number of flats in particular administrative residential units ranges from 20 in Marysin and Rogi up to 23 800 in Retkinia. Large concentrations of cooperative buildings are mainly found outside the city center, in the following units: Retkinia, Karolew, Widzew Wschód, Olechów, Radogoszcz Wschód and Radogoszcz Zachód, Teofilów-Doły, Zarzew, Dąbrowa and Chojny Zatorze. The largest number of cooperative buildings, reaching up to 400, is located in Retkinia.

The largest areas built up with cooperative housing (over 30 ha) belong to cooperatives such as Teofilów, Chojny, Bawełna, Radogoszcz Wschód and Radogoszcz Zachód, Stefana Batorego, Zarzew,

Retkinia Południe and Retkinia Północ, and Dąbrowa. Altogether, residential areas administered by the mentioned coops represent 58.8% of the total urban space developed by cooperatives. It should also be added that so far cooperative buildings have not appeared at all in the most outlying areas of Łódź, characterized by dispersed detached housing.

Analysis of the distribution of cooperative housing indicates that the housing stock belonging to the individual cooperatives often concentrates in a specific area, limited by streets. However, buildings owned by one of the cooperatives can also be dispersed in the urban area and mixed with other residential buildings (Marszał 1999a, p. 82). Most of the cooperatives (24) operate in areas located in only one administrative residential unit, while the remaining coops operate in 2–4 units.

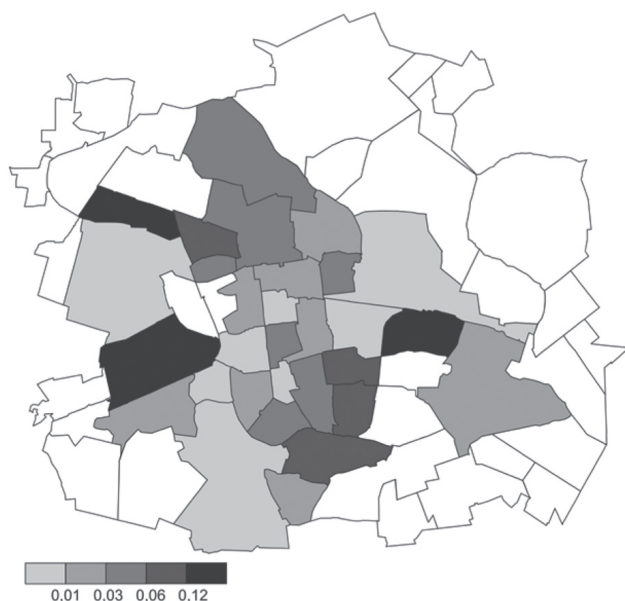
Dispersion of housing stock in different parts of Łódź occurs in the case of 1/4 of the housing cooperatives operating in this city. It takes the form of several groups of buildings, or individual buildings, located in various residential areas (e.g. RSM Bawełna, SM Osiedle Młodych, SM Górna, SM Kielnia, SM Staromiejska, SM Towarzystwo Lokator, SM Twórców, ŁSM) (Marszał 1999a, p. 82). The most dispersed housing characterizes the following cooperatives: Ogniwo (buildings in 14 administrative residential units), Bawełna (12) and Polesie (9).

Cooperative housing is unevenly distributed in the urban space of Łódź – its strong concentration is a distinguishing feature of areas surrounding the inner city, where multi-family residential buildings are located (especially in Retkinia, Widzew Wschód and Teofilów). The city center is characterized by small and highly fragmented areas of cooperative investments, filling the gaps between pre-war rental buildings.

The disparities in spatial development of cooperative housing are confirmed by the differences in the intensity of cooperative housing development in administrative residential units, measured by the proportion of usable floor space of dwellings to the total area of analyzed units (figure 2.6). Exceptionally high intensity ratio,

which exceeds 0.12, occurs in previously mentioned administrative residential units located outside the center of Łódź. In the peripheral parts of the city the intensity ratio usually drops below 0.01 or there is no cooperative housing at all.

High intensity ratios are noted in residential areas administered by the following cooperatives: Łódzka, Śródmieście, Osiedle Młodych, Ogniwo, Górna, Rogatka, Ustronna, Miejska, Towarzystwo Lokator and Żubardź, and it significantly decreases in urban areas owned by cooperatives focused exclusively or partially on the construction of detached houses (Lokator, Mikołaja Reja, Liściasta, Rojna, Ciżemka, Młodzieżowa, Pokój, Pienista and Nauczycielska) (Dzieciuchowicz 2011, p. 156).



**Figure 2.6.** Density of cooperative housing in Łódź

Source: own elaboration based on data from NSP 2002

It is also worth mentioning that in contemporary political and economic conditions, the investment activity of many cooperatives operating in Łódź is limited – many of them have given up the construction of new housing, focusing on the exploitation of existing resources (in the 1990s nearly 2/5 of the cooperatives reduced their activity only to the management of possessed housing stock) (Marszał 1999a, pp. 82–83). At present, only a few of the 41 housing cooperatives operating in the area of Łódź engage in new residential construction. Among the most active cooperatives are Bawełna, Kielnia, Ogniwo and Piaski. New dwellings in Łódź are also constructed by Botanik, Ustronie, Chojny, Ciżemka, Śródmieście, Polesie, Batory, Retkinia Północ, Zagrodniki, Młodzieżowa, Twórców, Żubardź, and Dąbrowa (Milewska, Ogrodowczyk 2006, pp. 90–113).

Just as before 1990, most of the cooperatives focus their entire activity within one city district, or even within one residential area, but a tendency to dispersion of new cooperative developments has been observed in recent years. The reasons for dispersing new cooperative developments are the “battle for customers” by offering them good locations, as well as in the shrinking of urban areas where multifamily housing developments can be located. A phenomenon which previously was marginal and now is becoming more common is construction of infills – new buildings on vacant lots between existing buildings.

New residential buildings are also erected to complement the spatial structure of large housing developments produced in the 1960s, 1970s or 1980s. The new buildings have an interesting architectural form (as a result of discontinuation of the use of large-panel technology), so they enliven the old, often monotonous housing estates. Examples include blocks of flats built by SM Polesie at Retkińska Street or by SM Retkinia Północ in Armii Krajowej Street (figure 2.7) – built on the basis of the reinforced concrete structure with monolithic ceilings and shielded walls of cellular concrete blocks.



**Figure 2.7.** Block of flats built by SM Retkinia Północ,  
Armii Krajowej Street

Source: phot. K. Milewska-Osiecka, A. Ogrodowczyk

The new architectural standards, covering both, the residential buildings themselves (as well as elements of small architecture) and their location on the building lot, enable the creation of specific neighborhoods – small enclaves within the older and partially built up residential areas. It is increasingly common to build “L”- or “U”-shaped multi-family houses to provide free internal space (for playgrounds, squares, parking lots) and create conditions for stronger identification of tenants with the inhabited space (Milewska, Ogrodowczyk 2006, pp. 90–113).

### **2.5.2. Public Building Society (TBS) construction**

The idea behind Public Building Societies is construction of rental housing with rents at reasonable levels. TBSs appeared in the Polish construction market as a completely new category of investors in 1995, with the adoption of *Act on Supporting Housing* (1995). Nearly 3/4 of them was set up as new operators



(47%), while other were formed by transformation (10%) or liquidation (43%) of the Department of Public Utilities, the Department of Housing and the Municipal Houses Board.

According to existing law, TBS have the competence to buy residential buildings, carry out repairs and modernization of facilities, rent commercial spaces located in possessed buildings, administer the housing stock commissioned by other entities, or conduct any other activities related to housing and accompanying infrastructure. However, the main objective of their activity is the construction of rental accommodation. A public housing program in Łódź is implemented by Widzew Public Housing Society (WTBS) Ltd., founded in 1998 by a resolution of the City Council, which was the initiator of converting the budgetary enterprise ZGM Widzew Zachód into a commercial entity (municipality of Łódź is the overall shareholder). The society's housing developments are in the area of Janów (neighborhood of Jagienki Street) (figures 2.8–2.9), Olechów and in the city center, in Nowa Street (figure 2.10) and Nawrot Street (figure 2.11).



**Figure 2.8.** Residential buildings completed by WTBS at Jagienki Street No. 5/7

Source: phot. K. Milewska-Osiecka, A. Ogródowczyk



**Figure 2.9.** Residential buildings completed by WTBS at Jagienki Street No. 9/11

Source: phot. K. Milewska-Osiecka, A. Ogrodowczyk



**Figure 2.10.** Residential building completed by WTBS at Nowa Street No. 30

Source: phot. K. Milewska-Osiecka, A. Ogrodowczyk



**Figure 2.11.** Residential building completed by WTBS at Nawrot Street No. 18/20

Source: phot. K. Milewska-Osiecka, A. Ogrodowczyk

The housing projects carried out in Nawrot Street (Nos. 14 and 18/20) are especially interesting, as they have been the first implementations of the local program of revitalization of inner-city and postindustrial areas adopted by the City Council for 2004–2013. In total, 172 flats and 15 commercial premises on ground floors of residential buildings have been provided here (Milewska, Ogrodowczyk, 2006, pp. 90–113). Completed buildings have interesting architectural form, which has been achieved by using the mixed technology of construction. TBS's investment area is well supplied with infrastructure – water supply and sewage system, central heating, gas and energy, and transportation.

### **2.5.3. Construction designated for sale or rent**

Until 1990, the State and housing cooperatives were the main investors in the residential construction sector. In contemporary economic conditions this role is being taken over by developers, which are

private entrepreneurs involved in the process of mobilization and coordination of production factors in the housing sector. In Poland, enterprises operating in this area of economic activity were often formed on the basis of transformed real estate agencies or institutions of former housing cooperatives.

Developers operate on both sides of the property market – on the one hand they purchase land and on the other they sell flats in residential buildings. However, some differences can be noticed in terms of the forms of their activity in Poland and e.g. Western Europe. In the developed countries, real estate developers mostly erect residential buildings using their own resources, supplemented by credit, and then sell completed units. In Poland, it is common practice for customers to pay installments for an apartment under construction, which means that the financial risk of investment is passed on to them. After obtaining the building permit most developers present their housing project: the design of the building, layouts of apartments, their standard and equipment, price per 1 sq. m of apartment and the planned completion date. They either carry out construction work by themselves, or contract their execution to other construction companies.

The development of housing built by developers has been noticeable in Łódź since the late 1990s, when small, high standard apartment blocks were constructed, intended primarily for wealthy individuals. However, the housing market in Łódź is not easy for developers – much less residential development is feasible here than in Warsaw, because residents of Łódź are much less affluent than those living in the capital city. Moreover, the labor market in Łódź is limited, so not many inhabitants can really afford to buy a new apartment.

It also should be noted that there are no companies in Łódź which are able to complete residential projects just with their own money – this fact, taking also into account the careful attitudes of banks, initially reluctant to give credits for such risky investments, explains the difficulties in the development of this housing sector in Łódź.

In 2008 about 20 developers were operating in the administrative area of Łódź, investing in construction of both multi-family apartment blocks (in groups, mainly in peripheral housing estates, or as individual buildings in the city center) and single-family detached and terraced houses.

Investors have the option of purchasing land for multi-family housing in the city center, but these are predominantly small plots,<sup>11</sup> so the number of newly built housing units in the central part of Łódź is rather small. The location of new apartment blocks built by developers in inner city is characterized by filling virtually every undeveloped site where the land use plan permits the residential function.



**Figure 2.12.** Apartment block completed by Exbud Skanska at Adwokacka Street No. 7/13

Source: phot. K. Milewska-Osiecka, A. Ogrodowczyk

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<sup>11</sup> Residential developments in the city center are conducted by: MAXBUD Development (Struga Street), UNIBUD (Nowa Street), STUDIO3 (Nawrot Street) and J. W. Construction (Tymienieckiego Street).



**Figure 2.13.** Residential building intended for four households, completed by Unibud at Bilewiczówny Street No. 5

Source: phot. K. Milewska-Osiecka, A. Ogródowczyk

In other parts of the city where developers have operated in recent years (especially in the outer zone – outside the railway truck), their investments are mostly located near areas of single or multi-family housing, but also in the middle of housing estates built in the 1970s and 1980s. New buildings vary widely in respect of specifications and architectural form (figures 2.12–2.13) (Milewska, Ogródowczyk 2006, pp. 90–113).

Analysis of the distribution of housing designated for sale or rent in the area of Łódź has identified several distinct clusters forming housing estates of multi-family buildings of varying heights (the largest developments of this type are in such administrative residential units as Olechów, Retkinia, Kochanówka and Radogoszcz) as well as dozens of individual scattered investments, which predominate in downtown Łódź and emphasize the former development axis of the city in the north-south direction (figure 2.14). Other districts of the city where developers have operated in recent years are: Teofilów, Ustronna, Chojny Zatorze, Fabryczna (over 100 units) as well as Żłotno, Kurak, Marysin-Rogi, Łagiewniki, Stare Miasto-Bałuty, Żubardź, Doły, Zielona, Centrum, Zarzew and Dąbrowa.



**Figure 2.14.** Housing provided by developers in Łódź

Source: own elaboration based on data received from developers

#### 2.5.4. Municipal housing construction

After the Second World War, bad housing policy resulted in inadequate development of municipal housing in Łódź and led to significant degradation of the existing housing stock. Municipal construction was mainly carried out to provide substitute accommodation to persons evicted from buildings intended for demolition and satisfied the housing needs of the society only to a small extent. Municipal housing was located, on a limited scale, in the housing estates of multi-family blocks of flats (Dąbrowa, Koziny Wschód, Kurak B, Podgórna, Wilcza-Gołębia, Wielkopolska B,

Doły Południe, Chojny Zatorze, Inflancka Południe and Czerwona-Świerczewskiego). Apart from new construction, modernization of some communal tenement houses located in the city center was carried out (including the following streets: Więckowskiego, Hutor, 1 Maja, Żeligowskiego) (Marszał 1999a, pp. 73–74).

At present, municipal housing plays an important role in the shaping of housing economy, living conditions and the spatial system of Łódź. In 1990, along with the reform of the country's economic system, the municipality of Łódź took over from the Treasury over 133 300 flats and today it is known to be the largest owner of tenement housing among urban centers in Poland – the municipal housing stock makes up 38% of flats located in Łódź. And although its role in the city's economy clearly decreased in recent years as a result of progressing privatization, municipal housing still generates serious problems due to the low standard and poor condition of the buildings (effect of long-term inappropriate housing policy), and inadequate spatial development of their neighborhood.

Within the administrative area of Łódź there are about 6600 residential buildings representing various forms of communal property, of which 3400 buildings belong solely to the municipality (including condominiums and the State property). Data from the 2002 Census show that municipal buildings, mostly in poor technical condition, are located mainly in the city center (figure 2.15), impacting heavily on its negative image, often generalized for the entire city. Large numbers of municipal dwellings are the distinguishing feature of the following administrative residential units: Stare Miasto-Bałuty, Nowe Miasto, Zielona, Fabryczna and Dąbrowa Zachód.

The highest density of municipal housing is characteristic of residential areas in the center of Łódź (Nowe Miasto, Zielona, Centrum, Górny Rynek, ŚDM and Fabryczna), while the lowest density (taking into account only those administrative units where municipal buildings exist) is in those located in the periphery (e.g. Łagiewniki, Sikawa, Stoki, Mileszki, Olechów, Ruda, Żłotno).

In the 1990s, spatial concentrations of new communal housing in Łódź was observable. With the exception of individual buildings



erected in the city center, new municipal construction appeared mainly in two parts of Łódź: in the neighborhood of Liściasta Street and in Olechów housing estate (residential areas of Olechów and Janów Zachód).



**Figure 2.15.** Municipal housing in Łódź

Source: own elaboration based on data from NSP 2002

The concentration of construction activities in Olechów is the result of good technical infrastructure in this area and good transport connection to the city center (moreover, an access road to the highway will pass nearby in the next few years). In addition, this area was also characterized by favorable ownership structure of land – 90% of plots belonged to the State Treasury, so their communalization did not involve major problems (Marszał 1999a, p. 77). In the neighborhood of Liściasta Street, which is also well equipped with technical infrastructure, new municipal blocks of flats were built next to a cooperative housing estate. One more advantage of both these locations is their proximity to green areas.

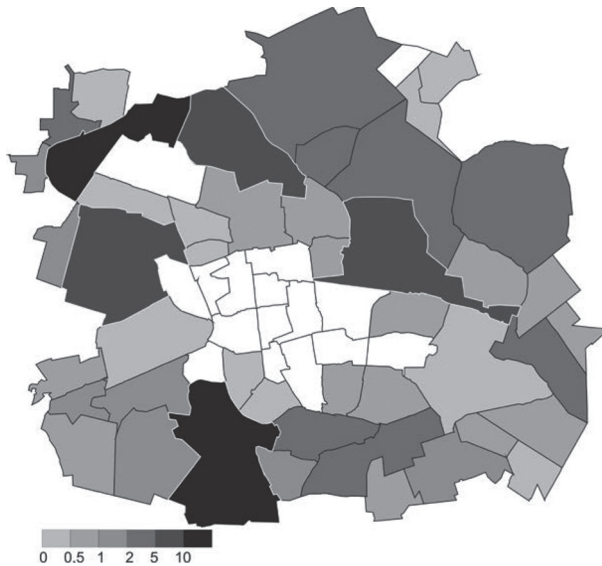
New municipal housing estates in Łódź differ considerably from this kind of investments carried out in former periods, which is visible both in their infrastructural facilities (parking lots, playgrounds for children, facilities for disabled persons) and the layout of apartments.

Before 1994 small and medium flats (with average usable floor space of 53–62 sq. m) dominated (so-called M-2, M-3 and M-4), while in the second half of 1990s M-4 became a predominant type of flat (approximately 50% of the total number of dwellings). Large flats, too, were constructed (M-5 and M-6) at that time. Construction technology was also changed – the large panel technology (Dąbrowa 82 and W-70 Systems) was replaced by mixed technology, where the supporting structure is made of prefabricated elements, and the walls are made of bricks (e.g. in residential area of Janów) (Marszał 1999a, p. 79). These data indicate substantial qualitative change in the municipal housing construction taking place in Łódź in recent years.

### **2.5.5. Private housing construction**

According to GUS data, at present there are 24 206 private residential buildings within the administrative area of Łódź (mostly single-family detached houses, as well as semi-detached and terrace houses), which makes up 65% of all residential buildings, but at the same time, only 13.2% of the total number flats).

The largest proportion of this type of housing is in the residential units located in the periphery: Kochanówka, Ruda (over 5% of their areas is taken up by residential function in the form of single-family housing), as well as Radogoszcz, Żłotno and Stoki (2–5%). A significant share of this type of buildings is also characteristic of units such as: Zimna Woda, Łagiewniki, Marysin-Rogi, Sikawa, Nowosolna, Andrzejów, Chojny Zatorze and Górki. On the other hand, the central zone of the city is almost entirely devoid of single-family construction (figure 2.16).



**Figure 2.16.** Proportion of single-family housing area in total area of each administrative residential unit of Łódź (2007)

Source: own elaboration based on Groeger (2011)

Taking into account the physiognomy of buildings, we can find within the city limits almost all types of private residential construction, from pre-war buildings with classic “urban” forms, through so-called *Polish cubes* (rectangular blocks devoid of any architectural embellishments, unfortunately very common in the socialist period), to the newest buildings, presenting a wide range of architectural styles. For example, 150 new residences (villas) were inventoried in Łódź in 2007 (figure 2.17), among other specific types of detached houses.

The spatial distribution of areas with new residences is related to the availability of land for single-family housing – residential buildings of this type are located mainly on the outskirts of the city

(e.g. Romanów, Łagiewniki). However, the sites for new villas have not been chosen in a planned manner – their location is often unfavorable due to poor development of their neighborhoods (usually older single-family housing). Modern residences are not located in the main streets, but hidden among the greenery, often behind tall fences (Groeger 2011, pp. 83–98).



**Figure 2.17.** New villas in the residential units of Łódź, distinguished by domination of single-family housing

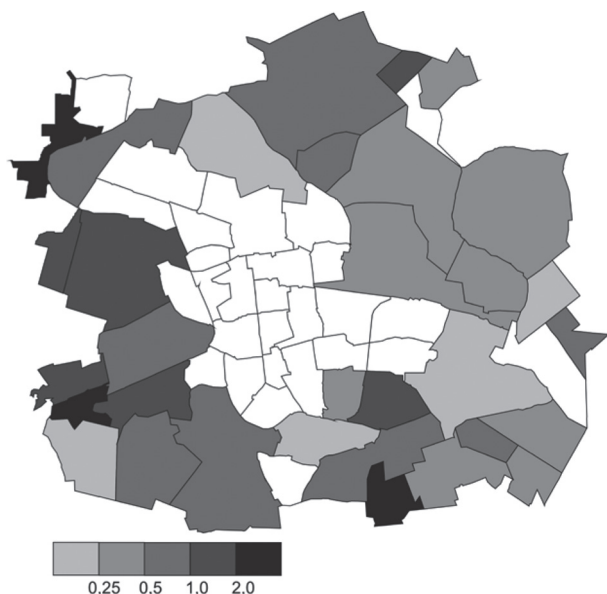
Source: own elaboration based on Groeger (2009)

Areas of new residences account for only 0.6% of the total area within the city limits (Groeger 2009a, b). Analysis of spatial distribution of this type of residential investments in Łódź shows that their greatest concentrations are in Polesie and Bałuty.

Taking into account the location of Las Łagiewnicki and Julianów (regarded as prestigious since before the Second World War) within the district of Bałuty, it is perceived as a favorable residential area, while Polesie is a new and rapidly developing district, with residen-

tial buildings located on relatively small plots (about 3000 sq. m) (Groeger 2011, pp. 83–98).

Residential buildings on large plots are mainly erected in Żimna Woda, Bronisin and Lublinek, which represent a small part of the city area, but the density of residences is the highest (figure 2.18). Higher density ratios are also a characteristic feature of other peripheral units: Nowe Moskule, Lublinek-Pienista, Srebrna, Żłotno, Huta Jagodnica, Dąbrowa Przemysłowa (Groeger 2011, pp. 83–98).



**Figure 2.18.** Density of new villas in administrative residential units of Łódź (2007)

Source: own elaboration based on Groeger (2011)

New residences are usually two-storey buildings with ground floor and usable attic space, predominantly in mansion style. However, the newest villas are frequently distinguished by modern form with irregular shapes and fragmentation of the structure.

## 2.6. Conclusions

Present-day Łódź is not a uniform urban body, but a collection of many settlements of different origins, historical development, morphological features and functions. This undoubtedly has an impact on the spatial structure and density of different types of residential buildings erected in successive years within the city limits by various investors. However, general features of the spatial structure of housing are basically similar in Łódź and in other large cities of Poland, or other CEE states. Within the present limits of Łódź the following areas can be distinguished: (1) densely built up central zone with a large proportion of devastated or neglected buildings, (2) outer zone with less intensive development and chaotic urban structure, with the presence of industry, warehouses and undeveloped land (agricultural and fallow land, public greenery), (3) sectors of housing estates with multi-family blocks of flats, (4) outer, suburban zone, with housing estates of detached and semi-detached houses, or with scattered single-family housing, agricultural land and municipal forest.

At the end of the 20<sup>th</sup> century, the proportions between the scale of cooperative (or owned by the State) and private residential construction have changed significantly in Łódź, as in other large Polish cities. The increasing role of private investors in the housing construction sector results in dispersion and decrease in the scale of undertaken projects, but also in greater diversity of the forms of residential buildings, associated with different requirements and abilities of investors.

**Bohdan Posatskyy**

Lviv Polytechnic National University

### **3. REVITALIZATION OF URBAN SPACE OF LVIV**

#### **3.1. Introduction**

Lviv, starting from its foundation in the middle of the 13<sup>th</sup> century (first record in 1256, was given the Magdeburg right in 1356), was the capital of Galicia-Volyn Principality (Kievan Rus, 13<sup>th</sup>–14<sup>th</sup> century), Ruthenian Voivodeship (Polish Kingdom, 1387–1772), the province of Galicia and Lodomeria (Austria-Hungary, 1772–1918), the West Ukrainian National Republic (1918), and the main city of Lviv province (Poland, 1919–1939) and Lviv region (from 1944 until now) (Isayevych ed. 2006, pp. 7, 8, 56).

Over the centuries Lviv developed as a commercial and administrative center; a city of culture, education and science, and in the second half of the 20<sup>th</sup> century, in the USSR period, it also became an industrial center. The number of residents doubled during that time; in 1959 the city had 411 000 inhabitants, while in 1989 it had the greatest number of residents in its history – 787 000 people (816 000 with the suburbs) (*Postup* 2003). The area of the city was 155 sq. km at that time. In 2006 it had a population (with suburbs) of 762 000 people, and occupied 171 sq. km (Matkovskyy ed. 2007).

Lviv has always been a multinational city, whose inhabitants included, over centuries, Armenians, Germans, Jews, Poles, and in the second half of the 20<sup>th</sup> century – Russians.

In the 20<sup>th</sup> century Lviv did not suffer significant war damage and today the historic downtown is a unique large urban architectural and landscape complex created during the 13<sup>th</sup>–19<sup>th</sup> centuries.

Cultural heritage protection requirements significantly affect the current problems of the city's urban development because of the large territory and a large number of objects – monuments of culture, planning and architecture.

### **3.2. General background**

Revitalization in the present urban development context often concerns a part of a city or a complex of buildings that as a result of social and economic changes and other factors have lost their primary function and purpose. In this sense, revitalization means measures in the field of urban planning, public policy and economics, aimed at improving the functional and aesthetic characteristics of an object and thus creating conditions for improving the quality of life in the revitalized area or complex of buildings.<sup>1</sup>

Revitalization is a multifaceted task and may include several components: upgrading, regeneration, rehabilitation, reconstruction, reclamation, repair, renovation and restoration. Today the term “revitalization” is in many cases inappropriately used instead of one of the terms denoting process components.<sup>2</sup>

The transition to market relations and the abolition of import restrictions in Ukraine since the regaining of independence in 1991 has triggered rapid development of the building materials market and home improvement items. The privatization of housing and other buildings started, and it became possible (with certain limitations) to privatize land.

The opening of borders has enabled specialists in architecture and the general public to see with “own eyes” the various opportu-

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<sup>1</sup> <http://pl.wikipedia.org/wiki/Rewitalizacja>.

<sup>2</sup> <http://www.rewitalizacja.krakow.pl/index.php?expMen=10&loc=1&LANG=PL&MENU=I>.



ities and ways of preserving and adapting valuable historic architectural environment to the needs of modern life.

Before 1992, when Ukraine did not have its own legislative and regulatory framework for city planning, the regulations from the Soviet times were applied. In 1992, urban planning and architectural standards were issued, which, however, in most cases repeated the contents of the earlier documents and did not reflect the new realities of life (*Derzhavni Budivelni Normy* 1992). In addition, there was no comprehensive system of laws for the regulation of architectural and urban management issues, which negatively affected the development of towns and villages. The situation changed only slightly at the beginning of the 21<sup>st</sup> century, when a number of laws relating to architecture and urban planning were adopted.<sup>3</sup>

Ukrainian legislation does not include separate provisions directly relating to revitalization of urban space. Identification of main urban areas and the scope of revitalization activities are determined by the master plan of a city. The composition of the master plan includes a historical and architectural reference plan which contains information about major historical periods of the city, places of historical and architectural interest, and buildings having artistic values.

The chapter also identifies areas of historical and architectural heritage and the established modes of building within these areas. Areas are defined in the city where priority is given to restoration and modernization and new construction is limited. It should be noted that the basic city plan for historical and cultural conservation was drawn up almost three decades ago and requires significant updating.

The first master plan for the city in independent Ukraine was completed in 1993. However, this document only formally could be the basis for further development of Lviv, because it assumed that industry would be the foundation of future growth of the city. After less than a decade it became apparent that the master plan of 1993

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<sup>3</sup> Ukrainian laws: *Pro Planuvannia i Zabudovu terytoriy* 2000; *Pro Okhoronu Kulturnoyi Spadshchyny* 2000; *Zemelnyy Kodeks Ukrainy* 2001; *Spysok Istorychnykh Naselenykh Misc Ukrainy* 2001.

should be updated. In 2002 the *Concept of the Development of Lviv* was published. It considered the development of industry (high-tech), trade and market infrastructure, tourism, culture, science and education as basis for urban growth. As regards spatial development strategy set out in the Concept, it repeats the thesis of evolutionary development of the street network and “transformation of the predominantly radial system”, subject to “sectoral development” with the concentration of service functions in the central zone (Dubyna 2002, pp. 8–9).

The current master plan for the city was adopted in 2010 and covers the period until 2025. The master plan does not envisage substantial population growth in the city, but projects a slight increase by incorporating neighboring villages located near the suburban ring road.

Two factors are taken into account in this document, that are important for the city’s development in the new environment: A – geographical location at the intersection of European overland routes, B – historical and cultural potential (material and spiritual). The first advantage operates in various forms throughout the city’s lifetime. The second value grows, in economic and cultural terms, with globalization (the formation of the European Union), as location of the city on the border with EU member states plays the crucial role (Posatskyy 2003, p. 32).

The master plan provides for further development of the polycentric planning scheme of the city center. To three sub-centers projected in previous master plans are added: a “commercial business quarter” in the northern sector of the city, a commercial and recreation complex in the western part of the city and two sub-centers in the southern part. In the past, the sites of these planned objects fulfilled commercial function, so we can assume that in this way major revitalization of former industrial areas is foreseen.

The historical urban area given the protected status is the central part of the city, limited by rail crossings in a kind of quadrangle: Pidzamche station (in the north), the main railway station (in

the west), Persenkivka station (in the south), and Lychakiv station (in the east).

The beginning of practical measures for revitalization of city space in the second half of the 20<sup>th</sup> century was the creation in 1975 of the National Historical-Architectural Reserve over an area of 120 ha (Plikhivskyy, Dac 2005, p. 37). It consisted of three functional departments which dealt with protection and exploitation of architectural monuments, scientific study of the monuments, and organization of museum exhibitions. It should be noted that it was in Soviet times, when it was believed that museum is the main function of the architectural monument.

For example, a museum of ancient books was opened in the Church of St. Onufry; a museum of the history of religion and atheism operated in the Dominican Church; the Church of Snowy Mary housed a Museum of Photographic Art; in the Carmelite Church it was planned to establish a museum of architecture, and in the Bernardine Church – a museum of wooden sculpture. This use of monuments was possible because the majority of religious buildings of the city were closed, and real estate was owned by the state.

After 1991 there was an attempt to expand the boundaries of protected areas of the city. A Department of Historical Environment Protection was formed in 1992. The new department was incorporated into the structure of Lviv City Council's Office of Urban Development, Architecture and Housing. An area of 3500 ha was designated by the City Council as historical and cultural reserves (Plikhivskyy, Dac 2005, p. 40).

The oldest part of the downtown area of 120 ha (i.e. territory that was within the state historical-architectural reserve since 1975) was entered in 1998 on the World Cultural Heritage List. It was emphasized that "Lviv is the only city in Ukraine that has fully preserved medieval layout, composition, characteristics and urban landscaping. 2000 monuments were designated as connected with the history of the establishment and development of the city. These are samples of nearly all styles and trends in construction from the 13<sup>th</sup> to the 20<sup>th</sup> century. They create a unique architectural and

landscape ensemble” and reflect the historical stages of the urban environment formation (Mohytych et al. 1997, p. 38).

Somewhat later, in 2003, the City Council decided to enlarge the historical protected areas in the central part of the city from 120 ha to 875 ha. In addition to the medieval city (as it was before) was incorporated the territory that was occupied by the city in the 17<sup>th</sup>–18<sup>th</sup> centuries (*Postup* 2003). This is an area with the concentration of Lviv’s main architectural monuments and cultural institutions, most attractive for tourists, especially from the eastern regions of Ukraine and Poland. In 2005, the City Council identified the borders of control zone and control development outside the historic section of the city, which is similar to that designated as protected area in 1992.

Thus, over the past decades a number of historical and architectural heritage zones were designated in the city. However, international practice shows that the effective protection of the historic environment can only be realized when there is a comprehensive program of urban development, taking into account current and future needs of urban communities on the one hand and the requirements of preservation on the other, and city residents are engaged in the implementation program.

For this purpose, Lviv City Council adopted in 2011 the *Integrated Concept of Downtown Area Development*, which covers the area bounded by the railway track on the north side, Dzherelna and Stefanyk streets in the west, Petrushevych Square on the south side and the green areas of the High Castle, Korolenko and Filatov streets in the east. It is important that this document is the basis for annual budget planning and allocation of national and international funds. In the integrated development concept are defined the measures and projects for the following thematic groups: Cultural Heritage and Housing, Public Space, Transport and Technical Infrastructure of the City, Tourism and Culture, Economy and Retail Trade, and Education and Social Issues.<sup>4</sup>

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<sup>4</sup> <http://www.city-adm.lviv.ua>. (*Intehrovana koncepciya rozvytku centralnoyi chastyny Lvova* 2011).

The *Integrated Action Program* describes all important activities and projects to develop the historical part of Lviv during the next 10 years. There are different projects that are under implementation, and short-term, long term and medium duration events, projects and ideas must be implemented by the City Council or other community organizations and stakeholders in the field.

The current situation as regards the revitalization of city space can be considered as comprising three components: A. Historical core of the city (the territory included in the World Cultural Heritage List); B. Downtown area (covered by the *Integrated Concept of City Centre Development*); C. Median zone (Historic area).

### **3.3. Area A. The historic core of the city**

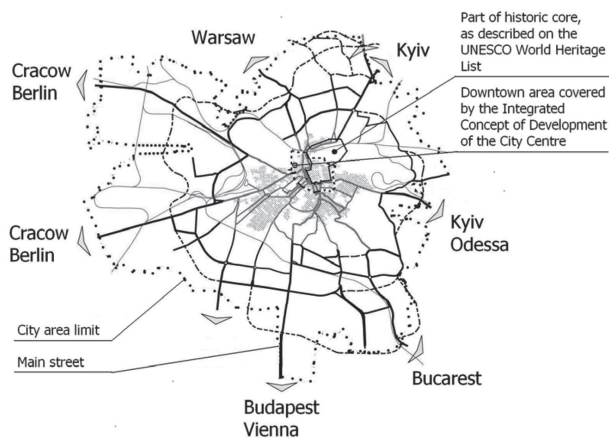
The historical center of Lviv had very densely built living quarters and there was no vacant land in its territory.

State monopoly in the Soviet economy inhibited the development of trade and services. Many former commercial premises (to 1939) on ground floors of historic buildings were converted into apartments or given to various institutions. There is no need to explain that such uses did not contribute to the preservation of architectural interiors. All this led to a situation where the historic urban structure was used inefficiently due to political and economic constraints – the historical part of the city was “devoid of vitality”.

However, while almost all real estate was owned by the state and it was believed that the main objective is to maintain the outer appearance of buildings and use them for culture functions. Therefore, museums were located in 16<sup>th</sup>–18<sup>th</sup> century palaces in Rynok Square, art exhibitions in 14<sup>th</sup>–17<sup>th</sup> century Church of St. John the Baptist in Stryi Rynok Square, research institutions in the 19<sup>th</sup> century Potocki Palace, and concert halls or museums were arranged in church buildings (17<sup>th</sup> century Church of Mary Magdalene, 17<sup>th</sup> century Dominican Church, 14<sup>th</sup>–17<sup>th</sup> century Church of St. Onufry).

Restoration of economic freedom in 1991 and collapse of large enterprises in Lviv (built after 1945) led to rapid development of the service sector and trade in the center of the city of Lviv. Services and trade returned to ground floors of houses, and in summer many cafes occupied outdoor space in old streets. Restoration of facades and interiors of historic buildings began by private owners of shops, cafes, bars, restaurants and other establishments.

This forced city authorities to restrict transit traffic to a minimum in regular planned historic downtown around the Rynok Square and turn it into a pedestrian zone. The composition of this zone includes the Rynok Square and Halytska, Krakivska, Serbska, Ivan Fedorov, Staroyevreyska, Braty Rohatyntsi, Virmenska, and other streets.



**Figure 3.1.** General layout of Lviv

Source: own drawing

Based on the new socio-economic conditions, the city government in 1995 announced a competition for the *Concept of Reconstruction, Restoration and Functional Arrangement of the Central Part of City Streets within Horodotska-Kleparivska-railway and Zamkova Street*.



**Figure 3.2.** Perspective of Lviv historic and architectural reserve  
Source: drawing by Yuryi Dubyk; Schular (ed.) (1997)

The winner became the state institution Mistoproekt, second place – state institute Ukrproektrestavratsiya (State Institute of Conservation and Restoration), and third place – Urban Planning Department, Lviv Polytechnic National University.

The competition territory encompassed the northern part of the city core area which, in turn, was divided into two parts (eastern and western) by Chornovil Avenue. The eastern part of the territory (at the foot of the High Castle) is the historic city center.

Mistoproekt focused on solving transport problems and increasing park areas in the city center and did not envisage substantial reconstruction activities in the historical town center. To improve access to the park for visitors to the High Castle, it was proposed to connect it with the Staryi Rynok Square by a cable-way.

Similar aspects were considered in the project of the Town Planning Department of Lviv Polytechnic National University. It was proposed to create urban freeway on-site railway that by encircles the projected area on the north side (*Centr Lvova. Konkurs* 1997, p. 10).

More problems connected with revitalization of the historic urban environment were considered in the proposal of Ukrproektrestavratsiya. It was noted that the eastern part of the competition area “has exceptionally valuable archaeological and cultural layer and a relatively well-preserved medieval planning structure”. However, buildings from different periods often are not in harmony with each other.

Accordingly, it was proposed in the project to preserve, reproduce and complete construction in the “historically recorded parcelation”, to create conditions for exhibiting archaeological material and to restore the saved attractions (*Centr Lvova. Konkurs* 1997, p. 12).

In the 1970s was restored one of the oldest surviving churches in Lviv – Church of St. Onufry, founded in the 13<sup>th</sup> century, located near the High Castle. Then a museum of printing was opened in the church. It was associated with the name of Ivan Fedorov, the first printer, who was buried in 1583 at the cemetery of Onufrievskiy monastery.

The sacred function was restored in the church and monastery in 1990 and at the same time work started on restoration of the monastery complex, which was successfully completed at the beginning of the 21<sup>st</sup> century.

The museum function is still preserved in the 14<sup>th</sup> century church (the oldest Latin church of the city), located on the east side of Staryi Rynok Square. In the course of comprehensive restoration in the late 20<sup>th</sup> century, random layers were removed from the facades, revealing authentic pieces of interior arrangement.

Apart from museums and exhibitions numerous private galleries are run in the historical center, such as “Dzyha”, “Icons Art”, “Primus” or “Zelena Kanapa”.

Within the historic city center the Rynok Square, with residential buildings from 15<sup>th</sup>–18<sup>th</sup> centuries, is one of the main elements. These buildings are now partially used for housing, ground floors are traditionally occupied by trade and catering establishments, and several buildings from the early 20<sup>th</sup> century are functioning as museums.

After restoration in 2005 of the Bandinelli Palace built the 16<sup>th</sup>–18<sup>th</sup> centuries (east side of Rynok Square, No. 2), an exposition of historical treasures from the collection of the Lviv Historical Museum was opened in the basement of a building in which a tourist information office operates. During the restoration work the supporting structures of the building were strengthened, a modern heating system was installed, and stone elements of the facade as well as interior decoration were restored. On the east side of Rynok



Square restoration work is being carried out in the 16<sup>th</sup> century Renaissance palace Blackstone House (No. 4), Korniyakt Palace (No. 6), 18<sup>th</sup> century Lubomirski Palace (No. 10), where an exhibition of furniture from the Museum of Ethnography is held, and in the house at number 24 (on the west side), where the exhibits of the Lviv History Museum are kept. In the Lubomirski Palace the restoration and modernization work started in 2011, with the aim of adapting it to modern demands of museum exhibitions.



**Figure 3.3.** Stone figures of teacher and students before the Museum of the “Lviv Dame” in St. John the Baptist Church

Source: phot. B. Posatskyy

On the south side of Rynok Square, on the corner of Ruska and Serbian streets, there are compositionally linked three-storeyed 16<sup>th</sup>–18<sup>th</sup> century buildings. In 1991 a house in disrepair was transferred to Lviv Bank for repair and reuse. Gothic parts of walls and stone frame windows and doors were restored, and the decorative stucco was renewed in the upper floors. After the restoration and modernization it became in 1998 the main office of Lviv Bank (Rybenchuk 1999, p. 7).

Several banks are operating in Rynok Square in adapted premises (formerly there were trade institutions) in the ground floors of buildings on the southern and western sides of the square.



**Figure 3.4.** The Bandinelli Palace and the Blackstone House on the east side of Rynok Square

Source: phot. B. Posatskyy

Lviv traditionally belonged to cities with developed financial activity and after transformation in 1991 it caused the construction of new buildings for offices and banks. A 5-storey Business Center building was erected on the south side of Staryi Rynok Square in place of a building destroyed during the war. The construction of this center was accompanied by protests from archaeologists and historians who argued that it disrupts the cultural fabric of the city.

There also were debates caused by construction in 2001 of a new building for Ukrsochbank on the eastern side of Mickiewicz Square, in place of removed 19<sup>th</sup> century buildings. Architectural forms of new buildings are aggressive and are in contrast with the surrounding architectural environment. The discussion around this building resulted in a situation that a neighboring site where a 19<sup>th</sup> century house was demolished remains undeveloped.

The historic centre of the city attracts more and more tourists from Ukraine and from other countries, with tourists from Poland dominating among other visitors. In this part of the city it generally is not possible to build new hotels, which is why investors respond to market demand by conversion of old residential houses into hos-

tels and hotels. For example, some hostels appeared in Ruska and Pavlo Berynda streets, hotel “Leopolis” in Teatralna Street, “Reikartz Medievale” in Drukarska Street, “Viden” in Ivan Pidkova Square, or “Natalia-18” in Kniaz Osmomysl Square.



**Figure 3.5.** Office of Lviv Bank

Source: phot. B. Posatskyy



**Figure 3.6.** Office of Ukrsochbank

Source: phot. B. Posatskyy

Thus, the existing historic buildings generally maintained their appearance, and their interiors have been restored (in accordance with archival documents) or modernized. It should be noted that all the technical systems and installations meet modern standards. Thanks to the high level of restoration and repair works in 18<sup>th</sup>–19<sup>th</sup> century houses in Teatralna and Shevska streets a five-star hotel “Leopolis” was opened.

Traditionally, the ground floors of buildings in the historic city core were occupied by institutions of trade and catering. After 1991 there was a rapid increase in the number of such establishments, especially restaurants, bars and cafes. For the purposes of these institutions ground floors and also basements are being adapted, so during the last decade a whole “chain” of bars and cafes appeared in such streets as Braty Rohatyntsi, Valova, Halytska, Krakivska, Virmenska, Serbska and Staroyevreyska. Some of them occupy the scenic patios of historic buildings, such as “Kilikia” and “Mons Pius” in Virmenska Street.



**Figure 3.7.** Hotel “Leopolis”

Source: phot. B. Posatskyy

In summer time dozens of these establishments take out tables into the streets and arrange summer terraces under umbrellas. Examples are restaurants “Kniazhyi Kelych” and “Viden” in Svoboda

Avenue, where tables are near the reconstructed towers and fragments of 15<sup>th</sup>–17<sup>th</sup> century city walls, and summer cafes at Rynok Square. However, it should be noted that in some narrow streets (Serbska, Braty Rohatyntsi, Krakivska) summer terraces for tables impede pedestrian movement, let alone travel in emergency situations (ambulance, fire).



**Figure 3.8.** Courtyard of restaurant “Mons Pius”

Source: phot. B. Posatsky

It often happens that during repair works in old houses wall paintings and other details of historic interiors are revealed. For example, cafe “Fresco” in Krakivska Street got its name from the 17<sup>th</sup> century frescoes discovered on the walls and ceiling in the course of repair. In addition, several frescoes by Bruno Schulz were reproduced in natural size on the walls of the summer terrace “Pid Zolotoyu Rosoyu” in Staroyevreyska Street.

At the beginning of the 21<sup>st</sup> century new elements appeared in the streets and squares of the medieval city: outdoor sculptures and pointers for tourists. The first were stone sculptures placed in Rynok Square in the 1990s. Newer outdoor sculptures made of bronze depict well-known figures of European culture, which at one time were in Lviv. These natural size bronze figures include writer Leopold Sacher-Masoch in Serbska Street, the inventor of kerosene lamps Ignatius Lukashevych in Virmenska Street, the Brave Soldier Schweik

in Ivan Pidkova area, and primitivist artist Nicephorus Drovniak in Museum Square. Numerous tourists always gather near these figures and take photos.



**Figure 3.9.** Fresco in open terrace of restaurant  
“Pid Zolotoyu Rosoyu”

Source: phot. B. Posatskyy



**Figure 3.10.** Figure of Leopold Sacher Masoch  
in Serbska Street

Source: phot. B. Posatskyy



Pointers for tourists are in the form of traditional shooters with inscriptions in English and Ukrainian and light boxes where information is shown on a color display.

The monument to King Danylo Halytskyi (probably the founder of the city) in Halytska Square, opened in 2001, became an important landmark of the historic centre of Lviv. The monument is located in a way which makes it possible to arrange in the future an exposition of the 15<sup>th</sup> century Galician gate, the preserved fragments of which were examined by archaeologists before the monument was erected. Another important landmark, associated with democratic transformations in Ukraine in the 1990s, is a monument to Vyacheslav Chornovil, placed in 2002 in the park in Vinnychenka Street (Biriulov ed. 2008).



**Figure 3.11.** Sketch plan of revitalization of the area of Virmenska Street

Source: Archive of the Urban Planning Department, Lviv Politechnic



**Figure 3.12.** Exhibition of lions in Rynok Square

Source: phot. by B. Posatskyy

In the 21<sup>st</sup> century celebration of Lviv City Day started as well as celebration of certain streets, such as Staroyevreyska and Virmenska. During the Day Rynok Square near the Town Hall is an exhibition-auction of brightly painted figures of lions, because lion is the patron of the city.

The multicultural character of the city is manifested today in displays, particularly in street festivals, where folk ensembles play folk music, and craftworks and ethnic dishes are offered. Street entertainments are very popular with residents and visitors to Lviv.



### **3.4. Area B. Downtown area (covered by the *Integrated Concept of City Center Development*)**

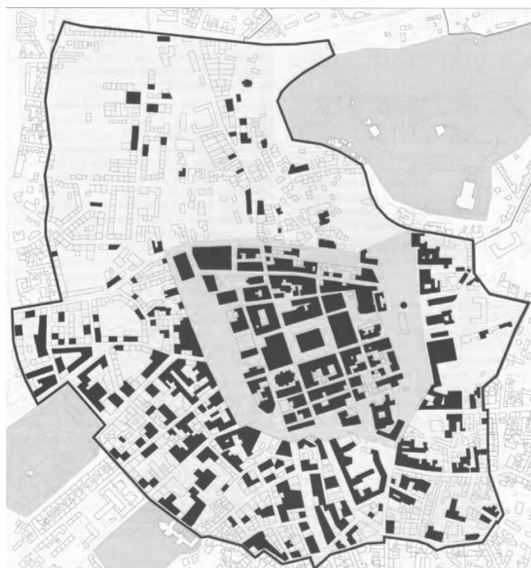
The *Integrated Concept of City Center Development* as a whole can be regarded as the first program of revitalization of the historic 13<sup>th</sup>–19<sup>th</sup> century area, supported with the participation of German and Polish experts. The project covers the area surrounding the medieval city and the western, southern and eastern sections, mostly formed in the 19<sup>th</sup> century.

From the urban point of view, this “surrounding” area has its own specificity. Its plan was based on the medieval trade routes that led to the gates of the city and boulevards constructed during the 19<sup>th</sup> century, in the place of removed fortifications. These areas include the main streets, such as Horodotska, Hnatiuk, Doroshenko, Kopernyk, Zelena, Lychakivska streets, Svoboda Avenue and Taras Shevchenko Avenue, and Danylo Halytskyi Square. These are generally radial directions, interconnected by a network of short narrow streets, which divided the territory of a large number of densely built-up neighborhoods. The main city axis in the central part is formed by Svoboda Avenue – Mickiewicz Square – Shevchenko Avenue. It is sometimes called “Lviv Corso”.

Buildings in this zone were erected during the 19<sup>th</sup> century and in the first decade of the 20<sup>th</sup> century. Lviv was at that time the capital of the Halychyna province in the Austro-Hungarian Empire, which presupposed the construction of monumental buildings for public use. These include the eclectic architectural forms of such buildings as Opera and Drama Theatres named after Maria Zankovetska, the Puppet Theater, the National Museum in Lviv and the Museum of Ethnography and Crafts, Lviv Art Gallery, the Vasyl Stefanyk Scientific Library, National Bank, Prominvestbank, Savings Bank, Grand Hotel, Hotel George, House of Scientists in the main building of Ivan Franko National University, and others.

Residential construction represented by 3–4-storeyed buildings, including monumental forms of houses, appeared in the first decade of the 20<sup>th</sup> century, with office space in ground floors.

As seen from the above description, major cultural institutions of the city are focused in this area, so naturally this feature should be developed further. A notable new cultural facility in the city center, built in 1995, is the Palace of Arts in Kopernyk Street. The object was designed as a new component of a large cultural center in the complex of Potocki Palace and Lviv Art Gallery. There are 14 exhibition halls, 60% of which have natural light and ceiling height of 6–8 m in a 4-storey building.



**Figure 3.13.** Area layout in the *Integrated Concept of the City Center Development*

Source: *Integrated Concept of Lviv Center Development*

The facade of the house in Kopernyk Street is visually completed by a sculpture of St. Luke, patron saint of a painters workshop, whose image remained in the handcraftsmen department in Krakivska Street (Kamenshchuk 1997, p. 21).

Today the trading function dominates in the whole area. The first floors of most houses are occupied by catering establishments and

many of the streets have become so-called shopping streets: Horodotska, Hnatiuk, Doroshenko and Kopernyk, and Chornovil Avenue, Bohdan Khmelnytsky Street and others. The function of high-class trade also plays an important role in the space of Svoboda Avenue and Taras Shevchenko Avenue – the main streets of the city. There is resale of establishments, and places in “prestige” streets are occupied by expensive shops which attract people by showcases, elegant design and facilities.



**Figure 3.14.** Department store “Magnus”

Source: phot. B. Posatskyy

The greatest pre-war department store “Magnus” was built in 1913. In the construction of this building was used, for the first time in Lviv, a multistorey reinforced concrete frame, large glass exterior walls and other modern (at that time) architectural and design solutions. During the repair, the original appearance of the facades of houses was restored and technical modernization of equipment was carried out to ensure high standard of customer service. Now the largest department store in the centre has again become a popular trading institution and serves a large number of visitors (Humenetskyy 2003, p. 5).

The trade function has returned to pedestrian passages (in the Soviet period it was removed) in central Lviv. For this purpose new pedestrian malls were built, with landscaping and installation of small forms (benches, fences etc.). Currently, the largest operating open passage is the restored pedestrian Kryva Lypa Street which connects Doroshenko and Hnatiuk streets. There are about a dozen bars and cafes of varying standard, offering a wide selection of national and international dishes.

The construction in 2010 of the Opera passage between Svoboda Avenue and Kurbas Street can be considered a return to traditions of covered passages in Lviv. The passage is a modern 3-storey shopping complex (selling perfumes, clothing and footwear of well-known European brands), with an underground level (small food supermarket), built in the courtyards from the late 19<sup>th</sup> and early 20<sup>th</sup> century. During the construction work the eclectic facades of buildings were restored.

The most famous pre-war Lviv covered passageway – Mikolyasha Mall between Kopernyk and Voronoho streets – is still waiting for reconstruction. Built at the beginning of the 20<sup>th</sup> century, it was a popular place in the heart of the city – there were two cinemas, cafes, and a photo studio. During the last decade several projects for reconstruction of the arcade were discussed, but none of them has been implemented (*Khronika* 2008, p. 44).

The growing popularity of the city as touristic destination requires continuous development of hotel facilities. Famous 19<sup>th</sup> and 20<sup>th</sup> century hotels (hotel “George” in Mickiewicz Square and Grand Hotel in Svoboda Avenue) have been rebuilt, their facades have been restored and all technical equipment has been modernized. The same can be said about reconstruction and adaptation for hotels of 19<sup>th</sup> century buildings: hotel “Nezalezhnist” in Tershakivtsi Street, hotel “Burger” in Franko Street, “Shveitsarskyi” in Kniaz Roman Street and “Staryi Krakiv” in Shpytalna Street.

However, demand for hotels is constantly growing and the city faced the need to build new hotels in downtown area. The first major object is the hotel “Opera” at Svoboda Avenue No. 45, built on

the site of hotel “Dnipro” (“New York” until 1939) near the Opera House. The old hotel was unusable for technical reasons and it was decided to disassemble it and to build a new hotel with preservation of old facades. The quarter in Fredro Street has been completed with an infill – hotel “Nobiles” has been built on a cleared site.



**Figure 3.15.** Summer terrace in Halytska Street

Source: phot. B. Posatskyy



**Figure 3.16.** Office of Ukreximbank on Mickiewicz Square

Source: phot. B. Posatskyy

Expansion of financial activities necessitated provision of buildings for new banks in the city's central part. An office building was constructed in Valova Street, which houses several banks. In Mickiewicz Square a building was rebuilt in 2006 to adapt it for the needs of a branch of Ukreximbank. In this case the early 20<sup>th</sup> century architectural style was restored. It could be done because drawings of the 1895 project were preserved and after consultations it was decided to recreate the former facade and interiors. This undertaking improved the appearance of Mickiewicz Square, an important element of the historic architectural environment. It is interesting to note that on the opposite side of the square is a "modern" building of Ukrspotsbank branch, which creates a contrast of forms (*Budivla filii Ukreximbanku u Lvovi* 2006, pp. 8, 10, 12).

The building which houses Kredobank branch was built in 2006 on a small undeveloped corner plot at the beginning of Drahomanov Street. The authors of the project took into consideration the historical stylistics and decided on a smooth arched facade in postmodernist style, which was referred to by critics as an attempt to "squeeze" into the architectural context of the fracture between the 19<sup>th</sup> and 20<sup>th</sup> century (Frankiv 2006, pp. 24, 26).

Starting from the 18<sup>th</sup> century, an important role in the architectural environment has been played by monumental sculpture. After 1991 it was time to remove communist symbols from city space and to perpetuate in bronze and stone the prominent figures in the history of Ukraine.<sup>5</sup> The most important among the new monuments is the monument of the genius poet Taras Shevchenko, which was erected in the main street of the city – Svboda Avenue – in 1992–1996. Composition of the monument allows for using it also as a pedestal and a place for making speeches. There is a small area surrounded by gardens and lawns in front of the monument. The area has become a popular place for residents and visitors.

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<sup>5</sup> Main symbol of Soviet communism in Lviv – monument of Lenin was demolished in 14.09.1990. Lenin Avenue was named as Svboda Avenue (see Isayevych ed. 2006, p. 411).



**Figure 3.17.** Monument to Taras Shevchenko

Source: phot. B. Posatskyy



**Figure 3.18.** Hotel "Citadel Inn"

Source: phot. B. Posatskyy

Somewhat later, in 2000, we witnessed the return of the statue of Virgin Mary to Mickiewicz Square, from which it was removed during the 1950s. In this way the missing element was restored, and Mickiewicz Square (up to 1944 Mariatska Square) returned to its historical appearance (Kotlobulatova 2009). During religious holidays there are many worshippers near the statue of Virgin Mary.



Attempts to make the streets and squares of the city more attractive include creation of some temporary objects associated with some event or advertising certain products. For example, a floral arrangement was made in Svoboda Avenue, advertising football championships Euro-2012 – it draws attention and is often photographed. Another example is a travelling exhibition, advertising “Renault” car company, which functioned for several weeks.

Among the new elements in the downtown area are brightly-colored mini-trains and buses for excursions. Their routes begin and end in Rynok Square. These vehicles are popular among tourists.



**Figure 3.19.** Floral arrangement advertising Euro-2012

Source: phot. B. Posatskyy

The administrative function is very important in downtown Lviv because here are the main bodies of state administration and local government. These institutions have retained their historic location: the city government is located in City Hall in Rynok Square, Regional State Administration and Regional Council occupy buildings (built for administration of the Austrian province of Galicia) in Vynnychenko Street.

As can be seen from the above presentation, downtown Lviv is a complex structure which has regional significance, but as regards



the form – is a unique monument of architecture and urban planning of the 13<sup>th</sup>–19<sup>th</sup> centuries. It is clear that there is conflict between “history” and “modern requirements”, the most acute aspect of which is the transport problem.



**Figure 3.20.** Tourist tram in Rynok Square

Source: phot. B. Posatskyy

Motorization is developing rapidly, but historically formed urban space is not physically able to “give place” to all vehicles. Evidence of this are frequent “traffic jams” in the streets and squares, which are likely to be increasing. Experience of European cities shows that solution to this problem involves radical administrative and town planning measures: first, restricting access of cars to the city core and giving unconditional priority to public electric transport of large capacity, and secondly, developing underground urban space with transport infrastructure.

### **3.5. Area C: The median zone of the city (Historic area)**

The part of the city outside the central area may be regarded as the median zone, which largely coincides with the historical range (outside the range approved by the City Council in 2005) and

surrounds the downtown ring.<sup>6</sup> The historic area includes the part of the city with green hills of Kortumova, Znesinnya and Pohulyanka, built up until 1939.

The dense street network and buildings in this area were created at the turn of the 19<sup>th</sup> century. Individual plots were developed in the 1930s in the form of small living quarters or separate buildings of varying height built according to principles of contemporary “modern architecture” (Allsopp 1985). During the 1950s–1970s large areas within this zone also contained the industrial function (manufacturing, transport): in the western part it was the sector of the city between Horodotska and Antonovich streets, in the north – the sector between Chornovil Avenue and Bohdan Khmelnytsky Street, in the east – the sector between Poliova and Bohdanivska streets.

Today a process of active restructuring of these areas is in progress. The declining industrial function and is being replaced by a variety of multi-storey housing and services. It should be noted that the production function in a broad sense is supported by transport facilities (tram and trolley bus depot, bus and car parks, municipal engineering maintenance facilities). The trade and service functions are represented by a wide range of objects, the largest of these being the market complex “Pivdennyi” between Vyhovskyi and Schiretska streets, supermarkets “Arsen”, “VAM” and “Vopak”, and others.

Considering the issue of revitalization within the middle zone of the city it is important to address the problem of polycentric structure of the city center. At the turn of the 20<sup>th</sup> century the central area of Lviv could be enhanced by redevelopment of former industrial areas in the western and southern sectors of the city’s middle zone. However, unsystematic “partial” privatization of these areas became an obstacle to this, since the new owners were interested primarily in obtaining quick profits and therefore started to develop the banking function, trade and catering. Former factory buildings have been adapted for new functions, but it was chaotic and with-

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<sup>6</sup> *Boundaries of the Historic Area of the City of Lviv* (2005).

out creating common infrastructure, especially transport and pedestrian routes. An examples of this are the site of the former plant "Kinescop" between Antonovych and Turgenev streets.

1. The polycentric system of the city center acquired new accents during preparations for hosting the European Football Championships in 2012. As the site for construction of a new stadium was chosen on the southern outskirts of the city near the intersection of Stryiska Street and the ring way, the role of the southern sub-center increased.

2. Implementation of this concept is of fundamental importance for the development of the city as a whole, because the objects of municipal and regional significance, which generate a significant volume of traffic and pedestrian movement, would be located outside the historic center. Especially important is the urban solution involving preservation of unique historical and architectural heritage in the central part of the city and enhancement of its attractiveness for tourists.

The polycentric system of the city center is also planned to develop in the northern and southern sectors of the city. In the northern sector it is planned to form a large "commercial business quarter" by redeveloping the former industrial area between Zhovkivska, Lypynskoho and Bohdan Khmelnytsky streets, while in the southern part of city will be located two new "buffer sub-centers": one in Luhanska Street and one in Zelena Street, and one sub-center in the western part of the city at the intersection of Shevchenko – Levandivska streets.

Since the construction of public facilities in the middle zone of the city was planned, there has been rapid development of housing. Land resources are limited, so mostly individual infills in existing residential buildings were constructed. Initially, their height was 5–9 storey, and then increased to 10–12 storey. The height of new buildings has led to sharp contrasts between existing residential buildings and new buildings which have become dominant in this part. This applies to new buildings in Krypyakevych, Nizhynska, Storozhenko, Mikhnovsky Brothers and Zolota streets.

Quite neutral in relation to the existing spatial environment are low-rise buildings on small plots. This type of construction in the late 20<sup>th</sup> century was new to the city and initially was not popular. In the central part of the city several such complexes were built during 1996–1999 in Kharkovska, Rudnitsky and Mushynka streets. Clearly, the comfort of living in such homes is much higher than in multi-storey buildings, but they use up more land resources.

Despite the shortcomings of urban development, new housing generally provides comfortable accommodation in terms of equipment and layout of apartments. They are in sharp contrast to objects of mass “amateur revitalization” comprising mainly houses built in the 1860s–1970s. They were constructed to fulfill minimum standards (flats and total floor space) and with poor quality building materials. Residents of these flats today are trying to improve their living conditions through repairs with full replacement of equipment. It creates many problems, because these works are carried out in most cases without project documentation by random “masters”.

Attempts to increase the living space of apartments is carried out by means of adaptation of open balconies and loggias. As a result, facades of buildings show a mosaic of different solutions used in additional structures attached to the house.

Large energy losses through external walls of residential buildings from the 1960s–1970s resulted in the need for additional insulation of the walls. Implementations of these works are inconsistent, depending on the financial possibilities of the residents. As a result, facades of buildings are covered by “scraps of insulating materials”, which distorts their general architecture. All these amateur demonstrations of the inhabitants’ initiative were possible because of imperfect legislation and local governments loss of control over compliance with building rules and regulations.

Apart from multi-family block housing in the middle zone of the city, there are large green areas of Kortumova Hill, Znesinnya and Pohulyanka. Of these three green spaces, Kortumova Hill is in unsatisfactory condition, chaotically built up with residential buildings, garages etc., and is losing the function of recreation area.

Znesinnya area is actively used for recreation and was granted the status of regional landscape and historic park. The area's largest forest park in Lviv extends over 300 ha of Roztochia hills, with rich greenery and scenic trails.

The Museum of Folk Architecture and Rural Life (Skansen) occupies an area of 50 ha in the eastern part of a forest park in picturesque Shevchenko Hai (grove). The museum has a number of miniature villages with 10–15 architectural objects in them. The exhibition is organized according to ethnographic principles. In dwelling houses and in household buildings are exhibited things of home use, clothes, handicraft tools, agricultural implements, and transport facilities of Western Ukraine (Biriulov ed. 2007). The museum is very popular with residents and visitors, especially on holidays and weekends.

The famous historic parks of Lviv are: Ivan Franko Park (the oldest in Lviv and in Ukraine, a former Jesuit garden, founded in the second half of the 16<sup>th</sup> century), and Stryyskyi Park (founded in the second half of the 19<sup>th</sup> century).

Ivan Franko Park covers an area of 12 ha and because of its location among the densely built-up neighborhoods it is actively used by all population groups. There is a playground for children, adults may walk along pathways, and there are many benches for taking a rest. During public holidays a brass band plays in the 19<sup>th</sup> century rotunda. This tradition was restored several years ago. Intensive use of the park area made it necessary to carry out revitalization in 2008–2009: surfaces of walkways were replaced, new benches were provided and historic lantern lighting was renovated.

At the same time, similar measures were taken in Stryyskyi Park. It occupies 60 ha, and consists of two parts: the upper and the lower park. All wild trees and shrubs were removed, and lawns and flower gardens were restored, creating thus a picturesque park space of late 19<sup>th</sup> and early 20<sup>th</sup> century.

The great historic-landscape complex of Lviv Citadel is waiting for revitalization. It was built in 1852–1856 by Austrian military. There are four tower-bastions situated in the south and in the north

(Biriulov ed. 2007). After 1991 the Citadel was left by the military garrison and the question arose about a new use of the land and facilities (barracks and four defensive towers). A comprehensive revitalization plan was developed (Marchenko 1996, pp. 11, 12), however, as a result of privatization of a part of land and buildings the citadel now houses the bank "Electron", offices of various firms, a construction materials warehouse and small shops. One of the defensive towers after reconstruction in 2009 has a new feature – hotel "Citadel Inn" was opened and a defense shaft around the tower has been reconstructed.

An important component of urban green areas is the historic Lychakiv Cemetery, founded in the 18<sup>th</sup> century. Located on the hills in the eastern part of the middle zone and adjacent to the Pohulyanka forest park, it covers an area of over 42 ha and has about 300 000 burial places. Many famous representatives of culture, science and business of 19<sup>th</sup>–20<sup>th</sup> century Galicia, belonging to different nationalities, are buried at the cemetery. Monuments and tombstones are erected by famous sculptors and architects (Biriulov ed. 2007).

A separate part of the cemetery is a memorial – it contains graves of Polish people who died in 1918–1920. Soviet authorities almost completely destroyed the memorial in 1971, but at the end of the century it was restored with funds and help from the Polish State and public institutions. A memorial to Ukrainian people's liberation struggle is located in the vicinity, crowned with a figure of Archangel Michael (Biriulov ed. 2008).

If we consider the town-planning aspect of Lviv parks revitalization in the middle zone, the question immediately arises of the relations between them and the formation of the city's large green system. Today there is still a possibility of returning to the 19<sup>th</sup> century idea of "Lviv Corso" by combining Ivan Franko Park, the Citadel, Bohdan Khmelnytsky Park, Strytskyi Park, Zymna Voda Park, Snopkivskyi Park, Pohulyanka forest park, Znesinnya Park and High Castle Park. These parks can be connected by walking paths despite the difficult conditions of crossing urban thoroughfares.

Formation of such a pedestrian system would significantly increase the leisure opportunities of citizens in downtown Lviv and would contribute to modernization of the equipment in park areas.

It should be noted that the possibility of forming a network of bicycle paths in Lviv is actively discussed in recent years, but because of the historical narrow streets and some other obstacles, such a network can be created only in the new peripheral districts of the city. However, the terrain is not a significant obstacle for hiking or popular walking with walking poles (Nordic walking).

### **3.6. Conclusions**

Civilization changes at the beginning of the 21<sup>st</sup> century have triggered revitalization in Lviv. The measures that were taken were not coordinated by local authorities until recently, as the existing legal framework does not provide clearly defined guidelines. Today we are talking mainly about restoration and reconstruction of architectural monuments and valuable historic buildings, but integrated planning and management of urban space is still lacking. Participation of residents in the revitalization process is generally spontaneous and not guided by experts and is limited to own apartments.

Comprehensive revitalization programs, approved by the city government, may change the situation for the better, providing that we make these programs understandable to residents and coordinate the actions of various actors in the urban space.





**Anna Wojnarowska**

University of Łódź

## **4. REVITALIZATION OF URBAN SPACE OF ŁÓDŹ**

The base and the engine of the economic prosperity of Łódź since its dynamic development in the 19<sup>th</sup> century till the end of the 1980s was textile industry. Decline of this industrial branch, which started in 1989, has triggered the whole set of socio-economic and spatial phenomena: mass loss of jobs, subsequent high rate of unemployment and related multifold social problems as well as emergence of dilapidated post-industrial *brownfields*, dispersed within the historic urban structure. These abandoned areas and objects on the one hand created serious threats to the quality of urban space, its continuity and public safety, but on the other hand brought about a possibility to introduce new functions and to re-build the urban functional and spatial structure in a sustainable way.

The other topic in Łódź regarding the regeneration process is its vast 19<sup>th</sup> century downtown, whose degradation in technical and social terms has its roots in the socialist era, when the historical districts of tenement houses in Polish cities were criticized for political reasons (as testimonies of pre-war capitalistic times) as well as from urban planning positions (as outdated) and after the Second World War were neglected on purpose, causing so-called *renovation gap*. Therefore, after political and socio-economic

transformations in Poland in 1990, there was an urgent need for integrated and comprehensive approach to urban regeneration, aiming not only at incorporation of abandoned industrial structures into the city fabric, but also, and even more importantly, at bringing them back to life and revitalizing the degraded historical downtown area.

Strategic documents setting the main directions of future development of the city<sup>1</sup> state that it will depend on different factors than those in the industrial era – it will be influenced by new economic branches, such as commerce and the service sector, telecommunications, IT branches, transport and logistics, education, culture, tourism, science and innovative industrial technologies. The city's attractiveness as a place to live and invest in will be closely related to the quality of urban environment, and other so-called *soft localization factors* – good living conditions, the cultural and entertainment offer of city and its region, and proper exploitation of the cultural heritage. In Łódź – a post-industrial city – revitalization of post-industrial structures should be combined with regeneration of the degraded inner city areas, creating the synergy effect. Decline of the industrial function created a unique chance to introduce new metropolitan functions to the historical structures, previously occupied by industry. The city has a very wide range of post-industrial areas and objects, varying in size, cultural value and complexity. There are huge ensembles such as Karol Scheibler's Księży Młyn or Izrael Poznański's industrial complexes, as smaller ones or even single objects. All of them are the important fragments of the city's history embedded in its space, constituting its identity and, undoubtedly, worth preservation and adaptation for new roles.

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<sup>1</sup> *Local Development Program for Łódź for Years 2007–2013 (Program Rozwoju Lokalnego Miasta Łodzi na lata 2007–2013), Regional Operational Program for Łódź Voivodship for Years 2007–2013 (Regionalny Program Operacyjny Województwa Łódzkiego na lata 2007–2013).*

## 4.1. Regeneration of degraded inner city areas

### 4.1.1. Local Revitalization Program (*Uchwała... 2004*)

The first step towards regeneration of inner city areas was the *Local Revitalization Program for Łódź for Years 2004–2013*, prepared in 2004. The boundaries of the revitalization area as defined in the *Program...* encompass mainly the 19<sup>th</sup> century urban structure within the peripheral railway line (figure 4.1).



**Figure 4.1.** Revitalization area in Łódź – as defined in the *Local Revitalization Program for Łódź for Years 2004–2013*

Source: drawing by A. Wosiak on the basis of the LRP

Preparation of such a document was a necessary condition for local authorities to gain the possibility to apply for EU structural funds for urban regeneration. This program set out the general revitalization strategy and its main goal was to identify the crisis area and the most explicit symptoms of degradation within the city core, as well as to address key problems and to indicate potential beneficiaries.

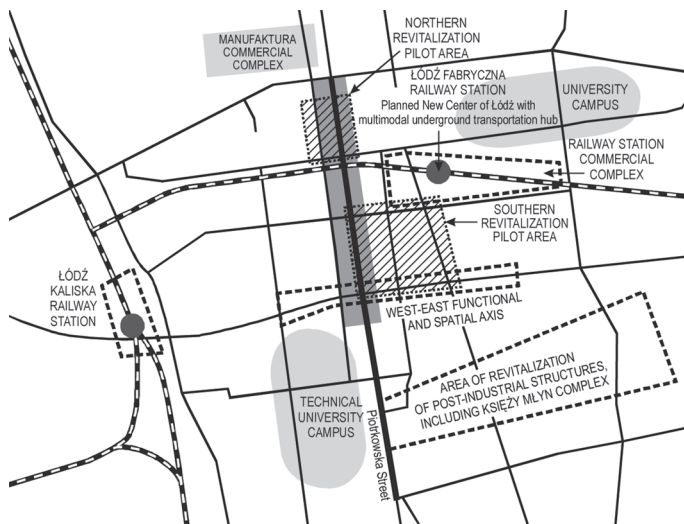
#### **4.1.2. *Integrated Revitalization Program for Łódź Central Areas "Prorevita" (Zintegrowany... 2005)***

This document detailed a revitalization program for two so-called *pilot* areas. It was prepared in an integrated manner, combining spatial, social and economic issues. Both areas consist of four urban blocks each, situated in the very heart of Łódź inner city: the southern revitalization area (between Tuwima – Kilińskiego – Mickiewicza – Piotrkowska streets) adjacent to the main functional and spatial axis of the city – Piotrkowska Street from the east side and from the south lined by the transportation artery cutting the city through in the west-east direction – Mickiewicza/Piłsudskiego Avenue, and the north revitalization area (between Wólczajska, Próchnika, Piotrkowska, Zielona streets) situated to the west of the northern part of Piotrkowska Street (figure 4.2).

These areas were indicated as the “poles” of concerted activities of urban regeneration, which in the consecutive stages would be spread over the whole revitalization area as defined in the *Local Revitalization Program*. The idea was that public financial means and activities concentrated in these “regeneration nodes” would create the “snowball effect” bringing about the positive phenomena of modernization and new investments in neighboring areas, so that in a longer perspective the whole inner city area should be revitalized.

For the presentation of the urban regeneration issues in Łódź in this chapter, the southern revitalization area was chosen, representing characteristic features regarding urban degradation and already

undergoing – within the last few years – visible transformations in relation to the implementation of the revitalization program.



**Figure 4.2.** Two pilot revitalization areas of the *Integrated Revitalization Program for Łódź Central Areas "Prorevida"* – the scheme showing their relation to Piotrkowska Street and other important elements of spatial and functional structure of the city

Source: drawing by A. Wosiak on the basis of the LRP

### ***Weaknesses and strengths of the southern revitalization pilot area***

The main weaknesses of the area, recognized in the stage of the prerequisite studies, included:

- spatial and physical degradation (bad technical condition of buildings, inadequate living standards, low quality of public space, lack or neglected existing green and recreational areas, deficiencies in technical infrastructure);

- parking problems (lack of the adequate amount of parking space for inhabitants and visitors to the area);
- traffic system deficiencies (dense traffic in the central city area, lack of paths for pedestrians and bicycles, inefficient and low standard public transport, lack of modern traffic solutions – like traffic calming and extension of zones dedicated only to pedestrians and bicycles);
- spatial and functional conflicts (presence of functions and structures unsuitable for city center, lack of spatial continuity and incoherence of scale, standard and composition, collisions of users' interests);
- social and economic problems (poverty, unemployment, low education level, social pathologies);
- environmental degradation (air pollution, noise, insufficient amount of biologically active surfaces);
- complicated property rights structure (nearly 50% of properties of unknown legal status).

The identified strengths of the area included:

- spatial and cultural values (historic urban structure and monuments, unique elements of spatial structure and architecture creating the identity of the city, cultural functions already settled in this area);
- social and economic potentials (metropolitan functions existing in the area – like local administration, banks, shops and services, high level of entrepreneurship, number of small and medium enterprises, activity and social participation of local community);
- environment potentials (green area of Henryk Sienkiewicz Park, open public spaces and inner yards with greenery).

### ***Spatial and functional structure of the area***

The southern revitalization pilot area is very differentiated regarding its spatial and functional characteristics. Western blocks, adjacent to Piotrkowska Street, have better developed urban struc-

ture, with high land-use intensity, and contain representative buildings and metropolitan functions. In contrast, in both eastern blocks we may observe disadvantageous functional structure, not appropriate for central city area – there are only small fragments where metropolitan functions are present, and also zones completely unused or used in an extensive manner and for unsuitable functions, like temporary warehouses, scrap yards, car-repair shops, sheds etc. One of the most serious spatial problems in this area is the presence of “hollows” in the urban structure – some plots have never been developed and some are empty after demolitions. This “underdevelopment” is mainly caused by the lack of access – in the form of streets or pedestrian passages – into the interiors of urban blocks, which are huge (about 300 x 250 m each) in comparison with urban blocks situated in downtown areas of other European cities of similar size as Łódź – the road system in downtown Łódź is sparse and not sufficiently developed.

### ***Need for humanization of the traffic system***

The south-western corner of the southern pilot area is the crossing of two main streets of the city: Piłsudskiego/Mickiewicza Avenue – the main transport axis in the west-east direction and Piotrkowska Street – north-south axis, the spatial and functional center of the city. Piłsudskiego/Mickiewicza Avenue is the main spatial barrier in this part of Łódź, dividing Piotrkowska Street into two parts – southern, which is functioning as a traditional street and northern, which is mainly a pedestrian zone. The solutions used in the traffic system in this part of the city are already outdated, with the overwhelming domination of car, neglected pedestrian underground passages, poorly designed tram and bus stops, lack of well designed and upkept greenery, lighting and other elements of so-called *street furniture* (figure 4.3).



**Figure 4.3.** The southern border of the pilot revitalization area  
– Piłsudskiego/Mickiewicza Avenue – the strong west-east traffic  
barrier dividing center of Łódź into two parts

Source: phot. A. Wojnarowska, M. Zajackowski, 2004

### ***Parking problem***

In the whole inner city of Łódź there are no underground and multi-story garages, and the amount of parking lots in the streets or grouped in a ground level parking spaces is inadequate, so finding a parking place in the city center currently constitutes a really serious problem. The crucial issue is lack of the parking space for inhabitants, but difficulty in finding a place to park a car is also discouraging potential customers and tourists from visiting the downtown area. This makes location of shops and other services in the city center less attractive for investors, while big shopping centers situated not only at the fringe of the city, but also in the center of Łódź (as Galeria Łódzka or Manufaktura) offer huge parking spaces for their customers.

### ***Spatial, social and economic potentials***

The main quality of the pilot revitalization area is its localization in the very core of the city, which presents unique spatial, cultural and economic potentials. The western part of the area, neighboring Piotr-

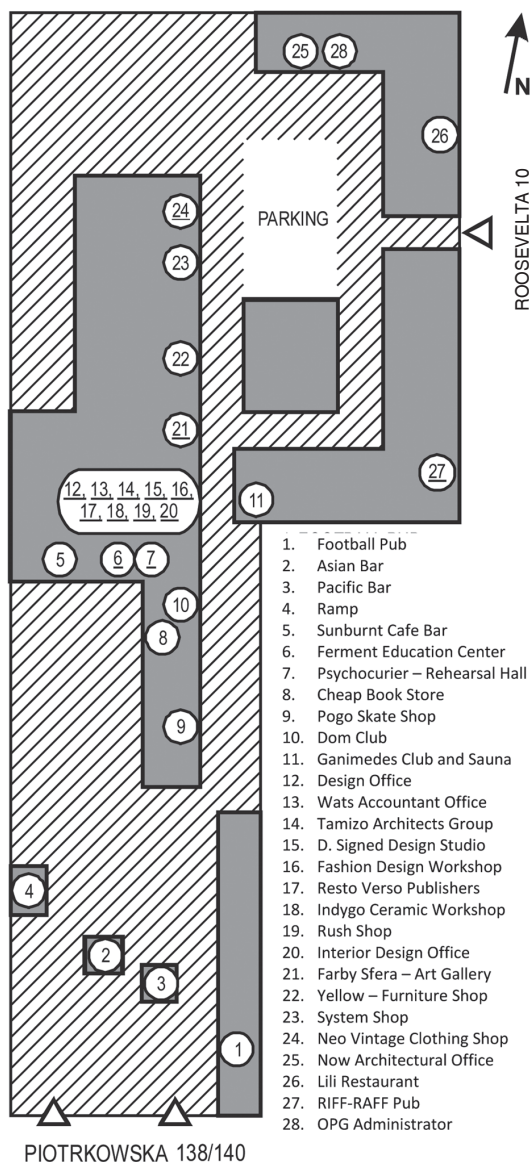


kowska Street, is under conservator's protection as a historical urban structure with valuable historical buildings listed as monuments. In this zone metropolitan functions are already present, such as local and regional administration offices, banks, art galleries, churches, high standard shops and boutiques, cultural and educational utilities, restaurants and coffee shops. In the east-northern quarter historical Henryk Sienkiewicz Park is situated, which gives a great advantage to the area as it is not only one of very few compact green areas within the inner city, but also a location of two cultural attractions – the Museum of Natural Sciences and the Modern Art Gallery.

A necessary condition of success of the revitalization process is participation of local community. Inhabitants who are active and interested in positive changes to the area are the main “actors” of the regeneration process. Important participants of revitalization are also small and medium enterprises (SMEs), and in the pilot area they are strongly represented, which is a good prognostic for the planned transformations.

### ***Post-industrial objects and areas***

Another value is the presence of post-industrial structures, creating unique possibility of adaptation for new metropolitan functions within the attractive historic settings. There are two post-industrial complexes situated in two western quarters: Ramisch's factory in the south-western quarter and the former textile plant of M. Wohlman in the north-western part. The latter is still abandoned and dilapidated, while Ramisch's factory is already undergoing adaptation for new functions, housing OFF Piotrkowska Center ([www.facebook.com/offpiotrkowska](http://www.facebook.com/offpiotrkowska), 2012) – a new place where creative alternative arts and cultural functions, galleries, design offices and workshops are concentrated (figure 4.4). The location of both former factories in the middle of the quarters affords opportunity for interesting spatial and functional solutions, integrating them into the existing and planned structure of public and semi-public spaces, and creating functional interrelations aiming at synergistic effect.



**Figure 4.4.** New functions in post-industrial area of former Ramisch's factory at Piotrkowska Street No. 142; Source: drawing by A. Wosiak after: [https://fbcdn-sphotos-a.akamaihd.net/hphotos-ak-snc7/400545\\_309701319061779\\_216592865039292\\_1065821\\_1836029613\\_n.jpg](https://fbcdn-sphotos-a.akamaihd.net/hphotos-ak-snc7/400545_309701319061779_216592865039292_1065821_1836029613_n.jpg), 01.2012

### ***“Islands of time”***

There are places and objects whose existence is usually not even noticed by passers-by in an everyday rush – like historic gates and walls, details of buildings, cobblestone pavings and also buildings themselves – hiding their beauty behind the layer of dirt and decayed plaster. They are all important elements of local identity, worth preserving and enhancing their aesthetic value. And there are also places of unusual atmosphere, where one has the impression that time stopped there many years ago. They are standing still in the flowing river of life, witnesses of the old times – fragments of the world which vanished long ago. Preservation of such unique places, which contribute to the inimitable identity of Łódź, should be one of the important tasks of a revitalization program encompassing cultural heritage stocks. This would be the way to save them for next generations, while they are not under legal protection as monuments and, therefore, especially threatened with eradication.

### ***Proposed steps of revitalization – revitalization priorities***

On the basis of the prerequisite studies, taking under consideration both strengths and weaknesses of the pilot area, the following priorities of the revitalization process were proposed:

- improvement of the quality of life in the downtown area – as a place to live, work and spend leisure time;
- intensification of use, counteracting the depopulation of the area;
- augmentation of the role of culture, cultural heritage and tourism as factors important for the development of Łódź;
- exploitation of the historic industrial architecture stocks for development of metropolitan functions of the city;
- exploitation of the spatial values of the city – resulting in creation of its positive image;
- raising of the aesthetic standards of inner city – including built structures, public space and greenery;

- creation of a legible and attractive system of public and semi-public space;
- amelioration of urban environment;
- enhancement of the cultural, touristic and recreational values of the area;
- reinforcement of Łódź metropolitan status by improvement of existing and development of new metropolitan functions, such as research, education, health care and culture;
- improvement of investment attractiveness;
- creation of friendly environment for development of micro-enterprises;
- provision of new employment possibilities – by introduction of functions generating new jobs;
- prevention of social exclusion;
- support for unemployed and disabled;
- increase of education level and professional abilities of inhabitants in danger of social exclusion;
- counterfighting social pathologies;
- improvement of public safety level;
- modernization and supplementation of technical infrastructure systems;
- improvement of the quality of public transport.

### ***Basic “streams” of projects addressing spatial problems***

The proposed tasks concerning buildings and their immediate surroundings were:

- conservation of monuments;
- renovation and modernization of other existing buildings, not being under legal protection as monuments;
- adaptation of industrial objects and areas for new functions;
- demolitions of dilapidated and low quality buildings;
- new investments.

Regarding the open spaces, there was proposed:

- conservation and modernization of existing public space;
- introduction of new public space – streets, squares and alleys;
- creation of semi-public spaces in the backyards of tenement houses and public buildings;
- conservation of existing valuable green areas – like parks, squares and street greenery;
- introduction of new green areas and single green “objects”.

Projects aiming at amelioration of traffic systems – pedestrian and vehicular – were as follows:

- “humanization” of existing streets;
- introduction of new streets with restrictions for vehicular traffic;
- creation of new spaces for pedestrians and new bicycle routes;
- investments in new multi-storey and underground garages.

As regards the technical infrastructure the following projects were planned:

- conservation and modernization of existing infrastructure;
- thermoinsulation of buildings;
- introduction of and support for sustainable heating systems;
- supplementation of infrastructural networks with new fragments;
- refurbishment of all buildings with full set of infrastructural equipment.

#### **4.1.3. Revitalization projects in pilot area for years 2004–2006 and 2007–2013**

A project called *Downtown Urban Block*, which was formally based on the *Local Revitalization Program for Łódź for Years 2004–2013* and on the spatial and functional solutions worked out in the *Integrated Revitalization Program for Łódź Central Areas “Prorevita”*, was introduced in 2004 and implemented by 2006, including several sub-projects, co-funded by UE structural funds.

Some projects have been already executed, like the renovation of historic tenement houses at Nawrot Street No. 7 in 2004–2006 with 49 apartments and 3 service premises, renovation and partial reconstruction of a historic building situated at Sienkiewicza Street No. 67/ Nawrot Street No. 16 – for residential, service, touristic functions and lodging infrastructure (apartments, hostel and Tourist Information Center). Another major investment project in this area was a new residential building executed by TBS Widzew (Social Building Society Widzew) at Nawrot Street Nos. 14, 18/20, 20/22, 24 and 28 with 172 new apartments (figure 4.5).



**Figure 4.5.** New apartment and service buildings at Nawrot Street

Source: phot. A. Wojnarowska, 2009

*The Revitalization Project of the Downtown Area of Łódź, Situated between Piotrkowska, Tuwima, Kilińskiego and Piłsudskiego Streets, consisting of 11 sub-projects encompassing a total area of about 45 ha, was planned to be implemented in the period 2007–2013. The regeneration projects included: revitalization of Henryk Sienkiewicz Park, adaptation of post-industrial buildings of the former textile plant of M. Wohlman for new functions with refurbishment of public space and creation of a new street, connecting Naw-*

rot Street and Leon Schiller Avenue, revitalization of public space of Leon Schiller Avenue, renovation of historical tenement buildings, revitalization of post-industrial buildings situated at Sienkiewicza Street Nos. 61 and 63, new residential investment at Nawrot Street Nos. 34 and 36, renovation of facades and upgrading the standard and aesthetics of 100 tenement houses and their backyards situated within the revitalized area (www: rewitalizacja... 2011). Regrettably, this project has not been implemented because the city authorities did not manage to obtain the necessary EU funds for.

## **4.2. Revitalization of post-industrial structures**

### **4.2.1. Manufaktura commercial and cultural center**

Manufaktura is a huge commercial and cultural center situated in downtown Łódź, created on the basis of the former industrial complex of Izrael Poznański. This is an example of adaptation of post-industrial structures of a cotton plant to the new service functions. The area is situated in the west-northern part of the inner city between Zachodnia, Ogrodowa, Drewnowska and Karskiego streets. This industrial complex dates back to the second half of the 19<sup>th</sup> century – many big workshops and a huge spinning mill at Ogrodowa Street were erected in the 1870s and the most prosperous period of industrial production had continued since then until the First World War. In socialist times, after nationalization, the cotton plant still operated, employing about 12 thousand workers and being almost a self-sufficient “city in the city” (Bińczyk 2006). The decline of cotton industry outspanned the decade of the 1990s, which brought gradual degradation of the material substance of historical objects. The whole area was bought in 1998 by the French company APSYS, which afterwards, between 1999 and 2002 (www.manufaktura... 2011), created a multi-functional commercial center in this place. The core of the area is a public space of so-called Rynek (Market Square), being the heart of the whole complex. The high

aesthetic, functional and spatial standards of this area have been appreciated by the Polish Society of Urban Planners (Towarzystwo Urbanistów Polskich), which awarded it as the best newly developed public space in the Łódź region. The whole complex is now organized around this public space, composed of modernized or – in a certain degree – transformed historic post-industrial buildings, and of a new huge two-storey market hall serving as a main trade area. To build this huge shopping mall, parking lot and new street at the west side of the complex, some historic workshops and warehouses were demolished, which was an inevitable effect of adaptation of the existing spatial structure to the new functional requirements. Post-industrial buildings were adapted for multi-fold service functions, building up together a comprehensive offer for different groups of customers: shopping mall, hotel, recreational and sport utilities, cinema complex, gastronomy and museum of modern art. The huge building of the former spinning mill at Ogrodowa Street No. 17 was adapted for the hotel and it houses luxurious 4-star Andel's Hotel. Specific feature manifesting transformation of this building to the new function is a glass box of a swimming pool protruding out of the northern side of the roof, cantilevered towards the Manufaktura Market Square (figure 4.6). A parking lot at the top of a post-industrial building between the hotel and the square was hidden behind a curtain wall, imitating the former front wall of the building (figure 4.7).

Manufaktura has become soon after its opening the main attraction not only for the city inhabitants, but also for visitors from other parts of Poland or abroad as a place designed not only for commercialized way of spending time on shopping or sitting in coffee shops or restaurants, but also as a venue of many events (figure 4.8), like concerts, exhibitions, fairs, or special attractions particularly addressed for children and young people – such as a sand beach in summer and a skating rink in winter. As a rule, these events are accessible for all interested parties, not only for the customers of the commercial complex, but there is still a certain doubt if they really are – particular groups of society, especially economically weaker ones, such as



elderly people are often reluctant to visit this area, afraid of “not fitting” the commercialized space, owned by a private investor. Commercialization of space and its gentrification due to the revitalization process is often regarded as the main negative quality of such a model of restructuring. This is a feature which is sometimes pointed out as a possible source of the weakness of this complex in the future – on the one hand it is multifunctional, which should positively add to the elasticity of use in the longer perspective, on the other hand it is owned by one private investor, which could make it more vulnerable to the possible economic fluctuations.



**Figure 4.6.** Glass box of swimming pool in Andel's Hotel

Source: phot. A. Wojnarowska, 2009



**Figure 4.7.** Parking lot on the roof of one of post-industrial buildings, hidden behind curtain-wall – as seen from Manufaktura Market Square

Source: phot. A. Wojnarowska, 2009



**Figure 4.8.** Cultural events at Manufaktura Market Square

Source: phot. A. Wojnarowska, 2009

#### 4.2.2. Lofts “At Scheibler’s”

This revitalization project encompasses a part of another huge post-industrial complex – a historic industrial ensemble of Karol Scheibler whose main factory building, a huge spinning mill had been located at Tymienieckiego Street No. 25 – was recently converted into a residential building with 421 luxurious studios and apartments, so-called *lofts* ([www.uscheiblera...](http://www.uscheiblera...) 2011). The whole investment was executed by a private developer, Australian company Opal Property Developments. This is another example of certain problems being the effect of private management of revitalization process: the majority of flats was bought by foreign investors as financial investment during the boom years in the property market a few years ago and in effect, only very few apartments are actually inhabited. This “underuse” of this interesting historical building, being the main structure of the former Scheibler’s manufacture, is a great loss to the public interest as it could be adapted for functions which would be widely accessible (such as cultural, congress and educational functions) and would enhance the cultural and touristic values of the whole Księży Młyn complex.<sup>2</sup>

Adaptation of a historical factory to a new function forced certain transformations not only in the interior of the building, but also in its outer shell, especially in the roof zone, though the materials used and forms comply with the historic architecture and were approved by the conservator. Also surrounding area was redeveloped into the attractive green space with brick terraces and stairs, playground for children and a little pond (figure 4.9). Another part of this post-industrial complex is a historical workers’ estate called Księży Młyn, one of the three estates described below.

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<sup>2</sup> Possible alternative functions for the whole complex including the former spinning mill building were presented in: Wojnarowska (2006).



**Figure 4.9.** Historic building of spinning mill at Tymienieckiego Street No. 25, adopted for “lofts” – southern elevation with new terraces and terrain stairs

Source: phot. A. Wojnarowska, Ł. Gapiński, 2011

#### **4.2.3. Revitalization program for historical workers’ estates**

In December 2007 the City Council of Łódź adopted the Revitalization Program of the Historical Workers’ Housing Estates in Łódź (*Uchwała...* 2007c). This document was an important declaration of local authorities’ intentions to undertake steps towards protection as well as material and social rehabilitation of three historical workers’ estates in Łódź: at Księży Młyn, Zwycięstwa Square and Ogrodowa Street. The *Program...* was based upon the public-private partnership model (PPP), where the regeneration process would be implemented by private investor, but bounded by a set of rules set by the municipality; this solution was highly evaluated by the Minis-

try of Economy, which awarded the *Program...* in 2008 (Wojnarowska et al. 2009).

All three historical workers' estates were built in the industrialization era of Łódź, in the second half of the 19<sup>th</sup> century – Księży Młyn and the workers' houses at Zwycięstwa Square (former Wodny Rynek) are a part of a huge industrial complex of Karol Wilhelm Scheibler, and a housing estate in Ogrodowa Street constitutes a fragment of a vast empire of another “cotton king” of these days – Izrael Kalmanowicz Poznański.

Revitalization of historical workers' estates is a very complex issue as all of the dwelling houses are still inhabited and they are listed as monuments, which implies strict requirements regarding social and conservation standards. Therefore all the planned revitalization activities should take into consideration the interests of local community and relevant consultations should be held during the whole process, including the conservators' services at municipal and voivodship level. Due to the monuments protection requirements, prospective adaptation of buildings for new functions would be limited and the renovation and modernization should be carried out with utmost care. The functions proposed for all three estates include the residential function in the first place, but also adaptation for hotels, services, shops, gastronomy, education and cultural functions.

Current situation on the investment market in Łódź, influenced highly by the global economic crisis, is difficult and the proposed model of cooperation between the private developer and local authorities is not easy to implement. Therefore the municipality seeks other solutions, adequate to the new economic situation. The most acute problem at the moment is bad technical condition of some buildings, and therefore the crucial issue is the physical renovation of material stocks and improvement of living conditions of the inhabitants by provision of necessary technical infrastructure, and modernization of the existing facilities.

One of the discussed estates is Księży Młyn, which is the most valuable in terms of its historical and architectural values. It is

located between Fabryczna, Przędzalniana and Tymienieckiego streets. In April 2012 the *Integrated Revitalization Program for Księży Młyn* was worked out, after a series of workshops and public consultations with the engagement of local community. It provided guidelines for modernization of buildings and their surroundings and proposed new functions for this area, enriching and supplementing the residential function (*Uchwała...* 2012).

#### **4.2.4. Revitalization of post-industrial Geyer's complex**

The project of redevelopment of post-industrial Geyer's complex situated at Piotrkowska Street No. 282, entitled the *Culture and Tradition of the Textile Łódź*, was implemented in 2004–2006 with financial support of UE funds. The main goal of this project was enhancing the cultural and touristic values of the city through revitalization of outstanding architectural monuments, representing the industrial and cultural heritage of Łódź. Adaptation of post-industrial buildings and areas for cultural functions included expansion of the Central Museum of Textile Industry and establishment of an open-air Museum of Urban Architecture (the only such institution in Poland), physical renovation and modernization of old industrial buildings, refurbishment of historic inner yards and creation of an open-air complex of 7 historical wooden buildings collected from different parts of Łódź, characteristic of Łódź wooden architecture of the second half of the 19<sup>th</sup> century and beginnings of the 20<sup>th</sup> century. The whole revitalized area has about 1.3 ha (*www.rewitalizacja...* 2011)

In this revitalization project also social aspects were taken into account: the craftsmanship workshops were planned to operate in objects of the Museum of Urban Architecture. UE financial means for this program were allocated for trainings of unemployed people for certain handicrafts. But actually, this interesting concept of “historical handicraft alley” is not functioning.



#### 4.2.5. Adaptation of other post-industrial buildings for new functions

Many post-industrial buildings scattered throughout downtown Łódź have undergone restoration and adaptation for new functions during the last 20 years. These buildings usually are not simply renovated, we may often speak rather of creating a new architectural value on the basis of the historical structure. Architects treated the existing buildings like as a starting point to create an extension – using new technologies and materials. The results are architecturally and esthetically interesting, though they may raise certain critical opinions, regarding the conservation aspects because of the fundamental transformations not only in their interiors, but also in the outer form (figures 4.10–4.11). Functions introduced to these buildings usually belong to the service sector, like banks, educational and office buildings, hotels and apartment buildings.



**Figure 4.10.** Building of IFE (International Faculty of Engineering) at the Technological University campus

Source: phot. A. Wojnarowska, Ł. Gapiński, 2011



**Figure 4.11.** Service building with banking premises  
at Dąbrowskiego Street No. 28

Source: phot. A. Wojnarowska, Ł. Gapiński, 2011

#### **4.2.6. Revitalization of historic power plant EC1**

The project of revitalization of the historic power plant EC1 is a crucial part of a huge planned strategic investment to create the New Center of Łódź, whose key element is construction of an underground multimodal transport hub.<sup>3</sup> The post-industrial area of the former power plant is situated near Kilińskiego and Targowa streets. The main idea of this project is introduction of a new area into the structure of downtown Łódź with safe public spaces and

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<sup>3</sup> The New Center of Łódź project was presented in this book in the chapter on the urban structure of Łódź.



a rich functional program with a strong emphasis on cultural functions, which have already given Łódź a special position at the national and even at the global level – a venue of many international cultural events, like festivals, competitions, conferences and congresses. Every year more than 160 such events are organized in Łódź (*Uchwała...* 2008), which promotes the city all over the world and attracts many tourists and artists.

Buildings of the former EC1 heat plant will be adapted for cultural and artistic purposes (*Uchwała...* 2007a). According to the winning concept selected in the course of architectural competition, this project is currently under realization and is planned to be finished by the end of 2014. The urban structure of this new fragment of the city will be created in compliance with the spatial concept proposed by the famous Luxembourgian architect Rob Krier.

Within the project of revitalization of EC1 and its adaptation for cultural and artistic purposes there are three sub-projects concerning particular buildings and areas (*Uchwała...* 2007b).

**1. EC1 East** – buildings 3, 4, and 5. This complex consists of three historic 100-year-old post-industrial buildings. According to the concept of Rob Krier, these buildings should play the most important role in the New Center of Łódź in the future, both in the spatial and the functional structure. The whole complex EC1 East will be dedicated for cultural functions: exhibitions, art gallery, 3D electronic theater, library, art bookshop and creative workshops. One of the attractions will be the possibility to view Łódź from the top of the power plant chimney, which will be furnished with an inside elevator.

**2. EC1 West** – buildings 9, 10, 11, 12, 12a, 36 and 43. In this part is planned so-called Energopolis, which is intended to be the biggest exposition dedicated to the broadly understood energy. It will consist of the Center of Science and Science Garden, Museum of Technology and Historical Thematic Park. The Museum of Technology will be housed in the historic building of the old heat plant. A part of the exposition will consist of original industrial installations and appliances.

**3. EC1 South-East** – buildings 24, 25, 26. In this part will be located the IT and media zone of the whole complex so-called Media Window, serving as the technical back-up of the all events organized in New Center of Łódź, such as TV transmissions, server room and technological utilities enabling organization of innovative cultural and artistic events.

#### **4.2.7. New residential estates developed in post-industrial areas**

Several new residential estates in downtown Łódź are constructed on post-industrial *brownfields* – Centrum I and Centrum II at Tymienieckiego and Tylna streets, and Barciński Park at Tylna and Kilińskiego streets can be the examples. There are also other areas for planned investments of this kind in different parts of the central part of Łódź prepared for development, like the area of Wool Industry Plant “Polmerino” situated at Politechniki, Wołowa, Proletariacka and Wroblewskiego streets, “Norbelana” between Żeromskiego, Mickiewicza, Gdańska and Żwirki streets or previous tobacco plant at Kopernika Street No. 60/68 (Młodawska 2011). Plots where post-industrial buildings were demolished and the area was cleared and decontaminated are attractive for new investments as the number of undeveloped plots in downtown Łódź is shrinking.

### **4.3. Conclusions**

Revitalization of degraded urban areas and post-industrial structures in Łódź – as in all Polish cities – has still a very short history. The first impulse initiating these processes was political and socio-economic transformation of 1989, bringing about the re-structuring of urban space due to the market and property changes as well as the re-thinking of urban space as an important factor of growth and development of cities. The second impulse accelerating the revitalization processes was Polish accession of the UE in

2004. The accessibility of UE structural funds enabled first steps towards the implementation of certain urban regeneration projects dedicated to revitalization of the degraded downtown substance (e.g. the *Downtown Block Project*) or post-industrial structures (revitalization of historic power plant EC1). Nevertheless, given the enormous range of needs in revitalization of Łódź, these funds only can be treated as seed-money triggering the leverage effect of private investments.

In this situation, the main obstacle is the current global economic crisis, deeply affecting the market, which has very negative effect on private investments. Many of the undertakings on post-industrial *brownfields* (of which huge projects like Manufaktura and some smaller ones were realized between early 2000 and 2008) have now been stopped and developers are waiting for better prosperity. Still, the local authorities are undertaking efforts to attract private capital to the city and at the same time are executing infrastructural and non-profit revitalization projects using public local and UE funds to create the positive background for private investments.

As to the spatial values brought about by the revitalization in Łódź, one has to admit that already executed projects mostly represent high esthetic and architectural standards, introducing a new quality into the existing urban structure in public, semi-public and private space and particular buildings. New arrangements of areas use well-designed elements of small architecture, greenery, pavings and water, and create an attractive background for social, economic and cultural activities. Post-industrial buildings or tenement houses in historic downtown, which have undergone revitalization, give an interesting settings for new functions, representing two basic lines of architectural concepts: restoration of historic buildings according to the conservation rules or creating a new architectural structure by adding new substance to the existing building, using materials and forms emphasizing the difference between the new and the old part, and seeking a new value in co-existence of both. In the functional aspect we may state that revitalization brought a mixture of functions

in previously mono-functional post-industrial areas, supplementing and enriching the existing functional structure of the city.

The main problem of revitalization of degraded urban areas in Łódź is that it is not executed in a satisfactory way, regarding its integrated character. As in other Polish cities, in Łódź are implemented mainly so-called *hard projects*, concerning material renovation of building stocks and technical infrastructure, lacking the proper correlation with *soft projects* aimed at amelioration of social and economic problems of crisis areas.

**Mykhaylo Habrel**

Lviv National University of Agriculture

## **5. FUNCTIONAL AND PLANNING TRANSFORMATIONS OF LVIV CITY SPACE IN POST-SOVIET PERIOD**

### **5.1. Introduction**

Functional and planning structure of the Lviv city is a subject to constant changes. Transformation of political and socio-economic system of Ukraine that started in 1991 especially actively influenced the dynamics of changes in the last decade as well as led to significant changes in intensification of social segregation, reducing of fertility, growth of labor emigration out of the state, changes in mentality and values of large part of society etc.

In this chapter the functional and planning changes in post-Soviet Lviv city space are analyzed. The following tasks are resolved in order to achieve the target goals:

- 1) characterization of the changes in post-Soviet space of Lviv;
- 2) identification of the factors that influence the changes;
- 3) assessment of the changes “depth” during the 1990–2010;
- 4) identification and evaluation of spatial localization of the appropriate changes in the city;

5) estimation of the way and degree of local, national and global phenomenon and processes influence on functional and planning changes of the city space.

Spatial structure of the Lviv city is the object of research. Functional and planning changes in the city space are the subject of research. The limits of the research: territorial limits – outlined by administrative boundaries of the Lviv city; time limits – covering the period from 1990 to 2010. Statistical yearbooks of socio-economic and cultural development of the Lviv city in 1990, 1995, 2005, 2010 as well as 1993 and 2008 Lviv General Plans are used.

**Research methodology.** Spatial elements division was conducted and according to it the specific levels were selected: on the first level the city was divided into basic functional and operational units as the main statistic elements; on the second level the changes in the administrative and planning districts of Lviv were agreed and on the next level the generalizations about Lviv and its interaction with the environment were carried out. Multivariate analysis and multidimensional hierarchy method (unlike the hierarchy composed on the basis of the main criteria) were applied in order to systematically classify and analyze phenomena. Multivariate analysis of spatial elements combined with functional and planning changes allows to define alteration tendencies more objectively and to avoid errors and subjectivity.

**The basic definitions.** Term *structure* (from lat. *struktura*) means the place and the mutual combination of elements (their parts) that forms a unity. In urban studies the structure of the city is often understood as a way of placement of the functional elements, constructions, services and other. Legal, social, economic, natural and other structures are distinguished.

Functional and planning structures are analyzed by the author. The first can be defined as the relationships between elements of the city area, their organization and structural collocation. Such characteristics of functional structures as diversity and organization are fundamentally important. The main defining indicators

of diversity and organization are: division by the quantity, quality and use of functional areas. Planning structure concerns geometric characteristics of the city. Such characteristics as size, configuration and development degree of street network plan were considered. Thus, *functional and planning structure* means city spatial division according to the specified functional and planning characteristics.

*Transformation* means fundamental changes in the system quality. Usually it is hard to identify the degree of the changes “fundamentality”, that’s why in practice we accept significant changes in functions of elements, connections and relationships as the criterion. In the issue of transformation in cities of post-socialist countries majority of researchers specify the following: inclusion into the market economy, political orientation changes, ideological changes in society.

## 5.2. Research presentation

Lviv preserves architectural, historical and cultural heritage of many epochs. In the periods when Lviv was the part of Poland, Austria-Hungary and Soviet Union the image of the city and its functional and planning structure were defined. Several stages of the city functional and planning structure forming can be distinguished in the historical aspect. Each of them is characterized by complication of form, emergence of new structure forming directions, expansion of city area and growth of population. The greatest changes took place during two intensive periods of city development due to the new city-forming factors that caused the increase in city population, expansion of the boundaries and changes in its intracity structure. The first period – after 1860 with the railroads building as the causing factor and the second period – the city industrial development during the administrative-command economy period (Soviet period).

Brief characterization of the urban space formation in Soviet times is necessary because fundamental changes in the Lviv city space that occurred exactly during this period (especially after 1960) are related to the dynamic industrial and residential housing development through creation of industrial zones and construction of new residential districts. The 1969 *General Plan* confirmed such changes. During this period the Lviv city received a significant amount of new housing. Construction around city center on plots selected often with a requirements of minimal demolition of the existing buildings became the characteristic feature. It should be emphasized that the scales of “seals” building in the Lviv city center were not large, that’s why this part of the city preserved historical buildings and space nature.

Already in the 1970s multi-storey housing has gained more dynamics. Citizens social structure has been significantly changed due to settling of people from villages in Lviv to work at new enterprises. Living conditions spatial structure has also been changed. The center part predominantly had good living conditions due to the large area of apartments and low settlement density, high level of engineering equipment, ceiling height etc. Dormitories and apartments for small families as the company housing allocated near work establishments gained dynamic development in this period. Small area and high density of population are the negative features of the new apartments. Socialized residential properties dominate in the structure of the city. At the end of the Soviet period (late 1990s) it amounted to 94.3% totally, while the residential housing in private property of citizens was only 5.1% (table 5.1).

In the Soviet period the changes affected also the planning of residential housing, including the transition to “free” building: elimination of traditional streets and transforming them into transport channels; loss of compositional unity of transport and pedestrian streets; disappearance of traditional yards, instead of which the building is freely located among landscaped areas;



change of space nomenclature in residential housing; openness of space structure, increase of inter-building territories' role; change of the system of trade and consumer services on the basis of the stepped construction principle.

In the period under review the Northern, Eastern and Sygnivka industrial hubs are formed in Lviv. On the basis of their planning scheme lays the blocking of warehouses located near the railways and automobile roads as well as creation of a system of pre-factory premises with administrative and service buildings on the city main roads. Considerable attention was paid to the reform of industrial facilities in the city.

**Table 5.1.** The structure of the city residential properties

Residential properties	Residential property volumes, total area	
	thousand sq. m	in % to the total volume
Residential properties totally, including:	12 040.1	100.0
1. Socialized residential properties, incl.:	11 347.8	94.3
1.1. Residential properties of local councils	8 264.5	68.7
1.2. Residential properties of public, budgetary and self-supporting enterprises, organizations and institutions of the ministries and departments	2 080.3	17.3
1.3. Residential properties of housing cooperatives	963.1	8.0
1.4. Residential properties of cooperative enterprises and organizations (without housing co-operative)	39.9	0.3
2. Individual residential properties (residential properties as the private property of citizens)	692.3	5.7

Source: own elaboration.

Lviv city area was significantly expanded at the final stage of socialism. Including of rural area into the city boundaries led to the increase of the city area up to 160 sq. km. Therefore, the unurbanized territories were added to actively urbanized ones with the change of both housing development nature of the city as well as the form of area management. The appearance of large residential housing districts with an appropriate set of social and engineering infrastructure objects is characterized by: differentiation of territories with the allocation of dense housing zones and large spaces free from buildings; specification of residential groups, each of which provides an appropriate set of infrastructure objects; identification of large arrays of landscaped areas designed for several residential groups; combination of the social infrastructure objects into the centers; appearance of improved landscape areas that form architectural accents in new residential housing. Some common features can be highlighted in the variety of residential development methods: functional mix of open spaces in residential housing, interpenetration of its certain types; lack of "individuality" of certain zones; more active use of vertical planning; uniformity and equitability of landscaped areas.

Functional and planning analysis of the Lviv city structure at the end of the Soviet period was carried out by the research methodology and in accordance with the existing at that time city division into housing operational elements (housing offices). There is a substantial difference in territorial indicators of different housing offices and in some cases it amounts to more than 1400 ha. The areas usually increase from the center to the periphery. An average area is 207.2 ha, the area in the central part amounts to 30–50 ha, in the middle – 50–150 ha, while in the periphery it is much higher and reaches a maximum of 1.432 ha. The average population of such unit is 14 380 persons and it increases in 4.6 times in the housing office 306 and reaches a minimum in 4.2 times less than the average population. The same is with the population density parameters, where the highest density of 864 persons/ha is in the central part and

in the new buildings (550–580 persons/ha), while the average indicator for the city is 70 persons/ha. Mixed housing zone located between them is characterized by much lower density indexes.

Industrial territories are included into the administrative boundaries of housing offices in different ways. The fact that there is no connection between them is confirmed by incomfromity of actions between both land users. The largest areas in absolute measures are occupied by large industrial enterprises, but in relative measures the housing offices of the city middle zone dominate. Landscaped areas – parks, squares, boulevards, gardens are also included into housing offices territory. They occupy in average 11.3% of area, and reach a maximum of almost 88% and 61% of the total territory. Ten housing offices do not have public landscaped areas on their territory. This indicator *per capita* reaches maximum in certain housing offices of the central city part due to historically formed parks and periphery due to inclusion of the suburban forests areas as well as cottage lots and gardens.

The following types can be selected when describing the residential housing: historical – late 19<sup>th</sup> – early 20<sup>th</sup> century; 50–60 years of the 20<sup>th</sup> century; late 20<sup>th</sup> century; individual. Territories of analyzed units are build-up with different housing types. Moreover, there are outstanded those where 100% – multi-storey residential buildings, in 20 housing offices – 100% of buildings of late 19<sup>th</sup> – early 20<sup>th</sup> century. The group of housing offices with complicated housing development nature is specified. Nineteen of housing offices have railways on their territory and in nine of them it crosses the area. There are main stations and central stations on the territory of five housing offices. Roads and sidewalks occupy from 0.4% to 37% of the total housing office structure area. This indicator ranges from 5.2% to 14.6% in new districts.

Spatial city structure characteristic in terms of housing offices and administrative districts at the end of the Soviet period is shown in tables 5.2–5.11.

**Table 5.2.** The area of Lviv housing offices (ha)

Leninskyi district		Radyanskyi district		Zaliznychnyi district		Shevchenkivskyi district		Chervonoarmiyskyi district	
housing office No.	area	housing office No.	area	housing office No.	area	housing office No.	area	housing office No.	area
100	33.92	200	37.16	300	96.60	400	68.16	500	129.32
101	32.64	201	27.84	301	101.00	401	34.28	501	8.20
102	11.12	202	23.60	302	46.80	402	68.64	502	35.88
103	54.04	203	152.60	303	39.24	403	22.36	503	13.80
104	11.24	204	240.00	304	66.00	404	71.16	504	167.92
105	117.68	205	229.88	305	685.00	405	157.48	505	60.96
106	37.96	206	45.88	306	1 432.00	406	43.68	506	66.44
107	170.00	207	31.40	308	560.00	407	891.52	507	754.80
108	19.00	208	43.00	309	440.00	408	731.52	508	589.10
109		209	128.68			409	498.16		
110	884.20	210	28.20						
		211	178.00						
		212	37.00						
Total	1688.32		1 203.24		3 466.24		2 586.96		1826.42
Average	153.48		92.56		385.70		258.70		202.94

Note: area of the city – 10 771.58 ha. In average for housing offices 207.15 ha.

Source: own elaboration.

**Table 5.3.** Lviv housing offices population (persons)

Leninskyi district		Radyanskyi district		Zaliznychnyi district		Shevchenkivskyi district		Chervonoarmiyskyi district	
housing office No.	population	housing office No.	population	housing office No.	population	housing office No.	population	housing office No.	population
100	9 410	200	6 824	300	11 688	400	10 895	500	24 649
101	4 712	201	9 022	301	11 657	401	8 991	501	3 429
102	9 729	202	7 308	302	6 158	402	3 993	502	6 455
103	4 773	203	18 510	303	11 974	403	4 831	503	6 878
104	5 160	204	17 976	304	9 135	404	6 747	504	23 604
105	9 005	205	46 015	305	20 245	405	15 765	505	10 448
106	25 815	206	6 839	306	58 772	406	16 480	506	8 295
107	22 715	207	17 419	308	29 102	407	21 125	507	11 231
108	6 862	208	25 082	309	9 502	408	17 093	508	25 149
109	9 265	209	34 181			409	11 319		
110	14 696	210	9 324						
		211	11 264						
		212	10 776						
Total	122 142		220 540		168 233		117 239		120 138
Average	11 103.8		16 964.6		18 692.5		11 723.9		13 348.7

Note: total population of the city 748 292 persons. In average for housing office 14 890 persons.  
Source: own elaboration.

**Table 5.4.** Residential density in housing offices of Lviv (person/ha)

Leninskyi district		Radyanskyi district		Zaliznychnyi district		Shevchenkivskyi district		Chervonoarmiyskyi district	
housing office No.	residential density	housing office No.	residential density	housing office No.	residential density	housing office No.	residential density	housing office No.	residential density
100	277.40	200	183.60	300	121.00	400	159.80	500	190.60
101	144.40	201	324.10	301	145.40	401	262.30	501	418.20
102	874.90	202	309.70	302	131.60	402	58.20	502	179.90
103	88.30	203	121.30	303	305.10	403	216.10	503	498.40
104	459.00	204	74.90	304	138.40	404	94.80	504	140.60
105	76.50	205	200.20	305	29.50	405	100.10	505	171.40
106	630.10	206	149.10	306	41.00	406	377.30	506	506.85
107	133.60	207	554.70	308	52.00	407	23.70	507	14.88
108	361.20	208	583.30	309	21.60	408	23.40	508	42.68
109	29.30	209	265.60			409	22.70		
110	16.60	210	330.60						
		211	63.30						
		212	291.20						
Average	72.30		183.30		48.50		45.30		65.80

Source: own elaboration.

**Table 5.5.** Lviv city residential properties density (sq. m of total area/1 ha of area)

Leninskyi district		Radyanskyi district		Zaliznychnyi district		Shevchenkivskyi district		Chervonoarmiyskyi district	
housing office No.	residential properties density	housing office No.	residential properties density	housing office No.	residential properties density	housing office No.	residential properties density	housing office No.	residential properties density
100	3 620	200	2 999	300	1 470	400	1 419	500	1 065
101	3 119	201	4 169	301	1 188	401	3 141	501	12 615
102	8 729	202	5 275	302	2 240	402	1 372	502	3 275
103	1 925	203	916	303	3 009	403	4 466	503	8 144
104	12 278	204	578	304	1 900	404	1 064	504	746
105	1 061	205	698	305	165	405	877	505	2 152
106	2 751	206	2 387	306	104	406	2 330	506	1 839
107	975	207	5 398	308	392	407	120	507	149
108	5 402	208	3 405	309	263	408	133	508	129
109	456	209	923			409	358		
110	163	210	3 326						
		211	831						
		212	2 701						
Average	800		1 394		348		449		567

Source: own elaboration.

**Table 5.6.** Industrial enterprises area within the land structure of Lviv city

Leninskyi district				Radvanskyi district				Zaliznychnyi district				Shevchenkivskyi district				Chervonoarmiytskyi district			
housing office No.	industrial enterprises area		housing office No.	industrial enterprises area		housing office No.	industrial enterprises area		housing office No.	industrial enterprises area		housing office No.	industrial enterprises area		housing office No.	industrial enterprises area			
	ha	% of area		ha	% of area		ha	% of area		ha	% of area		ha	% of area		ha	% of area		
100	0.16	0.47	200	-	-	300	21.16	21.90	400	12.20	17.90	500	2.24	1.75					
101	0.12	0.37	201	1.76	6.32	301	19.48	19.29	401	8.44	24.62	501	0.12	1.46					
102	-	-	202	0.16	0.68	302	0.72	1.54	402	6.80	1.16	502	0.24	0.67					
103	0.40	0.74	203	4.80	3.14	303	-	-	403	1.24	5.54	503	-	-					
104	-	-	204	10.00	7.50	304	6.00	9.09	404	27.56	38.73	504	15.56	9.27					
105	0.36	0.30	205	28.00	12.18	305	25.00	3.65	405	25.48	9.83	505	0.16	0.26					
106	-	-	206	7.00	15.25	306	90.00	6.28	406	-	-	506	10.76	1.42					
107	13.88	8.17	207	-	-	308	-	-	407	1.48	0.17	507	-	-					
108	-	-	208	-	-	309	-	-	408	57.80	7.90	508	74.28	12.61					
109	12.08	3.82	209	21.80	16.94				409										
110	199.28	22.54	210	-	-														
			211	15.00	8.43														
			212	-	-														
	224.28	13.40		88.50	7.36		162.36	4.68		148.76	5.75		103.36	5.66					

Note: city in whole – 729.26 ha, 6.775%.

Source: own elaboration.



**Table 5.7.** Landscaped area in housing offices structure of Lviv

Leninskyi district			Radyanskyi district			Zaliznychnyi district			Shevchenkivskyi district			Chervonoarmiyskyi district		
housing office No.	landscaped area		housing office No.	landscaped area		housing office No.	landscaped area		housing office No.	landscaped area		housing office No.	landscaped area	
	ha	% of housing office area		ha	% of housing office area		ha	% of housing office area		ha	% of housing office area		ha	% of housing office area
100	4.10	12.03	200	0.84	2.26	300	0.20	0.21	400	-	-	500	34.08	26.35
101	3.20	9.80	201	-	-	301	2.68	2.65	401	-	-	501	1.04	12.68
102	2.64	23.74	202	0.36	1.52	302	4.16	8.89	402	19.04	27.74	502	0.96	2.67
103	16.08	29.75	203	43.92	28.78	303	-	-	403	1.84	8.23	503	-	-
104	0.28	2.49	204	18.08	7.58	304	2.40	3.64	404	0.16	0.22	504	147.12	87.60
105	71.52	60.78	205	13.80	6.00	305	60.00	8.76	405	30.08	19.10	505	6.96	11.40
106	10.96	28.87	206	-	-	306	224.00	15.65	406	1.24	2.84	506	-	-
107	32.32	19.01	207	1.20	3.82	308	25.00	4.46	407	131.96	14.80	507	82.20	10.90
108	2.04	10.74	208	-	-	309	4.00	0.91	408	17.24	2.36	508	84.64	14.36
109	62.88	19.90	209	3.24	2.52				409	24.08	4.83			
110	18.88	2.13	210	-	-									
			211	-	-									
			212	-	-									
Total	224.90	13.32		84.44	6.77					225.64	8.72		357.20	19.56

Note: city in whole – 1214.62 ha, 11.28%.

Source: own elaboration.

**Table 5.8.** Residential housing characteristics of Lviv housing offices (% of total housing plot area)

Leninskyi district					Radyanskyi district					Zaliznychnyi district					Shevchenkivskyi district					Chervonoarmyskyi district																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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					historical	late 19 <sup>th</sup> – early 20 <sup>th</sup> century	1950s–1960s	new multistoty building						individual	historical	late 19 <sup>th</sup> – early 20 <sup>th</sup> century	1950s–1960s						new multistoty building	individual																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Source: own elaboration.

**Table 5.9.** City carriageway in the housing offices structure

Leninskyi district			Radyanskyi district			Zaliznychnyi district			Shevchenkiivskyi district			Chervonoarmiivskyi district		
housing office No.	carriage-way and side-walks, sq. m	% of the total area	housing office No.	carriage-way and side-walks, sq. m	% of the total area	housing office No.	carriage-way and side-walks, sq. m	% of the total area	housing office No.	carriage-way and side-walks, sq. m	% of the total area	housing office No.	carriage-way and side-walks, sq. m	% of the total area
100	30 615	8.10	200	29 875	8.10	300	61 477	6.40	400	60 314	8.90	500	54 217	4.20
101	29 907	9.20	201	22 602	8.10	301	43 249	4.70	401	30 403	8.80	501	30 194	57.10
102	33 078	29.80	202	21 711	9.60	302	28 897	6.20	402	40 286	5.90	502	33 367	9.30
103	33 936	6.30	203	40 399	2.50	303	36 445	9.30	403	52 405	23.40	503	26 164	18.90
104	37 992	33.80	204	67 641	2.90	304	32 678	4.90	404	38 763	5.40	504	44 329	2.70
105	43 519	3.70	205	24 023	1.10	305	67 552	0.95	405	52 832	3.40	505	43 608	7.10
106	38 423	11.30	206	25 811	5.60	306	77 641	0.54	406	36 030	8.20	506	49 897	7.50
107	102 711	6.00	207	9 091	2.90	308	47 336	0.85	407	41 792	0.50	507	87 729	1.20
108	30 210	15.90	208	62 548	14.60	309	30 873		408	28 573	0.40	508	65 740	1.10
109	44 065	1.40	209	92 354	7.20				409	49 461	1.00			
			210	40 143	14.20									
			211	91 699	5.20									
			212	43 255	11.70									
Total	424 456	2.51		571 152	4.80		431 157	1.24		431 359	1.67		435 245	2.40

Source: own elaboration.

**Table 5.10.** Landscaped areas expenses (sq. m/person) within land structure of Lviv housing offices

Leninskyi district		Radyanskyi district		Zaliznychnyi district		Shevchenkivskyi district		Chervonoarmiyskyi district	
housing office No.	landscaped areas expenses/person	housing office No.	landscaped areas expenses/person	housing office No.	landscaped areas expenses/person	housing office No.	landscaped areas expenses/person	housing office No.	landscaped areas expenses/person
100	4.38	200	1.23	300	0.17	400	-	500	13.83
101	6.79	201	-	301	2.30	401	-	501	3.03
102	2.71	202	0.40	302	6.76	402	47.68	502	2.78
103	33.69	203	23.73	303	-	403	3.81	503	-
104	0.54	204	10.06	304	2.63	404	0.24	504	62.33
105	79.42	205	3.00	305	29.64	405	19.08	505	6.66
106	11.33	206	-	306	38.11	406	-	506	-
107	16.12	207	6.89	308	8.59	407	62.47	507	73.37
108	2.97	208	-	309	4.21	408	10.09	508	33.66
109	147.44	210	-						
		211	-						
		212	-						

Source: own elaboration.

**Table 5.11.** Railway branches in Lviv housing offices structure

Housing office No.	Branch density	Housing office area, sq. km	Reilway density, km/sq. km	Housing office No.	Branch density	Housing office area, sq. km	Reilway density, km/sq. km
109	1.20	3.16	0.38	400	0.38	0.68	0.59
110	7.80	8.84	0.88	401	0.48	0.34	1.41
203	0.58	1.53	0.38	402	0.76	0.69	1.10
204	1.16	2.40	0.48	403	0.16	0.22	0.73
205	0.76	2.29	0.33	404	0.82	0.71	1.16
300	1.52	0.97	1.57	405	1.10	1.58	0.70
301	1.65	1.01	1.63	407	5.87	8.92	0.66
304	1.24	0.66	1.89	507	7.20	7.55	0.95
305	8.90	6.85	1.30	508	9.10	5.89	1.55
306	16.50	14.32	1.15	City in whole	67.12	107.70	0.63

Source: own elaboration.

Summary of available features of the administrative and planning districts and the Lviv city in whole allows to suggest that the functional and planning structure of Lviv at the end of the Soviet period was formed primarily by new residential and large industrial territories. Other functional areas are losing their role and are developing disproportionately to the dominant functions. Planning structure of the Lviv city, central part preserves its historically formed nature. The structure of Lviv urban space loses its diversity by the 1990 and is characterized by low transport infrastructure development. Service system falls behind the society needs. Insight into the functional and planning structure of the city evolution and its condition at the end of the Soviet period is necessary and it provides a basis for analysis of changes in post-Soviet Lviv city space.

### **5.3. Analysis of changes in functional structure of post-Soviet Lviv**

Characteristics of spatial factors includes following variables: time of new construction, functions, location of new construction (in center, in the middle zone, close to parks, on the periphery of the city), social infrastructure development level. Considerable attention is paid to the characteristics of the planning and organization of urban land improvement (Nazaruk 2008; Trehubova 1989). Interrelations between the factors were considered: the density of road transport network, development degree of transport infrastructure network, provision of housing for one person, social infrastructure development level, provision of landscaped areas, the structure of territories.

Detailed analysis is conducted according to the established functional and operational units. It should be emphasised that for the execution of the Resolution No. 1454-III of the Verkhovna Rada of Ukraine (18<sup>th</sup> February 2000) on creation of the Sykhiv district of Lviv, Lviv City Council through the decision on 28<sup>th</sup> December 2000 introduced amendments to the administrative-territorial division of Lviv and approved administrative districts boundaries, including and newly created Sykhiv district. Boundaries of certain housing offices, which changed its form of management, were also partially modified. However, these changes concerned only a small number of primary units, which allowed the author to analyze the functional and planning changes in the structure of post-Soviet Lviv city in accordance with the selected elements as well as functional and plan modifications.

Modern Lviv is considered as the center of over-regional settlement system. According to the regional planning scheme developed in 2010 by SRI "Dipromisto", Lviv is located at the intersection of basic axes of regional planning framework – East-West and North-South formed by international transport corridors A-3 and A-5. Urbanized core is formed at the intersection of external axes – Lviv city agglomeration.

meration, which includes the Lviv city (center of the system), Vynnyky, Dublyany, Brukhovychi and Rudno, Malekhiv, Murovane, Lviv Soroky, Kamyanopil, Lysynychi, Pidbirtsi, Volytsia, Berzhany, Pasiky Zubrytski, Zubra, Solonka, Sokalnyky, Sknyliv, Lapayivka, Holodnovitka, Zymna Voda, Ryasna Ruska, Birky, Zbyranka, Mali Hrybovychi, Velyki Hrybovychi. Totally – 26 settlements at the area of 33 000 ha with the existing population of 816 000 persons, including 83 000 persons outside the city. Lviv is an open complex system that is functioning in interrelation and interdependence with zone of influence. The limits of the zone form the territories of five rural administrative districts of the region.

In the adjusted *General Plan* (2008) Lviv city is considered in the context of the surrounding areas where two areas can be specified: suburban settlement within the range of about 30 km and forming of urban planning system “Big Lviv” within the range of 3–5 km from the outer boundary. An area of about 850 ha recommended for residential and related public housing for people who choose an individual country estate for permanent residence was allocated in the zone of suburban settlement near the main radial roads. In suburban forests and near water basins the territories for countryside recreation are provided as well as the objects of urban functioning maintenance system (cemeteries, nursery gardens, greenhouses, water intakes etc.) are provided in the appropriate zones (*Koryhuvannya heneralnoho planu...* 2008).

Growth indicators dynamics in Lviv peripheral zone in the first decade of post-Soviet period was higher than within the city limits considering the relatively lower cost and accordingly stronger attractiveness of suburban lands. Due to Lviv preparation to Euro-2012 the tendency has changed allowing us to suggest the possibility of extensive growth stabilization and reorientation to structural changes within the close city environment. However, the role of transport infrastructure, which requires rapid development – especially public transport systems – for efficient functioning of urban systems increases.

1. Functional structure of the city territories – residential areas. The volumes of housing construction changed significantly in the early post-Soviet period. The total residential housing put into operation for the period of 1991–2008 was 4.3 times less than planned. Thus, the expected growth rate of residential housing was 518 000 sq. m/year, but actually it was equal to 120 000 sq. m/year. The expected volumes of Lviv residential properties were 22 300 000 sq. m, while currently they reach just 13 000 000 sq. m. The following districts were proposed for housing development in post-Soviet period: Northern, Warsawska Street, Ryasne-1 at the cost of public gardens, Ryasne-2 and Levandivka districts – on free areas, Zelena-Washingtona, Khutorivka, Stryiska streets – through relocation and liquidation of companies, warehouses, depots as well as relocation of military units and production facilities in other parts of the city. Totally 998 ha of the territories can be developed by the available resources as well as 6 800 000 sq. m of residential housing can be built, residential properties could be increased to 18 800 000 sq. m, where about 765 000 inhabitants can be settled. In addition, suburban areas are developing – Lysynychi, Sokilnyky, Sknyliv, Malehiv, Lviv Soroky, where 3 000 000–3 500 000 sq. m of housing can be built and additionally about 60 000 inhabitants resettled. These parameters characterize the residential capacity of the area within the urban system “Big Lviv”. According to realistic demographic scenario for 2025, the accommodation in volume of 1 600 000–1 800 000 sq. m for about 45 000 inhabitants can be built here.

Individual residential building in suburban areas gained dynamics in the first ten post-Soviet years reaching its maximum in the period of 2000–2005, but the rate began to reduce due to economic crisis and reached its lowest indicator at late 2010.

A process of residential multi-storey housing localization in the middle zone of the city, which is a threat to landscapes by its form and scale, had a significant influence during 1990–2010. The 3–4-storey apartment type constructions as well as single-family constructions dominate among residential investment imple-



mented in these zones. Development of main city exit roads leading to dispersal of housing development and deterioration of visual perception of the city natural landscape dominants is the negative phenomenon in terms of placement of new residential housing. Complementary building at free areas is organized in the old city area. In the outer zone of the city the single-family residential housing is developed creating small formations.

It should be admitted that investment in residential building is not large, as well as it is not an element that strongly effects the changes in the urban space. It has scattered form, the largest places of concentration are in the districts of new building construction (Sykhiv, Northern) as well as in areas of individual buildings due to contraction and reconstruction. In these districts it significantly effects the territory image changes.

2. Landscape and recreation areas of modern Lviv. The area of current public planting system amounts to 820 ha, the coverage equals to 11.2 sq. m/person while the standard rate is 17 sq. m/person. The forming of landscape and recreation areas system in the analyzed period is organized through introduction of legal boundaries of existing parks and the regimen of exploitation and development of interpark territories as well as construction and accomplishment of parks in the new city districts with bringing their general area to the standard rate. 2008 *Lviv General Plan* provides construction of new parks with about 120 ha of general area and transformation of 360 ha of Bryukhovychi forests adjacent to the city into the city forest-park in order to maintain the recreational needs of the inhabitants of perspective districts "Zboyishche", "Holosko", "Pid Holoskom", "Bodnarivna". The qualitative changes in city landscape and recreational system in the post-Soviet period were not introduced.

3. Industrial territories of post-Soviet Lviv. The city has lost its role of outstanding industrial center of Western Ukraine dominating in electronic engineering, radio-telecommunications, machine-building and production of military-industrial complex. Therefore, post-Soviet period is characterized by bankruptcy and

liquidation of industrial enterprises, the former leaders of the whole Soviet Union. The following large enterprises are among the bankrupt: "Lviv Meat Processing Plant", "Kineskop", "Elektron", "Lviv Automatic Loaders Plant", "Lviv Paint and Varnish Plant", "Lviv Mechanic Glass Plant", plant "Pivkolo", "Lviv Gas Equipment Plant", "Rayduha", automobile operating companies etc. (*Osnovni pokaznyky sotsialno-ho...* 2001). The process of functional redevelopment of territories and objects of former industrial enterprises for public functions and residential construction has started. The biggest changes take place in this sphere in particular. The projects of the majority of bankrupt enterprises territories' redevelopment have been elaborated and implemented.

4. Sanitary area. The existing waste dump has exhausted its territorial resource. The issue of recycling plant (waste incineration plant) construction near thermal power station-2 (basic scenario) or on the other sections, which should be taken into consideration while elaborating the *Scheme of City Sanitation and Cleaning* and constructing of recycling (waste incineration) plant, has been under discussion for a long period of time. The city and its surroundings need more than 200 ha of public objects territory, in particular: tram depots – 6 ha, recycling plant – 7 ha, power substations – 2 ha, cemeteries – 184 ha, fire stations – 3 ha.

According to the integrated environment evaluation, the ranging of city territory has been conducted with specification of problem areas. Taking into account *The Lviv Landscape Map* the demand of forming of the city ecological skeleton as the ecosystem stability factor is declared.

5. Lviv historical environment area is one of the priority strategic directions of city construction process. In the post-Soviet period the process of forming of boundaries and regimes of significant sites protection areas was accomplished specifying the following:

- State Historical and Architectural Reserve;
- UNESCO protected areas;
- Lviv historical area;

- development control zone;
- historical landscape protection area.

Every protection area has its fixed regimen that meets the significant sites and environment protection requirements as well as plays leading role in city image forming. 45% of city territory is covered with protection areas: historical area – 2441 ha, development control zone – 4355 ha.

#### **5.4. Changes in street and road network and planning structure of the city**

The construction of inner ring road and continuous movement along the Luhanska, Syayvo, Levandivka, Yaroshenka, Lypynskoho, Plastova, Bohdanivska, Pasichna streets was launched with allocation of large interceptive parking structures in the road junctions zones as well as restriction of city center entry and forming of second ring – Naukovo-Proektovana Street–Ryashivska Street with getaway to Kyiv highway through Levandivka, Ryasne, Zboyishcha regions. The system of one-way movement on existing streets was reorganized in the city central part. The corridor of eastern chord road adjacent to the city center is reserved for solution of its construction problems in terms of its further development.

The parking problem escalates proportionally to the automobilization increase – 160 vehicles/1000 persons to-day. The number of vehicles grew most dynamically in the first post-Soviet years. Thus, in Lviv their number increased from 88 600 (1990) to 112 100 (1995). Now about 55% of vehicles are provided with parking lots, there are about 42 000 car places in garage cooperatives and at paid parking. The city needs 155 000 lots for new parking facilities for the estimated period with its location at place of residence in new buildings – about 55 000 car places; construction of new multi-storey parking structures within the standard accessibility – about 100 000 lots predominantly in noise and sanitary areas not available

for residential and public housing development. Short term parking attached to service objects, business institutions and entertainment establishments is also under way. The ideas of no-transport zones in the historical center of the city and interceptive parking at transport hubs at crossings of road rings with radial streets and public transport lines are declared. The system capacity is approximately 1 and 4000 lots respectively. However, implementation of this ideas even with consideration of the Euro-2012 chances has not been accomplished. In the post-Soviet period the Rynok Square was successfully transformed into pedestrian zone combining two segments of Krakivska and Halytska pedestrian streets.

**Public transport.** Its development is ensured through reconstruction of existing tram lines according to the new no-noise technology as well as future construction of the lines to Sykhiv, Pivnichnyi, Lysynychi and Ryasne regions and expanding of trolley-bus lines network. The Soviet-period-idea of simplified subway lines construction still remains. Electric transport is of the highest priority by economic and ecological criteria. However, to-day the buses remain to be the main kind of transport. Moreover, the low passenger capacity buses are preferred.

The system of public transport constricts, especially tram and trolley-bus lines. The existing tram lines are under reconstruction setting the rails on the large-scale platforms. Thus, the length of used tram lines has decreased from 76.4 km (1990) to 67 km (2000); the trolley-bus lines in the specified period – from 122.3 km to 117.3 km and is still reducing. Only during the last 3 years owing to Euro-2012 preparation such tendency started to change.

**External transport.** Modernization of railway hub, construction of Euro-standard railway and international railway station as well as reconstruction of station square is established by the *General Plan*. In the post-Soviet period the suburban station was constructed at the territory of former railway freight yard with space reorganization from Horodotska Street. The external transport objects require the relevant training to host a large number of fans. Lviv airport is

under reconstruction with lengthening of the runway to 3200 m, construction of the new 1000 persons/hr passenger capacity terminal and territory development. Modernization of bus station at Stryiska Street is also under way. Due to lengthening of runway, the lowering (in the hollow) of the part of Kulparkivska Street in the airplanes flight zone is planned. However, the majority of these projects will not be implemented.

Preparation to European Football Championships “Euro-2012” introduces the biggest changes in the post-Soviet period to the functional and planning structure of Lviv. The new stadium was constructed to hold the tournament matches. The 25 ha area in the Southern part of Lviv nearby the hippodrome was chosen to host 33 000 spectators. The area is provided with good transport links to major objects of external transport – airport, railway station, bus station due to reconstruction of Horodotska, Naukova, Stryiska streets, construction of South-East city ring segment – Naykova–Ryashivska streets (scheduled), lengthening of Knyahyni Olhy Street and extending of tram line to bus station and trolley-bus lines of No. 3 and 5 routes.

The 2500 parking lots are envisaged near the stadium for the fans that will arrive by private transport as well as construction of underground and above-ground parking near fan-sites and in the city center as the basic tourism object for the fans that will stay in the city after the match. Fan-sites for 47 000 persons will be provided near the stadium Euro-2012 in the public center of “Sykhiv” region, at the territory of culture and recreation park, near the “Sokil” stadium, in Snopkivskyi Park near “Ukrayina” stadium, in city central part – on Rynok Square, Svoboda Avenue, near the Opera House and on Pidvalna Street. The relevant development of existing stadiums “Yunist” in culture and recreation park, “Ukrayina” in Snopkivskyi Park and “SKIF” near Lychakivskyi Park is planed for the teams-participants training.

Significant development of hotel industry is expected to provide the fans with residence places. Current capacity is approximately 3500 places (1840 rooms) and it meets the standard requirements.

However, taking into account city priority development as tourist center the hotel capacity will be substantially increased. Propositions for 18 areas are accomplished in the framework of preparation to Euro-2012 to construct new hotels with 4200 places capacity. Total capacity may account for 7700 places, that is enough for the expected tourist flow. The system of public catering in Lviv currently exceeds standard requirements and will be able to satisfy the maximum demand during Euro-2012. The rest of actions will be taken under the social event program developed by the City Council. The carried-out insight into the evolution of city social and morphologic structure in the Soviet period allows analyzing the changes in post-Soviet period in details.

### 5.5. Estimation of morphologic structure changes in post-Soviet Lviv

To analyze the changes of functional and planning structure of socialistic (1990) and modern (2010) periods the methodic of basic components compilation is used. The study encompasses the group of functional and planning factors and their interrelation. The changes of city territory use structure that take place in Lviv are analyzed (tables 5.12–5.16).

**Table 5.12.** Basic functional and planning parameters of Lviv

No.	Parameter	Years			
		1990	1995	2000	2005
1.	City area, sq. km	160.0	160.0	160.0	171.0
2.	Population, thous. persons	816.2	831.2	758.5	761.7
3.	Total area of housing put into operation, thous. sq. m	361.0	89.9	95.9	158.7
4.	Total residential housing	11.9	13.7	14.3	13.8

Source: own elaboration.

**Table 5.13.** Lviv territorial resources in 1985\*

No.	Parameter	ha	% of city territory	sq. m/person
1.	Residential housing area	2 520.0	24.9	33.2
2.	Multi-storey housing – incl. historical	1 084.0 430.0	10.6	14.3 5.7
3.	Cottage housing	266.0	2.9	3.5
4.	Low rise homestead housing	1 170.0	11.4	15.4
5.	City housing area	825.0	8.2	10.9
6.	Schools, child care centers	230.0	2.3	3.0
7.	Service, health care and sport establishments	372.0	3.6	4.9
8.	Higher educational establishments, secondary technical schools	125.0	1.2	1.6
9.	Design institutes, publishing offices	45.0	0.5	0.6
10.	Garages, parking	53.0	0.6	0.7
11.	Industrial housing	1 576.0	16.6	20.7
12.	Industrial enterprises	1 046.0	10.1	13.8
13.	Construction	230.0	2.4	3.0
14.	Energy industry	88.0	0.9	1.2
15.	Storages, depots	212.0	2.2	2.8
16.	External transport area	1 760.0	17.4	23.2
17.	Agricultural lands (agricultural enterprises, “Dekoratyvni kultury” etc.)	812.3	8.1	10.7
18.	Collective gardening, yards	563.0		7.4
19.	Parks, urban forests, public gardens	1 638.0	16.2	21.6
20.	Special areas	217.0	2.1	2.9
21.	Cemeteries	98.0	0.9	1.3
22.	Unused urban lands (sanitary zones, areas reserved for objects relocation)	660.0	6.6	8.7
	Total	10 722.3	100.0	141.1

\* City area – 10 722.3 ha. Lviv population – 760 000 persons. Area/1 person – 141.1 sq. m.

Source: own elaboration.

**Table 5.14.** Lviv territorial resources in 1997\*

No.	Parameter	ha
1.	Lands under homesteads, buildings, yard sites, sq.	9 591
2.	Lands under public buildings	1 224
3.	Total forest fund area	3 347
	– incl. collective gardening	603
	– collective yards	467
4.	Plough land	402
5.	Perennial plantings	16
6.	Natural hayfields	171
7.	Pasture lands	55
8.	Underwood	30
9.	Bogs	24
10.	Lands under water, ponds	90
11.	Other lands	510

\* Population – 810 000 persons. City area with adjacent settlements – 16 562 ha.  
Area/1 person – 204.5 sq. m.

Source: own elaboration.

**Table 5.15.** Lviv territorial structure in 2002–2003

Parameter	2002	%	2003	%
1	2	3	4	5
Agricultural lands:	1771.96	10.40	1 820.33	10.64
cultivated lands	1623.27	9.50	1 665.64	9.70
agricultural lands under ame- nities	130.59	0.80	131.23	0.80
agricultural lands under roads	18.10	0.10	19.40	0.10
Forests	3366.20	19.70	3 451.96	20.20



1	2	3	4	5
Built-up lands:	11 237.26	65.70	11 296.75	66.10
under residential housing	3 364.84	19.70	3 381.75	19.80
industrial lands	1 793.61	10.50	1 876.76	11.00
transport and communication lands	904.57	5.30	910.89	5.30
technical infrastructure lands	102.80	0.60	120.52	0.70
recreation lands	2499.43	14.60	2 416.96	14.10
Open waterlogged lands	27.70	0.20	29.80	0.20
Open lands with no vegetation	579.03	3.40	380.48	2.20
Waters	118.84	0.70	121.65	0.70
Total lands within the settlements	17 101.00	100.00	17 101.00	100.00

Source: own elaboration.

**Table 5.16.** Lviv territorial structure in 2008

Parameter	2008	%
Agricultural lands:	1 826.14	10.68
cultivated lands	1 671.45	9.80
agricultural lands under amenities	131.23	0.80
agricultural lands under roads	19.40	0.10
Forests	3 435.52	20.10
Built-up lands:	11 317.37	66.20
under residential housing	3370.00	19.70
industrial lands	1 854.68	10.80
transport and communication lands	917.29	5.40
technical infrastructure lands	179.35	1.00
recreation lands	2 422.96	14.20
Open waterlogged lands	29.80	0.20
Open lands with no vegetation	370.50	2.20
Waters	121.65	0.70
Total lands within the settlements	17 101.00	100.00

Source: own elaboration.

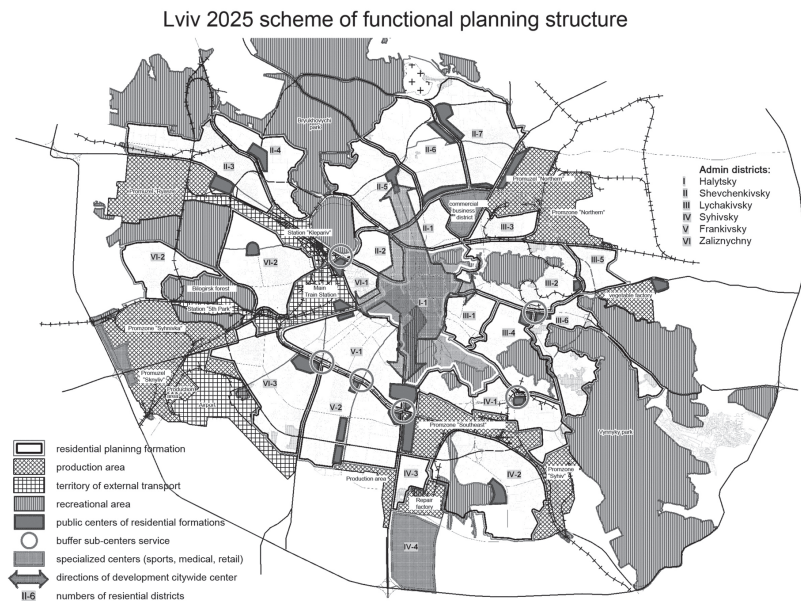
During 1990–2010 the city territory structure has underwent significant changes. In 2008 comparing to previous years the share of agricultural lands increased by 0.28% (54.18 ha). Their share under residential housing in the structure of built-up areas in 2008 did not change and amounted to 19.7%. The share of recreation lands decreased comparing to 2002 by 0.4% and amounted to 14.2%, when the share of industrial, transport and communication and technical infrastructure lands increased. Percentage changes in territorial structure testify to insufficient management of this resource in the city. About 20% of the territory is under the residential housing and the future Lviv development is associated primary with attraction of new territories for the needs of residential housing. Thus, as of 1943, 1985 and 1998 the relative share of residential housing lands increased and amounted to 19.1%, 24.9% and 34.5% respectively. This parameter comes near 50% if to take into account the active individual housing construction in Lviv suburbs (territories formally not included into city network) in the last decade. The shortcomings of city territories use mechanisms stipulated the imbalance of existing territorial structure with the need for relevant functions in territorial resources.

The analysis of city functions correspondence to social needs entitles us to affirm that the city lacks territories for its efficient functioning, in particular transport function takes insufficient quantity of city territories. Instead industrial function still takes large territories due to irrational planning organization and allocation of lands under industrial objects of Soviet economy period. Nowadays, industrial objects and transport, storage and construction enterprises take more than 40% of city territory and majority of them is located nearby the central part.

Due to breakaway from the massive residential housing practice, increase of customers range and differentiation of citizens by financial position, considerable changes take place in morpho-

logical structure of the city and its parts. According to the analysis and comparison of socialistic and post-socialistic housing construction, we can conclude that social changes crucially influence the functional and planning structure of the city and the role of these parameters increases. In particular, the “apartment type” houses appear; reconstruction (ground floors usually) and compaction of prestigious regions development is under way leading to deteriorating ecological parameters with simultaneous improvement of urban amenities provision. The changes in social structure of post-Soviet Lviv came as a result of multidimensional transformational process where the actions of local, national and global transition from planned to market economy as well as changes of geopolitical objectives and property categories overlap. Multidimensional transformational process led to collapse of dominating industrial production and beginning of deindustrialization processes in Lviv. These actions and transformational processes stipulated social changes – on the one hand, social group of those who lost due to transformation emerged, on the other hand – new investment and economic liberalization made it possible for a small society group to significantly enrich itself.

The updating of Lviv *General Plan* (Mistoproekt 2008) became an important architectural and urban event of post-Soviet period. The *General Plan* stipulates the city space development directions and is the base for elaboration of detailed plans of separate city parts’ economic development. For this aim the nature of the document is in many ways generalized and separated from the details of territory arrangement (figure 5.1). Due to this the elasticity of the document and possibility of its modification is preserved. The *General Plan* of the Soviet period was based on technical and economic grounding. The new one rests upon the *City Development Strategy*. On this ground the directions of spatial reorganization and development are specified.



**Figure 5.1.** The scheme of Lviv functional and planning structure

Source: own elaboration based on *Lviv General Plan 2010*

Comparison of 1993 (last *General Plan* elaborated up to the requirements of Soviet urban development) and 2008 General Plans show that the approaches and basic functional and planning decisions from the previous plan are preserved in the new one. However, the established idea of functional structure improvement is not implemented. The reduction of command and control mechanisms of urban management stipulates “erosion” of functional structure and strengthening of urban pattern structure that is treated as the objective process of return to the harmony of urban development.

The study of conditions points to strengthening of human and functions concentration in the central part of the city that emphasizes the closed type of city space. The desire to improve living conditions will lead to extension of territories oriented at services

(nurseries, schools). This will cause the development of engineering infrastructure at the territories allocated for new residential housing and in suburbs.

Communicating problems are redoubled due to concentration of job places and services in the city center as the result of industrial districts' lose of their importance and city reorientation at non-industrial activities that gravitate toward the city center. This is stipulated by obscurity of ring roads and lack of traffic roads passing through the city structure. Construction of the new roads for intra-city movement will be of utmost importance for development of Lviv. The proposed in *General Plan* creation of three bypass rings and development of public transport will contribute to solution of this problem.

The changes in the system of public transport with the dominance of minibuses are not efficient. Construction of subway in Lviv is uneconomical and unreasonable. Instead it is advisable to introduce the speed land tram as well as reorganize the system of railways in the city. The importance of this decision is obvious as far as the territories available for city center development are located in the Northern part in respect of city center behind the railway Lviv–Kyiv (Pidzamche district). These territories after removal of railway from this segment will have good road connections with the center and great territorial reserves for allocation of new public functions (figure 5.2).

In the author's opinion the further preservation and solution of city historic horizon as an important part of city space and its protection is obligatory. In its frames dynamic changes take place, while other city segments do not develop. Arrangement of compositional connections is important. Dominating role of Vysokyy Zamok and ancient city part that determine urban composition is preserved. Extension and search for new areas for residential housing is indispensable. It is worth paying attention to the chord "North–South". Currently the movement at this direction is not active and construction of such chord will lead to destruction of considerable green areas and a lot of houses as well as disruption of ground and water regimen at large city segment.

Lviv should preserve its city nature with low-rise housing, although it has also great vertical dominants. Occasionally, a 7-storey building-insertion appears at the 3-storey housing street in the historical center, which does more harm for the city space than 20-storey building located beyond the historic bounds and in compositionally reasonable place.

## 5.6. Conclusions

Intensification of space social fragmentation and housing in particular is the distinctive feature of social and morphological structure of modern Lviv. This is confirmed by proximity of “wealth oases” and “poverty enclaves” in different city parts. Their emergence is stipulated by previous development phases. “Poverty enclaves” represent old buildings in exterior to railway parts of the city (in particular Pidzamche district) that emerged at the break of 19<sup>th</sup>–20<sup>th</sup> century. “Wealth oases” appeared back in before-Soviet period and gained its development in socialistic and post-socialistic periods. The districts of Heneral Chuprynsky and Lychakivska Street in Lviv emerged in interwar times and preserved their high social status till nowadays. The districts of one-family houses (professor colony) as well as new buildings with improved planning (for party nomenclature) and higher standard of curtilage organization date back to socialistic period of city development. Post-socialistic period is characterized by dynamic intensification of social contrasts due to spot localization of new residential apartments in the old part of the city and in the most attractive places by urban development and landscape parameters.

Functional diversity and unsettled state of city space increases. The problems of city territorial resources use escalated in post-Soviet period. Moreover, the imbalances of city territories structure deepened with increasing of their deficit for necessary functions; separate industrial and special enterprises have surplus territories that are insufficiently used. The city actively goes beyond the admini-

stratively imposed limits. Whereas in Soviet period the area of Lviv was 117.42 sq. km, nowadays along with subsidiary settlements – Vynnyky, Rudno, Bryuhovychi – it amounts to 162.52 sq. km. Interdependence between the formed city landscapes is changing in favour of trade, entertainment, housing and transport functions (with decreasing of industrial one) as well as recreation and park territories.

The established historic, functional and planning structure is preserved. Planning structure is formed by transport carcass created by basic radial roads supplemented by chord and ring connections. The works on strengthening of ring connections and development of transport and planning connections at the crossings of basic radial and ring roads are under way. The works are especially intensified in the Southern part of the city due to construction of new stadium here and modernization of airport for Euro-2012 with extension of relevant transport infrastructure.

The errors in the issues of Lviv space reorganization were made in post-Soviet period. Modernization of Lviv airport can be considered as one of the biggest errors: all the previous *General Plans* provided for its relocation. Preparation to Euro-2012 opened the unique possibility for its relocation and opening of South-Western direction for city enlargement. However, the opportunity is wasted.





**Mariusz Lamprecht**  
**Anna Wojnarowska**

University of Łódź

## **6. THE STRUCTURE OF URBAN SPACE OF ŁÓDŹ**

The present functional and spatial structure of Łódź has been shaped not only by implementation of urban planning decisions, but also by spontaneous processes of non-planned character. The attempts undertaken to regulate and control the process of spatial transformation of Łódź are reflected in many previous planning documents, which are no longer in force, but constitute a testimony to problems with which the city has struggled in the course of its history. At the same time, many current urban planning decisions continue the spatial policy outlined previously, and sometimes conceptions which have not been realized before provide inspiration for actions undertaken at the present time. So the spatial and functional structure of Łódź presented in this paper is seen – to a great extent – in the light of urban planning decisions already implemented, and the directions of prospective development.

### **6.1. Urban planning and expansion of the city of Łódź up to the end of the Second World War**

Although Łódź can already be found on maps dating from the second half of the 18<sup>th</sup> century, a notion of the city's spatial arrangement may be gained from the city plan made in 1812–1813 by the team

of the surveyor Franciszek Johnney, at a scale of 1 : 5000. Although it had enjoyed the city rights since 1423, the settlement looked at that time more like a village than a town (the so-called agricultural Łódź). In light of the existing sources, it is assumed that the plan reflected the character of Łódź quite well, considering that because of its remote location and lack of impulse for development, Łódź practically did not develop until the 19<sup>th</sup> century.

The process of industrialization spurred the city's development and required urban plans to be prepared. Łódź's inclusion into the group of industrial cities, that is cities which were to be institutionally industrialised, was a result of, among other things, favourable geographical, legal and transportation conditions, as well as the region's drive for development. This marked the beginning of a new, dynamic and in most part planned period of the city's development. However, it should be noted that during the most dynamic stage of Łódź's development, urban planning was definitely not up-to-date. This fact may be partly explained by the city's rapid expansion; the number of residents rose in a few decades from almost 1000 (in 1815) to 100 000 (in 1872).

In 1820, a place for the market square of a new settlement, called Nowe Miasto, was secured. The new settlement was located south of Stare Miasto, on the opposite bank of the Łódka river; and its spatial arrangement was designed in 1823 by the surveyor Filip de Viebig. It had at the center the octagonal market square of Nowe Miasto, surrounded by 184 lots for development, and 200 land properties located in its eastern part. The regulations are shown in still existing cartographic studies from 1823, including *The Site Plan for Regulated Drapers' Settlement in the City of Łódź* (by F. de Viebig, H. Muldano-wicz) at a scale of 1 : 5000, and *The Site Plan for Regulated Drapers' Gardens in the City of Łódź* (by F. de Viebig) at a scale of 1 : 5000.

The city's rapid industrial development necessitated further expansion plans and the incorporation of new territories. The industry's dependence on rivers at that time resulted in the creation of industrial areas (so-called riverside industrial areas) in the Jasień

river valley south of Nowe Miasto. A linen and cotton drapers' settlement was located between Nowe Miasto and a group of industrial areas along the road and was regulated at the end of the 1820s.

Soon a further city expansion was necessary. So-called Nowa Dzielnica consisted of over 300 lots for residential development. The new territory was blended into the existing area of Nowe Miasto and the Łódka settlement, forming together a contiguous area.

During the last decades of the 19<sup>th</sup> century, the city's expansion was becoming gradually more chaotic. In the 1870s, Nowa Dzielnica did not fulfil the city's needs anymore, and its development was difficult due to the ground-level railway line which cut across the planned streets. New building areas were hastily designed by expanding the existing streets to form the outlines of new districts. However, the lack of further regulations resulted in the preservation of diagonal agricultural zones, which then became the borders of developed areas. Simultaneously, a swift development of rural land bought from the townsmen was taking place. Due to the fact that thanks to the invention of steam engine industry areas did not have to be located near rivers anymore, industry could now develop much more freely within the city borders. It resulted in converting former residential areas into industrial ones, which disrupted the order of the city's functional and spatial structure. Moreover, the industrial facilities retained a semi-rural character up until 1880; their vast parts were still undeveloped. Some areas, including those of Nowa Dzielnica, were located too far from the city center to be fit for intensive development. Only Nowe Miasto and the districts located along Piotrkowska underwent an intensive development already before 1880, which gave Łódź a more urban look (Wesołowski 2002; *Profil...* 2012, Koter 1980).

At the same time, the outskirts of Łódź, excluded from urban planning studies, experienced a rapid and chaotic development, often along cart tracks and on lots not connected to the existing transport routes. The scope of the development was enormous and resulted in Łódź being surrounded by chaotically developed

suburbs, which were strongly connected to the city and inhabited by the workers from Łódź factories and the rural poor. Therefore, the subsequent enlargement of urban areas caused the chaotically developed land to be joined with the properly planned city center (*Profil...* 2012). The intensive urbanization of suburban areas (including the working-class suburbs of Bałuty, which had been experiencing a rapid growth since the end of the 1850s, and the industrial Widzew) was the result of, among others, the lack of regulations specifying the street standards and the quality of the housing. Urban planning in these areas was limited to charting market squares and the outlines of main streets. Apart from that, the development could be wholly unplanned (Wesołowski 2002).

Undoubtedly, the scope of the local government's control during the period of the city's rapid industrial expansion was rather limited, although it included the adjustment of the plans designed for industrial settlements to the needs of a densely built-up city (which resulted in unusually large city districts). However, during 1850–1914, Łódź evolved from a group of industrial settlements with elements of small-town land development (visible mainly in Stare and Nowe Miasto) into a large city, which was gradually acquiring the urban landscape and spatial structure, as well as various functions and facilities necessary for the functioning of the metropolis (Wesołowski 2002).

The end of the First World War marked Poland's regaining of independence. In 1919, the Łódź province was established, with Łódź as its capital. The city's urban planning during that period was in poor condition. The land use and municipal services management lacked order; many areas (former suburbs) such as Bałuty or Chojny were poorly incorporated into the urban fabric and developed in a sub-standard and haphazard way. The railway line surrounding the city (so-called peripheral railway line) was becoming a significant obstacle in the city's spatial development, as the area it enclosed was being built up. Already in 1917, *The Spatial Development Plan for the City of Łódź* was prepared. It was designed for the area of the city within

the administrative borders from 1915 and the areas located outside the city borders but intended for urbanization. The major solutions proposed in the plan were a fast city railway line unconnected to the peripheral railway line as well as areas for city development located near the new line. At the same time, a cross-city railway line was designed. It connected the city's two main railway stations: Łódź Fabryczna and Łódź Kaliska. Although the idea has been for years considered worth implementing, it has not been carried out until now. Only in the last few years actions were taken to implement the concept designed before the Second World War.<sup>1</sup> The plan included also a design of the city's landscape corridors and a system of city squares. The street system was based on ringroads with diagonal routes connecting mainly city squares and streets (Bald 2002a, b).

During the pre-war period, works aimed at the improvement of the living conditions in the city were implemented. They included conveyance systems, and a sewage treatment plant. Until 1939, over 100 km of sewage drains had been three artesian wells, two firsts artesian receptacles which could contain 30 000 cubic m of water, and almost 60 km of the distribution network. Simultaneously, the rivers in Łódź, polluted with industrial and municipal waste, were regulated into open and covered channels. Although the decision improved the sanitary conditions in the city, it caused the rivers to be wiped out of the Łódź landscape. Currently a few actions aimed at their renaturalization have been implemented.

Among the main urban planning studies prepared before the Second World War was *The General Spatial Development Plan for the City of Łódź* from 1935. It was the first legal document to be the formal basis for the spatial development of Łódź since the 19<sup>th</sup> century urban regulations (Bald 2002a).

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<sup>1</sup> Currently plans for the underground expansion of the Łódź Fabryczna Railway Station and a vast portion of the railway tracks are being implemented. The concept and method of construction of an underground cross-city railway line located under the city center is also being discussed.

## 6.2. Main spatial planning principles and solutions in the socialist period

Similarly to the interwar period, the urban development of Łódź in the post-war times was based on the spatial development plans for the city. Their major aims were the need for large-scale multi-family residential development, a gradual deagglomeration of the industry, which up to then had been located in the city center, an upgrade of the transportation system, expansion of green areas and expansion of municipal services. None of these plans was in fact fully implemented, either due to the lack of financial resources or to the changes arbitrarily implemented by top-tier authorities, often politically motivated.

The first post-war program for the general spatial development of the city of Łódź was prepared by the newly-established Urban Development Office already in 1946. The solutions included there formed the basis of the first general spatial development plan for the city of Łódź in 1949. In 1949, *The Spatial Development Plan for the City of Łódź* (an unauthorized study) was designed. Its main features were:

- a so-called corridor organizing the city along the middle portion of the Piotrkowska and Zachodnia streets, which character was mainly commercial;
- a suggestion for a trade and office district near the Łódź Fabryczna Railway Station;
- a suggestion for two cross-city railway lines connecting the city center and the former suburbs (then city districts) Bałuty and Chojny (Bald 2002a).

One of the most important solutions included in the plan was the extensive residential development in new areas (districts) to the east and west of the city (Widzew, Retkinia). The plan used zoning to separate residential development from industrial development by relocating the plants, which were a nuisance for the residents, from the city center to the newly-designed industrial areas.

Subsequent projects resulted in *General Plan for the Spatial Development of the City of Łódź to the Year 1980*, authorized in 1961. The plan provided for a “loose concentric/coaxial” spatial arrangement. The number of city center inhabitants was to be reduced and residential construction on undeveloped land was to be implemented in order to improve the conditions in the city center. Furthermore, the so-called *red square*, that is the center-forming area was charted. Due to the increasing number of residents and the rise in employment, the plan focused on mass transportation. The concentric arrangement of the city was to be serviced by a modern tramway and bus transportation system. The peripheral railway line was to be used as a means to provide transportation services for the city and the commuters from the suburbs. The project differed from the previous plan in that it had one cross-city railway line connecting the city center and Bałuty together with a new central railway station (Bald 2002a).

*The Development and Modernization of the city of Łódź to 1975 and Subsequent Years Project*, authorized by the government, spurred far-reaching changes. It reflected the top-tier authorities’ recognition of the fact that Łódź had so far been excluded from every progressive national development concept and should be provided with more resources for economic and urban development. The increased financial resources (which were the consequence of the new government’s pro-Western attitude) allowed Łódź to develop more quickly. Subsequent plans focused on industry expansion, modernization and restructuring, as well as further dynamic development of residential construction and technical and social infrastructure, especially services and culture. Industry development and diversification, which was to weaken the dominant position of the textile branch, as well as the development of multi-family residential construction, were to be the main factors of Łódź’s urban development. Both these aims required large new areas for urban investing, which meant the need to go beyond the peripheral railway line.

In 1972, *General Local Spatial Arrangement Plan for Łódź – a perspective* came into force. Its main concept was the development

of Łódź as the center of the urban agglomeration and the region and a city whose influence reached far beyond their borders. Therefore, the spatial arrangement of the city was described as an open arrangement, which was to develop into a radial/multiple-band shaped arrangement connected to the areas of the Łódź Urban Agglomeration. The plan provided for a thorough rebuilding of Łódź's 19<sup>th</sup>-century city center. It also identified the need for the expansion of the large districts to the east and west of the city in order to balance the existing meridionally elongated arrangement. The new areas of urban development were to be band-shaped along the main road and tramway – and, in the future, railway – transport lines. They would include both housing estates and new job vacancies at the planned “industry and warehouse parks”. Residential areas were to be dominated by multi-family construction located in the main zones of intensive urban investing. They would consist of housing estates as well as new workplaces for the residents in newly-designed “warehousing and industry parks”. The city was divided into five districts: Śródmieście, Bałuty, Widzew, Górna and Polesie. Each of them had its own commercial complex. Furthermore, Śródmieście had an independent general municipal services complex, which was the center both of the city and of the agglomeration. The plan provided for new residential areas and accompanying industrial complexes, as well as academic districts, main elements of the transportation, railway and air transportation systems, and green areas (Bald 2002a).

The plan also suggested supplementing some of the existing housing estates with industrial areas. Extended infill construction was to be implemented in the city center. Furthermore, so-called central residential districts were to be established in the city center. The plan introduced a new solution in the form of supplementing the multi-family construction with single-family development. It was to be implemented in the zones located outside the peripheral railway line, far from the intensive urban investing, and was supposed to blend into the existing suburban development. The preferred forms of development were attached and semi-detached housing, but detached housing was also allowed.



Since the beginning of the 1970s, the housing estate Widzew Wschód was being constructed outside the eastern part of the peripheral railway line. It had an independent loose spatial arrangement, which to a limited extent incorporated the existing remains of the older settlement network. At the same time, in the second half of the 1970s, the construction works on Retkinia, Łódź's biggest housing estate, began. The works were divided into stages and were finished in the middle of the 1980s.

A true breakthrough in multi-family development, both in respect to the location and the scale and form of the buildings, happened at the turn of the 1980s with the construction of the high-rise Śródmiejska Dzielnica Mieszkaniowa (ŚDM). It was the first district of this kind within the core of the city center. The highest point of the area, it dominated the landscape and was Łódź's new landmark as well as a symbol of the city's modern character. It consisted of fourteen to twenty-four-storied residential buildings, at the time the highest ones in Poland. Due to its extraordinary height, the estate was commonly named "Manhattan".

Another turn in residential development was marked with the construction of the first single-family housing estate in Łódź, which started at the end of the 1970s. The estate consisted of architecturally quite varied but technologically identical two- and three-storied terraced houses with flat roofs, constructed using prefabricated slabs. They formed parallel corridors of attached houses along the streets and were separated by gardens.

In the 1980s, the development of multi-family construction became less dynamic due to the increasing economic crisis. During that time, private residential housing started to sprawl in the outskirts. It was dominated by flat-roofed cubes which lacked a definite style and usually blended into the spatial arrangements of the old suburban settlements.

The idea of settlement bands provided for industry and warehousing "parks", which would become workplaces for the city residents. Although eight such districts had been planned, in the 1970s only four were constructed. Two of them were mainly warehouse

districts, sprawling across a vast area. The other two housed many large new plants, which showcased Łódź's industrial development. The new industrial and warehousing districts were largely based on the American idea of "industry parks" and consisted of simple, geometrical office buildings and low-rise halls with light structure and colourful fronts. Their similarity to "industry parks" was evident in their casual – in fact extravagant – space management, which provided for many green areas. To sum up, these new districts created a completely new type of industrial landscape, vastly different from the old one, which featured solid fortress-like red brick buildings, numerous turrets and high factory chimneys.

The incorporation of new areas into the urban fabric and the gradual introduction of industrial prefabricated housing necessitated such a mode of spatial development. As a consequence, the central areas of the city underwent a gradual decapitalization. They ceased to perform effectively their functions resulting from the size of the city and its role as the center of the region (Bald 2002b).

### **6.3. Transformations of the spatial structure of Łódź after 1989**

After 1989, the political and socio-economic transformation in Poland brought about changes in the spatial and functional structure of Łódź, as a result of re-introduction of market economy. Globalization, which after the end of the socialist era started to influence also Polish cities, resulted in the fall of the leading industrial branch of the city – the textile industry. Łódź is exceptionally exposed to the effects of global transformation, from the industrial to the IT era, as the previously mono-functional city, whose history encompassing the last 200 years was related to the prosperity of the textile industry. Regarding prospective development of the city, its present situation is difficult, because economic and social phenomena accompanying the restructuring of its economic base are paralleled by

elementary deficiencies in civilization development, dating back to the 19<sup>th</sup> century dynamic, but often temporary and haphazard growth (*Studium...* 2002). Still one of the most acute problems is underdeveloped system of technical infrastructure, requiring modernizations and completing.

After withdrawal of industrial activities, many plots and buildings previously occupied by the textile industry, situated in city center and downtown, were abandoned and subsequently dilapidated. These post-industrial areas and objects during the last 20 years have been partly adopted for new functions, mainly hypermarkets, financial and insurance institutions, service utilities, shops and apartments. Some buildings were demolished, the others still wait for revitalization,<sup>2</sup> creating the potential of future enrichment of the functional mixture in the city center.

The functions of Łódź are changing – current development and future prosperity of the city should be strongly related to the growth of the service sector and metropolitan functions, as well as building the attractiveness of the city as a place to live, work and invest in. Central localization of Łódź in Poland and transportation infrastructure (neighboring network of highways and motorways under construction at the moment), as well as the planned huge railway hub in the New Center of Łódź and availability of investment areas, bring about the possibility to develop also a new function of the city as the logistic center (*Studium...* 2010).

The main functions of Łódź presently are:

- administration – of regional and local level, with ambitions to assume also such function at the national level;
- industry – based on the traditional textile and clothing industry, but also introducing new branches, such as household utilities production and IT sector;
- culture;
- health protection;

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<sup>2</sup> Revitalization issues are presented in chapter 4 in this book.

- education and science;
- organization of international congresses and exhibitions, as well as sport events;
- transport and logistics;
- service sector – with growing significance of financial and IT services.

The city's functional and spatial core still remains its traditional historic functional and spatial center of linear character – Piotrkowska Street, especially its northern part between Wolności Square and Mickiewicza/Piłsudskiego Avenue, which is dedicated mainly to pedestrians.

#### **6.4. Urban planning documents**

Spatial development of Łódź after the Second World War was characterized by territorial expansion. The city had annexed within its boundaries a much bigger area than it was able to develop (*Studium...* 2002). One of the effects of such a way of spatial growth was degradation of city's central zone. This direction was still predominant in the *Master Plan of Łódź* of 1993, which continued all the earlier tendencies, indicating huge new areas for urbanization, in spite of explicit inclinations of the city's depopulation and – specific for the end of the socialistic era – decline of the land-consuming big industry (Wiśniewska 2009).

Since 1994 the legal instrument in spatial development policy of communities has become a study of the conditions and directions of spatial development. It is the compulsory document which has three main functions:

- to express the spatial policy of commune, containing the general rules of its spatial development;
- to coordinate the arrangements of local spatial management plans, specifying the guidelines according to the spatial structure of the whole city;

- to promote the city, indicating areas attractive for investors and to inform about the intentions of local authorities within the area of spatial management.

Within the years 1997–1998 the first *Study of the Conditions and Directions of Spatial Development of the City of Łódź* was prepared, then followed by two others in 2002 and 2010. The first two documents set the main directions of the spatial and functional development of Łódź for the last 20 years and the third one for the forthcoming period, taking under consideration new challenges and opportunities of market economy, as well as making efforts to implement pro-ecological trends of sustainable development.

First steps towards this new thinking in urban planning of the city were made by the *Study...* of 1998, in which the need to hamper the tendency of diffusion of urban development and urban sprawl was recognized, as well as necessity to cover all the city's territory by local plans. It also pointed out the need of modernization, rehabilitation and regeneration of the degraded central and downtown area, creation of legible and rich system of public space and limitation of huge commercial investments – such as hypermarkets – in the outskirts of the city, to intensify the development of the inner city area (Wiśniewska 2009).

### 6.5. Zoning of the urban structure of Łódź

The *Study of the Conditions and Directions of Spatial Development of the City of Łódź* of 2002 identified the basic division of the city into two zones: urbanized zone (U) – the zone of urban character of development and non-urbanized zone (N) – the natural zone. The natural zone (N) consisting of 16 465 ha constitutes 56% of the overall city area and the urbanized zone of 12 857 ha – 44%. Within the urbanized zone (U) we can presently distinguish two mutually not related structures, separated by the peripheral railway line: a compact urban structure of the historic 19<sup>th</sup> century town with fragments dating back to the 15<sup>th</sup> century (so-called *inner area*, situated within the peripheral railway line) and a looser

structure of the 20<sup>th</sup> century town (the *outer area*), located outside the peripheral railway line). The inner area is densely built up, representing the historical way of urban planning – mixture of different functions neighboring one another, in contrast with the outer area, which was largely planned according to the modernist ideas of separated functional zones.

Within the urbanized zone (U) we can indicate three basic parts:

- **center**, embracing the oldest, middle part of this zone – with an area of 718 ha (about 2.5% of the whole area of the city and less than 6% of the urbanized zone U);

- **downtown**, between the center and peripheral railway line – the area referred to as the “Old Łódź” within the city boundaries of 1939;

- **the post-Second World War developments outside the peripheral railway line**: huge housing estates, single-family residential areas, industrial and warehouse zones (*Studium...* 2002).

Regarding the first two zones – center and downtown areas – Łódź has a very well preserved spatial structure representing its historic development – dating back to the early beginnings in the 15<sup>th</sup> century:

- medieval incorporations of land to the west of town – in the vicinity of present Old Market and Church Square, still legible in city’s structure as streets following the traces of old routes or divisions between fields (Krzemieńska, Zdrowie or Drewnowska streets);

- secularized areas of Włocławek bishops’ properties, which were the foundation of the spatial development of Łódź and the outline of which could be presently seen in city’s structure as the roads forming its administrative border (Telefoniczna and Czechosłowacka streets);

- early industrial developments of the New Town in 1820–1823, then Łódka and New District, legible in the central part of Łódź, with dominating axis of Piotrkowska Street and neighboring streets in central part of the city, as well as so-called riverside industrial areas located on Jasień river;

- elements of spatial development of industrial Łódź of 1860s with huge industrial complexes (like Scheibler and Grohmann, Poznański manufactures) and of the railway sideline from Koluszki, lately the area of the Łódź Fabryczna Railway Station;
- peripheral railway line constructed in 1896, creating the spatial border for the dynamic development of the city;
- compact housing developments erected in the period between the two World Wars, which emerged as well in the inner, as in the outer city zones (*Studium...* 2010).

A specific feature of the spatial structure of Łódź is its historic downtown, concentrating the most valuable material heritage, distinguishing Łódź from the other big cities in Poland and many in Europe, as one of the biggest preserved areas of the 19<sup>th</sup> century built stocks. This part of the city has great potential, not only as preserved material substance of unique cultural value, the trace of four cultures (German, Jewish, Polish and Russian) which have created the history of Łódź, but also as the centrally located area which should be used in a far more intensive way than it is at present. It is a great challenge for the city, as currently about 75% of its built stocks in this area is in bad technical condition.<sup>3</sup> The second important and characteristic element of urban structure of Łódź are the 19<sup>th</sup> century vast industrial complexes (*Studium...* 2002).

The outer zone of the city is built up of a loose set of functional areas – housing estates, residential areas of single-family houses and industrial/warehouse plots. Main problems of this zone are: monofunctional character of particular complexes, lack or very poorly developed services and undeveloped system of public space, uncompleted realization of big housing estates of the socialist era, spatial chaos – co-existence of haphazardly located residential houses, industrial areas and housing estates, lack of realization of planned transportation links. Recently there are examples of introducing new apartment blocks and service buildings into

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<sup>3</sup> According to the research done by the Instytut Rozwoju Miast (*Studium...* 2010, p. 18).

the structures of existing housing estates, but still in not sufficient extent (*Studium...* 2010).

As the effect of the course of its historic development, urban structure of Łódź does not constitute a homogenous organism, it is rather a set of differentiated settlement units of different origin, architectural and urban planning features, as well as morphological and functional individualities. This situation implies existence of specific local communities, reflecting different legal and property form of land ownership in the past. Taking under consideration such prerequisites, Koter distinguishes in Łódź seven categories<sup>4</sup> of units of urban structure, regarding their morphological and functional qualities of the particular kinds of urban development:

- a) units of residential character (tenement houses and multi-family block houses);
- b) mixed single- and multi-family residential units;
- c) mixed use units of residential/industrial development;
- d) industrial units;
- e) single-family residential units;
- f) suburban units of single-family and agricultural development;
- g) agricultural units (Koter 2009).

According to this categorization, Łódź was divided in 1991 into 62 local administrative units (*Uchwała...* 1991).

## 6.6. Main directions of spatial development of the city

Development of the urban structure of Łódź after 1993, according to the provisions of the *Master Plan (Miejscowy ogólny plan...* 1993), followed the proposed west-east axis, instead of the historically strongly determined north-south direction. Afterwards, both *Studies of the Conditions and Directions of Spatial Development of City of Łódź* of 2002 and 2010, sustained the Piłsudskiego/Mickiewicza Avenue

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<sup>4</sup> Categorization done for the purpose of creating local government units in Łódź in 1991.



as the secondary functional axis of the city, perpendicular to Piotrkowska Street, concentrating new investments of different kinds in this area. Up to the present, important changes in the city's spatial structure amplifying the west-east development concentrated along the main west-east axis mentioned above, between Kościuszki and Sienkiewicza streets, where new investments took place – like hotels, shopping malls, multistory parkings, offices, shops and services. In this area is also proposed a zone where concentration of high-rise buildings could take place in the future. Development on the north-south traditional direction took place mainly in the form of new huge commercial centers on the outskirts of the city.

### **6.7. New areas and elements in urban structure**

New economic situation after 1989 has brought new challenges regarding the city's potential and ability to build its future prosperity. Łódź has entered a new period in its history, starting to be influenced by the global trends of the post-industrial era. One of the effects of this process manifesting itself in the urban structure is the emergence of new urban areas, which can be classified as new in three aspects: new functions, new forms and/or new localization (Liszewski 2006). In the period considered, that means after 1989, we can recognize new areas, situated both in urbanized (U) (revitalization of post-industrial or degraded central city areas, developments on empty plots) and non-urbanized zone (N). Within the city center and downtown we can often observe the emergence of new functions, which occur as the adaptation of the existing structure for a new role. We can indicate: new investment areas, commercial complexes, multifamily dwelling estates built by private developers, residential areas of single-family houses, new campuses (Parysek 2006).

As was mentioned above, transition to the market economy brought back the private ownership of real estate, which caused very strong pressures for further territorial expansion on *greenfields*. Therefore, for the last 20 years the main problem in a fringe zone

of the city has been uncontrolled annexation of open, green areas for new investments and urbanization pressure on the valuable natural areas – so-called *urban sprawl*. To hamper this process the city should undertake actions aimed at regeneration of the degraded inner city areas, as well as use in a new way the areas previously developed, but presently underdeveloped or not used (*brownfields*) – to bring investments back to the city center, to the already urbanized zone “U”.

Spatial development of Łódź after 1989 had a specific character. Construction of multi-family housing estates, which in the socialist era created vast areas of new living quarters in the outer zone of the city, was limited in favor of new districts of single-family houses, filling up the suburban and fringe urban area. Another new feature of this development was the emergence of post-industrial areas and structures, which were adapted for new functions or dilapidated and demolished, making free space for new investments. In this group we can enumerate huge investments like Manufaktura commercial complex or some examples of so-called *pocket revitalization* in central and downtown area – adaptation of post-industrial buildings for banks, hotels, educational edifices and apartment buildings, and filling the gaps in the existing urban structure with new apartment and service buildings on empty plots.

New elements of urban structure after 1989 were also new economic areas, like Special Economic Zone (SEZ), huge commercial complexes and hypermarkets and areas planned for new industrial and economic investments. Hypermarkets and commercial complexes are situated as well in the inner, as in the outer (in relation to the peripheral railway line) zone of the city.

In Łódź there are several complexes of SEZ being a part of Łódzka Specjalna Strefa Ekonomiczna (ŁSSE), situated in the downtown part of the city at Tymienieckiego Street.

Several areas in Łódź have been indicated as particularly advantageous for investments – the poles of accelerated economic and spatial growth:

1. In non-urbanized zone N:

- surroundings of Janów and Olechów in the east part of the city – as an area especially devoted to the development of new economic functions, such as technological parks;

- Smulsko and Lublinek region in the west part – as a zone of infrastructural investments near the sewage treatment plant and new economical investments neighboring the Special Economic Zone (SEZ) Nowy Józefów (*Studium...* 2002).

2. Within the urbanized zone U:

- areas of Łódź Fabryczna Railway Station and its vicinity – as a place of localization of the new transportation hub and New Center of Łódź, including revitalized building of the historic power plant EC1;

- the corridor area related to realization of transportation artery of Wojska Polskiego Street (*Studium...* 2010).

To assure the sustainable development of the city, local authorities should also prepare for the future investments in previously developed areas, including post-industrial complexes, situated in the already urbanized outer zone, or even in the inner city area.

## 6.8. Public space

The structure of public space in Łódź is rather poorly developed, manifesting itself most distinctly in central and downtown areas, based on a grid of the 19<sup>th</sup> century corridor streets dividing inner city into the rectangular urban blocks, with the main axis of Piotrkowska Street and very few squares. Beyond the historical core of the city, we can recognize only fragmented, unfinished spatial compositions of public space, unrelated to the inner area and to each other, not creating the consistent and continuous system. The main problem of public space in Łódź is its low quality showing itself as a lack of function, low aesthetic quality and weak links within the system. The nodes of this system are the historically developed squares: Old Market and Bałucki Market, Wolności, Niepo-

dległości, Komuny Paryskiej, Katedralny, Reymonta and Barlickiego squares, as well as Schillera and Reymonta passages, perpendicular to Piotrkowska Street. In the future it should be supplemented also by newly created public area including pedestrian passages and Kobyła Square within the New Center of Łódź.

One of the most important factors which would serve the improvement of the quality of life in Łódź should be the proper use of its built heritage, in the form of the built structures and public space. This process would require complex regeneration of the downtown area, including modernization of material stocks and technical infrastructure, improvement of public transportation systems and existing roads, creation of supplementary access system to the interiors of big urban blocks (inner "secondary" vehicle and pedestrian streets), solution of parking problems and creation of an integrated system of public space. Introduction of zones of calmed traffic and extension of the pedestrian zone in the city center should be one of the priorities serving better accessibility for inhabitants and tourists and underpinning the functional and cultural role of the central area.

The extension of the system of public space should also include the most valuable historic industrial complexes along the valleys of Łódka and Jasień rivers. Another precious and indispensable components of the public space system are green areas – like huge complexes of Zdrowie Park, Botanic and Zoological gardens situated to the west of the peripheral railway line, Brusy and Złotno districts, as well as Las Łągiwnicki in the north, greenery along river valleys and open green areas of the natural zone N.

## 6.9. Green areas

The structure of green areas in Łódź is largely based on the primarily existing forests, arranged green areas containing parks and cemeteries (of global acreage of 1114 ha), allotment gardens, greenery within the urban blocks, accompanying transportation arteries and filling out empty plots and unused areas, even in the cen-

tral and downtown part of the city. In this city zone the green areas usually are: historic parks and gardens, remainders of past public and private green areas, of which 12 historic parks are protected as the monuments. Important is the role of the greenery of cemeteries of different religions which were present in Łódź during the course of its history, as well as the greenery of post-industrial complexes, river valleys, open areas and forests of the natural zone, mentioned above.

In current planning documents still vivid is the idea (for the first time conceived in the *Master Plan of Łódź* of 1993) of the *Green Circle of Tradition and Culture* – a conception combining the areas and objects of historic cultural heritage and valuable green areas into a ring embracing the inner city, forming a border and at the same time the connection between densely invested central districts and outer areas of less intensive development. The new concept basing on this idea is named *The Blue-Green Network* and strives to create the complete system of green, recreational and sports areas, combined with water reservoirs, especially re-naturalized rivers, and was conceived by the European Regional Center of Ecohydrology (ERCE) in 2009 (<http://switchlodz...> 2011).

## 6.10. Transportation system

The inner city transportation system is based on the 19<sup>th</sup> century grid of streets. It is not efficient and overloaded almost within the whole area limited by the peripheral railway line, due to the unfinished and undeveloped structure in some parts of the city, lack of the continuity of main arteries and framework of by-passes, as well as low technical parameters in the downtown area.

Considering outer transportation links, Łódź is still not adequately exploiting its central localization in Poland, as a transportation and logistics center. This potential would be strengthened by (already being under construction) A1 and A2 highways and S14 and S8 express roads, constituting a kind of the outer by-pass

framework of the city. Another ultimately important investment is a new multimodal transportation hub which is planned as an element of TEN-T European system, a new underground railway and bus station, in the place of the former Fabryczna Railway Station. This investment is directly related to the New Center of Łódź project, being the key element of the whole concept.

### **6.11. New Center of Łódź**

In 2007 City Council adopted a resolution on the *New Center of Łódź Program (Studium... 2010)* which is an idea of creating completely new urban structure on the post-industrial areas of historic power plant EC1 and former area of Łódź Fabryczna Railway Station. This program comprises a number of huge investments, of which the most spectacular will be the new multimodal transportation hub, situated underground and serving as railway, tram and bus terminal. The second important element will be the revitalization of EC1 industrial structures for new functions – modern cultural and art center, a part of which would be the *Special Zone of Art* and the *Special Zone of Culture*. The whole investment of the New Center of Łódź is planned in two stages, of which the first one consists mainly of the two projects mentioned above and encompasses the area of 30 ha, while the second stage – 60 ha, altogether an area of 90 ha situated between Kilińskiego, Narutowicza, Kopcińskiego and Tuwima streets. In the second stage commercial investments are planned, like apartment blocks, offices, shops and services.

This new part of the city will be created according to the urban planning concept conceived by the famous architect Rob Krier, who proposed new urban structure strongly related to the existing downtown spatial form, filling up the empty area with new streets, squares and urban blocks. Thanks to the execution of this project the city would gain new elements of public space, with the main element of a new agora – Kobro Square, enriching the existing system of public space in the central part of Łódź.

## 6.12. Future development of the city structure

Since 1990, when Łódź had 848 000 inhabitants, its population has fallen to 753 000 in 2007, and demographic forecasts are that till 2025 it will reach the level of about 650 000. This loss is of specific character, as the city loses inhabitants mainly in its inner area, with the growth of the number of new inhabitants in the suburban zone, which is closely related to un-coordinated investments in the fringe area and brings about the broadening of the range of unsolved infrastructural problems. This phenomenon necessitates protection of open, undeveloped areas and more intensive use of urban plots already invested. The way to impede the *urban sprawl* tendencies should be the creation of the city which would be friendly to its inhabitants, with sustainable transportation systems, healthy environment, abundance of green and open areas, offering diversified living conditions. It should bring back the inhabitants to the inner area, as well attract new ones.

*Study of the Conditions and Directions of Spatial Development of Łódź* of 2010 is a new strategic document defining the local spatial policy for years to come, including directions of future spatial development and transformations of the existing spatial structure.

There are three main guidelines on future spatial development of Łódź:

- city of sustainable development;
- city well settled in the structure of natural environment;
- city based on the historical identity.

To comply with the idea of sustainable development, the most important issue is to regenerate the dilapidated inner city area, using its potential to build the future prosperity of the city, to bring the outer urbanized areas to the functional and spatial coherence, and to indicate new areas for specific new investments, with maximum use of *brownfields*, protecting the natural, non-urbanized areas. To achieve development well settled in the natural environment, it is necessary to create pro-ecological urban structures and a system of inner natural areas connected to the outer natural set-

tings of the region. To preserve the identity of the city, its historic assets as well as valuable single objects as being parts of the urban structure should be protected and maintained in a proper way, with recommended or necessary supplements in the historic structure (*Studium...* 2010).

As potential areas for future development of metropolitan functions are indicated attractive, revitalized areas, accessible by local and supralocal transport connections at multi-modal hubs: the area between Łódź Fabryczna and Łódź Widzew railway stations, the neighborhood of Łódź Kaliska Railway Station and Reymont Airport, as well as urban blocks adjacent to Piotrkowska Street, Manufaktura and Księży Młyn (*Studium...* 2010).

### **6.13. EU accession**

Polish EU accession has triggered transformations in the spatial structure of the city, mainly concerning modernization, extension and adding new utilities to the existing technical infrastructure networks, including road and tram systems, which have been and still constitute the most acute deficiencies in the development level of the city. Other changes have been provoked by the flow of EU funds for urban regeneration, used for investments in new buildings filling gaps in urban structure of the 19<sup>th</sup> century downtown, renovations and adaptations of historic buildings for specific functions and creation of new premises for SMEs. Presently the flagship project of the urban regeneration in Łódź, implemented using the EU funds is the revitalization of the historic power plant EC1. This project is a part of the planned huge investment of the New Center of Łódź.

### **6.14. Conclusions**

The spatial structure of Łódź urbanized zone is formed of two distinctive parts: the inner zone, which was largely developed during the first period of the dynamic industrial development of city in



the 19<sup>th</sup> century and whose compact structure is limited by the peripheral railway line, and the outer zone, located outside the peripheral railway line. The outer zone was developed mainly in the era of rapid territorial expansion of the city, being an effect of building huge housing estates to the east and west of the peripheral railway line, as well as industry and warehouse zones, in the 1970s and 1980s. Changes after 1989 can be described as the emergence of new urban areas within the city structure, regarding their functions, forms and/or localization. These new elements have been situated both in urbanized (U) as well as non-urbanized zone (N). An important problem in urban development in this period has become the *urban sprawl* – a process of uncontrolled and spontaneous annexation of open, non-urbanized areas for new investments, as well for residential (prevalingly single-family housing) and commercial purposes. All the planning documents for Łódź prepared after 1989 stressed the necessity to stop further development on *greenfields*, in favor of redeveloping *brownfields* situated in the inner city area. This direction is coherent with the idea of sustainable development, as well as the proposed in the new *Study...* close relation of the city to the natural environment. An important element of spatial development of the city should also be the proper exploitation of its historical stocks, building its specific identity. Therefore, the development of the spatial structure of Łódź in forthcoming years is to follow this model, with redevelopment and revitalization of the historic center and downtown area within the peripheral railway line, and further development of the urban complexes zone containing residential districts and industrial quarters situated outside the railway line.



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