



## DEVELOPING “GREEN” PUBLIC SPACES AS A PATH TO URBAN REVITALISATION OF RESIDENTIAL-INDUSTRIAL ZONES

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### Summary

Optimization of the urban structure, as well as modernization of city districts as a result of changes in the functional use of the urban territory, are currently coming to the fore among research topics for most cities in Eastern Europe.

In the present article, as seen in the example of the Pidzamche district of the city of Lviv (Ukraine), attention was drawn to the need of revitalising the already urbanized, often post-industrial areas, which had lost their original function over time. The developmental impetus for this area may arrive by way of “green” public spaces project, which will affect the “quality of life” for the local residents, through: performing recreational and leisure functions, raising the aesthetic value of the place, as well as potentially constituting so-called “green corridors”, connecting individual parts of the discussed area.

### Keywords

green public spaces • modernisation • urban revitalisation

### 1. Introduction

An important event, one that had influenced the manner of city planning at the end of the twentieth century, was the transition from industrial production to the information economy, which results in a product of intellectual work, broadly understood, beginning with modern technologies, and ending with stock exchange operations. De-industrialisation in most European countries started in the early 1970s. In Eastern European countries, this process began only in the 1990s, along with the transformation of political systems. For instance, in Lviv in 2014 there was a reduction of industrial areas by 9%, instead of 1.5% as forecasted in the 2010 General Plan for Lviv; in turn, instead of expanding public space by 1.2%, the latter was reduced by 3.2% [Petryshyn, Hanec 2014].

For the city districts currently operating as industrial ones, technological requirements were prioritized at the time of their inception. In urban planning, this meant grouping industrial facilities in industrial zones, separated by train and car routes.

As a result, the urban tissue was “crisscrossed” with communication routes, without convenient access routes or connections for pedestrians, without landscape areas, recreation areas, or public spaces.

A change in the orientation of the economy, namely a reduction in the share of production and an increase in the services sector, conditioned the closure of industrial facilities, which affected the life of entire urban districts. In many countries of Western Europe and the USA, an incentive to develop degraded post-industrial districts of the city was provided by newly created “green” public spaces and projects in the field of “green architecture”. As a result of the activities undertaken by the inhabitants of New York City, aiming at restoring urban wasteland to life, a competition for the High Line Park project was carried out in 2003. The composition of the park referred to the former use of space, by introducing footpaths in the form of railway sleepers, and the materials used evoked the industrial character of the place, thus emphasizing its tradition. In the green surroundings, visitors to the park have the opportunity to view the streets of New York and Hudson River buildings [Wilczkiewicz, Wilkosz-Mamcarczyk 2015]. Another example of urban modernization is the city of Leipzig in Germany [Stadt Leipzig 2017]. In the city, on the grounds of the former railway and on areas of wasteland, parks were established. In this way, on the one hand, it was possible to combat the problem of the lack of greenery, and on the other hand, hitherto unattractive districts gained popularity. The municipality financed the construction of these parks from subsidies, thus increasing the value of land in nearby plots. Leipzig is also known for its public spaces. The premise for obtaining financial support was that the residents of the quarters allowed for the public use of their semi-private spaces surrounding their homes. In this way, green “pocket” parks were established, which significantly improve the quality of life in old housing estates, while the small green zones created a new urban quality.

## 2. Material and methods

The aim of the research work is to present the method of resolving, and the possibility of using “green” public spaces in the urban, post-industrial tissue of the city district of Pidzamche in Lviv (Ukraine) – within the area defined by Zamarstynivska, Khmelnitsky, and Lipinsky streets. The analysed district is located at the foot of the hill, where in the thirteenth through to nineteenth centuries there was a castle, hence the name: “Pidzamche” (literally: “under the castle”). Research methods consist in studies on the literature related to the subject of the article, but also *in-situ* studies involving field research work: inventory and photographic documentation carried out by the authors of this publication in Lviv in the year 2016.

## 3. The History of Pidzamche

The identity of Pidzamche consists of several historical layers. Already since the thirteenth century, the then Krakovian Forecity area had been inhabited by craftsmen.

Because of its informal independence from the city, palaces and estates were built there, surrounded with parks. Over time, large mechanized factories had been built in the northern part of Lviv. The architectural and spatial landscape was changing, with one-storey production facilities lining the streets.

In the 1860s, this part of Lviv became a place of radical changes. The beginning of the latter dates back to 1869 when a railway line appeared here, which in the nineteenth century initiated many changes in the functional and planning structure of the city. Pidzamche began to fill with factories and production plants as well as cheap living quarters for the workers. The railway embankment has shaped the physical border between the main part of the city and the Pidzamche, thus creating a separate district with a new identity (Figure 1). During the nineteenth century, that district had been expanding like all the others, but it became inferior in terms of the quality of buildings and sanitary conditions, and in the imagination of many Lviv inhabitants, to this day it remains the periphery of the city.



Photo by M. Wilkosz-Mamcarczyk, 2016

**Fig. 1.** Railway line separating Pidzamche from other districts

The railway contributed to the transformation of craft workshops into factories and production plants. First of all, the food and light industry sectors, metal processing, wood processing and construction were established here. At the turn of the nineteenth and twentieth centuries, there were many factories operating in Pidzamche that enjoyed high prestige, such as: the Baczewski factory of liqueurs and vodkas (in Khmelnytsky street), Jan Rucker's canning factory (in "Znesinnia" area near Zhovkivska street), and "Hazel" confectionery factory (in Tkatska Street). In the upper part of Zamarstynivska street, at the beginning of the twentieth century, the first Lviv Factory of pressed yeast

and malt was operating; at the end of Zhovkivska street, also at the beginning of the twentieth century, stood the first steam laundry throughout Galicja region, and the first dry cleaner in Lviv; and at Khimichna street there was a large production plant for varnishes and paints by Henryk Blumenfeld. In 1886, a large factory of agricultural machinery, owned by Ferdynand Pietsch was transferred to Zhovkivska street from Lychakiv quarter, later followed by the foundry belonging to Prince Lubomirski. The plans for the development of the “Greater Lviv”, drafted by engineer Ignacy Drexler in 1901, envisaged connecting Lviv with the suburbs, but due to the outbreak of the First World War, it had not been implemented. In the interwar period, state investment funds related to the development of industry were not directed to Lviv [Bohdanowa 2004]. Accordingly, during this period, only several new establishments were created in the area of Pidzamche: Kuźnicki’s factory of roofing paper, the Winter brothers’ factory of weighing scales, Ichnowski’s butchery and meat processing factory at Zavodska street, the “Pallis” shoe factory at Zhovkivska, street, the “Tlenpol” chemical products factory at Horodnycka street, and the “Len” weaving factory at number 29 in Tkatska street [Melnyk 2010].

After the Second World War, in the context of Lviv’s industrialization, the industrial district of Pidzamche did not play an important role – this is because in other parts of the city, new priority plants for the Soviet economy were built, related to the machine, chemical and electrotechnical industries. The production facilities remaining at Pidzamche were treated as “second rate”. New factories were not developed here, but the existing ones were used, added onto, and modified. But even these added buildings and rare new factories occupied larger and larger areas – and Pidzamche did not have any significant surplus of the latter. Industrial buildings “absorbed” the entire streets, an example of which can be seen in the buildings of the now defunct “Svitoch” factory in Boryslavska street (formerly Vilchkov) [Melnyk 2010]. Factories also surrounded residential buildings, as in the case of the building at Wolhynska street, around which the “Movdyvinprom” factory grew over time. In 1960, the authors of the “Project for the location of the first construction section for the city of Lviv for the years 1959–1965” described the northern district of Lviv as follows: “The northern part of the city has the worst development. The streets here are narrow, almost undeveloped, there are no green areas. Residential buildings are intertwined with industrial enterprises.” [Centre for Urban History of East Central Europe 2017].

#### 4. Current status of the studied area

Currently, most of the industrial buildings of Pidzamche are not functional (Figure 2). In the area occupying approximately 10% of the district, multi-family residential houses are built without access to accompanying services or infrastructure with cultural, or leisure functions. As a result, the quarters of residential and industrial buildings remain, in terms of quality, the worst choice for the place to live. According to data obtained from real estate brokers, the lowest accommodation prices in the whole city can be found right here (700 USD/m<sup>2</sup>) [Duocom 2017].



Photo by N. Sosnova, 2017

Fig. 2. Wolhynska street, ruins of “Movdyvinprom” factory

On the other hand, the district has the potential in terms of cultivating the tradition of the place, grounded in history, and the industrial development characteristic of early twentieth century, as well as other elements of historic heritage (including the church of St. Parascheva at Khmelnytsky street).

Currently, Pidzamche as an area is interesting from the point of view of the architectural and spatial layout, divided into several districts of different functions. There are residential farm buildings from the beginning of the twentieth century, residential buildings with an average number of storeys, dating to between late eighteenth and early twentieth century, industrial buildings from the first half of the twentieth century; as well as currently erected compounds of multi-storey residential buildings.

The population living in the Pidzamche district today amounts to around 2.7 thousand people. The total area of the district is 38.5 ha, of which 19.55 ha is part of the area included in the UNESCO World Heritage listing. Generally speaking, there are 263 buildings in this area, of which more than half are residential buildings, including 17 monuments of national importance [The Municipal ... 2014].

Factors, which are potentially significant for the development of the district, include: the proximity of the city centre, as well as the natural areas - the “Znesinnia” regional landscape park and the “High Castle” park; the location of public institutions in Pidzamche (kindergarten, school, clinic, church, etc.); and small business development in the form of service companies (car workshops, gas stations, bars, shops and others). An important role – also for the whole of Lviv city – is played by the transportation network: tram lines, exit roads from the centre, and the Pidzamche railway station.

The disadvantages of the district include neglect and fragmentation in its planning. The industrial zones of the Pidzamche district constitute about 50% of the area, and there is no communication between them, which would facilitate the connection of various parts of the district with each other and with natural areas. Another problem is the lack of the necessary amount of green recreational areas. Although there are

large landscape objects nearby, the railway tracks constitute an artificial barrier. The stifling atmosphere of abandoned, neglected factories, along with the lack of attractive facilities, inhibit the inflow of investors who could cause the initial, “acupunctural” development of the district. According to J. Lerner [2016], “acupunctural development” consists of various types of activities that will initiate the development of cities. For the analysed area, this could also be “pocket parks”, which would become an impulse for the revitalization of the district.

Currently, along with the transition from the industrial economy to the economy based increasingly on services and technology, industrial buildings of the Pidzamche area remain in a state of stagnation and destruction. Most large production plants have been fragmented, and their individual parts have been sold. Such processes of functional exchange and fragmentation of individual areas generally stimulate the transformation of the urban structure.

## 5. Proposed changes

The post-industrial city “produces” knowledge and services, whereas the “means of production” are its streets, squares, and parks, service and public buildings, educational, cultural, scientific, and medical facilities, social and commercial networks, in other words – the entire urban environment. In turn, public space takes over the city-forming role [Wantuch-Matla 2016]. The development of urban centres today consists mainly in using the potential of spatial reserves existing within their structures. However, thanks to the skilfully shaped public space, we can strive for the secondary integration of urban structures, fragmented in the process of urbanization [Wantuch-Matla 2016].

The goals of future urban projects in relation to the Pidzamche district should focus on revitalization, which would warrant the possibility of implementing a variety of visions, in terms of living and working conditions in the modern city.

In the Lviv-Pidzamche Revitalization Program 2012-2025, jointly prepared by the Instytut Rozwoju Miast (IRM, the Cities’ Development Institute) of Kraków and the City Institute from Lviv, the aim of the changes was to increase the attractiveness of the district in terms of housing and services, opening it up to tourists, as well as strengthening the identity of Pidzamche. The supporting activities are to be those related to raising architectural and urban standards [Jarczewski, Huculak, 2011]. However, from the point of view of the authors of the present article, landscape-related activities can also become an important element in the process. One of such activities is the creation of green public spaces, as places that would emphasize and create the identity of Pidzamche. Among the proposed solutions is the implementation of pedestrian connections between existing landscape objects (Figures 3 and 4). New connections are offered between public transport stops and production facilities. It is proposed that pedestrian access routes be developed between Khmelnitsky and Promyslova streets in the form of green ecological corridors. Ecological corridors are arranged in such a way that residents and potential users of the designed ecosystem have an alternative option of routes to choose from, connecting various functional items.



Source: Tupis, Petryshyn, Sosnova 2017

**Fig. 3.** The existing green areas of Lviv



Source: Tupis, Petryshyn, Sosnova 2017

**Fig. 4.** The concept for the urban revitalisation through the creation of 'green' public spaces

Due to the lack of the possibility to create large-scale green areas in the form of parks (because of the “compressed”, crowded built environment), public spaces can perform the functions of hybrid spaces, for instance, a combination of a park and an urban square. Also functioning as green spaces in this area are: garden courtyards, playgrounds, or fragments of post-industrial areas transformed into “cultural parks”. A major role in urbanized space – due to the limited amount of biologically active areas – can be played by vertical green structures, which, incidentally, have already been appearing spontaneously on the sites of abandoned post-industrial buildings (Figure 5).



Photo by M. Wilkosz-Mamcarczyk, 2016

**Fig. 5.** Spontaneously appearing greenery of vertical character

The green public space will be a place of integration and meetings of the local community – that is, the residents of nearby buildings and neighbouring quarters. Connecting these spaces via green corridors will facilitate the creation of a high-quality pedestrian communication network in the former industrial district of the city, bringing urban space to a new aesthetic level. As seen in the examples of many “post-industrial” cities throughout Western Europe (for instance, Emscher Park in Germany) and the USA (such as the High Line Park, mentioned in the introduction), greenery contributes to the development of post-industrial areas, and it activates the development of tourism in the region, which often translates into the profit for local municipalities and good publicity for the city. It helps in the revitalization process, without negating the industrial past. It develops new ecosystems in areas that had been deprived thereof by the industry. It contributes to the improvement of the urban landscape quality, shaping a positive, aesthetically pleasing image of the place [Pluta 2014, Sobol A., 2014].



## 6. Conclusions

The motto of the club located outside the city centre, in the former industrial surroundings, is heavily packed with urban-planning content: "We extend the central part of the city!" For decades, this was the motto guiding the urban planners of Lviv, who designed the Podzamche quarter – the flow of some of the functions from the overloaded city centre to the aforementioned district. Along with the aforementioned change in the character of the economy, production and industry are no longer the factors determining the city formation; instead, these functions are taken over by public spaces and greenery [Zachariasz 2006]. Individual industrial facilities are beginning to integrate into the modern economy, in which services prevail – and not the production industry, as before. The changes are also taking place in the way of life of contemporary city dwellers. Currently, the need for recreation and leisure is dominant, which may be met by newly designed "green" urban spaces. The presented examples also confirm the fact that the issues behind the degradation of urban centres are diversified, and depending primarily on economic factors; and therefore individual solutions should be used, developed in accordance with the needs of each particular place.

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