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THE CITY OF LVIV WAS CREATED BY OUTSTANDING PERSONALITIES

Issue No. 4 of AS is dedicated to the outstanding personality of ARNOLD RÖHRING

Lviv is open to the world and it has a difficult task, namely, that of being original, preserving self-identity, and being iconic at the same time. The monuments of architecture and its urban planning create the singularity of the city. However, the personalities of its creators are often forgotten with the passing of time, and their contributions are not adequately appreciated. Garden and park monuments are the most vulnerable elements of the ecosystem affected by the growing pressure of urbanization. The City Council should care more about improving the state of the city landscape monuments. On May 19–21, 2016 the Department of Urban Planning and the Institute of Architecture of the Lviv Polytechnic National University in cooperation with the Department of Protection of Historical Environment of Lviv City Council and the Department of Environment and Improvement of Lviv City Council, held in Lviv the International Scientific and Practical Symposium “ARNOLD RÖHRING – Art and Nature in the Urban Development of the City of Lviv”.

The Symposium was held in honour of Arnold Rohring – a landscape architect of a European scale in the modern sense. He was one of the many creators of Lviv who, during the period of 1870–1913, implemented into life his vision of Lviv as a flourishing garden. The architect managed to combine both the classical and innovative visions of the role of green spaces in the panorama of the city.

Arnold Rohring collaborated with such prominent architects of that epoch as the Rector of Lviv Polytechnic Julian Zakhariievych and Prof. Ivan Levynskij. The then city was growing rapidly, Lviv Polytechnic became a decoration of the prestigious “New world” district and was surrounded by its popular Technical garden created by Rohring and preserved until today.

The combination of the historical school of urban planning, architecture and unique landscape architecture of the highest standard are the perfect symbiosis of Lviv. This tradition should continue to be developed.

The purpose of the Symposium:

- return from oblivion of the name and the creative works of Arnold Rohring – the Chief landscape architect of Lviv in 1870–1913 and appreciation of his contribution to the development of the city;
- discussion of current research problems of preservation and reconstruction of historical systems of urban green spaces and proposals for their solution;
- establishing of good communication between scientists in the field of protection of historical gardens and parks for the preservation of historic urban greenery network of the city.

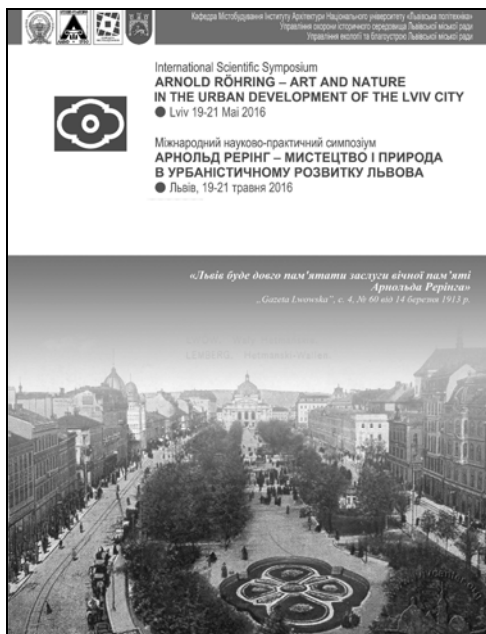


Fig. 1. Poster of the Symposium (project of Yu. Idak) [1]



Fig. 2. During plenary sessions (May 20th, 2016, photo R. Liubyt'skyy)

Proposed Symposium topics:

- development of the urban ideas of the second half of the 19th – early 20th centuries and creation of a network of urban greenery;
- identity of Arnold Rohring in the culture of the city;
- the author's hand in landscape gardening by Arnold Rohring ;
- status of the urban greenery network of the city, conservation, protection and development prospects.

Arnold Rohring was one of the best students of C. Bauer (*Carol Bauer; 1818–1894; Director of the Botanical garden in Lviv*). He developed green spaces in the parks, on the main boulevards and squares of the city and carefully watched over their condition. As the press of that time wrote, more than 200 parks and gardens decorated the variety of terrains in Galicia, Kingdom of Poland, Russia, Silesia, Hungary, and Prussia, which were put in order according to the plans and under the guidance of A. Rohring.

The 18th and 19th centuries became the period, when green spaces were a necessary part of urban structure. Already in the 19th century the typology of urban landscaping of squares, promenades and parks for various purposes was generated. The period of the industrial revolution and fundamental changes in the socio-political and economic spheres of society, resulting in significant spatial and functional transformation of the European cities, were still going on. Lviv was one of the examples of the cities that had undergone such transformations in Central Europe.

The cooperation of Arnold Rohring with Yuriy Zakhariievich in the formation of the urban planning concept of development of Lviv and the necessity to develop the new construction status and the aesthetics of the parks and gardens were effective. Created on the motives of romantic park compositions and historicism functioning in architecture at that time – the eve of the era of secession – Stryiskyi Park was considered the most exquisite among the parks of Galicia and the whole of Europe. This Park had become a landmark in the biography of Arnold Rohring and in the life of the city, as well.

For Lviv, the modern Svoboda Avenue (Hetman Vally) and the prospect of Shevchenko (Academic avenue) have also become iconic spaces. Since the time of the laying of these alleys they took on the role of a central representative of the urban space. Socio-economic and political changes have altered the cultural and symbolic image of Lviv; over years Lviv has got a more complicated structure, however, the central public spaces, i.e., boulevards, parks, squares, formed by the end of the nineteenth century, remain the main formative elements in the identity of the city.



Fig. 3. The ceremonial opening of the restoration memorial table dedicated to Arnold Röhring in Stryjskij Park. From left to right – S. Tupis, assoc. prof. H. Lukashchuk, Prof. Dr. Sc. Agata Zachariasz, the Head of the Department of Restoration and Artistic Architectural Heritage prof. M. Bevez, PhD in Arch. assoc. prof. O. Rybchynskyy (photo H. Petryshyn)

Urban Planning Department of the Lviv Polytechnic National University from the 1970s, works in the field of landscape architecture.

Many projects from that time are worth being mentioned. Among them are the projects of reconstruction of urban parks, which were carried out in the then Students Design Office (SDO) under the leadership of the enthusiast of preservation of green spaces in Lviv for generations to come Vira Laskowska, as well as the architects such as: Victor Kravtsov, Tatyana Maksymiuk, and their disciples and followers : Stepan Tupis,

Volodymyr Didyk and others. The period of 70's – 80's of the 20th century in Lviv was marked by a new wave of revitalization of programs for conservation, protection and development of historical parks, monuments of landscape art, as well as other city parks and gardens.

Active teaching and research activities in the field of “Landscape architecture” are carried out by the Head of the Department, Professor Halyna Petryshyn and the other teachers of the Department – the architects Tetyana Maksymiuk, assoc. prof. N. Sosnova, S. Tupis, V. Didyk, the dendrologist, assoc. prof. G. Lukashuk. They conduct scientific and applied research and conceptual research projects of landscape and historical complexes, parks, and other open areas. The Department completed the project of landscape historical complex “Vysokyy Zamok”, Sviatohirsky gardens, a landscape reserve park “Znesinnia”, as well as proposals about the arrangement of the park “Kortumova hora”. As a result, the “Landscape Map of Lviv” was developed as a section of the General Plan of Lviv (the leader of the authors` group is the PhD architect, assoc. prof. Yuriy Kryvoruchko).

Conservation, protection and sustainable development of landscape objects of garden and park art are possible, subject to the policy and principles of integrated urban development, as central preconditions for implementation of the European sustainability strategy.



Fig. 4. 19.05.2016 - The ceremonial opening of the parterre of Svoboda Avenue projected by A. Röhring (the restoration project is done at the Department of Urban Planning of Lviv Polytechnic by H. Petryshyn, S.Tupis, H. Lukashchuk. The executive firm – the design center EDEM, its Director – I. Antonova); from left to right – prof. B. Posatskyy, (a guest), T. Maksymiuk, S. Tupis, assoc. prof. I. Rusanova., assoc. prof. H. Lukashchuk, assoc. prof. N. Sosnova, the Head of the Department of Urban Planning prof. H. Petryshyn, the Head of the Department of Protection of Historical Environment of Lviv City Council –arch. L. Shvets-Onyshchenko, assoc. prof. I. Cherniak, the Head of Department of Ecology and Improvement of the Lviv City Council A. Halushka, the Director of the design center EDEM I. Antonova, assoc. prof. A. Pavliv, assoc. prof. Yu. Idak [2]

In the final discussion and summing up of the Symposium the following conclusions and recommendations were made:

1. A more thorough research of the heritage of Arnold Rohring is recommended with a view to clarify and expand the list of his works.

2. The authentic objects of Arnold Rohring's heritage (parks, gardens, promenade, Corso, squares, villa gardens, resort parks, parks for residences) projected in trends of the prevailing styles of the 19–20th centuries (landscape style including calligraphic direction, Art-Nouveau, etc.) have the features of uniqueness and, at the same time, the general features of the author's style.

3. For the first time Arnold Rohring created a comprehensive system of greenlayings in Lviv, which was distinguished at the gardening exhibition of 1903 in Vienna as the best in the Austro-Hungarian Empire. Its

impact on the cultural value of Lviv is invaluable till today. That is why the creation of documents for entering the author's layings of A. Rohring to the Register of monuments of culture and monuments of nature is so important today.

4. The legislative documents, existing today, do not establish a clear mechanism for granting the status of monuments to objects of landscape art. Lviv has inherited the works of many famous landscape architects, therefore, a request is made to the Department of Protection of Historical Heritage and the Department of Ecology and Improvement to create the so-called road-map for the setting of objects of landscape art under protection.

5. It is important to identify the authenticity of landscape objects and in accordance with this to carry out their reconstruction. In 2006, the Department of Urban Development insisted on the determination of legal limits of the title documents on the land use and the delimitation of green zones. For the city parks the borderlines were defined; it was recommended to continue the establishing of borders for the parks and other recreational areas. It is also necessary to develop certification of all green areas of common use. The outcome of such work will be granting to some individual objects the status of monuments of landscape art and admitting them as objects of Environmental Protection Fund of Ukraine.

6. Because Lviv has a unique landscape of historic heritage, there is a need for the appointment of a "City gardener" or "Landscape architect" in the Department of Urban Planning in the City Council of Lviv.

7. It is recommended to investigate the works of the other landscape architects of Lviv, in particular, the teacher of Arnold Rohring - Karol Bauer, the prominent works of whom are the Lychakiv cemetery, the High Castle, the Botanical Garden, etc. The results of the work have to be discussed at the analogous Symposium.

P.S. The Symposium had its informal sequel.

The Department of Urban Planning already for six years actively participates in the "European Heritage Days in Lviv" The last time it was held on September 24–25, 2016 under the motto "Gardens and Parks of the City: a Living History of the City". In Svoboda (Liberty) Avenue the exhibition was presented (Prof. H. Petryshyn), devoted to the creativity of Arnold Rohring, the tour to of the Stryiskyi Park was organized (architect V. Didyk and dendrologist G. Lukashuk). The Department of Urban Development took part in a panel discussion at a bookstore "Є" titled "The Historic Gardens and Parks of Lviv: the Problem of Reconstruction" (moderators: Assoc. Prof. – I. Cherniak, architect V. Didyk and S. Tupis).



Fig. 5. European Heritage Days in Lviv. 24–25.09.2016. Exhibition devoted to the creativity of Arnold Rohring on Svobody Avenue (photo H. Petryshyn)



Fig. 6. European Heritage Days in Lviv. 24–25.09.2016. Panel discussion at a bookstore “E”:
from left to right – Serhiy Leonov, Zavadovych, Stepan Tupis, prof. Volodymyr Kucheriavyy,
Volodymyr Didyk, as. Prof. Ihor Cherniak (photo H. Petryshyn)



Fig. 7. European Heritage Days in Lviv. 24–25.09.2016. Awarding participants, who have devoted their events
to the creativity of Arnold Rohring: from left to right – Olexandra Provozin, assoc. prof. Halyna Lukashchuk, assoc.
prof. Tetiana Kazantseva, Serhiy Leonov, prof. Halyna Petryshyn, Stepan Tupis, Volodymyr Didyk (photo: R. Liubysky)

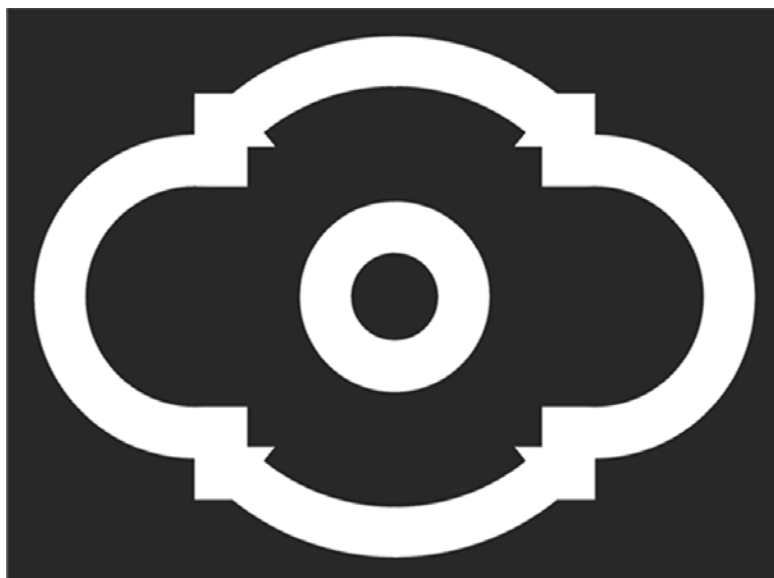
Prof. Halyna Petryshyn,

The Chairman of the Scientific Committee of the International Scientific and Practical Symposium
“ARNOLD RÖHRING – Art and Nature in the Urban Development of the City of Lviv”

Lviv, May 19–21, 2016

References

- [1] “Arnold Röhring – art and nature in the urban development of the city of Lviv”. Thesis of the International Scientific and Practical Symposium, 18–20. May 2016. Red. H. Petryshyn, Yu. Idak. Lviv Rastr-7. – 86 p.
- [2] Arhitektory politehniki vidnovyly istorychnu klumbu na prospekti Svobody, stvorenu za proektom Arnolda Reringa [Electronic resource] – Mode of access : <http://www.lp.edu.ua>
- [3] European Heritage Days in Lviv [Electronic resource] – Mode of access : <http://lviv.travel/ua>



THE PUBLIC SPACE AND THE REVIVAL OF MULTICULTURAL IDENTITY IN THE CITY OF LVIV

*Lviv Polytechnic National University, 12, S. Bandery str., Lviv, 79013, Ukraine,
tscher53@gmal.com, svitlanalinda@gmail.com*

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Abstract. Models of architectural representation of multiculturalism related to the revival of historical myths about the “Polish” and “Jewish” Lviv are presented in this article.

Key words: Lviv, multiculturalism, identity.

1. Introduction

Lviv is a city with a multicultural phenomenon created throughout the centuries by different nationalities. Multiculturalism experienced several development periods through which it underwent drastic changes due to wars and geopolitical transformations or because of assimilation processes. The twentieth century was especially turbulent and it left us several important myths. They can serve as the defining points for modern multicultural development of the city of Lviv.

The myths of “Polish” and “Jewish” Lviv appeared during the interwar period (till 1939) when the population of Lviv consisted of three dominant ethnic groups, i.e., Poles, Jews and Ukrainians. After World War II, Lviv lost its historic multiculturalism: the Jews were killed by the Nazi, the Polish had to move from the country or were deported. The major part of the Ukrainian native population was repressed. In 1950s, it was the time when Lviv became almost a Russian city with a clear industrial and military development vector. It was the period of a strong ethnical transformation and an aggressive development of the new Soviet identity. In 1960s, the processes of new Ukrainization began and it has continued, later on, in the days of independent Ukraine.

Independence of Ukraine has brought about revitalization of Polish, Jewish, as well as Armenian and Russian communities, the historical and cultural heritage of which is an integral part of Lviv cultural legacy.

2. Basic Theory Part

The article deals with the analysis of information concerning development of the city of Lviv in the 20th century and summarizes the most important facts and features of the multicultural representation evidenced in its monuments, memorials, and architectural complexes. They constitute the multicultural public space of the city.

3. Results and Discussion

Lviv as a multicultural city

About a hundred years ago, Lviv was the capital of a province as part of the Austro-Hungarian Empire. After World War I it became one of main cities of the Second Polish Republic. The new geopolitical importance of the renewed Polish state and a strategically and culturally important role of Lviv brought about a significant development of the city including the architectural aspect, too.

The spatial development of the city during the interwar period was related to the implementation of the concept of “Grand Lviv”, which was first clearly defined by Ignacy Drexler in 1920 in its monograph “Wielki

Lwów. Le Grand Léopol” [1]. Its introductory part says, “Today, after a 150-year break, Lviv successfully returned to Poland and the great and new tasks are put on it. They can be performed only by using great means, and it opens new opportunities for strong development. Now, begins the era of its development, let it be the happiest one”. (“Obecnie, gdy Lwów, po półtorawiekowej przerwie, drugi raz szczęśliwie wrócił do Polski, przypadają mu nowe wielkie zadania, które tylko wielkimi środkami będzie mógł wypełnić, i otwierają się szlaki potężnego rozrostu. Tu zaczyna się piąta epoka rozwoju, oby najszcześniejsza”) [2]. These happy times were to begin both for the intellectuals and the politicians after the 150-year break during which Lviv was not part of the Polish state. The city image had to correspond to its great tasks in a happy future.

The project of “Grand Lviv” was worked out by I. Drexler in 1920–1930s. For the first time the problem of the future development of city suburbs arose (later, the territories of the surrounding communities were added to the city which resulted in doubling its area up to 6664 ha); for the first time the principle of the functional zoning of urban areas was used in the project; and the project of landscaping of streets and squares was scheduled.

However, the idea of a “Grand city” as a great one, happily returned to the Polish state, required additional means of representation. Those were primarily achieved by construction of new monuments. The first phase of monuments construction which most clearly identified the environment as the one belonging to a certain community, namely the Polish one, was completed in the late nineteenth and early twentieth centuries. Actually then, about 15 monuments in well-known parts of Lviv were built, e.g., the monuments to the King Jan III Sobieski, the governor of Galicia Ahenor Holuhovskyi. That was the first phase of monuments construction which reflected the Polish romantic and national vision of Lviv which was still under the rule of the Habsburg dynasty. In the interwar period, that theme was replaced by the theme of glorifying the struggle for Lviv and Eastern Galicia (Halytchyna). The soldiers who died for their Motherland and for Polish Lviv became new cultural cult personalities. Two monuments to very young defenders were built. The first one was put up not far from the railway station, as a lot of battles had taken place there, and the other one was erected in the yard of Lviv Polytechnic University, where the Polish soldiers had buried their comrades during the war. The most important cult place of dead heroes was the Cemetery of the Defenders of Lviv (or Eaglets Cemetery) which was designed by Rudolf Indruch next to the Lychakiv Cemetery (Fig. 1).



Fig. 1. The Cemetery of the Defenders of Lviv:

a – the Chapel and the Triumphal arch, Rudolf Indruch; b – the French infantry monument [3]

At that time a committee was formed for construction of monuments to the military leaders Tadeusz Jordan-Rozwadowski and Czesław Machynski. And in 1935, a competition was held for construction of the monument to Józef Klemens Piłsudski. Besides that, by 1936, there had been put up at least 27 plaques with the Polish patriotic theme on them [4].

Despite the fact that the Jewish community did not build monuments, there were lots of evidence of their residence in Lviv, i.e., about a hundred of synagogues and houses of study, a Jewish cemetery located in the city centre, premises of productive and active work of numerous Jewish communities.

The Ukrainians did not have the right to put their own monuments in public spaces, at least, in the central part of the city. However, in June 1914, a monument to Taras Shevchenko was built in the suburbs of Lviv,

called Vynnyky, and was the first and the only one Ukrainian monument put up in a public space of the city. We should also mention that there were two statues placed in front of the entrance to the Seim of Galicia (the Local Parliament), which showed the historical Ukrainian personalities of King Danylo and Prince Yaroslav the Wise.

Soviet Lviv – Monocultural Ideology

On August 23, 1939, in Moscow, a non-aggression agreement between Germany and the Soviet Union was signed by the German Foreign Minister Joachim von Ribbentrop and the Chairman of the Council of People's Commissars, the People's Commissar for Foreign Affairs of the Soviet Union Vyacheslav Molotov. They issued a secret additional protocol which defined areas of mutual influence over both countries in Eastern Europe and the division of Poland between them. The German attack on Poland was expected in those days. West Ukraine with Galicia and its major city Lviv was included into the sphere of Soviet interests.

The September events, the decline of the Polish state and the first Soviet occupation created new conditions in which the city began to live. The most important task of communist propaganda after the arrival of Soviet troops in Lviv in 1939 was to deprive the city of its traditional multicultural character and make it “forget” its European history. When the Red Army came to the city, due to the Soviet statistics, about 345,000 people lived there. The Soviet regime and later World War II brought here, besides local emigration, a huge wave of emigration from the west, as well as from the east of the country. The above-mentioned Soviet statistics stated that at the start of the war time the population of Lviv reached as many as 500,000 people.

In 1939, there were 160,000 Polish and 100,000 Jewish inhabitants in Lviv. The number of Jews before the war even increased to 160,000 people because of the number of refugees from Nazi-occupied Poland. In fact, all Jews of Lviv, excluding 823 persons, were killed by the Germans during the occupation of the city in 1941–1944. Four waves of deportations in 1940–1941, war victims and, especially, a post-war mass deportation led to the fact that in 1946, only about 15,000 Polish people remained in the city. There was a relatively small number of Ukrainians in Lviv. Based on the city population census of 1931, only 16.2 % of the population was Ukrainian. Its number did not significantly increase by 1939 [5].

After the Soviet invasion, a group of architects from the Soviet part of Ukraine was sent to the city. Its supervisor, and later the chief architect of Lviv O. Kasyanov, who came from Kharkiv, defined the task of the group as the one that had to “convert the building system in Lviv according to social principles” [6].

The notion of a “social model” for Lviv image implied the total communization of public spaces and depriving them of signs of multiculturalism. The first city general plan, which remained unfinished, was developed under the guidance of O. Kasyanov and suggested a number of ideas according to which the “strong Communist power” had to change the city from a “consumption” one into a city of “industry” and “socialism”. In addition to the proposals for the architectural and functional reorganization of the city structure, the authors designed an “architectural and landscape city cartogram”, the aim of which was to “locate new monumental buildings, which together with the existing monuments would eventually create key points in the future architectural and landscape city composition” In terms of the ideas of the first Soviet master plan of Lviv, and due to the lack of time only the two projects were implemented. Namely, the city was divided into four administrative districts, and on the former street of Legions (modern Svoboda Avenue), a temporary monument “to Reunification” was erected in between the then existing equestrian statue of King Jan III Sobieski and the Opera House. Both of the implementations, especially the monumental one, were primarily of propaganda character. Newly formed districts were called according to new Soviet concepts: Stalin (Central) district, Red Army district, Zaliznychnyi district and Shevchenko district. The district names primarily reflected the “key symbols” and the “main ideas” which were to be imposed by the Soviet power in West Ukraine: the strengthening of Stalinism on the basis of the army and the proletariat by using the term “Ukrainization” (of course, in the Soviet sense). To celebrate the first anniversary of the entry of Soviet troops in West Ukraine (September 17, 1939), the cornerstone for the monument to Lenin in front of the Opera House was laid. The monument was to be completed in 1942, but its opening was delayed for 10 years and was connected with the next stage of communist transformation of the historic city [7].

In June 1941, Lviv was occupied by Nazi Germany and became the centre of Galicia district as part of General Government which was founded on the territory of the former Poland. The Nazis also offered their version of ideological and architectural transformation of the city. They developed an ambitious plan for Lviv urban change. As a model for German urban architects served the restructure design of Berlin of 1942,

developed by Albert Speer. They worked in the Central Technical Department and treated Lviv as “the last western city” which “once bloomed.” The Germans tried to turn Lviv into an industrial centre (development of textile, salt, and metal industries) with keeping production facilities in the suburbs, while the city centre was aimed to be the centre of the visual representation of the new government [8].

As it usually happens, the streets and squares were renamed and the monument to Ad.Hitler was put on today’s Svoboda Avenue. Actually, that was all that German occupation authorities managed to implement.

After the capitulation of Nazi Germany, the new inclusion of Lviv in the Soviet Union was followed by significant changes of the city life. A new arrival of the Soviet administration in July 1944 was accompanied by a new wave of repressions and arrests. Only in the period five days, from January, 3rd to 8th, about 17.300 people were arrested.

In 1944, right after the war, Lviv numbered 149.219 inhabitants. Deportation of about 120,000 Poles to the West in 1945–1946 meant the shortening of the number of local population. As a result of the communist and nazi violence in 1939–1946, out of 345.000 pre-war inhabitants of Lviv there remained only about 30.000 post-war local inhabitants. The old city was done away with. The problem was that it was not destroyed only demographically. The exile and liquidation of the largest ethnic groups of the historic Lviv, Poles and Jews, led to the fact that its peculiar feature of multiculturalism, focused on European culture, was ruined. Stalin’s “iron curtain” only completed the subsequent isolation and devastation of the historical city. The demographic composition of the city changed significantly. During the first ten years after the war, about 270.000 new residents from Russia, Eastern Ukraine and local villagers moved to Lviv [9].

On April 13, 1945, a resolution “On the reconstruction and development of industry, transport and municipal economy of Lviv” was adopted by the Council of People’s Commissars of the USSR. According to it, Lviv had to become the largest industrial centre of West Ukraine. A rapid development of industry in the post-war Lviv in contrast to rather insignificant and uncertain pre-war plans can be explained by three reasons, namely, the moving of the state border west of the city because of the victory in World War II, secondly, transformation of the city into an important military base for the control of newly formed satellite states and, thirdly, resistance to influence of the West, ethnic cleansing and transformation of the city into a typical Soviet city. In the light of the above-mentioned, the first Soviet postwar master plan was of significant importance for the city.

The authors of the general plan are architects Anatoliy Natalchenko and Henry Shvetsky-Vinetsky. One of the fundamental points of the postwar master plan was not only the search of new areas for the industrial development and the housing development associated with it, but the fact that its authors treated the historical part of the city with respect. It makes an honour to them that they immediately understood an immense value of the city historical architecture and in their design they tried to change it as little as possible. They were the first in the Soviet times who made a list of city architectural monuments and marked them using the terms of local, national and all-union value.

Concurrently, in the golden age of Stalin’s dictatorship, the issue of city planning could not avoid being subjected to the goal of transformation of the city image. The city had to become Soviet, not only in its significance, but also in its form. The architectural ideas proposed by H. Shvetsky-Vinetsky and A. Natalchenko are rather interesting as they maintained the historical part of Lviv while giving it a socialist image.

To reorganize the city center, the authors proposed the idea of the so-called “city compositional axis” which is laid from the north to the south of the city and embraced May 1 Prospect (modern Svoboda Avenue) and Academichna str (modern Shevchenko Avenue). To the north direction, behind the Opera House, the “compositional axis” ran almost 1.5 km and finished with a new square and a public building in it in modern Lypynsky str. Thus, a new planning axis of 3 km long appeared in Lviv and could successfully be used for ceremonial Soviet military parades and demonstrations.

The idea which crowned all that was the concept of a new Central Square of Lviv which they suggested locating just behind the Opera House in a place of the partially destroyed buildings of the Jewish ghetto during the German occupation and the territory of Krakiv market. The dimensions of the proposed square were 250mx160m and it had to become the largest area of the city. The new Central Square of Lviv had to become a distinguished square among the urban areas of the Soviet Union. Its planned territory of 4 ha exceeded even the dimensions of the Red Square in Moscow, which is 3 ha. A monument to Stalin had to be the central object of

the square and was aimed to be placed in front of the new headquarters for the Party and government authorities designed in classical architectural forms [10].

In 1945, the public space of Lviv preserved a lot of features of the former multiculturalism. Their liquidation started almost immediately. For instance, the monument to Yablonovskiy was demolished right in 1944. Other monuments were moved to Poland. The monument to Alexander Fredro was put upon a ring boulevard in Wroclaw in 1956, the monument to Corneliy Uyeyskiy was re-opened in Szczecin in the same year. In 1950, the monument to Jan Sobieski was removed, and it was long kept in the castle park of Vilyanov, near Warsaw, and only in 1965 it was put up in Gdansk. Some other Polish monuments were left in the city, such as the monument to Mickiewicz or Kilinski.

The Jewish Lviv was annihilated during the time of German occupation, when almost all the synagogues were pulled down (among them the well-known “Golden Rose”) or closed down, the Jewish cemetery was devastated and finally eliminated to the ground, already during the Soviet times.

An intensive “sovietization” of Lviv continued. In 1952, the first monument that represented the new regime was built. It was a statue of Lenin placed on the main boulevard in front of the Opera House, the cornerstone of which was laid before the war. The same year a memorial complex to Soviet soldiers who perished in World War II, called the Hill of Glory, was opened. The memorial consisted of an entrance gate designed in the Classical style, a monument to the unknown soldier with the Soviet flag in the hands, and the Soviet Pieta, a sculpture of the Mother and a dead Soldier in her arms. Numerous Soviet holidays such as Soviet Army Day (on February 23), Victory Day (on May 9), or Lviv Liberation Day (on May 27), were celebrated there.

In 1960–80s a lot of Soviet monuments were built in Ukraine. In 1962, a monument to the Soviet Hero Nicolai Kuznetsov was put up. In 1970, the grand Monument of Glory was erected on the site of the memorial to the Soviet Army. In addition to this, the monuments which combined the Soviet features with local West Ukrainian ones were put up, e.g., a monument to Ivan Franko (1964), Vasyl Stefanyk (1975), Yaroslav Halan (1972). A monument to the doctors who participated in World War II was erected in 1975, a monument to the first printer Ivan Fedorov was put up in 1977, two more monuments were constructed in 1981, one to Stepan Tudor and the other to Olexander Havryliuk. Finally, in 1982, a monument commemorating the famous kozak Ivan Pidkova, beheaded in Lviv in 1578, was erected. In 1990, at the time of the revival of the Ukrainian Lviv, a monument to Markian Shashkevych, cherished by all Ukrainians since the 19th century, was inaugurated [11].

Post Soviet Lviv. Revival of Multiculturalism

A new phase of change in the city identity began by dismantling the monument to Lenin in 1991, which took place much prior to the proclamation of Ukraine’s Independence. The leader of the world proletariat was the most odious figure at the beginning of the movement for independence. Because of that, the monument became the very first one to be demolished with the agreement of local authorities in September 1990. The bronze cast of the figure failed to survive. It was melted down.

The modern public space has been acquiring features of historic multiculturalism. Development of new identity, “Ukrainization”, of Lviv public spaces began with the renaming of streets and squares, ceasing the functions of Soviet buildings, demolishing old monuments and erecting new ones. In 1992, in the middle of the former Lenin Avenue, which was renamed Svoboda Avenue, a monument to Taras Shevchenko was put up. In 1996, a stele depicting scenes of Ukrainian history and life, commissioned by the Ukrainian diaspora from Argentina, was added to the monument.

The statue of God’s Mother was returned to its original place in Svoboda Avenue. The triumphal rehabilitation of the Ukrainian Greek-Catholic Church, which had proved to be one of the most successful institutions that preserved and fostered West Ukrainian national identity, was accompanied by a boom in church construction and restoration of monuments, lost during the Soviet regime.

Construction of the monument to the legendary founder of the city, an outstanding military Knight and King Danylo Galician (2001) was not just another symbol of the national revival, but a new interpretation of the myth of Lviv’s ancient origin and its “Golden Age”. On the monument bears the inscription “King Danylo”. In this way, the pro-European orientation of the city is emphasized, and the given historical figure is interpreted as an integrator of Ukraine in the western civilization (Fig. 2).



Fig. 2. The monument of King Danylo in Lviv.

Source: the authors' archive

The monument to Mykhailo Hrushevskiy was built on the site of the monument to a Polish playwright A. Fredro on Shevchenko Avenue. This monument continues the interrupted sequence of Ukrainian monuments marking the stages of the country development and referring to the times of the Ukrainian People's Republic and the West Ukrainian People's Republic.

At the same time, the evidence of the multi-ethnic history of the city is being revived. Popularization of the Polish past is evidenced in the outlines of the monument to the poet Adam Mickiewicz, built in 1905. At present, it is of no less importance that the Lviv city symbol – the Opera House. The inscriptions and advertisements in the Polish language on the old unpainted walls are informal reminders of the Polish presence in Lviv. The most intensive work to regenerate the historical memory of the Polish Lviv is carried out with the aim to arrange the Cemetery of the Defenders of Lviv and construct a memorial to honor the professors killed in Lviv in 1941.

The most important cult place of dead heroes, the Cemetery of the Defenders of Lviv, was erected next to the Lychakiv Cemetery. The first burial there took place in November 1918. As the number of graves grew steadily, a wooden chapel was built in March 1919. The work over it started in autumn 1920. And in spring 1921, a contest was announced and four projects were submitted. Rudolf Indruch (1892–1927), a 29-year-old student of Lviv Polytechnic, who was a participant of the battle for Lviv (1918) and of the Polish-Soviet War (1920), became the winner. The project by R. Indruch included the main entrance from the Pohulianka Park through a wide alley ending with an entrance gate to the cemetery. It was developed in the classic style, and a sculpture of an eagle with the outstretched wings crowned it. Three broad flights of stone stairs were constructed from the cemetery gate into its depth leading to the semi-circular terrace graves. The central part of the project was to be decorated with the monument in form of a triumphal arch surrounded by a colonnade with 12 Doric columns with an architrave [12].

The grand opening of the memorial was November 11, 1934 on Polish Independence Day. On the last peaceful day before World War II there were 2.859 tombs on the Cemetery of the Defenders.

During the war, the necropolis was not ruined, but gradually dismantled in the Soviet times. The monuments to the French and US troops were removed. Later, through part of the cemetery a road was paved. In 1956, the main tombstone of the Tomb of the Unknown Soldier was taken to Poland. In the 1970s, the colonnade and the majority of the tombs were razed with bulldozers. Only the pylons survived, as their foundation was very strong. "Catacombs" were put up on top and were turned into workshops for grave masons. At the turn of 1980–1990s, restoration of the memorial initiated by the director of a Warsaw firm *Energopol* Yu. Bobrowski was undertaken. In 1991, the first design of its reconstruction was developed by Ya. Skshypchuk. Draft

drawings of the designs were made by the Ukrzakhidproekt Restoration Institute. June 25, 1998 a protocol of the transfer of the cemetery land to the *Energopol* firm was signed, and reconstruction works began.

The Cemetery of the Defenders of Lviv was reopened on 24 June, 2005. The President of Poland Aleksander Kwaśniewski and the President of Ukraine Viktor Yushchenko attended the inauguration ceremony. At the opening the President of Poland said, “In the struggle for Lviv two desires, two patriotisms, two national prides confronted. Polish and Ukrainian people sought liberty, but had different ways to find it. Today, we meet at a place where once we had to part. Lviv seem to have been loved too much and each one wanted to keep it”. In its turn, Victor Yushchenko said, “Today, Ukraine and Poland demonstrate a unique ability to distinguish the past from the future. Opening of the Eaglets’ Cemetery is a historic moment which is equally important for the union of our two nations ... There is no independent Polish state without independent Ukraine. Without independent Poland there is no independent Ukrainian state. Glory to the Polish and Ukrainian nations, let us live in unity and peace” [13].

A monument to the professors which were shot down on Vuletskyi hills was opened on July 3 in Lviv. This tragic event happened at the beginning of the city occupation by German troops. On 30 June 1941, the German division “Einsatzgruppe C” started a planned elimination of the so-called enemies of the state, among which they counted Jews, communists and “those who collaborated with the Soviet authorities”. Since all Lviv higher educational institutions in the Soviet times were preserved and functioned in cooperation with the Soviet authorities, a lot of professors of Lviv higher schools were accused of collaboration with the Soviets. July 4, 1941 the Germans shot 22 Polish professors and associate professors of higher educational establishments of Lviv, some of them were shot with the members of their families, as they all were taken during the arrest [14].

In honor of these tragic events a memorial was opened in Lviv. The initiative to construct a monument belongs to the President of Wrocław city Rafał Dutkiewicz and Lviv Mayor Andriy Sadovyi. A design contest was announced on July 30, 2009. 28 projects were submitted to it, eight of which were projects from Ukraine. The design by the sculptor and prof. Aleksander Śliwa from Krakow was the winner. The architectural design of the project was guided by Lviv Polytechnic National University, namely with the assistance of the Institute of Architecture under the supervision of its Director Prof. Bohdan Cherkes.

The winner project shows the gate which is built of concrete blocks symbolizing Ten Commandments. The concept is that by eliminating a single unit (a commandment) of it the integrity is lost. The block marked by the Roman numeral V was partly put forward to symbolize a blatant violation of the fifth commandment “Thou shalt not kill”, i.e., not to kill the scientists. On the monument there are no inscriptions, everything is clear and terrible in its horrible truth about the past (Fig. 3).

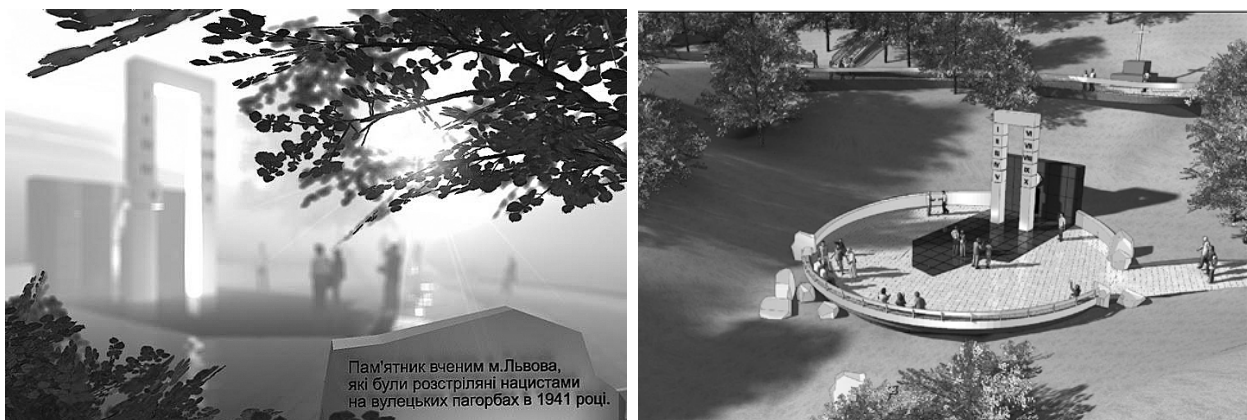


Fig. 3. The monument to the murdered professors of Lviv on the Vuletski Hills in Lviv. Project
Source: the authors’ archive of

The opening of the monument was held on July 4, 2011, on the 70th anniversary of the terrible events. At the ceremony, the President of Wrocław Rafał Dutkiewicz took the floor. He said that this monument is a good sign of friendship between the Ukrainian and Polish people, as “science does not belong to any nationality, as it is expressed in a language that no nation possesses”. Lviv Mayor Andriy Sadovyi, who took part in the

ceremony, stated, “Today we commemorate people killed by the Nazis without any trial a few days after the city occupation. Wise and intelligent people are always a threat to totalitarian regimes, as they are the source of true knowledge and education. ... Ukrainians and Poles should remind the world how the attempts to divide the world and the attempts to expand and build new empires may end.

The Rector of Lviv Polytechnic National University Yuriy Bobalo, who, in his opening speech told the story of the tragic events, stressed, “The tragedy of Vuletski Hills is an open wound of our modern history. It is the case when time does not heal”. (Fig. 4).

At the same time the memory about the “Jewish Lviv” is revived. Back in 1988, the Society of Jewish Culture named after Sholem Aleichem initiated construction of the monument to Jews killed in Lviv ghetto. At that time the project of the monument was developed. Its author is the former resident of Lviv, later the resident of Jerusalem, the sculptor Louise Shterenshteyn. Despite the economic and political difficulties, construction was successfully completed, and the Memorial to the Victims of Lviv Ghetto (1941–1943) was officially opened on August 23, 1992.

To preserve the Jewish cultural heritage and the memory of its founders the city authorities and the public of the city in cooperation with the Centre for Urban History of Eastern Central Europe and the German Society for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ) organized an international competition to preserve Jewish memorial sites in Ukraine. The competition lasted from August to December, 2010. For the contest three places associated with the history of the Jewish community before World War II and the history of its destruction during the war were chosen: the Space of Synagogues (the Jewish Quarter in the city centre), the Memorial Park Besoylem (on the site of a Jewish cemetery) and the Yaniv Concentration Camp (one of the main sites of the Holocaust in Halytchyna).



Fig. 4. The inauguration of the monument to the murdered professors of Lviv in the Vuletski Hills in Lviv
Source: the the authors' archive

146 candidates from 16 countries participated in the contest. An international jury nominated the winners in the period from 20th to 22nd December, 2010. The group of contestants from Germany was awarded a prize for the Space of Synagogues, the candidate from Israel won the prize for the Memorial Park Besoylem, and a participant from the United States for Yaniv Concentration Camp.

At present, the Space of Synagogues project is being implemented. The first part of the project was opened to the public on September 4, 2016. It includes the preserved remnants of the synagogue “Golden Rose”, the foundations of the Jewish Beit Midrash House of Learning, and the setting of the memorial installation

“Perpetuation”. The main idea suggested by Franz Reschke, Paul Reschke and Frederik Springer was to create different spaces with different characteristics in each part where, once, three important community buildings for Jewish social and religious life were located. Their task is to symbolize and reveal the historical traditions of each building, and to mark this public space with a new feature of the city daily life.

Implementation of the project began with an exhibition of *the Golden Rose* by a photographer Jason Francisco in July 2015. During the first year they managed to preserve the remains of the synagogue “Golden Rose” and to arrange a drainage system on the territory; the authentic foundations of Beit Midrash were cleared of concrete and marked by white stone “Venezian Terazzo”; also a memorial installation “Perpetuation” with city residents’ quotations and those of Jewish people connected with the city’s history was erected; a summer terrace of the neighboring restaurant was removed and new trees were planted instead (Fig. 5).

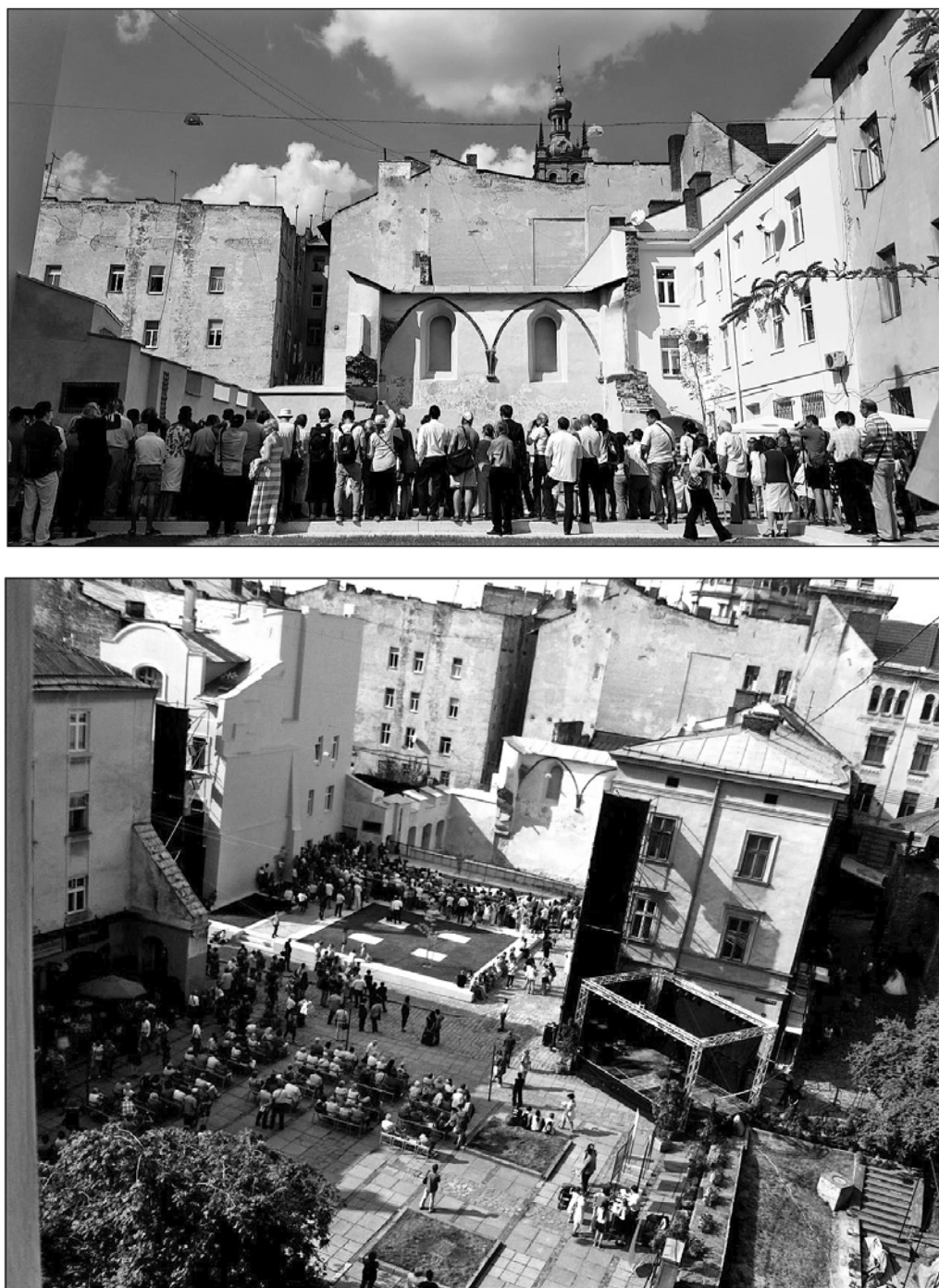


Fig. 5. The opening of the Space of Synagogues project. Source: the authors’ archive

The city authorities, the government officials, the representatives of diplomatic missions, as well as partner organizations, research institutions, as well as city residents who survived the Holocaust together with their descendants, took part in the opening ceremony. The project's implementation is an important stage in the restoration of historic multiculturalism of public spaces of Lviv.

4. Conclusions

According to modern interpretation Lviv multiculturalism is viewed as an immensely valuable heritage, whose revival and preservation is the only way for our future development. Multiculturalism implies recognition of values, lifestyles and symbolic representations of various ethnic and religious communities. So one of our main goals, along with acquiring knowledge about our own nation, is to form a positive attitude to the cultural heritage of other nations. In this context Lviv sets an example to be followed, since historical multiculturalism embodied in form of memorials and monuments in the city's public spaces is being restored in Lviv with application of architectural means. Modern Lviv is portrayed as a complex of mosaic construction Leopold-Lemberg-Lwów-לעמבערג-Львов, the city which simultaneously belongs to a number of cultures and nations. Multicultural history of the city does not only embrace our common past, but also means that we have a great responsibility for our common future.

References

- [1] Drexler I. Wielki Lwów. Le Grand Léopol, Lwów, 1920.
- [2] Ibidem. S. 16.
- [3] Kotłobułatowa I., Lwów na dawnej pocztówce, Międzynarodowe Centrum Kultury, Kraków, 2002. S. 324, 326.
- [4] Rossolinski-Liebe. Istorija mesta Lvova w yoho politychnych pamyatnykach. [Electronic Resource]: http://www.academia.edu/530732/История_міста_Львова_в_його_політичних_пам'ятниках.
- [5] Tscherkes B. Stalinist Visions for the Urban Transformation of Lviv, 1939–1955. In: Harvard Ukrainian Studies, Lviv: A City in the Crosscurrents of Culture, Volume XXIV, Ed. John Czaplicka. – Cambridge, Massachusetts: Ukrainian Research Institute Harvard University, 2002. – P. 205–222.
- [6] Kas'yanow O. M. Sotsialistyczna rekonstruktsiya Lwowa Касьянов // Architektura Radyans'koyi Ukrayiny. 1940. No. 9. S. 4–12
- [7] Rossolinski-Liebe. Istorija mesta Lwowa w yoho politychnych pamyatnykach
- [8] Posatsky B. S. Architektura totalitaryzmu (1940–1956). W.: Architektura Lvova: Czas I Styli XIII–XXI stolittya, Lviv, "Tsentr Yevropy", 2008. – S. 580–581.
- [9] Tscherkes B. Stalinist Visions for the Urban Transformation of Lviv...
- [10] Ibidem.
- [11] Rossolinski-Liebe. Istorija mesta Lvova w yoho politychnych pamyatnykach
- [12] Nicieja S. S. Cmentarz Orłat Lwowskich. W: Niepodległość i Pamięć, 13/3 (24), 2006. S. 242.
- [13] Ibidem, s. 254.
- [14] Politechnika Lwowska, 1844–1945. Wydawnicwo Politechniki Wrocławskiej, Wrocław, 1993. S. 64–65.

Богдан Черкес, Світлана Лінда

ГРОМАДСЬКИЙ ПРОСТІР І ВІДРОДЖЕННЯ МУЛЬТИКУЛЬТУРНОЇ ІДЕНТИЧНОСТІ ЛЬВОВА

Анотація. У статті розглянуто приклади архітектурної репрезентації культурної поліетнічності сучасного Львова, пов'язані із відродженням історичних міфів про “польський” та “єврейський” Львів.

Ключові слова: Львів, мультикультурність, ідентичність.

Ihor Chernyak

THE LEGAL BASIS FOR PRESERVATION OF GARDEN AND PARK ART OBJECTS

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, cherniak.ihor@gmail.com*

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Abstract. The given research consists in the analysis of legal regulations efficiency concerning issues of garden and park art sites with reference to nature protection laws as compared to national and international monuments protection norms.

Key words: garden and park arts, cultural heritage, natural reserve fund.

1. Introduction

Ukraine's cultural heritage is an integral part of world cultural values and part of the humanity's priceless and irreplaceable achievements, in general. Its losses, due to degeneration and ruining, lead to the degradation of the world's heritage.

The European integration principles are not limited to economic, organizational, legal or security issues. The full understanding of the role and the need for cultural and natural values preservation, as well as the material and spiritual heritage is indicative of evaluation of adaptation possibilities in the European community.

It is pertinent to note that today cultural and natural heritage sites suffer from a lack of proper support both from the state and local authorities, and not only from insufficient financing. The failure to realize their current roles and the future ones among a vast Ukrainian urban and rural population makes their protection and preservation impossible. The decision to put in dissonant color plastic windows instead of authentic wooden ones on the architectural monument façade, to construct a new multi-storey block building in the place of a historical villa or new residential buildings with faceless façades instead of a town historical skyline, results from a lack of self-identification with this building, city or country rather than from a lack of finances.

At the same time, however, preservation and the enhancement of cultural and natural values are declared to be one of the priorities for the national cultural policy. In accordance with international treaties, ratified by the Ukrainian Parliament, preservation of cultural and natural heritage is an international legal obligation of our state before the international community. The fulfilment of these obligations is not simple, though a necessary process for the incipience of a European nation.

The legal regulation for garden and park art sites (monuments) preservation and protection issues at the national level is directed by a significant number of legal acts. These are the Laws of Ukraine "On the Natural Environment Protection" (1991), "On the Natural Reserve Fund" (1992), "On the Herbal Environment" (1999), "On the All-state Program for the National Ecological Network Forming for 2000–2015" (2000), "On the Cultural Heritage Protection" (2000), "On the Ecological Network of Ukraine" (2004).

These laws contain serious contradictions of the legal organization of issues concerning creation, management and preservation of garden and park art sites. The Law of Ukraine "On the Cultural Heritage Protection" defines the Cabinet of Ministers of Ukraine together with the authorities of the cultural heritage sector, namely, the Ministry of Culture, regional and district state administrations, executive bodies of villages and towns as bodies responsible for state management of cultural issues. Other laws redirect garden and park art

sites under the responsibility of the central executive body in the area of environment protection management (Ministry of Ecology and Natural Resources of Ukraine), special units and ministerial bodies in regions, as well as special administrations at natural reserve funds objects. This kind of dualism in garden and park arts sites management leads to a situation where historical parks and alleys, created by outstanding figures and playing a significant role in historic landscapes of Ukrainian cities are not enlisted in the architectural monuments register and, as a result, are not protected by law.

2. Basic Theory

The doctrinal principles of international law regarding cultural values protection during military actions trace their beginnings in Europe back to the 16 – 17 centuries. The first international law norms concerning regulations of cultural values area are found in particular articles of the Peace of Westphalia treaties (1648), 2nd Hague Convention with respect to the Laws and Customs of War on Land (1899), 9th Hague Convention as of 1907 etc.

However, until the second half of the 20th century, protection of cultural heritage in the international law was never reviewed as a separate issue. Only after World War II the United Nations Educational Scientific and Cultural Organization (UNESCO) started to carry out an active and purposeful activity on coordination and regulation of the international cooperation in this area. The foundation for this activity was built by UN General Assembly resolutions, which were confirmed by the Nurnberg military tribunals sentence regarding the recognition of cultural heritage crimes as crimes against humanity.

The legal base sources for protection of cultural heritage sites are, first of all, multilateral universal agreements accepted under UN protection. These are as follows: General Assembly resolutions, UNESCO conventions and recommendations, acts of intergovernmental and diplomatic conferences, documents of NGOs and conferences (in particular ICOMOS and ICCROM). The legal base of monuments protection on the European level is developed well enough thanks to the Council of Europe and the European Union together with their bodies containing a significant number of norms regarding the cultural heritage of European peoples.

The foundation of contemporary international law in the realm of monuments protection is the Convention on Protection of World Cultural and Natural Heritage of 1972, which combined two documents prepared by the International Council on Monuments and Sites (ICOMOS) and the International Union for Conservation of Nature and Natural Resources (IUCN). The Convention contains a significant number of new regulations that were not inherent in other international law institutions at that period. Thus, a single complex approach towards management, preservation and protection of cultural and natural heritage sites was formed.

This approach, however, does not find an understanding, support and promotion in the national monument and nature protection area. To a great extent, this happens due to a lack of interdisciplinary communication and legal collisions in the systems of management, financing, research and monitoring of garden and park art sites.

The aim of the article:

The aim of this research consists in the analysis of legal regulation effectiveness of issues of garden and park art sites preservation in comparison with the existing national and international legal norms.

2. Results and Discussion

Garden and park art sites in Ukraine are regulated by law as elements of national ecologic network and the natural reserve fund as cultural heritage sites and scientific sites of national heritage. Therefore, tasks and methods of identification, registration, functioning and methods of protection differ.

The existing laws provide different approaches towards definition of identification criteria, identification of protection regimes, protection and use of garden and art sites. In one case, the natural reserve fund of Ukrainian sites is defined as “the areas of land and water, natural complexes and objects possessing special natural, scientific, esthetic, recreational and other values, picked out to protect the landscapes versatility, the genetic fund of animal and plant worlds, to support the general ecological balance and provide the background monitoring of natural environment”. [1] In another case, cultural heritage sites are defined as “... natural, natural anthropogenic or man-created sites disregarding their state of preservation, which have brought to our

times values from architectural, aesthetic, historical, architectural, art, scientific or artistic points of view and have preserved their authenticity". [2] Basing on these approaches, quite different objects with the same title are identified.

The differences deepen the task of legal regulation, as well. In the first case, "protection and effective use of natural reserve fund of Ukraine, recreation of its natural complexes and objects" is emphasized, in the second case, it is "the cultural heritage protection in order to preserve and use it ... in the social life, protection of the traditional character of the environment for the good of current and future generations".

The profile tasks and norms define the order of status granting, tasks and regimes of garden and park art sites use and their protection in different ways. The general order of sites inclusion in the natural and reserve fund is not defined by law, however, the task, the character, the functioning and the regime of the areas are defined by regulations developed in accordance with this law.

The Ministry of Nature affirmed by its Order No. 245 [3] the Guidelines as of 2005 on projects of organization and protection of the natural and biosphere reserves areas, natural complexes and objects of national natural and regional landscape parks. The project development procedures consist of six main stages. For national natural parks these are as follows:

- Data collecting;
- Definition of priorities and problems;
- Definition of park development strategy for a decade period;
- Five-year measures plan development;
- Preparation of the introductory part and the President of Ukraine decree on establishment of a park

and an approved order of Ministry of Nature, defining park regulations; reasoning of nature use within the borders of a park and reasoning for the acceptable ecological educational and scientific load on its natural complexes.

The law of Ukraine "On the Natural Reserve Fund of Ukraine" defines that monuments of garden and park art shall be the most prominent and valuable samples of park construction in order to protect and use them with aesthetic, educational, scientific, protection and recreational aims. Depending on their ecological and scientific value they can be of all-state or local weight.

Any kind of activity which is not related to their tasks and jeopardizes their protection shall be forbidden on the territory of garden and park art heritage sites. The excursions and mass recreation of residents shall be provided there, the plants shall be protected and looked after, including sanitary cutting, reconstruction and care for the identical trees and bushes planting instead of the withered ones, measures are used to prevent self-seeding, to preserve the compositions of trees, bushes, flowers and lawns. Zoning in accordance with the demands concerning botanic gardens shall be acceptable.

Maintenance and reconstruction of the monuments-parks of garden and park art are carried out according to the projects developed by specialized scientific and project institutions and are approved by bodies managing these parks upon confirmation of the following bodies:

Central executive authority in the area of natural environment protection (Ministry of Ecology and Natural Resources) concerning the monuments-parks of garden and park art of all-state status;

Central executive power body for natural environment protection in regions concerning monuments-parks of garden and park art of local status.

Owners and consumers of land plots, water and other natural objects which are declared to be monuments-parks of garden and park art, shall be obliged to provide protection and preservation regime.

Monuments-parks of garden and park art as cultural heritage sites should be registered by inclusion in the National Register of Immovable Monuments of Ukraine under the categories of national and local status of monument. The order of category definition of a particular monument is approved by the Cabinet of Ministers resolution No. 1760 as of 27.12.2001 [4] which provides registry documents for each site proposed for inclusion in the Register. The documents consist of a registration card or passport, a brief historical note, an act of technical state and a current condition photo register. These registry documents are prepared by the authorized bodies of cultural heritage protection of the region, district state administrations, village and town councils. Along with the inclusion of the cultural heritage site in the Register, the legal status of the monument is acquired along with all its integral elements.

Monument protection regulations precisely define the criteria of directing a monument of garden and park art to the national or local protection categories. To receive a national status sites need to be of particular historical or cultural value, conform with the authenticity criterium, as well as to one of the following criteria:

- Had a significant influence on the development of culture, architecture, urban development and arts of the country;
- Have a direct link to the historical events, beliefs, life and activity of the famous personalities;
- Represent an artisan's masterpiece, became a stage creation of outstanding architects or other artisans;
- Were the creation of a vanished civilization or an artistic style.

The authenticity criterium means that the monument needs to preserve its shape and the material and technical structure and historic cultural layers to a significant extent.

The local value sites should conform with an authenticity criterium, as well as to one of the following:

- Had an influence on the development of culture, architecture, urban development of the location or region;
- Have a direct link to historical values, beliefs, life and activity of outstanding personalities in particular location or region;
- Are the creation of outstanding architects or artisans;
- Are a cultural heritage site of the national minority or a regional ethnic group.

The conformity of the garden and park art site to the criteria is evaluated by consultancy councils of cultural heritage protection areas of regional administrations along with scientific councils of institutions and organizations which act in the area of cultural heritage protection. The conclusion on the cultural heritage site to be enlisted into the Register is submitted within a 15-day period of evaluation and is sent to the Ministry of Culture on the day of signing. Upon reception of Ministry's conclusion, it is passed (with all the calculation documents) for evaluation to an expert commission created within the Ministry. The result of an expert commission is registered in the minutes which become a basis for enlisting a garden and park art object in the Register.

Thus, the issue of locating, registration and classification of value categories for garden and park art sites aiming to register them as monuments is more precise, substantiated, detailed and logic in the monument protection legislation. However, despite the existence of nature preservation norms, central or local executive authorities and local administrations responsible for cultural heritage protection have not detected or enlisted a single garden and park art site to the Register of national or local monuments.

The issue of comparison of legal mechanisms systems, providing registration, deterioration avoidance, protection preservation and maintenance of garden and park art sites in nature protection and monuments protection laws is becoming of importance in this context.

Sites of natural reserve fund are protected by signing of protection obligations whereas natural heritage sites are protected by protection agreements. The first ones are directed at keeping of the regime set, as well as of demands as to the use of area and preservation/protection of valuable natural complexes, the second ones regulate peculiarities of monument use regime, types and terms of conservation, repairs and other kinds of monument protection measures.

However, none of the documents or laws define precise protection site objects, which kinds of natural complexes or architectural elements are considered unique, valuable or background and by what means are reached authenticity, protection and development. The responsibility for violation is declarative, to a great extent, due to a lack of precise mechanisms for monitoring by the state and a lack of protection of natural components, as well as cultural heritage protection. In this context national nature protection laws are missing the detailed and precise laws of Ukraine, international conventions, charters and recommendations in the scope of cultural heritage protection, in particular the philosophy of identification and monitoring of historical gardens state, management, preservation, renovation and reconstruction of the mentioned in the Florence Charter (1981) [5] and European landscape convention sites (2000) [6].

3. Conclusion

Historical gardens and parks should be recognized as objects of cultural heritage with the granting of respective status and protection. Preservation, protection and sustainable development of garden and park art sites are possible under the condition that the policy and principles of integrated urban development be shaped

as a central precondition for the European strategy for cultural heritage of humanity protection and sustainable development. The legal unification of approaches to definitions, registration, management and monitoring of the state and responsibility in the event of violation of monument protection demands concerning objects defined as “garden and park art site”, should be based on implementation of European and international documents in legislation of Ukraine.

References

- [1] Law of Ukraine “On Natural Reserve Fund of Ukraine”, Verkhovna Rada of Ukraine Buletin, 1992, nr. 34, art. 502.
- [2] Law of Ukraine “On Cultural Heritage Protection”, Verkhovna Rada of Ukraine Buletin, 2000, nr. 39, art. 333.
- [3] On Affirmation of Regulations on Projects of Natural Reserve Fund of Ukraine Institutions Areas Organization, Order of Ministry of Natural Environment Protection of Ukraine as of 6.06.2005, nr. 245. <http://zakon4.rada.gov.ua/laws/show/z0829-05>
- [4] The order for monuments categories definition for enlisting of cultural heritage objects into the State Register of Immovable Monuments of Ukraine, Directive of Cabinet of Ministers as of 27.12.2001 nr. 1760 edited by Cabinet of Ministers Directive as of 14.09.2016 <http://zakon5.rada.gov.ua/laws/show/1760-2001>
- [5] The Florence Charter on Historic Gardens (Florence Charter, ICOMOS-IFLA, 1982)
- [6] European Landscape Convention. Ratified by a Law nr. 2831-IV (2831-15) as of 07.09.2005, Verkhovna Rada of Ukraine Buletin, 2005, nr 51, art. 547

Ігор Черняк

ПРАВОВІ ЗАСАДИ ЗБЕРЕЖЕННЯ ОБ’ЄКТІВ САДОВО-ПАРКОВОГО МИСТЕЦТВА В УКРАЇНІ

Анотація. Проведено аналіз ефективності правового регулювання питань збереження об’єктів садово-паркового мистецтва природоохоронним законодавством порівняно з національними та міжнародними пам’яткоохоронними нормами.

Ключові слова: садово-паркове мистецтво, культурна спадщина, природно-заповідний фонд.

THE PROBLEMS OF STRYJSKYJ PARK RECONSTRUCTION

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, vlodko.arch@gmail.com*

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Abstract. The necessity of the park-monument reconstruction and its adaptation according to the new town-planning and social terms were regarded. The main aspects of this task are both to renew and to reconstruct connections between natural park landscape and its architectural and planning components.

Key words: Arnold Röhring, composition of the park, master plan of reconstruction of the Stryiskyi Park.

1. Introduction

In the end of XIX century was finally formed romantic style in the park and garden art of Europe. Stryiskyi Park in Lviv was designed actually on principle of romanticism by the main gardener and director of municipal gardens Arnold Röhring (1840–1913) in 1879–1887. Project works were executed in 1876–1877. On the Overhead terrace of the park in 1894 the First General Regional Exhibition sanctified to the 25th anniversary of Lviv self government was opened [1]. Essentially the opening of the exhibition was the opening of the completed composition of park.

In 1952 during the Soviet period (after WWII) in the entrance area of Stryjskyj park the arcade was built by the architect G. Shvetskyi-Vinetskyi (instead of existing wooden arches with the lateral pavilions made by architect A. Zakcharievycz) [2]. In the same time at the top of the park, the child's railway was built. The former exhibition halls of the upper terrace of the park were adjusted to the various social functions.

2. Basic Theory Part

70th – 80th of XX century in Ukraine was marked by a new wave of programs to entrance the protection conservation and development of historic parks – memorials of landscape architecture and other green areas of the city. It should be noted that in 70th of XX of century in Lviv the first position of landscape architect of city appeared since all post-war period. Kostyantyn Plakhotniyk took this position. By his initiative the Lviv's City ordered to the Department of the Urban Planning of Lviv Polytechnic National University the performance of real diploma projects on Stryjskyj park reconstructions. These real diploma projects laid the foundation for a real request of the general plan for reconstruction of the Stryiskyi park in 1977 [3].

It was appointed the leading organization – Student Deign Bureau (SPKB) of Lviv Polytechnic. In subcontracting conditions Dendrology Department of Environment and Forestry University (Lviv), Department of physical geography and plant morphology of I. Franko University (Lviv), and Ukrainian Geobotany Institute of Sciences were invited. Survey findings were performed with tree fixation method by using aerial photography.

The master plan of reconstruction of the Stryiskyi park was developed in 1981–1982. Team of authors consisting of: architectural and building part – Chief Project Architect – V. Kravtsov, chief of the architectural group – groups manager T. Maksymiuk, architects V. Didyk, O. Lyaskovskiy, I. Muryn and R. Ovcharek; electricity part – Chief specialist – I. Kozak and Ing. V. Onufryk; sanitary part – chief of the group – J. Bodnar; dendrology part – chief of theme – Z. Herushynskiy, researchers S. Shevchenko and K. Katona, the younger researcher A. Khazanova.

In the process of restoration of central orchestra, by proposal of T. Maksymiyk, methodology of Janush Bogdanovskiy was applied, and that was used later during reconstruction and restoration of park and garden objects.

A project was executed in complex – from architectonically planning and structural decisions, dendrology, installation and to the design of park equipment.

In 1982 the row of objects was projected: “Ground at the end of hornbeam avenue”, “Reconstruction of hornbeam avenue” and “Rosarium” (realized 1986–1987). Farther there were the “Orchestra gardens before the

monument of Y. Kilinskyj” (1983), “Major repairs of water cascade” (1985–1987), and the “Small belvedere with a central glade” (1986–1987), reconstruction of wayside-travelling network and main avenue of overhead terrace.

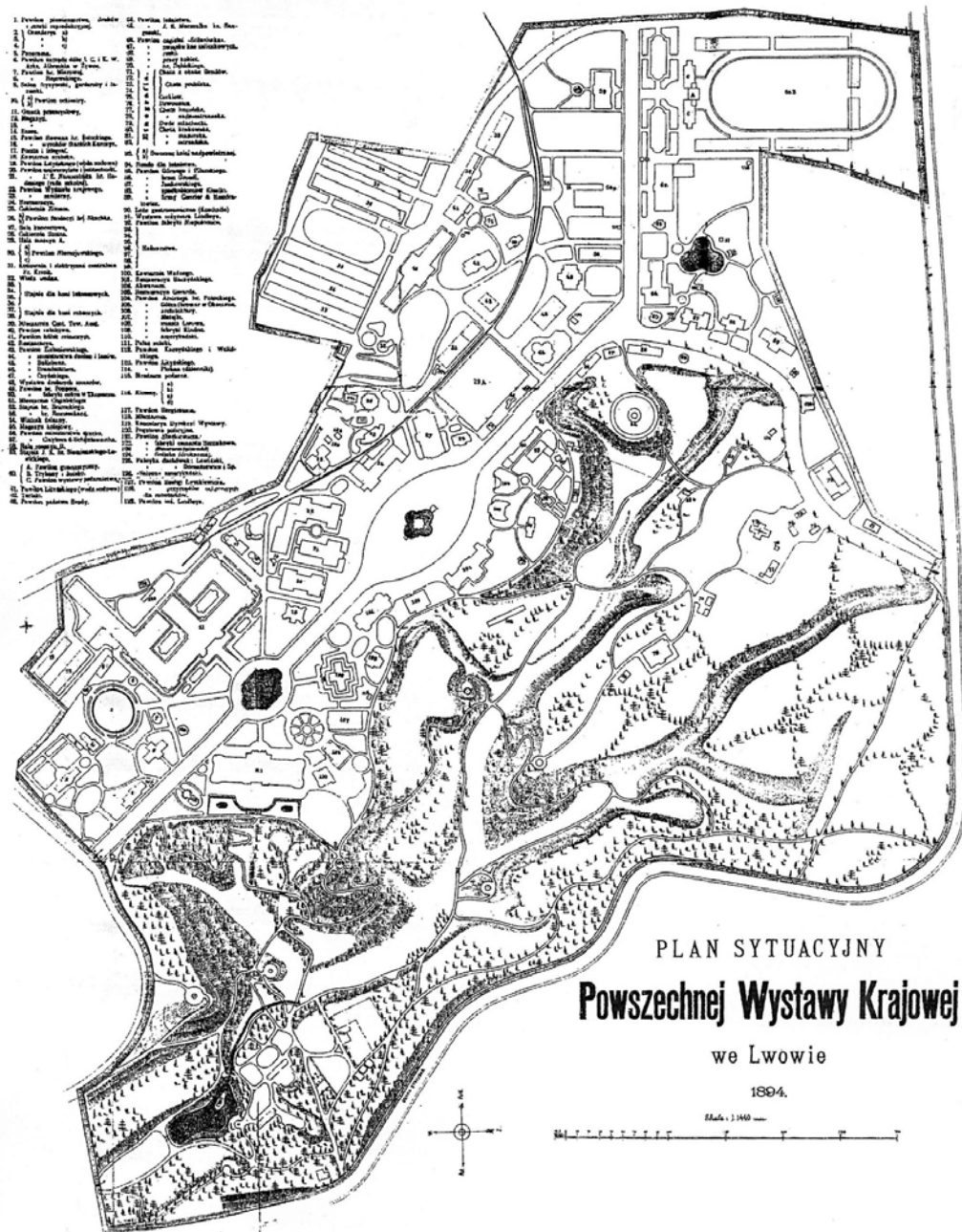


Fig. 1. Master plan of the Kilinskyj Park (Stryjskyj) – the General regional exhibition in 1894, Archived photo

In January 1988 at participation of T. Maksymiyk was published “Green book” – “Program of the complex quipping with modern amenities, planting of greenery of Lviv and other cities and settlements of area on the period of 1988–1997”. (Lviv, Regional Trade union publishing house 1988) and that was ratified by Resolution of the Lviv regional committee of communist party of Ukraine and executive committee of town council of deputies of No. 30 from 26.01.1988. This book was like a travelling map that envisaged an order and terms of building, reconstruction and restoration of landscape recreational objects of city and area, and also determined customers, project organizations and contractors, cost of object and sourcing. According to it, the reconstruction of the Stryiskyi Park had to be finished in 1997. Among project organizations, SPKB LPI had taken a leading role.



Fig. 2. The Entrance to the park – wooden arch of architect A. Zachariyevycz (archived photo) (a); the entrance area to the Stryjskyj Park – modern arcade of architect G. Shvetskyi-Vinetskyi, built in 1952 (b) (photo by V. Didyk, 2016)

Reconstruction plan of Stryiskyi Park was agreed at all levels, including the level of the State Construction Committee of Ukraine and the National Committee for Conservation of Nature and monuments of landscape architecture (1986). It included the reconstruction and restoration of the lower gardens of Stryiskyi Park, the construction of water cascade, a small Belvedere, rosary and the main avenues in the upper terrace.

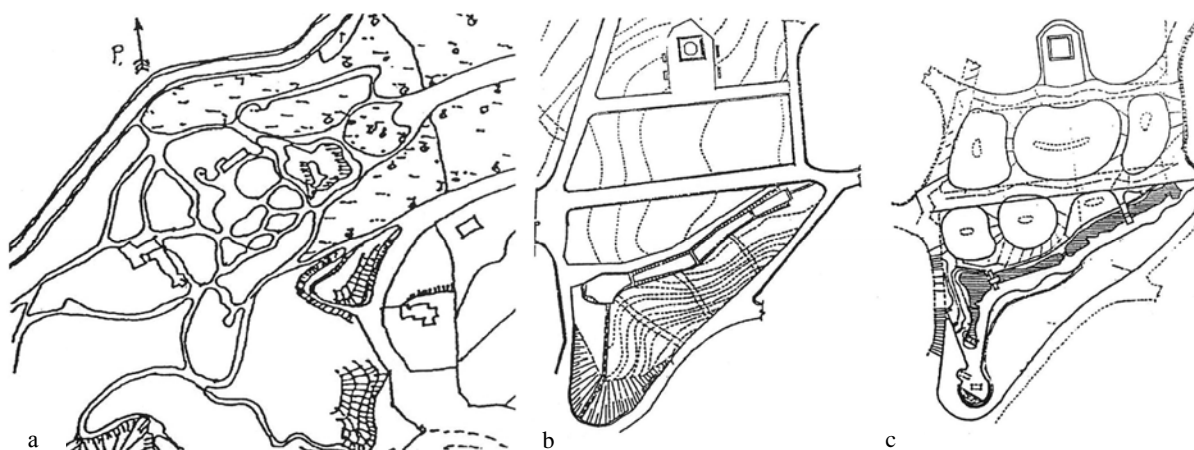


Fig. 3. Views of grass ovals in front of the Jan Kilinskyj monument in the Stryjskyj park in Lviv: a – lower parterres designed by Arnold Röhring, 1894; b – the same parterres in 1980th; c – the project restoration project and its realization in 1983–1989. Architects T. Maksymiuk, B. Kravtsov, V. Didyk [1]; d – a prospect of central parterres in 2016. Photo by V. Didyk



Fig. 4. The model of Stryjskyi park, in 1980 (photo from the cover of Magazine “Architecture of the USSR”, No. 12. 1980) (a)
 General plan of Stryjskyj park reconstruction designed in 1981–1982 (the archived photo of T. Maksymiuk) (b)

However, after the Ukrainian independence restoration, even even the works that were implemented realized in the years 1983–1989, again gradually turned into ruin. In the Stryjskyj Park a management is liquidated with the state of workers, and its functions had been given to the Lviv communal enterprise “Green Lviv”, that looks after a park episodically. In 2009–2010, according to the results of tender, Lviv’s City Executive Committee ordered to Ltd. “MAKRO-BUDOMAT” the master plan of Stryjskyj park reconstructions, which should have been by the team of architects: T. Maksymiuk, V. Didyk and S. Tupis. The

project of alley, road network and lighting reconstruction was completed and implemented in 2010, and the projects of the reconstructions of small and large belvedere, restoration of romantic ruins, renovation of historical pavilions in upper terrace and public toilets were not implemented.

Due to the master plan of reconstruction the Stryjskyj park is parted into zones, districts and objects. According to the structure of relief the park has three zones: A – is a zone of lower orchestra gardens (subject to restoration); B – is a forest-park zone; C – is an overhead exhibition terrace.

According to the classification of areas and objects reserve fund of Ukraine, Stryjskyi park in Lviv is monument of landscape art of national importance and is protected as a national property, for which a special regime of protection, reproduction and using is established.



Fig. 5. The Master plan of Stryiskyi Park reconstruction, in 2010 (architects T. Maksymiuk, V. Didyk and S. Tupis).
Photo by S. Tupis

3. Conclusions

The main task of the historical park reconstruction is to adapt it to the new urban and social conditions. Key aspects of the restorations and reconstruction problem are connected to the park phyto landscape and its architectural and landscape characteristics. The specific forms of the implementation of these aspects may include:

1. Design and construction of new landscape-architectural, architectonic or engineering facilities and equipment;
2. Reconstruction of existing facilities that allow full or partial replacement of the design, materials, plant species and forms with improved basic compositional and functional characteristics of the object;
3. Major object recovery;
4. The restoration of the object's primary view.

The Schedule of the major reconstruction works in the Stryiskyi Park is developed on the basis master plan schemes, areas schemes and architectural objects of Stryiskyi Park. Schedule takes into account the priority of reconstruction activities based on the criterion of practical, necessity, appropriateness and real perspective expediency.

References

- [1] Volodymyr Didyk, Tetiana Maksymiuk. Atraktyvnist sadiv i parkiv Lvova // Zapysky Naukovoho Tovarystva imeni Shevchenka *Tom CCLV: Pratsi komisii architektury ta mistobuduvannia* – Lviv, 2008. – 612 s. (s. 263).
- [2] Lviv: Turystychnyi putivnyk / ed. A. Rudnytskyi. Science ed. Ju. Biriulov. Lviv, 1999. S. 306.
- [3] Didyk V., Maksymiuk T. Kulturologichni, arhitekturni ta ekonomichni problem istorychnykh parkiv Lvova // Problemy landshaftnoi arhitektury, urboekologii ta ozelenennia naselenykh mist: materialy Perszogo miznarodnogo seminaru, 25–27 czervnia 1997: T. 2. Lviv:Ukr. DLTU, 1998. S. 23–28.

Володимир Дідик

ПРОБЛЕМИ РЕКОНСТРУКЦІЇ СТРИЙСЬКОГО ПАРКУ У ЛЬВОВІ

Анотація. Необхідність реконструкції Стрийського парку і адаптації його відповідала новим містобудівним та соціальним умовам. Основні аспекти цього завдання полягали у відновленні та реконструкції зв'язків між природним ландшафтом парку та його архітектурно-планувальними особливостями.

Ключові слова: Арнольд Рерінг, композиція парку, генплан реконструкції Стрийського парку

Dorota Gawryluk, Maciej Kłopotowski

**HISTORICAL PARKS AS AN ELEMENT
OF SHAPING A GREENERY SYSTEM IN BIAŁYSTOK
(Part 1: Emergence and development history)**

*Białystok University of Technology, Poland, 15-351 Białystok, ul. Wiejska, 45a,
d.gawryluk@pb.edu.pl, m.kłopotowski@pb.edu.pl*

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Abstract. At the outbreak of World War II, green areas, organized in Białystok, created a system, spatially and functionally linked with the surrounding city forests and meadows. In the first half of the twentieth century they were rebuilt and greatly enlarged. They lent a contemporary look to the public spaces of the city.

Key words: Białystok, historical parks, greenery system

1. Introduction

The system of green areas of the contemporary Białystok is based on the affiliations of natural parks situated in the city centre with the surrounding forests and open areas. This layout has existed since the 18th century, when Białystok accounted for an extensive compositions of landscape related to the residence of J. K. Branicki.

2. Aim, scope and research method

The aim of the research conducted by a team of architects is the analysis of the contemporary natural system of the city of Białystok based on its historical conditions. The authors look for relationships between green areas in the spatial and historical-cultural dimension. The analysis covered the area of the former residence of J. K. Branicki along with the closest adjoining area with a particular emphasis on the area of the modern downtown city. Due to historical factors associated with the development of the city, the time frame spanning since the end of the 19th century (the dynamic development of the industrial city) to modern times was taken into account for the analysis.

In the carried out research, the available sources of literature [1, 2, 3, 4, 5], including the history of development of the city of Białystok [6, 7, 8, 9, 10, 11], and the preserved cartographic elaborations, including maps and plans of the city were used [12, 13]. The research benefited from the iconographic sources with a particular emphasis on old photographs and postcards of Białystok.

3. Green areas in city layout of J. K. Branicki

The 18th century Baroque laid in the eternal layout composition at the residence of Jan Klemens Branicki was based on the natural conditions resulting from its location. It was created by the topography of the place, the river valley, and the natural forests. In this arrangement, a number of architectural and functional elements were introduced, which, then, connected the system of a road network and the system of scenic link. The road network was based on the combination of communication to the palace with the summer residence located in

Choroszcz (15 km west from Białystok). The road was laid in an attractive landscape, enabling the viewing of other elements of the composition during the travel time. The individual parts of the layout had been formalized in varying degrees (from a representational avenue, to field roads). This layout included the palace along with its adjacent gardens, a zoo, the city itself, as well as the surrounding villages (Białostoczek, Sloboda, Starosielce) and the new settlement tavern. On the possible observation area, a natural elevation was located, whose spatial significance emphasized the architectural objects. In the immediate vicinity of the palace there was a formal Baroque garden. Its composition includes, among other things, an embroidered entry to parterres and a bosquet. In the area of the garden, an orangery intended for a seasonal storage of citrus trees fitted with the equipment was erected. A substantial part of the area of the palace and the park was surrounded by ponds fed with the waters of the Biała River. The largest of these, with an area of over 8 hectares, was located on to the north-east side of the palace and was one of its visit cards [14, 15, 16, 17].

After the death of Hetman Branicki, the residence passed into the hands of his wife, and then, to the next heirs. In 1802, it was sold to the king of Prussia and in 1807, after the signing of the Treaty of Tilsit, this area was incorporated into the Russian empire [6, 7, 18, 19, 20].

4. Green areas in the industrial Białystok during the 19th Century

The spatial and economic development of Białystok during the nineteenth century, to a large extent, was conditioned by the geopolitical situation. The impetus to this were the changing boundaries of countries and the industrial revolution [16, 17]. The beginning of the century was associated with the organization of residency in the former tsarist palace of Branicki. Half of a century was dedicated to the dynamic development of the textile industry associated with a restrictive economic policy of Russia towards the industrialized areas of the former central Poland. The end of the century was a period of development of the city, assimilation and urbanization of the surrounding areas and making efforts towards organizing and beautifying the space. During this time, the arising of the city reflects the characteristics of other centres developing on the outskirts of the Russian Empire. Characteristic of them are a regular grid of streets and communication links of military character [6, 7, 18, 19]. The greenery in these cities was regarded as “embellished and decorative” – resolved in the form of city parks. They accounted for separated enclaves not linked to other objects of landscape architecture. During the time of J. K. Branicki, the spatial arrangement of green areas was rebuilt and divided. In addition, the former palace park, the area surrounding it and the zoo began to function separately.

4.1. Palatial park and adjoining area

In 1837, after the resignation to create the tsarist residence in Białystok, on the basis of the imperial decree, the tsarist palace and the associated gardens along with it were dedicated to the needs of a newly created Institute for Noble Maidens [7, 18]. During the years 1837–1841, on the area of the palace, a number of construction and renovation works were done, besides the aimed adaptation of the facilities to new functions, it was also meant to obliterate the traces of its former glory [10, 11]. During 1884 a new school building was built in the immediate vicinity of the palace. This property still exists today, and now houses the Collegium Novum Medical University. The Institute for Noble Maidens existed until 1915, when during the war, it was evacuated to Str. Petersburg.

The park and green areas related to the Institute, directly adjacent to the palace, were divided on the part of the garden – which was made in the area for planting new trees and vegetable gardens and an orchard, which were functionally connected with the school. This area was surrounded by the meadows in the west and the south, which were encircled with a wooden fence. Since 1895, this area began to be utilised by using mowed grass in its territory for the needs of the depot formed for the horse tram. After 1919, this area functioned as barren and was taken over by the State Treasury.

4.2. Old Park

The second half of the 19th century was a time of dynamic development of the city. The most emphatic evidence of this was the population growth, which in 1857 amounted to 13 789 people and in the course of 1895 – to 62 993 [6, 7, 18, 19]. The demographic changes are associated with the development of the industrial

city [17, 18]. This known period is dated back to the 1880's regulatory plan of the city. This plan assumed hitherto the arrangement of chaotic building (introduced a regular grid of streets into places of spontaneous development of suburbs, in which new streets duplicated the old divisions of agriculture areas) and the construction of a large urban park. The area, which was allocated under this investment was located between the streets: Bulwarna (now Branicki) and Puszkina (now Mickiewicza). It had more than seven hectares of area. To the eastern border of the park there was a former palatial mill pond, also known as the millpond, which in the late 19th century began to transform into a quagmire due to the negligence. The park, being situated on the main avenue (the axis of the north - south) was designed with three perpendicular alleys and an avenues system, cutting the surface of the park into the layout of adjacent triangles. The figure of the next plan (the project) of the city from 1887 reflected continued efforts regarding the adjustment of the streets while increasing the area of the city. The surface of the planned park reduced the area of the city by more than half by limiting it to Bulwarna and Pushkin streets and the newly demarcated Mieszczkańska (now Elektryczna) street. The plan also redesigned the spatial layout of the planned park. An oval plaza was designed in the central part of the park, within which three avenues intersected, dividing the area into six triangular foundation quarters. The fundamental change in relation to the earlier concept was to resign from the main compositional axis.

In 1895, the work related to the foundation of the park commenced. Basic operations consisted of regulating the course of the Biala river and completely filling up the remains of the old pond. Under the new park was allocated an area of over 3.5 hectares (similar in size to the plan of 1895). The park was designed by a well-known Warsaw architect Walerian Kronenberg and Teodor Chrzepiński worked with him in the design and its implementation. An oval plaza was established in the central part of the park from which a crossover distributed the main avenues. The remaining composition was composed of several interior design related to the complex system of roads, which were carried out in a simple, curved and circular manner. The park was fenced with a wooden fence, which in 1897 was replaced by a massive brick wall, translucent spans of which were filled with wrought iron bars. During the years 1908–1910, the fence was rebuilt again – this time it was given Neo-Baroque features and a large part of the decorative elements made of stone blocks, the author of this work was the engineer Kołuba. All of the other fences were equipped with three gates, of which the main was located in the vicinity of the gate of the palace and the other in Bulwarna and Puszkina streets. In 1892, the central square of the park was located around the fountain. Its most important equipment in the period was wooden, circular Paradise pavilion. It was located on the axis between the fountain pool and the Biala river. The building held exhibitions and concerts. Within the park, there was also a public passage. In 1919, the municipal park was given the name of Prince Józef Poniatowski [11, 18].

4.3. Zwierzyniecki Forest

In the 80's of the 19th century, on the initiative of the Tsarist authorities, "strategic Baranowicka highway" was built, which separated the latitudinal area of Zwierzyniecki forest on the northern and southern part [13]. This state initiated a number of ways for using both parts of the old zoo.

In the southern part, in the late 19th century, in the place of the former forestry a complex of buildings called "Rozkosz" was built [7, 8, 18]. This place was used as a summer resort and served entertainment purposes. Since 1895 citizens of Białystok could get there, with a horse streetcar, of which a track led along one of the baroque ducts (currently 11 Listopada street). During World War I in the north-west part of the former zoo a German military cemetery was created [13, 18].

The northern part of the zoo was kept in form of a forest. During World War I, this area was decimated.

5. Transformation of green areas in Białystok during the interwar period

In 1919 the so-called "Big Białystok" work was started to clean up the urban space [18, 19, 20]. In the renovated building of the former Branicki Palace, the head office of the province was created. The palace courtyards were renovated all around and a part of the garden was cleaned up. It was left with numerous changes made throughout the 19th century. Among them, planting trees made baroque composition unreadable. In the neighbourhood of the palace a new clerical district was built. In Mickiewicza street buildings of the Court and the Tax Chamber and in Świętojańska street residential buildings for officers and their families were built.

In 1925, the gardening organization started to function in the city, which in its work undertook problems connected with beautifying the urban space.

5.1. Park of Constitution of May 3

The first activities related to organizing green public spaces are associated with Zwierzyniecki forest. This work started in 1921. The northern part of the Zwierzyniecki forest was given the name of Park of Constitution of May 3, and on its premises a monument memorializing this event was located. The monument took form of the landscape object consisting of three oak trees circumvallated with eleven lime trees [10, 11, 18].

In 1924, a comprehensive modernization project of Zwierzyniecki forest was developed. It was designed by Stanisław Życieński-Zadora. The composition of the new park was upheld in the spirit of modernist idea and based on a wide avenue planted with double rows of trees. The development covered woodland; the existing summer resort Rozkosz and the newly designed sports grounds. The assumption of design marginalized the importance of the tsarist Baranowicki route. The system inscribed in the radial distribution of the avenue Big Zwierzyniec of Branicki day which was highlighted with a newly designed flora planting [18]. The composition of duct and avenue was complemented by a formal, oval place (roundabout), which was supposed to be equipped with monuments. This system was complemented by peripherally conducted avenues and paths. Their composition referred to the graphic line calligraphic parks.

Implementation work at the area of the zoo began in 1930. The work was led by the Chief Engineer of the city, J. B. Rybołowicz. He was also the author of a detailed concept from 1924 [10, 11]. Primary assumptions of design were implemented piecemeal. The rebuilding of the road transport on Baranowica Street was not made, which sanctioned division of the zoo on the northern and southern parts. Both parts, due to their functional purpose and planned facilities, as well as the distance from the city, were implemented separately. A portion of the communication system was completed in the northern part, including the main avenue and the square where the monument “ko czci poległych oficerów i żołnierzy 42. Pułku piechoty” made by Jakub Juszczyk was placed in 1930 [10, 11]. In 1934, in this part of the zoo, a military cemetery was established according to the project of Stanisław Grala [10, 11, 21]. In the 30's, to the west from 11 Listopada street, according to the original intentions, sports grounds were organized, including a soccer field with bleachers, tennis courts and shooting range. The implemented work and the introduced equipment gave a natural outlook to this part of the zoo. Apart from the formal equipment, its walking layout was supplemented with avenues which were going along interesting groups of trees and shrubs, a viewing platform on a small hill on its eastern part along with views of the ponds and a watercourse in the area of north-east [10, 11, 18, 21].

The scope of the work carried out in the southern part was much smaller. Only a fragment of the compositional and communication work was realized. This area remained as a forest. In this area, in the place of the former summer resort Rozkosz, the gastronomy and recreation facilities were still functioning. In the direct vicinity one of the planned roundabouts was implemented, which from the south side was closely extended to 11 Listopada Avenue [18].

5.2. Planty Park and Kościalkowski Boulevards

In the period of a great economic crisis, the governor of Białostocki province Marian Zyndram Kościalkowski made donations to the city in the year of 1932. The park located in the downtown, was nationalized in the year of 1919, remaining as waste land of the state land which was once associated with Branicki residence. On this area in the years 1934 to 1936 was implemented a new, modernistic city park. For the clean-up and construction works the area was granted with investment on which 200 unemployed people were hired. The project of a new park was developed by Stanisław Grail in collaboration with Józef Blicharski. The basis of the assumptions was the main avenue, laid out parallel to the old avenue of ash-maple (from the composition of city of J. K. Branicki), which was connecting already the existing Old Park and the Park of Constitution of May 3 (northern zoo). In the central part of the park a rectangular pool was organized, on the axis of which flowery carpets were laid. The surrounding of the main avenue was designed in a geometric way, connecting at the same time circular paths which overlapped. The area of the park was enriched with a pond and a concert shell. The statistical data confirms the size of investments. On the area of the park 600 trees encompassing 34 species were planted. The main avenue of the park was planted with thuja [21].

In the north – eastern part of the park, in the area adjacent to the administration district, a rose garden was established. The facility was composed on four levels (gradually declining toward the centre). At the lowest of them a rectangular pool was realized. The entrance to the rose garden was overgrown all through with plants gate (climbing roses). The interior was composed as regular rentals – a boxwood of hedges interspersed with roses. Sidewalks were laid under pergolas and tunnels.

Along with the construction of the Planty Park, work was carried out in the area to the west of the palace. The area between the Wersalska street (now Akademicka) and the former palace gardens was being utilized at that time. With the decision of the City Council, the created boulevard was given the name Kościałkowski Boulevard.

5.3. Old Park

In 1933 on the area of the Old Park work on building the modernist Community Centre in name of Marshal Józef Piłsudski was started. The author of design development of this building together with the theatre hall was John Giryn [8, 18]. Facilities were inscribed in modern characters to form an administrative district of the city at this place. One of the activities related to the construction of the theatre building was reconstruction of its surroundings – the City Park. In 1937, the pavilion Raj and the park fence was dismantled. A new spatial arrangement was implemented based on the development of the project by Stanisław Życiński – Zadory. In the years 1936–1938, the main axis of the assumptions was reconstructed. The existing alley was converted into a wide prospectus with a rectangular swimming pool fountains and flowery carpets. Around it a lower greening of the place was organized and in further distance an existing forest stand was kept. Around the area of the park a large part of the naturalistic system by Valerian Kronenberg was left. The only part of the building which is a remnant from the old park is the arched bridge spanning over the Biała river. Definitely, a new element was an avenue connecting the central part of the park with the Planty park which was adjacent to Mickiewicz street. The entire assumption was completed with the building of the Municipal Theatre named after Marshal Józef Piłsudski in 1938.

6. Conclusions

Summing up, it can be ascertained that a day before World War II (1939), a system of parks located in the centre of Białystok was organized, and a complementary system included: the Old Park, the Planty park with Kościałkowski Boulevards, the park of the Constitution of May 3 and the Zwierzyniecki forest. This system alluded to the historical assumptions of the 19th century. It constituted an example of a wedging system, in which the suburban green areas functionally, in a continuous manner, entered the city centre through convenient city parks.

Gratitude

This study is the result of research conducted in the framework of the statutory work S/WBiIS/2/2016.

References

- [1] Ciołek G. *Ogrody polskie, Budownictwo i Architektura*, Warszawa 1954.
- [2] Majdecki L. *Historia ogrodów*, Państwowe Wydawnictwo Naukowe, Warszawa 1981.
- [3] Ptaszycka A.: *Przestrzenie zielone w miastach*, Ludowa Spółdzielnia Wydawnicza, Poznań 1950.
- [4] Szczepanowska H. B. (red.) *Wpływ zieleni na kształtowanie środowiska miejskiego*, Państwowe Wydawnictwo Naukowe, Warszawa 1984.
- [5] Tolwiński T. *Urbanistyka. Zieleń w urbanistyce*, Państwowe Wydawnictwo Naukowe, Warszawa 1963.
- [6] Dobroński A. *Cz. Białystok. Oblicza miasta*, Wydawnictwo ŁUK, Białystok 1999.
- [7] Dobroński A. *Cz. Historia Białegostoku*, Fundacja Sąsiedzi, Białystok 2012.
- [8] Lechowski A. *Białystok. Przewodnik historyczny*, Benkowski Publishing, Białystok 2009.
- [9] Oniszczuk J., Wiśniewski T. *Białystok między wojnami. Opowieść o życiu miasta 1928–1939*, Dom Wydawniczy Księży Młyn, Łódź 2011.
- [10] Bończak – Kucharczyk E., Maroszek J., Kucharczyk K. *Katalog parków i ogrodów zabytkowych dawnego województwa białostockiego stan z 1988r. Część ogólna*, Prace Białostockiego Towarzystwa Naukowego Nr 47, Białystok 2000.

- [11] Bończak – Kucharczyk E., Maroszek J., Kucharczyk K. Katalog parków i ogrodów zabytkowych dawnego województwa białostockiego stan z 1988 r. Część szczegółowa tom1, Prace Białostockiego Towarzystwa Naukowego Nr 48, Białystok 2000.
- [12] Białystok oczami kartografa, Archiwum Państwowe w Białymstoku, Wydawnictwo PRYMAT, Białystok 2011.
- [13] Historical maps of Białystok, <http://igrek.amzp.pl/maplist.php?cat=TPCE>, accessed July 2015.
- [14] Kucharczyk K., Maroszek J. Barokowa kompozycja w dolinie rzeki Białej w XVIII w., Studia i Materiały do Dziejów Miasta Białegostoku T. IV, 1985, pp. 57–70.
- [15] Nieciecki J. Barokowa kompozycja w dolinie rzeki Białej w XVIII w., Studia i Materiały “Ogród Branickich w Białymstoku. Badania-Projekty-Realizacja” Ogrody 4/10, 1998, 16–22.
- [16] Oleńska A. Jan Klemens Branicki. Sarmata nowoczesny, Instytut Sztuki PAN, Liber Pro Arte, Warszawa 2011.
- [17] Turecki A. Ochrona reliktów urbanistycznych Białegostoku, Zeszyty Naukowe Politechniki Białostockiej, Architektura Z. 16, Wydawnictwa Politechniki Białostockiej, Białystok 1996, 103–111.
- [18] Dolistowska M. W poszukiwaniu tożsamości miasta. Architektura i urbanistyka Białegostoku w latach 1795–1939, Oficyna Wydawnicza Politechniki Białostockiej, Białystok 2009.
- [19] Kułak A. (red.) Białystok – Manchester północy, Towarzystwo Opieki nad Zabytkami Oddział Białystok, Białystok 2010.
- [20] Nowara H., Sikorski R. Białystok. Rozwój przestrzenny miasta, Prezydium Miejskiej Rady Narodowej w Białymstoku, Białystok 1969.
- [21] Oskrobko J. Planty Stanisława Grali, Białostoczczyzna, z. 4/12 /1988, 21–23

Дорота Гаврилюк, Мачей Клопотовські

**ІСТОРИЧНІ ПАРКИ ЯК ЕЛЕМЕНТ ФОРМУВАННЯ СИСТЕМИ
ОЗЕЛЕНЕННЯ У БІЛОСТОЦІ
(Частина 1. Виникнення та історія розвитку)**

Анотація. Коли почалася Друга світова війна, озеленені території в Білостоці об'єднувались в одну просторову і функціональну систему, пов'язану із лісами та луками навколо міста. У першій половині ХХ століття їх перебудовано та збільшено, в результаті чого було сформовано сучасний характер громадським просторам міста.

Ключові слова: Білосток, історичні парки, система озеленення.

Maciej Kłopotowski, Dorota Gawryluk

**HISTORICAL PARKS AS AN ELEMENT OF SHAPING
A GREENERY SYSTEM IN BIAŁYSTOK
(Part 2: Contemporary state of preservation)**

*Białystok University of Technology, Poland, 15-351 Białystok, ul. Wiejska, 45a,
m.kłopotowski@pb.edu.pl, d.gawryluk@pb.edu.pl*

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Abstract. The modern natural system of Białystok is based on the historical system. This system is connected with the areas surrounding the city through Las Zwierzyniecki. Landscape architectural objects are constantly updated and supplemented with new functional and aesthetic features.

Key words: Białystok, historical parks, greenery system.

1. Introduction

Modernization activities conducted in Białystok were interrupted during the twenty-year interwar period with the outbreak of World War II. During the war, the city was repeatedly occupied by German troops and Soviets. In 1941, in the course of the Germans pacification, the Jewish neighbourhood district Chanajki was completely burned along with almost half of the city centre. In 1944, as a result of fires kindled by the bombardment of Soviet air force destroyed rest of the city. The city was looted and taken over by the Soviets from the hands of Germany in July 1944. The degree of destruction of the material substance of the city according to various sources, is estimated at 75–90 %. Remaining industrial plants and cultural facilities in the city at the time were treated as the war booty and were stolen away [1].

2. Aim, scope and research method

Continuing the research presented in Part I of this study, the authors analysed the processes associated with the transformation of green areas in the area of Białystok since the end of World War II to the present times. The analysis covered areas that in the interwar period were defined as the natural system of the city and were legible in its structure to the present times. The given research was based on such available material sources as: literature, cartographic and iconographic works. The conducted works undertaken, among other things, were due to the lack of comprehensive studies dedicated to these problems.

3. Białystok city parks in the period after World War II

Reconstruction of the city began in 1944, when the Office of the Voivode set up a special cell. Then, a team of designers led by a newcomer from Vilnius Władysław Paszkowski, began reconstruction works of the most valuable monuments of the city. At the same time action was taken related to the development of the project of reconstruction of the centre of Białystok. The newly created buildings (maintained in the style of socialist realism) had to replace the facilities destroyed during the war [2, 3]. The enormity of the work and its associated costs postponed the problems of urban green areas [4]. In the vicinity of the newly formed building decorated gardens were created, and the problem of public parks was not undertaken until 50s [5, 6].

3.1. The Palatial Park

After the completion of reconstruction of the building of Branicki palace (1946-1960) in Białystok and its handover for the needs of the Medical Academy seat, the activities related to reconstruction of the baroque gardens started [7, 8, 9, 10]. The carried out work consisted in cleaning the upper area of the garden from the forest stand and in arranging it within the fence, which was newly marked out (palace brickwork). In 50s of the 20th century the arranged area was used for agricultural purposes and intended for vegetable gardens used by employees of the Medical Academy. Reconstruction work carried out in the 60s of the 20th century was conducted as based on the development of Stanisław Bukowski since 1957 [7]. In the fence a gate from the side of Dzierżyński street (former Legionowa) and Akademicka street was introduced, allowing an easy communication by walking and connecting the area of the garden with the surrounding of old Kościółkowski boulevards. On the territory of the park boxwood plantings of embroidering parterres were restored, garden fountains and the edge of palatial pond was also regulated (in new shape). Within the space of the park several reconstructed sculptures and garden benches were placed. However, work associated with reconstruction of the bosquet, the Chinese garden and the garden pavilions were not carried out. The main Garden avenue was asphalted, and the palace courtyard was paved with concrete slabs. Courtyards, as well as the upper garden, were decorated with the rose flowerbed with a linear course, which emphasized the main axis of the palace [8].

3.2. Surrounding of the Palatial Park

In 1948, the building of the theatre, which was completely destroyed during the war, was given into commission [5, 12]. In the year 1949, this building was given the name of Aleksander Węgierka. At that time, the park area surrounding the theatre building was called the Old park. Its facilities are maintained in the style of the interwar period. Before the main entrance to the building, a swimming pool and a fountain were set up, which until the end of 90's were repeatedly renovated. During this period, surfaces, benches and lanterns in the park area were changed and the management of the forest stand was also carried out. On the axis of the building a linear flower bed of flowers was retained and in 1976 along the centre of its length a sculptural composition made by Albin Sokołowski was set up. The main avenue of the park was used as a driveway to the theatre parking [6].

During the post-war period, the Planty park was renamed to the Park of Friendship. In 1951 in its central part on the main axis over the central pool, a monument of Gratitude to the Red Army, of the authorship of J. Ślusarczyk, was placed. The main attraction of the park was a fountain in the central pool. The concert shell was organized in its vicinity. The main avenue of the park was preserved in its modernist style with the planting of thujas and flowery carpets. During the 70's, an additional attraction were sculptures and flowery clocks. Its surface, the same like others in the entire area of the park and the boulevards, was changed to the asphalt, and in the area around the park gradually the fittings (lamps, benches, dustbins) were replaced. In 1945, inside the park, in the rose garden a sculpture of the Washing Lady by Stanisław Horno – Popławski, ordered before the war, was placed. The other elements of the rose garden over time were devastated. On the territory of the former Kościółkowski Boulevards (which lost its name in 1944), used as walking paths, two new fountains located in the area of Dzierżyński street and the Medical Academy dormitory building were placed.

3.3. The area of former preserve (Park Zwierzyniec + forest)

The system of roads for communication through the area of the former zoo in the 19th century ("Strategic szosse"), and in the interwar period (11 Listopada street), divided it into four different-sized parts [13]. The subsequent repairs involving widening of these roads and strengthening of this division, led to the different usage of these parts.

The northern part of the zoo divided into Świerczewski street (formerly 11 Listopada street), since the interwar period was already functioning as a division into space for relaxing and recreational area and a group of sports facilities. In the 60's of the 20th century the Accent Zoo (mini zoo with an area of approximately 3 hectares) was opened in the park, which primarily was used as a space for temporary storage of animals. The amphitheatre stage was organized in the park. Festivities and folk parties were organized there. An athletics stadium, tennis courts functioned in the area located between 11 Listopada and Wołodyjowski streets. In the 70's, a sports hall belonging to the Medical Academy was built there. The biggest attraction in this part of the park was a tower used for parachute jumping in the 60's of the 20th century [6]. The southern part of the zoo in

this period was functioning as a forest area, restored after devastation from the period of World War II, when the Nazis cut down 50 hectares of forest within the framework of re-development of the Krywlany airport, adjacent to this forest. In the northern part of the forest, in the 70's of the 20th century, the headquarters of the Polish radio was built. Since 1947, the State House of Small Children operates in the place of the former summer resort Rozkosz. The southern edge of the forest because of farmland, allotment gardens and the area of the airport was connected with the suburban Solnicki Forest.

4. The green areas in the centre of Białystok after 1989

The political or economic changes that took place in Poland after 1989, are reflected in the spatial activities, including those related to the functioning of green areas [4]. It was part of the so called decommunisation space. It required the removal of monuments – symbols of the communist period and the reconstruction or new construction associated with the flow of independence times. The next stage of transformation of green areas in the city is associated with the renovation and modernization. These were made possible by the funds obtained for this purpose from the European funds.

4.1. Branicki Garden in Białystok

In 1997, the work started in order to perform revalorization of Branicki Gardens in Białystok. The author of the development of the new concept was Dr. Dorota Sikora. Based on her work, reconstruction of four out of eight lodging gardens was completed. Plantings of plants and filling of embroidering parterres were completely changed. Work on the reconstruction of fountains placed in the pre-courtyard also started. The next phase of the revalorization was started in 2009. It was connected with the implementation of a completely new design concept. The author of the development was Dr. Dorota Sikora and arch. Tomasz Rogala [14, 15, 16, 17, 18, 19]. The essential part of work was carried out in the years 2009–2011. The upper garden was entirely rebuilt, embroidery parterres were once again reconstructed, the Pavilion under Eagle was rebuilt (2011), and the whole area was successively fitted with reconstructed sculptures. In the area of the upper garden and the pre-courtyard, the pavement was entirely replaced. The ongoing work is supposed to be continued and will include regulation of ponds, implementation of the Chinese garden and the successive reconstruction of a bosquet [20].

4.2. Old Park named after Prince Józef Poniatowski

Revitalization work in the area of the Old park started in the year 2003. It consisted of organizing the area and replacing the pavement. Among others, a fountain and a central flower bed with a statue were eliminated. An essential part of the work was carried out since 2007. It was carried out based on the project of architect Danuta Fiedziukiewicz, under which the surface was reconstructed and a new fountain was designed. The newly shaped area was excluded from the road communication. The created square was named after Marshal Józef Piłsudski. In 2014, in the central part of the square, a renovated composition by Albin Sokołowski was placed. The edges of the square were equipped with new benches and the flora was enriched with lilacs.

4.3. Planty Park and rose garden

In 1990, the monument of Gratitude to the Red Army, which was located in the central part of the park, was dismantled and moved to the cemetery of Soviet soldiers which was located at Ciołkowski street in Białystok. At the same time, the park was restored its historic name the Planty park. In the mid of 90's of the 20th century, a children's playground was organized in the area of the park. At the same time, an underground public restroom was rebuilt for a café. The area is subjected to constant maintenance. However, a comprehensive modernization was not carried out. Currently, its asphalt surfaces and the flora in the area of the rose garden is in the worst condition. The main attraction of this object still remains the fountain, for which the repairs were carried out between 2000 and 2016 [6, 21].

4.4. Kościalkowski Boulevards

The area surrounding the Branicki and Planty Park gardens – Kościalkowski Boulevards were restored with their historic name in 1990. In 1991, in the northern part of the boulevards, between the cathedral and the

Branicki palace, a monument of Rev. Jerzy Popieluszko of the authorship of Jadwiga Szczykowska-Zaleska was set up. Whereas in 2005, at a new location a replica of the sculpture of “Pies Kawelin” was set up. The author of the original from 1938 was Piotr Sawicki, and the modern replica was made by Małgorzata Niedzielko [6]. In 2011, in the immediate vicinity of the boulevards – the site covered with abandoned pool fountains, was put into operation into a new multi-functional playground. During the subsequent years, the inoperative fountain situated along Legionowa street (former Dzierżyński) was also covered [21]. The area of boulevards, as well as the area around the Planty park was subjected to successive maintenance and its furnishings are constantly modernised.

4.5. Park of Constitution of May 3

During the 90s, the northern part of the Zwierzyniecki Park was reinstated to its historic park name, named after the Constitution of May 3. Since that time in the area of the park, a number of modernization and maintenance works associated with the maintenance of roads and vegetation was carried out. In the southern part of the park, a new children's playground was organized. Reconstruction of the area of the Accent Zoo was also carried out. The essential part of the work took place in 2014 [21].

Since 2006, the initiative “Forum Białystok Jutra” started activities related to the revitalization of the area of the monument of Constitution of May 3. Supplementary missing trees were planted, and on May 3, 2007 a pyramidal monument was unveiled. This realization was inscribed as a part of the activities for reproducing monuments destroyed during the war and commemorating people and events erased in the history of People's Poland.

In 1997, in the central part of the park, a copy of a monument dedicated to soldiers of the 42nd Infantry Regiment, who died in the battles for independence in 1920 was set up. The authors of the original were the brothers, Jakub and Kazimierz Juszczykowi. A replica was made by the Białostock's sculptor Krzysztof Jakubowski.

In 2000, the main axis of the park, close to the Philharmonie, a memorial stone in honour of the Polish prisoners of war massacred by the Soviets was unveiled. This monument was rebuilt in 2005. At that time, it supplemented the sculptural composition and the name was changed to the Monument of the Katyn massacre. Currently another reconstruction of the monument is planned. The work relies on the introduction of a several meters high cross to the existing composition. On the social initiative, it is also planned to organize in the given area a steadfast and underappreciated Avenue. On the section between monuments: the Katyn massacre and soldiers of 42nd infantry regiment, boulders will be set to commemorate the “heroes who acted in favour of a free Poland, fought and died for their country, repressed, and today still not widely known as compatriots” [22]. The monument will be realised with public funds in the years 2017–20. In 2014, the monument “Cześć Poległym” located at the military cemetery since 1934 was renovated. The monument was kept in art-deco style and restored to its original character.

All the activities related to renovation and construction of monuments in the area of the Park of Constitution of May 3 will completely change the nature of its area. This area takes on the characteristics of features of the memorial.

4.6. Las Zwierzyniecki (rezerwat – reserve)

In 1996, according to the order of the Minister of Environment, Natural Resources and Forestry, part of common forest was transformed into the nature reserve under the name “Zwierzyniecki forest”. It was set up on account of scientific and teaching values of tree stand about character of the humid broadleaved forest. Now, it is combined with the Park of the Constitution May 3 with a walking footbridge conducted above the modernised Zwierzyniecka street. In the spatial arrangement, elements of the composition carried out in the years 30's of the 20th century by J. Rybołowicz are legible [18].

In 2011, a decisive competition for the design of the campus of the University of Białystok took place. For this purpose, the city has allocated, belonging to it, the southern part of the Zwierzyniecki Forest, used as an area of garden allotments. The author of the winning concept prof. Marek Budzynski started the implementation of the facilities entering into the environment and interaction with nature. On the basis of this concept, in 2014, a building with four divisions was realised. The new investment is located outside the main traffic routes in the city, separating the urban areas from the forest area. It met with many controversies. As a result of discussions, it was decided to undertake the design work aimed at

streamlining the communication of the new campus while maintaining the cultural and natural places. A concept of “Ogrodu Czterech Uniwersytetów”, the system linking the compositional and natural Białystok universities was developed. The project involves the spatial relationship of each university to the system of green areas. For this purpose, it used the preserved relics from the days of John Clement Branicki including the arrangement of the Branicki Garden, the Planty Park and Kościalkowski boulevards, the Park of Constitution of May 3 and the Zwierzyniecki forest. The work related to the studies and design efforts for its implementation is currently under way.

5. Conclusions

The current existing system of green areas of the city of Białystok took shape for over two hundred years, based on the knowledge and experience of successive generations of its creators. Today, it consists of city parks and housing estates, land allotments and cemeteries, as well as urban wastelands and the area of the Biala river valley. Its primary core is a green wedge connecting outside urban areas to the forest areas of the city of Białystok. Its elements are discussed in this publication related to parks and forests.

Gratitude

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References

- [1] Dobroński A. Cz. Historia Białegostoku, Fundacja Sąsiedzi, Białystok 2012.
- [2] Oleksicki A. Powojenna odbudowa Białegostoku, Muzeum Podlaskie w Białymstoku, Białystok 2002.
- [3] Oleksicki A. Pierwszy powojenny plan Białegostoku autorstwa Ignacego Felicjana Tłoczka a późniejszy rozwój miasta, Biuletyn Konserwatorski Województwa Białostockiego, 2003, 98–107.
- [4] Turecki A. *Analiza możliwości adaptacji fragmentów osiemnastowiecznego założenia ogrodowo – urbanistycznego do współczesnego centrum Białegostoku* [w:] Ochrona relikwów urbanistycznych Białegostoku, Zeszyty Naukowe Politechniki Białostockiej, Architektura Z.16, Wydawnictwa Politechniki Białostockiej, Białystok 1996, s.103–111.
- [5] Bończak – Kucharczyk E., Maroszek J., Kucharczyk K.: Katalog parków i ogrodów zabytkowych dawnego województwa białostockiego stan z 1988r. Część ogólna, Prace Białostockiego Towarzystwa Naukowego Nr 47, Białystok 2000.
- [6] Bończak – Kucharczyk E., Maroszek J., Kucharczyk K.: Katalog parków i ogrodów zabytkowych dawnego województwa białostockiego stan z 1988r. Część szczegółowa tom 1, Prace Białostockiego Towarzystwa Naukowego Nr 48, Białystok 2000.
- [7] Wicher S. *Życie architekturą. Życie i twórczość Stanisława Bukowskiego*, Studio Wydawnicze UNIKAT, Białystok 2009.
- [8] Oleksicki A. Ogród Branickich w Białymstoku, praktyka konserwatorska ostatnich lat [w:] Ogród Branickich w Białymstoku, Badania – Projekty – Realizacje 1998, Studia i Materiały, Ogrody 4(10), Warszawa 1998, s. 12–15.
- [9] Chodorowski M. Obraz miasta Białegostoku po II wojnie światowej jako punkt wyjściowy do analizy przekształceń przestrzennych w okresie powojennym na podstawie “Inwentaryzacji stanu zagospodarowania miasta Białegostoku – 1948” [w:] *Architecturae et Artibus* (11) 1/2012, s. 5–17.
- [10] Chodorowski M. Śródmieście Białegostoku w ogólnym planie urbanistycznym autorstwa I. F. Tłoczka i St. Zielińskiego - 1948 [w:] *Architecturae et Artibus* (15) 1/2013, s. 5–18.
- [11] Nowara H., Sikorski R. Białystok. Rozwój przestrzenny miasta, Prezydium Miejskiej Rady Narodowej w Białymstoku, Białystok 1969.
- [12] Dolistowska M., Szczygieł-Rogalska J., Tomalska J W Białystok nie tylko kulturalny. Okres powojenny lata 1944–1946, Instytut Wydawniczy Kreatorj, Białystok 2008.
- [13] Mapy dawnego Białegostoku i okolic, <http://igrek.amzp.pl/maplist.php?cat=TPCE>, acces, June 2015
- [14] Sikora D. Specyfika działań konserwatorskich w ogrodach regularnych, *Kurier Konserwatorski*, 7/2010, 32–42.
- [15] Sikora D. Projekt parteru do salonu ogrodowego w Ogrodzie Branickich [w:] Ogród Branickich w Białymstoku, Badania – Projekty – Realizacje 1998, Studia i Materiały, Ogrody 4(10), Warszawa 1998, s. 80–83.
- [16] Sikora D. Konserwacja ogrodu Branickich w pracach krajowego Ośrodka Badań i dokumentacji Zabytków [w:] Parki i ogrody zabytkowe, ochrona i konserwacja. Ogród Branickich w Białymstoku – historia i rewaloryzacja, Urząd Miejski w Białymstoku, Białystok 2011.
- [17] Nieciecki J. Salon parterów w ogrodzie Branickich w Białymstoku uwagi związane z jego restytucją [w:] Parki i ogrody zabytkowe, ochrona i konserwacja. Ogród Branickich w Białymstoku – historia i rewaloryzacja, Urząd Miejski w Białymstoku, Białystok 2011, s. 61–78.
- [18] Parki i ogrody zabytkowe – ochrona i konserwacja. Ogród Branickich w Białymstoku, historia rewaloryzacji : konferencja międzynarodowa 9-10 września 2010, Urząd Miejski w Białymstoku, Białystok 2011.

- [19] Rogala T. Problematyka rewitalizacji dziedzińca wstępnego pałacu Branickich w Białymstoku [w:] Parki i ogrody zabytkowe, ochrona i konserwacja. Ogród Branickich w Białymstoku – historia i rewaloryzacja, Urząd Miejski w Białymstoku, Białystok 2011, s. 111–131.
- [20] Nieciecki J. Rewaloryzacja Ogrodu Dolnego w Ogrodzie Branickich w Białymstoku. Propozycja zakresu i rodzaj prac, Biuletyn Konserwatorski Województwa Białostockiego Z.20, 2014, 7–118.
- [21] Gawryluk D. Historical Public Parks in Podlasie and their Current Day Modernisation, Formation of Urban Green Areas Nr 1, 2015, 74–80.
- [22] bialystok.onet.pl, published on 23.09.2016

Мачей Клопотовські, Дорота Гаврилюк

**ІСТОРИЧНІ ПАРКИ ЯК ЕЛЕМЕНТ ФОРМУВАННЯ СИСТЕМИ
ОЗЕЛЕНЕННЯ У БІЛОСТОЦІ
(Частина 2: Сучасний стан)**

Анотація. Сучасна система озеленення Білостоку історично сформована. Поєднується через Звєжинецький ліс з природним середовищем за містом. Ландшафтні об'єкти постійно модернізуються та доповнюються новими елементами функціонального та естетичного характеру.

Ключові слова: Білосток, історичні парки, система озеленення.

**OBJECTS OF LANDSCAPE ARCHITECTURE
IN FORMATION OF CITY MORPHOLOGY**

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, yuliya.idak@gmail.com*

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Abstract. The article describes urban development of Lviv in the historical context examining the place and the role of garden design objects and landscape architecture. The famous Austrian scientist and City Gardener of Lviv Arnold Röhring was involved in the development of urban space of Lviv at the turn of the 19th – 20th centuries, namely the Kilinski Park (the present Stryiskyi park), Hetmanski Valy, Zalizna Voda park, etc.

Key words: Lviv, A. Röhring, landscape architecture, urban space, city morphology

1. Introduction

A functionally unjustified use of valuable natural areas, an appropriate adaptation of landscape architecture to modern needs, a lack of comprehensive scientific architecture and organization of urban planning may, eventually, lead to the damage of the city historical environment and the loss of the initial appearance of the existing city facilities.

In the past the process of creation of any architectural object presupposed existence of a system. The system formed an image. It led to the consolidation of the city, the development of branch planning structure, etc. When creating a new environment, its authors were guided by various stylistic directions, subjective opinions about the meaning of gardens design and landscape architecture. In turn, it affected morphological features of the city.

In the 90's – 2000's the study of the city history intensified greatly. Its urban planning structure and urban life continued the tradition of the pre-war period. After reviewing descriptions and research materials made by many researchers of Lviv architecture, and considering the theme and direction of their research, we can divide these into two groups. The first group includes publications of urban nature, including publications about historical formation of Lviv. Such researchers have given their attention to this problem as: M. Bevza, Yu. Bohdanova, V. Vuytsyk, M. Habrel', Ye. Havrylova, S. Hoshovskiy, I. Dreksler, U. Ivanochko, M. Koval'chuk, Yu. Kryvoruchko, I. Krypyakevych, R. Lypka, S. Linda, R. Myh, R. Mohytych, H. Petryshyn, B. Posatsky, Ya. Purhlia, A. Rudnytskyi, M. Sepyalo, O. Stepaniv, T. Trehubova, B. Cherkes, O. Cherner, O. Shyshka, and others. The second group comprises combined works, which highlight formation of objects of landscape architecture and their role in the historical development of Lviv. This group also includes studies of individuals who created the city's environment with great enthusiasm. Works by V. Kucheryavyyi, H. Petryshyn, T. Maksymiuk, V. Didyk, S. Tupis' and some others are dedicated to the investigation of these issues.

The purpose of the given article is to determine the place and the role of garden design objects and landscape architecture in the planning structure of Lviv. The City Gardener Arnold Röhring was the one who was involved in its developing it at the turn of the 19th – 20th centuries.

On the occasion of commemorating the glorious Gardener of Galicia Arnold Röhrling an opportunity arose to return to his works, consider them in terms of connection between art and landscape architecture. All planted areas have always been an integral part in shaping the city's structure, its morphology. They are conditioned, to a great extent, by natural formation of the city, where morphology provides for the structure, planning functions, as well as their development and changes over time. "Landscape architecture is essentially urban development including natural means adapted to the increasing pressures" [1].

Since its foundation the morphology of Lviv was formed at the background of its natural frame, i.e., the valley space of the Poltva river basin surrounded by Castle Hill and Piskova Hill (or Hill of Lev), the Znesinnia ridge extending to Vynnyky Hills in the north and the north-east, and in the west by Sviatoyurska Hill and the Kortumivka area. The landscape dominants in the central part of the town were: the High Castle, also the Kalicha and Poznan Hills and Vronovska Hill (the Citadel). The south-west of the city of Lviv was framed by the elevated areas where the sources of the Poltva River begin, i.e., Snopkiv, Sofiivka and Zalizna Voda. These natural elements contributed to the uniqueness of the city in balancing its natural basis and urban structures. On this natural basis, objects of landscape architecture were formed, each of which played a role in the development of various urban functions in the area.

It should be noted that formation of garden design objects and landscape architecture should also be considered in conjunction with the overall urban development of the city, which is largely dependent on the political situation of the time and its socio-economic circumstances. Throughout the historical development of the urban network the afore-mentioned factors led to the heterogeneity of space with such features as: partition of areas, the presence of centers, proximity to various objects, highly developed means of communication and the functional content, etc. While studying architecture of the city of Lviv it is appropriate to consider its historical and morphological transformation influenced by formation of garden design objects and landscape architecture.

2. Basic Theory Part

The foundation of Lviv was due to its geographical location at the crossroads of trade routes. This fact defined Lviv as the royal capital city. It also determined its structure, typical for such cities, with a royal residence in the High Castle. The trade and craft positions at Castle Hill had an irregular structure, which included the Old Market area and churches and the cathedrals built at the time [2].

Unlike the old part of the city, the new city of the 14th – 15th centuries was built aside the old position towards the current Pidvalna Street and it had a regular planning center – Market Square. This downtown was surrounded by the city fortifications with external line ditches and shafts. This configuration of defensive walls, some of which have survived till our time, present the core of its characteristic originality and the possibility to look into the past and trace the changes in the shape of the city at the time.

A significant event in the development of the city was the dismantling of the city fortifications in the period of the Austrian governing in the late 70's of the 18th century. On the one hand, it opened the way for development of suburbs, on the other hand, it enabled to create a system of historic pedestrian walking promenades on the site of the outer line of fortifications. Thus, the lower downtown or Hetmanski Valy (Hetman's Ramparts, present Svobody Avenue) was formed. It consisted of two parallel streets with a walking alley between them, which was later extended along the Poltva River (now Shevchenko Avenue) [3].

From the east side, the upper Hubernatorski Valy were arranged in the area of the leveled ditches in the early 19th century. [4]. They stretched from the Bernardine Monastery garden to the Benedictine monastery Renaissance garden ensemble, which opened to the High Castle. Thus, it created a ring of historic squares – promenades that combined significant buildings, architectural ensembles and squares, the so-called first green city ring [5, p. 181]. Creation of promenades along the boulevards, as an organic component of the city's morphology, was analogous with the "plyanty" in Krakiv, Vienna Ring, Paris Boulevard under reconstruction by Osman.

If the insulating system of boulevards can be viewed as a result of the then prevailing architectural norms of formation of the city planning structure, the existing natural landscape complexes, unique to each city, became a basis for objects of landscape architecture.

The most significant natural landscape, dominant of Lviv, is High Castle, located on the highest hill of the city. It is a part of the pre-locational city. The surrounding areas of historic buildings preserved an authentic plan structure around Old Market Square and the Pidzamche area. The value of this landscape complex can be assessed in terms of formation of a three-dimensional space of the city, where the High Castle is a kind of symbol, and to which all lines of visual perception are opened from different parts of the city plan.

In the early 19th century, from the hill on which the ruins of the city castle stood, in dry weather periods clouds of dust and sand appeared, and in rainy period streams of sludge flowed down (“decline of water plowed ravines, accessible only to the cattle that grazed and took a sunbath”). Therefore it was decided to plant trees on the bare hill and found a park on the site of the castle fortifications. The avenues were planned as a continuation of gardens and promenades on the shafts. In 1820–1830-ies beautiful clean streets appeared, paved from the side of the walls of Hubernatorski Castle Hill [6].

The laid High Castle Park greatly enriched the panorama of the city, especially, when the ravine between Castle and Knyazhi Hills was filled and a mound was formed in honor of the 300th anniversary of the Lublin Union. There is speculation about the fact that A. Röhring participated in the laying of the park in the late 19th century, before that time another City gardener K. Bauer took part in its laying [7, p. 369].

In the eastern direction High Castle Hill through Lev’s Hill and the Park on Strilnytsya is connected with Znesinnia Hills, the site of an ancient settlement. The regional landscape park “Znesinnia”, laid in this place with the surrounding areas and the Kryvchytsi area, evidences traces of historical settlements [8]. Even to this day in this periphery area low-rise buildings with gardens remain.

Thus, “High Castle” and “Znesinnia” Hills, creating a solid green ridge, became natural boundaries that extended the Pidzamkovyi Lviv beyond the outer walls of the city center. Since the beginning of industrialization in the 19th century geographic features of these areas (namely, a flat space and a natural protection of the downtown – High Castle Hill), a relative cheapness of the land and a low status in terms of living quality made them the most convenient place for industrial construction [9]. After the laying of the railway in 1869 and construction of the railway station in this district of Lviv, the industrial value of these areas increased [7, p. 457–458].

With the moving of the city life on to Market Square, the old town centre of Princes times began to decline. However, due to the influence of the High Castle the district of Pidzamche managed to retain its identity. Its quarters were given the status of a particular territory in modern Lviv, and it stimulated its revival [10].

The next phase of urban net is due to the development of suburbs, some of which (Krakiv and Galician suburbs) were areas densely populated. The areas from the south-western side were mostly occupied by manors and estates of wealthy burghers. On those territories the oldest city park in Ukraine [11], the present Ivan Franko park, was laid in the 16th century with a green island area over 11 hectares protruding into in the urban structure. In general, its appearance was associated with formation of garden design and landscape art in Lviv [12]. Like most parks of that period in Europe, it was initially created on private lands, and later on, transferred to the city by the Venetian Consul Antonio Masari [7, p. 115]. This urban garden later acquired public functions that determined its destination, that of a modern-wide park area between the former Sejm (Province Parliament), and the today’s University named after Ivan Franko. The main alley of the park continues Sichovi Striltsi Street and is partly used for transit pedestrian traffic.

The Ivan Franko park, bordering the Sviatoyurska (St. George) Hill and the Citadel, forms part of the green ring in the south-west part of the city center. The top of the park is connected with the ensemble of Sviaty Yuriy (St. George) Cathedral, built in the monastery garden in the then prevalent Baroque style. A cascade of terraces with retaining walls formed a natural pedestal for the majestic silhouette of the cathedral. The structure of the cathedral with a garden was planned by the famous Lviv architect B. Meretyn [15, p. 160]. It opened from the inside the visual communications with the High Castle and views of the historic city. The cathedral on St. George's Hill became a meaningful spatial reference in the city panorama.

Citadel Hill, called Kalicha Hill in the 15th century and Shembek Hill in the 18th century, served as one of the natural landmarks of the city. The steep slopes of the hills made it difficult to access, which led to it being used for military purposes. In the early 19th century when the Citadel was taken over by the Voronovskiy family, there were plans to create a park, that had not been implemented [7, p. 231]. In the past the Citadel vicinity to the city caused the laying of steep streets, paths and slopes, some of which led to the establishment of the Ossolinskyy library at the intersection of Stefanyk and Copernic Streets, while the others led to the Pelchynskyy pool, formed in the marshy territory at the southern foot of the hill near Pelchynska Road (now Vitovskyy Street).

The multi-faceted structure of green spaces, i.e., parks, gardens, green lanes along streets was common in all areas of the spanning urban net. This coincided with the rise of landscape art and an interest in botany, which contributed to the creation of arboretums and botanical gardens. Their foundation is associated with the name of Austrian scientist Arnold Röhring, who planned to found an arboretum marginal urban school, nowadays, the Forestry University Botanical Garden in Kyrylo and Methodiy Street [5, p. 180–193].

The second half and the end of the 19 century witnessed a further development of Lviv territory and objects of landscape architecture. A. Röhring's activities in this period made a tremendous leap in solving landscape architecture of the city. They were carried out both as rehabilitation and reconstruction of the existing facilities of landscape architecture and as creation of the new ones. Arnold Röhring joined Karl Bauer in such projects as: the reconstruction plan of the park at the foot of the High Castle, the works concerning Hetman's Valy, the improvement of the main Lviv avenue composition with trees and flower beds. The activities of Röhring extended to creating smaller pieces of landscape architecture, namely, T. Vyshnovskyy park (former Executions Mount (now Zolota Street) and the small park near the St. Yuriy (St. George) Square [5, p. 181].

The Stryiskyy park occupies a special place in the formation of green spaces of the city, the most famous and the most important work of landscape architecture of A. Röhring's authorship. All began with the laying of the park in 1887, with the plan of laying of the lower parterre with the monument to Jan Kilinski, which appeared on the central lawn slopes in the background of the forest park and the lake. The Stryiskyy valley with the spring, on which the park was formed as part of the natural frame shaped by geoplastics of relief, divided the park into two parts: the plateau of the upper terraces and a spacious valley bottom. The upper terrace was designed for the Universal Exhibition of the National Chamber of Commerce and exhibition pavilions; it was a public space as opposed to romantic compositions of the bottom part of the park. A. Röhring's skills manifested themselves not only in the planning of one of the best parks, but also in the nature of the surrounding buildings. The main front gate led to the street with an interesting architectural solution surrounded by mansions. A. Röhring laid the gardens of the mansion buildings area, adjacent to the upper terrace of the park. Thus, the so-called "buffer zone" was created as if to underline the beauty of the composition of the park. The upper terrace of the park passed gently into the Sofiiivka gardens (present Yaroslavenko, Dubrovskyy, Svetsitskyy Streets). An active building of the park began in the mid-19th century, when the architect Florian Onderka laid a public park and the architects Saltzman and Schmidt built several villas, not preserved today [7, p. 720].

The real flourishing of the area occurred in the late XIXth century during the establishment of the Stryiskyy park, when A. Röhring used the natural landscape of Sofiiivka Hill to create gardens, villas and manors. The Sofiiivka gardens, adjacent to the areas in the tributaries of Soroky and Zalizna Voda springs, were a favorite vacation spot for citizen's walks. This is where the Mayor of the city instructed the outstanding City Gardener A. Röhring to create a park. A. Röhring designed the park plans from the 80's of the 19th century until the last days of his life (1913). It should be noted that the "Zalizna Voda" park in the status of the city park dates from 1905. A. Röhring tried to preserve the natural landscape of forests in the undulating places the terrain. Walking bypass alleys were laid with a thematic change of plant groups. The upper plateau with the lower walkway was linked by a transit alley along the waterfall, destroyed after World War II. Two sources provided water to the Kaminskyy pool at the bottom of the park from the side of the present Stus Street.

According to A. Röhring's plan, the Jordan Park was designed on the upper terrace, named after the Polish doctor Henryk Jordan. A. Röhring started the laying of the park for games, amusement, sports facilities, patriotic education of children and youth in Krakiv [7, p. 720].

"Zalizna Voda" park was not completed, which resulted in its many subsequent conversions together with the development of areas around it. Therefore, this park is a prime example of landscape object in the formation of the district, called the "Novyi Lviv" ("New Lviv"). The establishment of the area began in 1910, when the architects F. Kassler and A. Ostem planned a station of villas with gardens in rectangular form with a circular area symbolizing the sun in the center from which 6 streets-beams were spread. It echoed with the ideas of the Howard city garden, developed by the outstanding Lviv architects Levynskyi and Yu. Zahariyevych, embodying this idea in the planning of the Kastelivka area [13].

Revitalization of work on the development of the area began with construction of 2–3 storey houses in the style of functionalism in the 30's of the 20th century under the guidance of the architect Tadeusz Wrobel. At the same time, in the 60-ies of the last century, in the place of the Kaminskyi pool, a city recreational pool and a recreation complex were laid, i.e., the sports complex "Dynamo".

In the post-war period in the Novyi Lviv area an active construction of typical 5-storey buildings began, the so-called "Khrushchev" buildings. In the pre-war period in the 30's of the Xth century, this area was reserved for construction of villas. However, in the Soviet times, the area was cut through with a diagonal Litvinenko Street. The growth of industry in Ukraine had not bypassed this area: the former bicycle factory was rebuilt to the "Polaron" factory for production of military equipment. The park had not undergone any significant changes and was used mainly for a rest on the grass. Nowadays, construction of the "New Lviv" continues with the simultaneous reconstruction of the park. A special attention is paid to transit traffic along Stus Street near the Snopkivskyi park. The residential streets, adjacent to the park, still retain traces of the old mansion buildings. The main street of the "New Lviv" is connected with P. Myrnyi Street and Chervona Kalina Avenue which is the main street of the Sykhiv residential area. The "Zalizna Voda" park became part of a continuous green strip in the southern and south-eastern part of the city along with the Stryiskyi park, Sofiiivka and Snopkivski Hills.

Formation of green areas in the eastern part of the city was due to the history of formation of this territory. In ancient times it was densely built and underwent a notable development from 1789 with the laying of the way from the suburbs towards the Galician clay. This path became the main artery of the Lychakiv suburb, which comprised two- and three-storey buildings and public facilities. A further development dynamic of the area led to the construction of a tram line that provided a link to the top of the Lychakiv center which entered the composition of the city. Along with the Lychakiv cemetery and the Tsetnerivka park in 1892 A. Röhring laid the Lychakiv Park. In the inter-war period a memorial to those who died in World War I was erected. Later on, after World War II, in the upper part of the park, war burials were made, the so-called "Hill of Glory".

The Lychakiv park is connected to the Botanical Garden of Lviv University, adjacent to the park in the Pogulyanka area of 100.33 hectares. This green neighborhood dates back to the XVIIth century, when the Lviv Mayor Altmayer leased fields, settled farmers-tenants and established an apiary. This sparsely populated peripheral area is actively being built, which will ensure the future of its multifunctional use.

Thus, objects of landscape architecture, developed by masters of landscape architecture, among which the most prominent figure was A. Röhring, laid a stable system of green areas morphology. They are an integral part of the city, formed in the pre-war period.

The current system of green areas, which determined the face of the city, was continued at a later stage of development after World War II. At that time, notable changes in the natural environment occurred as a result of human activities. Sometimes, the terrain changed in open spaces, the hydrographic network altered as well, numerous ponds and straits and most of the sources disappeared. A new concept of urban fabric affecting objects of landscape architecture was formed. It was reflected in the restructuring of old Lviv parks according to new requirements and the creation of new parks, wide and specialized one, as well as public gardens and green areas.

The Ivan Franko park (the former Kosciushko Park) underwent changes. In it, in the 50's of the 20th century, features, atypical of parks, such as: a cinema, a restaurant, children's rides, stands for selling the beer

began to make its appearance. This park continues losing features of landscape art monuments still today. The avenues are being turned to transit zones.

Among other reconstruction objects worth mentioning is the Stryiskyi Park, including its upper terrace, on which the Lviv Polytechnic sports complex, housing the Academy of Arts, and the "Lviv" cinema are located. From the side of the Ivan Franko Street, a new Chamber of Commerce, hotels, restaurants, and banks have appeared. The High Castle park and the Citadel have also changed.

High rates of house construction in the late 50's–80's were accompanied by the increase of trees planting. The urban greening plan adopted by the Council of Ministers of the USSR contributed to it. By this method the People's House in the B. Khmel'nitsky National Park of Culture and Rest was arranged. The Snopkivskiyi park together with the stadium of Ukraine, Vuletski Hills, a student park, Horikhovyi Grove were organised in the same way.

The project of detailed planning of the complex city recreational zone was made in the 70's of the previous century, which included the High Castle area, the Shevchenko (Kaiserwald) park and the former Znesinnia park. That project was the basis for creating a museum of folk architecture (Skansen), the so-called Shevchenko Grove [7, p. 720].

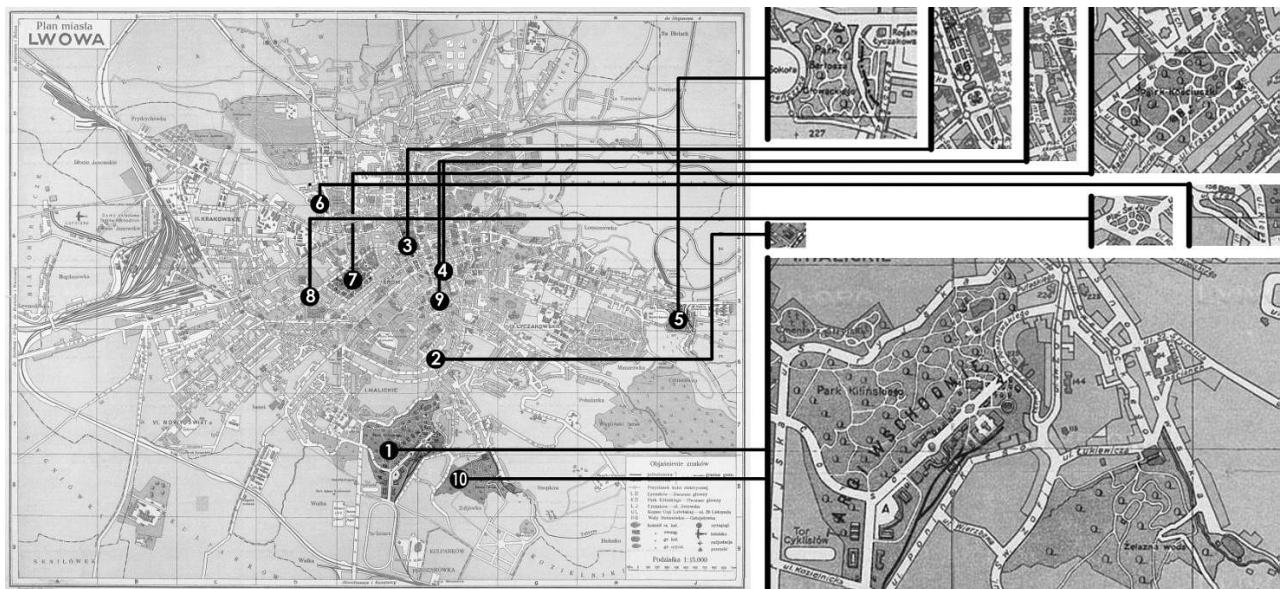


Fig. 1. Objects developed by Arnold Röhring on the city map of 1920 (based on map "Plan miasta Lwowa" 1922 p. [15], [16]):

1. Kilinski Park (now Stryiskyi Park); 2. Arboretum edge of the Forest School (Arboretum National Forestry University);
3. Karl-Ludwig-Strasse, Hetmanska Str., Hetmański Valy (Svobody Avenue); 4. Halytska Square (1890–1893);
5. Lychakiv Park; 6. Visnovskogo Park around the "Hory Strat"; 7. Lower Jesuit Park (Ivan Franko park);
8. St. George's square (1897); 9. Square around the monument to Kornel Ujejski (1902) and nonlinear Akademicka street (Shevchenko Boulevard) (1906); 10. "Zalizna Voda" Park (1905)



a

b

c

Fig. 2. Objects developed by Arnold Röhring: a – Halytska Square and Valova Street [17];

b – Downtown Lviv, Karl Ludwig Street, Hetmanski Ramparts (Svobody Avenue) [18];

c – St. George Church, St. Yura Square, green area, Palace of Metropolitans [19]

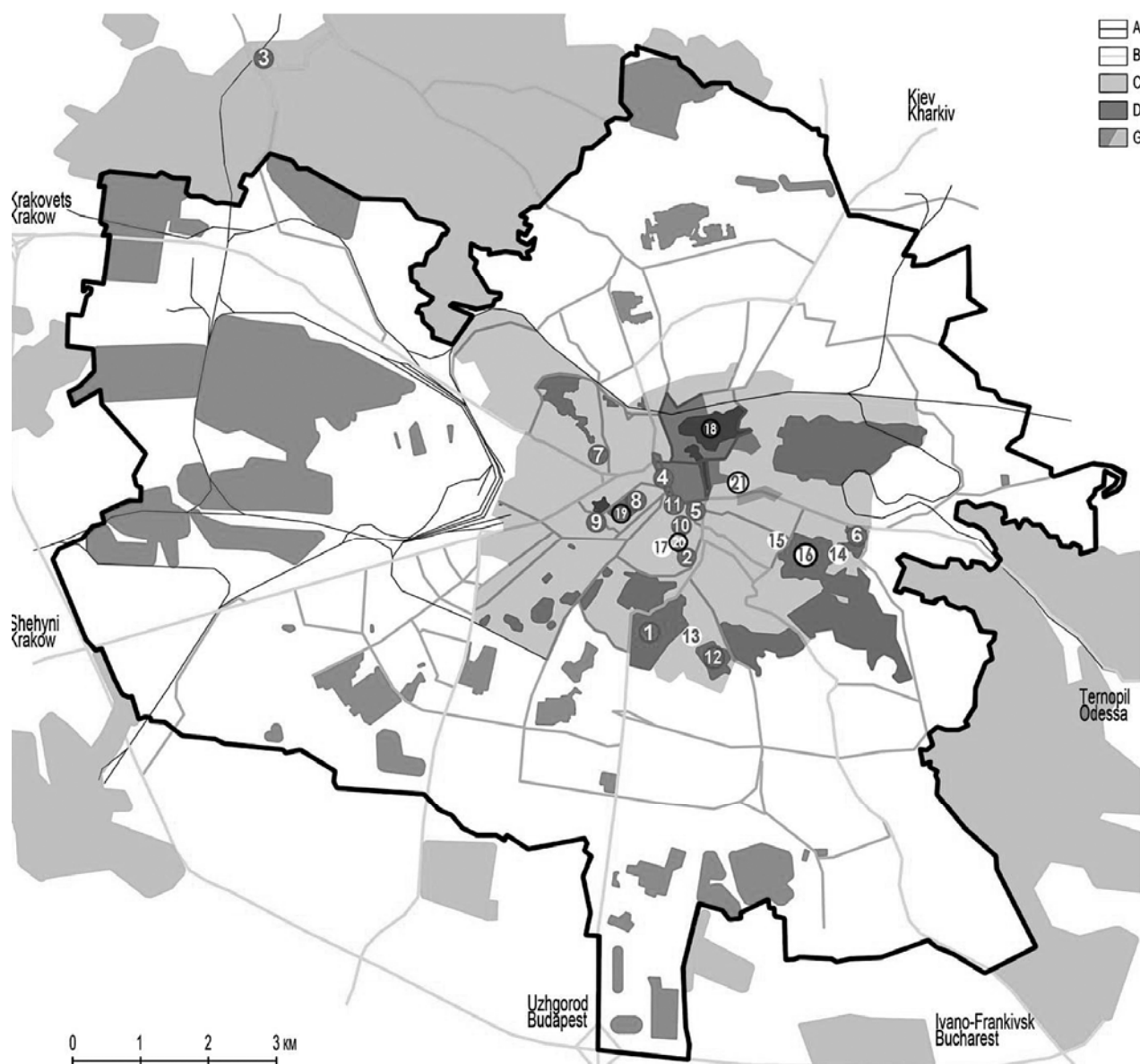


Fig. 3. Objects by Arnold Röhring on the city map of the beginning of the 21 century (based [16], [22]):

- A – administrative city limits; B – main streets; C – historical area of the city (2001); D – Historic Centre (the area included in the UNESCO World Heritage Site); G – green area. Kilinski Park (1877–1894, Stryiskyi Park, 47,61 ha); 2. Arboretum edge of the Forest School (1880) (Arboretum National Forestry University, 0,81 ha); 3. Recreation Park in Bryukhovychi (about 1887); 4. Hetmanski Valy (Svobody Avenue) (1888–1890); 5. Halytska Square (1890–1893); 6. Lychakiv Park (1892; 8,4 ha); 7. Visnovski Park (1895, covering 2,8 hectares), around the “Hory Strat”; 8. Lower Jesuit Park parterre terrace; 9. St. George’s square (1897); 10. Square around the monument to Kornel Ujejski (1902) and nonlinear Academic Street (Shevchenko Avenue) (1906); 11. Ordered landscape composition Mariacka Square (Pl. Mickiewicz); 12. Park “Zalizna Voda” (1905). *The possible relationship A. Röhringa*; 13. Technical garden (National Botanical Garden); 14. Park Sofiiivka (1893); 15. Park of infectious clinic on Pekarska Street 54 (1910–1914) and park on Pekarska Street 52; 16. Reconstruction at the Lviv cemetery (K. Bauer turned the cemetery in a park [21]); 17. Attempts to lay the Citadel Park. *Implemented Projects by Karl Bauer* [21]; 18. Vysokyi Zamok Park (Lviv Castle Hill Park) – took direct part A. Röhring; 19. Ivan Franko Park (formerly, Jesuit Gardens); 20. The first botanical garden; 21. City shooting gallery

In the latest city master plan developed for the period until 2025 an expansion of the system of landscape and recreational areas is expected, by creating new parks. They lag far behind as compared to the pace of housing construction. An urgent problem is the improvement of parks in Sykhiv, Zboyischa on Vyhovskyi and Volodymyr Velykyi Streets, the Avenue of the 700th anniversary of Lviv, and many others.

Because of the unresolved problem, the objects of landscape architecture experience more and more pressure. In the present political and economic situation we can only talk about prospects of development of objects of landscape architecture, considering the social structure of society, its way of life. The trend is that objects of landscape architecture, different in size and features, should be located closely to resident areas, creating a hierarchical structure, similar to that of active spaces for public life in some residential areas. The issue raised provides a wide field for research and study.

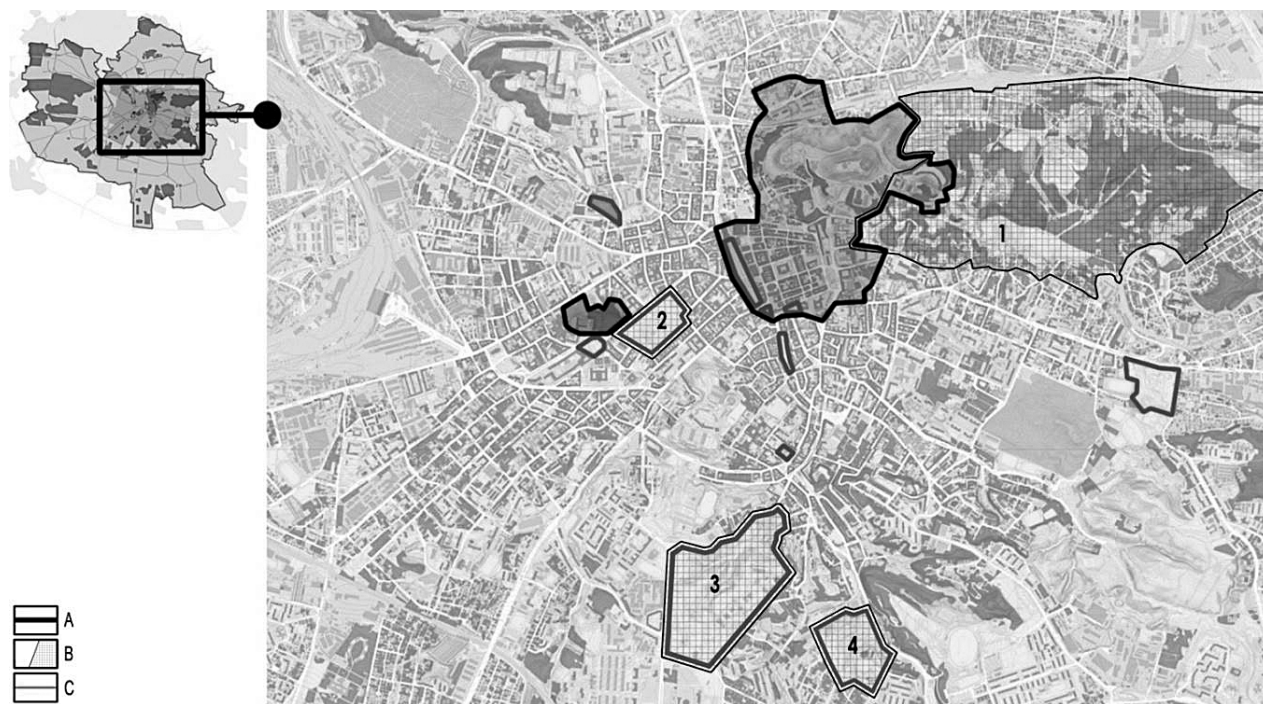


Fig. 4. The fragment of the historically formed central part of the city:
localization of objects by A. Röhring:

- A – the Ensemble of the Historic Centre (the area included in the UNESCO World Heritage Site);
- B – border and territory of the nature protected area in Lviv [22]
- (1 – regional landscape park “Znesinnia”; 2 – the monument of landscape art of national importance Ivan Franko Park – the oldest and one of the central parks of the city;
- 3 – the monument of landscape art of national importance Strytskyi Park; 4 – a monument of landscape art local importance “Zalizna Voda” Park);
- C – border of area A. Röhring’s objects

3. Conclusions

On the basis of the material it can be stated that historically morphological transformation of the urban net occurred in close relation with urban structures and objects of landscape architecture. The presence of such objects, depending on environmental conditions, led to a powerful pressure on certain areas, thereby, causing differentiation of urban areas.

Also, new facilities and landscape architecture have been formed. They are being integrated into systems, locks, lanes. In the morphological structure of Lviv, a green diameter from the northwest to the southeast is observed, consisting of city inner parks moving to Bryukhovyttskyi and Vynnykivskyi parks. There are new parks forming a green ring around the central, middle and peripheral areas wedging into the urban net, creating a sector model zone that corresponds to the radial-ring structure of the city.

The growth of the landscape and of the recreational area system is expected in the future through the development of suburbs, rich in the fauna and flora and water sources. Thus, underground facilities such as parking lots, storage places and underground passages, a new structure of the landscape and recreational areas are being extensively developed.

References

- [1] Dudarets V. M. Ladshaftna arhitektura ta morfologiya / V. M. Dudarets // Culture of Ukraine. Vyp. 30. Kharkiv, 2010. S. 194–198.
- [2] The city plan in 1700. [Electronic resource]. – Access: https://uk.wikipedia.org/wiki/Історія_Львова (viewed on November 16, 2016). – Title from the screen.
- [3] Krypiakevych I, Lviv. Yoho mynuvshyna and teperishnist / I. Krypiakevych. 1910, p. 5. [Electronic resource]. – Access: http://shron.chtyvo.org.ua/Krypiakevych_Ivan/Lviv_Yoho_mynuvshyna_i_teperishnist.pdf (viewed on November 22, 2016). – Title from the screen.
- [4] Vuysyuk, Sticky, 1987, p. 85 ; Tregubova, Mych, 1989, p.111; Krypiakevych, 1991, p. 77; Mohytych, 2003, p.10.
- [5] “Raytsenhamivka” ta “Trofejka” abo 10 faktiv z istorii Hubernatorskykh Valiv. [Electronic resource]. – Access: <http://photo-lviv.in.ua/rajtsenhamivka-ta-trofejka-abo-10-faktiv-z-istoriji-hubernatorskyh-valiv/> (viewed on November 12, 2016). – Title from the screen.
- [6] Didyk V. Tretie zelene kiltse Lvova / V. Didyk, T. Maksymyuk, S. Tupis // Experience and prospects of cities in Ukraine. Collection of scientific works . Vol 20. K.: Institute “Dipromisto”, 2011. – S. 181.
- [7] Stankiewicz Z. Ogrody i plantacje miejskie // Lwów dawny i dzisiejszy: Praca zbiorowa pod redakcja B. Janusza (Lwów, 1928), 62–71. – S. 64–65; high castle Street – the park “High Castle”. [Electronic resource]. – Access: <http://www.lvivcenter.org/uk/lia/objects/park-vysokyi-zamok/> (viewed on November 13, 2016). – Title from the screen.
- [8] Arhitektura Lvova chas i styli. XIII–XXI st. / ed. Ju. Biriulov. – Lviv: Center Europy, 2008. – 720. – C. 512.
- [9] Regional landscape park “Znesinnia.” [Electronic resource]. Access: <http://city-adm.lviv.ua/portal/catalog/pam-jatniki-parki-ta-sadi/parki-ta-sadi/6388> (viewed on November 14, 2016). – Title from the screen.
- [10] Nazaruk M. Rol’ promyslovosti u formuvanni socio-eko system Lvova u XX stolitti // History of Ukrainian geography. Ukrainian scientific-theoretical magazine. Ternopil: Textbooks and manuals, 2006. Issue 2 (14). P. 26–27. [Electronic resource]. Access: <http://ukrtur.narod.ru/istoukrgeo/allpubl/antropos/rolpromyslvoiva.htm>
- [11] Pidzamche: mistsia ta prostoty. [Electronic resource] / Center for Urban History of East Central Europe. Mode of access: <http://www.lvivcenter.org/uk/lia/researches/pidzamche/spaces-places/modernity-marginalized/> (viewed on November 14, 2016). – Title from the screen.
- [12] Park imeni I. Franka [Electronic resource]. – Access: <http://city-adm.lviv.ua/portal/catalog/pam-jatniki-parki-ta-sadi/parki-ta-sadi/6272> (viewed on November 14, 2016). – Title from the screen.
- [13] Vpershe u Lvovi [Electronic resource]. – Access: <http://www.touristinfo.lviv.ua/uk/lviv/about/architecture-capital/> (viewed on November 15, 2016). – Title from the screen.
- [14] Linda S. Kastelivka: narodno romantychni tendentsii u rozvytku arhitektury lvivskogo istoryzmu / S. Linda // ethnology notebooks. No. 2 – Lviv, 2000. – P. 272–279. Linda S. Development of building the city during historicism / S. Linda // Town planning and territorial planning, scientific and technical collection. – K., 1999. – Vol. 3. – P. 88–91.
- [15] Plan miasta Lwowa 1922. [Electronic resource]. – Access: http://www.lvivcenter.org/uk/umd/map/?ci_mapid=164 (viewed on November 15, 2016). – Title from the screen.
- [16] Arnold Röhring. [Electronic resource]. – Access: http://www.academia.edu/16119912/Арнольд_Рьоринг_Реринг_нім._Arnold_Röhring_1840_1913_Львів_ (viewed on November 14, 2016). – Title from the screen.
- [17] Halytska Square and Valova Street. [Electronic resource]. – Access: <http://www.lvivcenter.org/uk/uid/picture/?pictureid=1097> (viewed on November 15, 2016). – Title from the screen.
- [18] Svobody Boulevard. [Electronic resource]. – Access: <http://www.lvivcenter.org/uk/uid/picture/?pictureid=71> (viewed on November 15, 2016). – Title from the screen.
- [19] Petryshyn H. The park in st. Yuri (st. George) square – the jewel in the emerald necklace / Halyna Petryshyn, Olha Kryvoruchko, Halyna Lukashchuk, Stepan Tupis // Czasopismo Techniczne. Architektura, Y. 112, iss. 10-A – Wydawnictwo Politechniki Krakowskiej im. Tadeusza Kościuszki, 2015. 3–20.
- [20] Arnold Röhring. [Electronic resource]. – Access: https://uk.wikipedia.org/wiki/Арнольд_Реринг
- [21] Karol Bauer. [Electronic resource]. – Access: https://docs.google.com/document/d/17B5x3lsBu_RQWuJao5qMo-Ra66iqv4YkNRv6GaVv_gFE/edit (viewed on November 16, 2016). – Title from the screen.
- [22] Pryrodno-zapovidnyi fond Lvova. [Electronic resource]. – Access: https://uk.wikipedia.org/wiki/Природно-заповідний_фонд_Львова (viewed on November 15, 2016). – Title from the screen.

ОБ'ЄКТИ ЛАНДШАФТНОЇ АРХІТЕКТУРИ У ФОРМУВАННІ МОРФОЛОГІЇ МІСТА

Анотація. У статті описано містобудівний розвиток Львова в історичному контексті, місце і роль об'єктів садово-паркового мистецтва та ландшафтної архітектури, до розроблення яких був залучений відомий інспектор міських плантацій Львова на зламі XIX–XX століть Арнольд Рерінг, а саме парк Кілінського (тепер Стрийський), Гетьманські вали (тепер проспект Свободи), парк Залізна Вода та ін.

Ключові слова: Львів, А. Рерінг, ландшафтна архітектура, морфологія міста.

Uliana Ivanochko

**LANDSCAPE AND SPATIAL CONCEPTS OF LVIV CITY
DEVELOPMENT IN THE LATE 19 – EARLY 20 CENTURIES:
OUTLOOKS AND REALITIES OF URBAN SPACE HARMONIZATION**

*Lviv Polytechnic National University, Department of Architectural Design,
12, S. Bandery str., Lviv, 79013, Ukraine, uliana.ivanochko@gmail.com*

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Abstract. In the late 19 – early 20 centuries while integrating gardens and green spaces into residential area spaces the city of Lviv managed to form a complex system of outdoor intra-block and inter-block gardens, as well as villa and detached housing areas. In 1870–1890 the urban planning solution of south-western districts of Lviv, in particular, Kastelivka in NovyiSvit area, was initiated with construction of villas and detached houses. It appeared to be the first ever attempt in Lviv to arrange a large complex residential area. In 1910 the main changes in Lviv spatial development, related to the experience of creating suburban garden-cities, determined emergence of areas built up with villas and detached houses on the upper plots of the southern and south-western city suburbs, namely within NovyiLviv territory. The latter appeared to be the most favourable for housing a residential area.

Key words: landscape and spatial development, Lviv, urban space, gardens, villa construction

1. Introduction

History testifies to the fact that cities appear to bear specific images of modernization processes that take place in a society. Therefore, the latest urban concepts were, to a certain extent, embodied in the architectural and city planning patterns of Lviv at the turn of 19–20 centuries.

At the end of the XIX century the city of Lviv was the third one, following Vienna and Prague, on the top list of the cities of the Austrian provinces. Along with the growth of its political significance (as the capital and a self-governed city), later on, there also came an economic expansion accompanied by rapid and powerful advance in city planning [1, p. 201].

An analysis of the previous and contemporary research has revealed that the city of Lviv, as the capital of one of the crown lands of the Austro-Hungarian Empire, becomes the focus of research attention in a number of scientific papers by investigators of the 19th–21th centuries [2; 3]. Those authors, including architects, urbanists, historians, art historians, geographers, et al., have focused their research on the dynamics of demographic processes [4; 5; 6; 7], as well as on historical and legal aspects of the municipal life and changes in the administrative reorganization of the city during the Austro-Hungarian period. Some papers contain factual and analytical materials on city building development [8; 9; 10; 11; 12], changes in building and development of downtown and suburban areas, as well as landscape formation (creation of parks and public gardens) [13], improvement in urban hygiene standards [14], construction and legal aspects of building standardization [15; 16; 17].

2. Lviv city territorial development

The spatial development of certain city districts, due to a number of reasons, was uneven.

In 1870 the city population totaled nearly 90.000 residents; there were 253 streets and squares, 2.594 houses, mostly of one- and two-storeys [18, p. 39]. After the reorganization at the beginning of 1871 in Lviv, there were 226 streets, 25 squares, 3.314 building plots (realities) [19, p. 314]. In 1890 the city expanded to as many as 246 streets, 24 squares and 4.495 building plots [19, p. 316].

During the 19th century the city area increased in its administrative boundaries up to 3.240 ha, but the living space of it went further beyond the defined borders and developed steadily along the suburbantoll-post road areas and the free spaces between the main streets. It can be explained by the fact that up until the beginning of the 20th century the city developed spontaneously and chaotically, as no integral city planning strategy existed.

The opening of the railroad network in 1861, along with construction of the railway station, eventually resulted in a rapid development of Zhovkva suburban areas in the 70s of thXIXth century (during the 1870s and 1880s the volume of construction development increased by 40.9 %). Every other year new railroad lines were laid which turned the city of Lviv into the largest railway junction in Galicia. Unfortunately, the railroad network caused obstacles to public transport. In 1874 the traffic was routed down the newly created Obiizd Street (currently L. Dolynskiy Street) along the rail line to Zamarstynivska Street. More intensively, construction activities stretched in the direction of the main railway station. The Cracowian suburbs of Lviv turned into densely built up areas (during the 1870s and 1880s the volume of construction development increased by 25.8 % and during the 1880s and 1890s by 27.3 %, respectively). The Galician suburbs of Lviv developed extensively, as well (with a registered increase of 54.4 %). Also, high-density building blocks were erected from the eastern part of the downtown. Thus, the densely built-up housing ring around the center of Lviv became closed. Also, construction along the main roads continued. The city building plan acquired more and more the shape of a polygonal star [6].

The 70s of the 19 century witnessed a rapid spatial development of the city. Building construction along the main city streets (Yanivska Street, Horodotska Street, Lychakivska Street, Zhovkivska Street) extended far beyond the city center. Large areas between the main streets of the city still remained undeveloped. The width of the high-density construction ring around the city center increased. In 1872–1877 the Lviv Polytechnic complex was built in the Galician suburbs which made the area more attractive: dispersed buildings surrounded the Polytechnic and extended to NovyiSvit area.

Meanwhile, construction of the Lviv Polytechnic complex, i.e., the Main Building (1877), the academic building for the Chemical Faculty (1876), according to the design by Julian Zachariewicz, on the one hand, became an example for construction of a number of city administrative and public buildings and, on the other hand, laid the foundation for design and construction of educational institutions using its own resources.

The municipal territory expansion and an increase in the number of city residents resulted in problems with public transport provision. In 1879 in Lviv a horse-driven tram was launched. And in 1894 the electric tram started to operate. Gas street lights were introduced in Lviv, and in 1900 the first electric street lights in the city were installed. Until the late 21th century implementation of innovations of that time made Lviv plunge completely into modernization processes [20, p. 122–123].

The chronological boundary summarizing the city development in the 19th century was the Kraiova (Regional) Exhibition held in 1894. Being organized on a large scale with spectacular events, it symbolized metropolitan ambitions of Lviv and its willingness and readiness for modernization [20, p. 123].

In the Galician suburbs there appeared such building areas as Kastelivka, Vulka, Stryiska Dilnytsia, Sofiiivka-ZaliznaVoda, whereas in the Lychakiv suburbs there emerged Pasiky, Tsetnerivka, Upper Lychakiv. Progressing urbanization and the development of public transport gradually wiped away borders between the outlying and the central city districts.

Lviv city building patterns, just as those of other European cities part of Austria-Hungary, were determined by statements of the law, adopted in 1874, concerning the zoning of the territory of Budapest and defining the number of floors and other basic construction features. The urban area was divided into zones of four types: central zones, where multi-storey residential and public buildings were allowed, industrial zones with factories and housing facilities for workers, zones of residential buildings with less than 3–4 floors and zones of detached houses [21, p. 74]. The Lviv cadastral map of 1879 [22], which showed possible routes of new streets and expansion of the existing ones, as well as division of the newly constructed building blocks into redevelopment areas, laid grounds for working out the strategy for further city planning and development. Besides, within this strategy the radially-directed streets were to be further developed and the districts close in their location to the central part of the city made up the focus of the architects' attention.

The important document which streamlined building processes in the city was the first architectural statute for the royal capital city of Lviv adopted in 1877 [23]. The statute provided regulations for certain

buildings design and construction, standards for their height (depending on location), construction solutions, norms of fire-safety and sanitary requirements. The statute also focused on some city planning aspects related to the construction patterns of streets and squares in Lviv.

The architectural statute implementation contributed to intensification of the regulatory plan developments, primarily in the metropolitan capital cities in the late 19th – early 20th centuries, wherein the city aesthetics and city hygiene were of crucial importance, the development of street networks, squares and buildings within building blocks with a view to buildings height and façade types was taken into consideration, as well.

Regulatory plan development was aimed at meeting important transport, hygienic and aesthetic requirements for city planning and civil housing. The plan envisaged a series of measures for sanitation and a further territorial development of cities.

The necessity for development of the regulatory plan was caused primarily by a significant increase in the number of Lviv city residents. It created the need for extension of trade, industry, housing and construction activities, as well as for transport development, creation of new extensive building areas, merging urban and suburban communities and territories, and reconstruction of plots destroyed by natural disasters (fire, flood etc) [16, p. 4].

3. Architectural urban concepts in the late 19th – early 20th centuries and their implementation

Reviewing the development of architectural and planning structure of Lviv within each of the given periods it is possible to trace the ways how the contemporary urban conceptions were embodied at that time and how the representatives of Lviv architectural school contributed to their development and implementation.

3.1. Idea of “sanitation”

In developing plans for building regulation and sanitation during the 19th century it was assumed that new streets were expected to be laid through the medieval building areas, as well as building reconstruction measures were to be taken. These included increasing the number of building storeys, demolition of certain buildings or construction of new larger buildings on the site of individual houses and building blocks, arrangement of passages in the internal spaces of building blocks. Thus, stylistically homogeneous complexes were formed.

Regulatory plans aimed to meet basic communicational, hygienic and aesthetic requirements for urban development. Fire safety standards became more strict.

Suburb expansion led to the creation of representative axes which further determined fundamental trends in the city development. At the same time they served as the main functional connections, e.g. Academichna Street (currently T. Shevchenko Avenue), Sykstuska Street (P. Doroshenko Str.) and Sapiieha Street (present S. Bandera Str.) – suburban links (community center) – railway station, – these were attractive areas for construction of most public buildings. Urban development plans of the most community centers included spatial landscaping elements. The original solution of modern S. Bandera Street became a bright example of implementing the idea of a French Boulevard planted with trees and lawns on both sides. In the late 19th – early 20th centuries numerous public buildings primarily for banking and commerce were constructed along the main city streets close to the city center, which appeared to be the advantageous urban location.

The city population in between the early 19th – early 20th centuries increased by four times which resulted in significant quantitative and qualitative changes in housing construction.

While integrating gardens and green spaces into residential area spaces the city of Lviv managed to form a complex system of outdoor intra-block and inter-block gardens, as well as villa and detached housing areas.

3.2. Idea of decentralization

In 1870–1890 the urban planning solution of south-western districts of Lviv, in particular, Kastelivka in NovyiSvit area (Fig. 1), was initiated. Building villas and detached houses appeared to be a practical technique of implementing ideas proposed in 1889 by C. Sitte, an outstanding Austrian architect and theorist in urban planning [24].

The city planning concept of Baiky district was developed in 1886–1888 [25, p. 144]. Kastelivka became the first attempt in Lviv to arrange a large complex residential area built up with villas (with I. Levinskyi and J. Zachariewicz as design project participants [26, p. 41]). Each of these was constructed by an individual project as an autonomous unit with its own structural system of maintenance (the best known one being “Yulietka” in Strila Street (currently Metrolohichna St) designed by J. Zachariewicz). By that time detached houses and villas within the usual city planning patterns were dispersedly located and did not form any complex areas of individual housing (mainly separate public buildings were designed, more rarely those were building complexes). Within Galician suburbs the Kastelivka area was bounded by Kzhyzhova Str. (A. Pototskyi Str.), Maria Magdalena St, Vuletska Str., Issakovych Str. (currently Gen. Chuprynka Str., O. Kolberh Str., Acad. A. Sakharov Str., I. Horbachevskyi Str.). In terms of the city planning approach Kastelivka was regarded to be a creative experiment solved by challenge of introducing curvilinear streets into natural environment. A certain peculiar compositional axis was I Kotliarevskyi Street and the beginning of I. Nechui-Levytskyi Street. Other streets separated the site into irregularly-shaped smaller areas (due to local topographical conditions) where 64 buildings were to be constructed.



Fig. 1. Plan of Kastelivka

It was only partially that architects managed to fulfil their dreams as Kastelivka appeared to be located too close to the city center. The idea of it emerged in the times of horse carriages, but along with the coming of the age of electric trams and automobiles, the picturesque suburbs were involved in urban multi-storey building construction. Therefore, it was only in some separate areas that it became possible to create fragments of a cherished “garden city”.

The experience of creating suburban garden-cities on the verge of 19th and 20th centuries determined the emergence of areas built up with villas and detached houses on the upper plots which appeared to be the most favourable for housing in the southern and south-western city suburb territories (Fig. 2). There emerged as well residential colonies for workers (or industrial housing dwellings). Those were Bohdanivka, Vlasna Strikha, Vulky, Zalizni Vody, Kozelnyky (Novyi Lviv), Nove Znesinnia, Novyi Zamarstyniv, Novyi Svit, Levandivka, Syhnyvka, Sofiiivka, Profesorska and Kryvchytska colonies [5, p. 26, 60–64; 9, p. 41]. Local suburban settlements presumably of village-type or the so-called rural colonies were also formed. The Lviv city development by constructing new housing estates and residential areas on the city periphery was especially intensified after World War I [4].

The new city villa construction plot was laid in 1907–1914 on the terrain of the so-called Frantsivka located within the boundaries of Obvodova Street (modern I. Trush St), 29 Lystopada Bichna Street and Hrokhovska Street (present S. Rudnytskyi St).

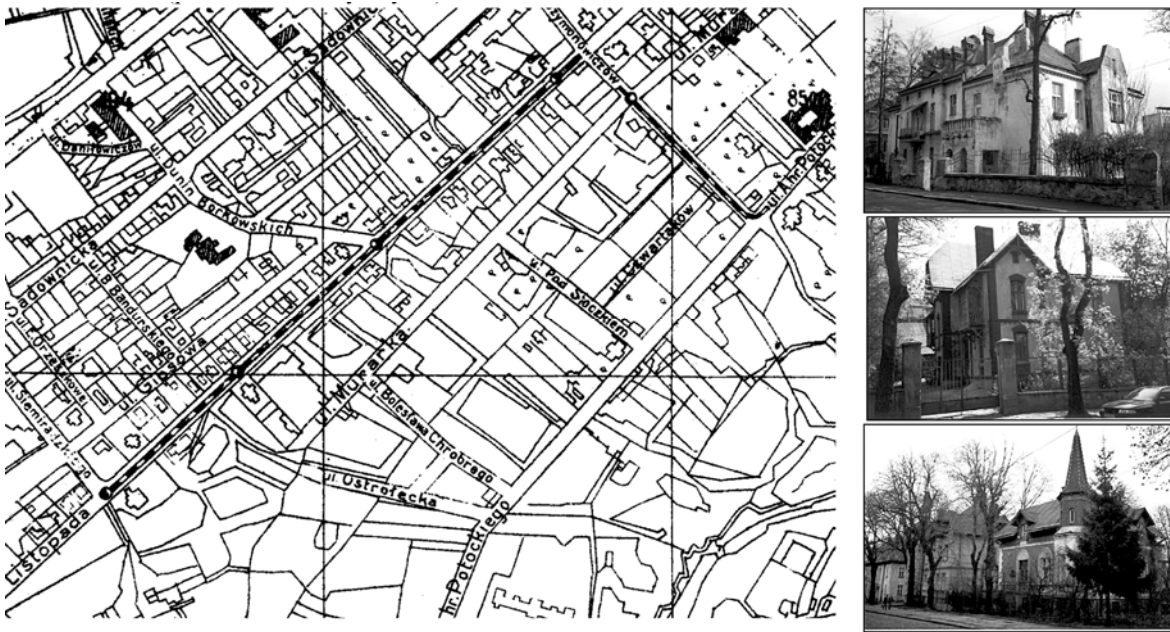


Fig. 2. Areas built up with villas and detached houses

In 1905–1914 villas construction was initiated in Lonshanivka district bounded by present Piskova Street, Bichna Piskova Street (I. Krypiakievych St), Krupiariska Street, Muchna Street, Pauliniv Street (Nizhynska Street), Pshchelna Street (Pchelyna Street, present I. Repin Street), Gening Street (P. Sahaidachnyi Street).

The idea of F. Kassler and A. Osten, who planned to form a villa district on the terrain of Novyi Lviv in 1910, became an interesting city development solution. The new housing district of Zalizna Voda was supposed to occupy the territory of the old Krasuchyn estate. The creators devised a city-garden plan in the form of a rectangle of a huge round square forming the sun sending out six street rays (Fig. 3). It was planned for construction of villas and 2-3-storey houses on the streets surrounded by gardens. Before World War I started they had succeeded in constructing only several houses within the area of present Ternopilska Street (particularly No. 15) (former Tsheshynska Street) and Heroiv Krut Street (No. 6, 6-A) (former Gdanska Street). Karbyshev Street (Krasuchynska Street) and Lytvynenko Street (Gnezynska St) were laid down. In 1960s the planning scheme offered by F. Kassler and A. Osten was destroyed and instead of a sun-resembling square with rays the rectangle of Novyi Lviv was filled with 5-storey “khrushchovka” houses located perpendicularly to the diagonal Moris Terez Street (present Serhiy Lytvynenko Street). The new housing district was to be separated from the city by the Zalizna Voda Garden laid in 1905 on the slopes between Krasuchyn and Sofiivka. Unfortunately the idea of Krasuchyn failed to be implemented in the first half of the twentieth century.



Fig. 3. Zalizna Voda housing district (Novyi Lviv)

4. Conclusions

The urgency of establishing villa housing complexes or green building residential districts in Lviv city suburban areas, to a certain extent, resulted from negative social consequences of urbanization.

The concept of a modern garden-city is grounded on such original ideas of settlements and advanced technological design approaches. The purpose of harmonizing the architectural residential environment with modern design techniques crucially requires application of comprehensive approaches to arranging green

landscaped areas for individual and general public use, as well as of an individual development of each area revealing its natural potential.

References

- [1] Siomochkin I. Narodzhennia industrialnoi ery // Istoryko-kulturni ta kraieznavchi narysy. Lvivshchyna. – Lviv: Tsentr Yevropy, 1998.
- [2] Istoriiia Lvova. U trokh tomakh. – T. 2. – Lviv, 2007.
- [3] Arkhitektura Lvova: chas i styli. XIII-XXI st. – Lviv: Tsentr Yevropy, 2008.
- [4] Sepial M. Rozvytok mista Lvova u XIX stolitti // Arkhitektura Lwowa XIX wieku. Arkhitektura Lvova XIX stolittia. – Krakiv: Mizhnarodnyi Tsentr Kultury u Krakovi, 1997.
- [5] Stepaniv O. Suchasnyi Lviv. – Perevydannia z 1943 r. Stereotypne. – Lviv: Feniks, 1992.
- [6] Drexler I. Wielki Lwów. Le Grand Leopold // Lwów w cyfrach. – Dodatek. Miesięcznik statystyczny. – Lwów: Nakł. Gminy m. Lwowa, 1920. – Nr. 1. Rok XV.
- [7] Hoszowski S. Ekonomiczny rozwój Lwowa w latach 1772–1914. – Lwów: Nakładem izby przemysłowo-handlowej, 1935.
- [8] Lypka R. Arkhitekturna spadshchyna Lvova – fenomen vzaiemodii riznykh kultur // Lviv: Istorychni narysy / Red. kol. Ya. Isaievych, F. Steblii, M. Lytvyn. – Lviv: Instytut ukrainoznavstva im. I. Krypiakevycha Natsionalnoi akademii nauk Ukrainy, 1996.
- [9] Trehubova T. O., Mykh R. M. Lviv. Arkhitekturno-istorychni narys. – Kyiv: Budivelnyk, 1989.
- [10] Chodynicky I. Historija stołecznoho Królestw Galicyi i Lodomeryi miasta Lwowa od założenja jego aż do czasów terażniejszych w r. 1829 wydana. – Wydanie wznowione, tanie. – Lwów: Karol Wild, 1865.
- [11] Kowalczyk M. Szkic projektu ustawy budowniczej. – Lwów: Drukarnia W. Lozińskiego, 1892.
- [12] Ostaszewski-Barański K. Rozwój Król. stoł. miasta Lwowa (1848–1895). – Lwów: Nakładem autora, 1895.
- [13] Maksymiuk T. Problemy rekonstruktsii ta restavratsii istorychnykh parkiv Lvova // Urbanistychno-arkhitekturni problemy mist Halychyny – Problemy urbanistyczno-architektoniczne miast Galicji: Tezy dopovidei 2-oi ukrainsko-polskoi konferentsii / Red. kolehiia: B. Cherkas, A. Rudnytskyi, M. Bevz, V. Bulinski, S. Yukhnovych, Y. Nakonechna. – Lviv, Tysovets, 1992. – P. 45.
- [14] Feliński R. Budowa miast. Z il. i planami miast. – Lwów: Nakł. Księgarni Gubrynowicza i syna, 1916.
- [15] Ivanochko U. Budivelno-pravovi zakhody shchodo terytorialno-planuvalnoho rozvytku Lvova u KhIKh stolitti // Visnyk Derzhavnogo universytetu “Lvivska politekhnika”. Arkhitektura. – Lviv, 1999. – No. 375. – P. 214–216.
- [16] Drexler I. Techniczny substrat do konkursu na plan rozszerzenia i regulacyi m. Lwowa. (Z tablicą). – Lwów: I. Związkowa Drukarnia, 1914.
- [17] Semsroth K. Vom Regulierungsplan zum räumlichen Entwicklungskonzept. Städtebauliche Entwicklungslinien in Österreich im Spiegel der Rechtsgrundlagen: Habilitationsschrift / Technische Universität Wien. – Wien, 1985.
- [18] Merunowicz T. Wyniki samorządu w Galicyi. Z powodu 50-lecia istnienia urzędów autonomicznych w Galicyi. – Lwów: Nakł. Księgarni W. Gubrynowicza i Syna, 1916.
- [19] Kowalczyk M. Rozwój terytorialny miasta // Miasto Lwów w okresie samorządu 1870–1895. – Lwów, 1896.
- [20] Oseredchuk M. A. Hromadskyi prostir Lvova na zlami XIX–XX stolit // Humanitarnyi zhurnal. – 2013. – No. 3. – P. 116–127.
- [21] Stanislavskyi A. Y. Planirovka y zastroika horodov Ukrainy. – Kiev: Budivelnyk, 1971.
- [22] Tsentralnyi Derzhavnyi Istorychnyi arkhiv Ukrainy u Lvovi (dali – TsDIA Ukrainy u Lvovi), f. 186, op. 8, spr. 631. Lviv z peredmistiamy. – 1879 r. – 53 arkushi; Tam zhe. F. 720, op. 1, spr. 616. Kadastrova karta m. Lvova. – 1879 r. – Ark. 1–11.
- [23] TsDIA Ukrainy u Lvovi, f. 146, op. 7, spr. 4153. Polozhennia pro poriadok budivnytstva u m. Lvovi i vypyska z dokladu ministra vnutrishnikh sprav. – 1877 r. – S. 6–41.
- [24] Zitte K. Khudozhestvennye osnovy gradostroitelstva: Per. s nem. Ya. A. Krastinysha. – [Perevod. izd.] Der Städtebau nach seinen künstlerischen Grundsätzen / Camillo Sitte. – Wien: Verlag von Carl Graeser. – Moskva: Stroizdat, 1993.
- [25] Linda S. M. Zhytlove budivnytstvo Lvova u druhii polovyni XIX stolittia // Zapysky Naukovoho tovarystva im. Shevchenka. – Lviv, 2001. – T. CCXXI. Pratsi Komisii arkitektury ta mistobuduvannia. – P. 126–153.
- [26] Krajewski A. Lwowskie przedmieścia // Biblioteka Lwowska. – VIII. – Lwów: Wydawnictwo Towarzystwa Miłośników Przeszłości Lwowa, 1909.

Уляна Іваночко

ЛАНДШАФТНО-ПРОСТОРОВІ КОНЦЕПЦІЇ РОЗВИТКУ ЛЬВОВА КІНЦЯ ХІХ – ПОЧАТКУ ХХ СТОЛІТЬ: ПЕРСПЕКТИВИ ТА РЕАЛЬНОСТІ ГАРМОНІЗАЦІЇ МІСЬКОГО ПРОСТОРУ

Анотація. Наприкінці ХІХ – початку ХХ ст. завдяки процесу інтеграції садів і зелених просторів у сельбищні території Львів отримав цілу систему зовнішніх міжквартальних та внутрішньоквартальних садів, райони віллової забудови. У 1870–1890 рр. було розпочато містобудівне вирішення південно-західних районів міста, зокрема, Кастелівки на Новому Світі, реалізацією забудови здебільшого особняками та віллами, яка стала першою спробою у Львові організації комплексної великої житлової ділянки. Основні зміни у просторовому розвитку Львова, що були пов'язані з практикою створення на передмістях міст-садів послужили закладенню у 1910 р. на найсприятливіших для проживання підвищених ділянках південних околиць міста, а саме на теренах Нового Львова ділянки вілл.

Ключові слова: ландшафтно-просторовий розвиток, Львів, міський простір, сади, віллова забудова.

**WE CAME TO YOU WITH FLOWERS. BLOOMING WALLS.
IN MEMORY OF KOST PRYSIAZHNYI**

*Lviv Polytechnic National University, 12, S. Bandery str., Lviv, 79013, Ukraine
enltexa@hotmail.com, oksanabilinska@gmail.com*

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Abstract. The article is devoted to historical aspects of the greening of buildings at the example of Lviv city. Based on iconographic and field research, jardinières (stands for placing pots of flowers), fences and trellis for climbing plants have been investigated. Directions for the usage of greening to humanize the appearance of buildings and to increase the attractiveness of the historical city have been provided.

Key words: historic buildings greening, Lviv, jardinières and trellis for climbing plants, gardening to humanize and increase attractiveness of the historical city.

1. Introduction

Lviv as a historic European city with a rich architectural heritage is a perfect model to study any phenomenon, including such a seemingly insignificant subject, at first sight, as greening. As we walk in the villa areas we admire old pines or linden trees, planted at the time when villas were built, or door-yard greening. When we observe Lviv from the height of Ratusha (the City Tower) or High Castle, we can see many big greened territories, parks and squares. This makes a big contrast with both the central part of the city, built of stone, and modern streets. The problem with greening could be successfully solved with vertical greening. This method, used in the city history before, is forgotten today. While parks are given enough attention in special research, including, monographs [3–7], the aspects of historical greening of Lviv buildings of the nineteenth and the third of the twentieth centuries, have remained unnoticed by researchers, despite their preservation and diversity. The exception was made by the outstanding restorer and teacher Konstantin Prysiazhnyi [2].

2. Basic theoretical section

Greening of balconies and windows was an integral feature of the historical Lviv. Galicia was the poorest part of the Austro-Hungarian Empire. And yet, the capital of “Galicia and Lodomeria” got the energy to find means to arrange the flowering attire in Lviv similar to that of European capitals. In old sepia photos and in contemporary watercolors (e.g., a watercolor by S. Tondos “Rynok Sq.”) we can see greened windows and balconies. Stanislaw Lem in his autobiographical book “High Castle” described how house plants were put back onto balconies after an unhappy winter, especially “the oleanders that bloom in pink and white” [1]. In the existing buildings we can see numerous flower pot stands under windows, along balconies. Flowers adorned the windows not only in residential homes, but also in administrative buildings – such as the current “Vodokanal”. Architects, the authors of Lviv stone buildings, planned a place for flowers already at the time of the draft development. Flowers were planted into iron-wrought jardinières, especially arranged on sills, balconies, and corners of balcony fences. These jardinières-baskets were styled and decorated according to the general style and composition of façades. The jardinières that were located in windows, usually had a rectangular form, while those in balconies were placed in various locations and had a varied configuration. In particular, jardinières

could be located at the top or the bottom (3 Levynskyi Strr.) of the balcony, be continuous or consist of several elements, rectangular or semicircular (37 Konovalets' Str.), they could be of metal, as well as balconies were, or contrast with its stone base (4 Dontsov Str.). The corners of balconies of some buildings, built at the end of the 19th and 20th centuries, are decorated with metal vases, the latter also had to be decorated with flowerpots (66 Franko Str.; 49 Kotlyarevskyi Str.; 8 Glibov Str.).

Only a few jardinieres survived since the beginning of the nineteenth century. They are characterized by a common style, i.e., metrically located rings between horizontal bars, in addition, there were stone vases for flowers (20 Horodots'ka Street).

In the second half of the nineteenth century a great variety of styles accordingly created a variety of jardinieres. The wooden balustered stands for flowers are the unique example of jardinieres of that time, they are preserved on the front façade of House No. 28 on Chekhov Street (Fig. 2).

Buildings in the pronounced historical style have jardinieres styled accordingly, for example, the quadrifolium of neogothic House in Herzen Street, 6 or curvilinear concave jardinieres of the neo baroque building in 5 Zelena Street,. Unique iron jardinieres with expressive artistic elements (flowers, stems, emblems) appear in Late Historicism. They can be considered as works of art, such as in 50–52 Chuprynka Str., and 49 Kotlyarevskyi Street, (Dashek's villa). However, most jardinieres of the late 19th – early 20th centuries are formed by a combination of circles, volutes, curls and saw palmetto (14 Str. Shevska, 13 Piskova Str.). Under the influence of decorative secession, jardinieres acquire concentric circles with a displaced center (5 Rapoport Str.) or linear complicated ornaments (8 Franko Str.; 16 Dontsov Str.). Traditionally, niches for God's Mother in Lviv were adorned with flowers, organized as jardinieres and richly decorated with garlands of roses, e.g., 12 Levynskyi Str. House with elements of folk style jardinieres reminding original jewelry from solid metal elements which provide little transparency (3 Karmelyuk Str.). Jardinieres of rational secession, typical of Art Nouveau, stylized elements of the previous styles, i.e., circles or ovals that are written in rosettes (4 Chuprynky Str.), squares or ovals on inscribed diamonds (65 Chuprynka Str.; 11, 49 Pekarska Str.), curls, spirals (49 Pekarska Str.), garlands (2 Levynskyj Str.). Also after 1908 jardinieres often acquire an interesting configuration, enriching a plain balcony or façade, as in 49 Kotlyarevskyj Str., (lost today).

Some attempts to create an illusion of volume on the plane are pretty quaint, such as the illusion of diamond rusty building in 12 Zdorovya Str. Art Deco style, often manifested in Lviv architecture in details, also affected jardinieres with its graphic design angles and kink pound (112 Chuprynka Str.; 38 Tarnavskyi Str.). Sometimes there is inclusion of folk elements (54 Tarnavskyi Str.). Jardinieres of functionalism were the epitome of a rational design of interwoven twigs crossing at right angles, or forming meanders (18 Kharkivska Str.).

The tradition of jardinieres application lasted until the postwar period, when balconies of houses of the Stalin and early Khrushchov period were equipped with these elements. Jardinieres of that time had a succinct, proportionate solution, supported in particular by small arms (57 Chuprynka Str.).

Having survived the war, and the Soviet way of managing, this lace black-smithing was preserved with a few exceptions. But flowers in it are seen more and more rarely. And such a situation recurs. While the authentic jardinieres are almost empty nowadays, balcony walls are hung with a variety of props from "birches" of the 50's to today's common plastic color terracotta pots or similar things. While walls are often painted in pale pink "to harmonize" with the owner's balcony.

Decorated with flowers and greening, façades acquired a rich polychrome solution, unfortunately, lost nowadays.

The greening contrasted with plastered façade shades of natural stone in the style of Historicism. Also, it complemented the red or yellow brick cladding of façades, made in style of "pittoresk", naturally transformed in stucco or majolica floral ornament Secession façades. The planting provided a mitigated and restrained form of heat in the styles of Art Deco and Functionalism, à propos, for half a century ahead of Emilio Ambaza thesis on "green on gray".

Small architectural forms in the historic city are also decorated with the greening. Stone and metal vases decorated buildings' fences; stands in form of a disk surrounded by barrier supported flower pole lamps (such as in middle of the Galician square). Then, lanterns were dismantled "for restoration". It returned to its place without a stand. Lviv residents can observe such lanterns, perhaps, only in Budapest.

Flowers of the Lviv “Dvirets” (the central railway station) used to meet and escort passengers. Daily, a Mr. Michael Ketsur used to come from Horodok to take care of them. High, on the landing-stage steel arches, the built platforms were equipped with vases stands. There were round shelves on sophisticated cast-iron column sheds at each station of the railway from Lviv to Chernivtsi. Most of them survived, but now they are unfortunately without flowers. It is worth mentioning that railways of Austria of that time bloomed all year round – in winter and in summer alike.

The city “vertical gardening” is very important as well, known still from the gardens of Babylon and improved by Patrick Blanc in the twentieth century. Frank Lloyd Wright advised to use it to hide the failures of an architect. In one of student competitions in streamlining of Mickiewicz Square the designers cleverly used climbing plants to save the monument from the aggressive visual impact of the building “Ukrsotsbank”. This practice of integrating a modern building in the historic environment exists in the world, as an example we can cite the expanding of the old hotel in the city of Amiens (France). The modern part of it was adorned with vertical greening [5].



Fig. 1. The greening of the façade as part of the architectural and artistic image of the building:
 a – prediction vases on flowers at the stage of project archival drawings (Lychakivs'ka Str., 15);
 b – braid building facade vines of wild grapes (Str. Kotlyarevskyi, 41) (the author: T. Kazantseva)



Fig. 2. Jardinières of the nineteenth century: a – the half of the XIX c. – stone vases on both sides of windows and a metal jardiniere on the window-sill, Horodotska Str., 20. Photo by T. Kazantseva;
 b – the end of the 19th century. The unique preserved wooden jardiniere, Chekhov Str., 28. Photo by S. Leonov



a



b

Fig. 3. A jardiniere of the early 20th century: a – decorative Art Nouveau, with a stylized floral ornament (Str. Rudanskyi,1);
b – Rational Secession, 22, Kotlyarevskyi Str. Photo by T. Kazantseva



a



b

Fig. 4. Jardiniere of the beginning of the 20th century: a – on the balconies in the courtyard, 16 Tarnavskij Str. Photo by S. Leonov; b – in the interior space (staircase) of the rental house, 5 Horska Str. Photo by S. Leonov



a



b

Fig. 5. Jardiniere of the end of the 19th – the beginning of the 20th century: a – 41, Kotlarevskyi Str. Photo by T. Kazantseva;
b – 12, Levynskyi Str. Photo by T. Kazantseva.

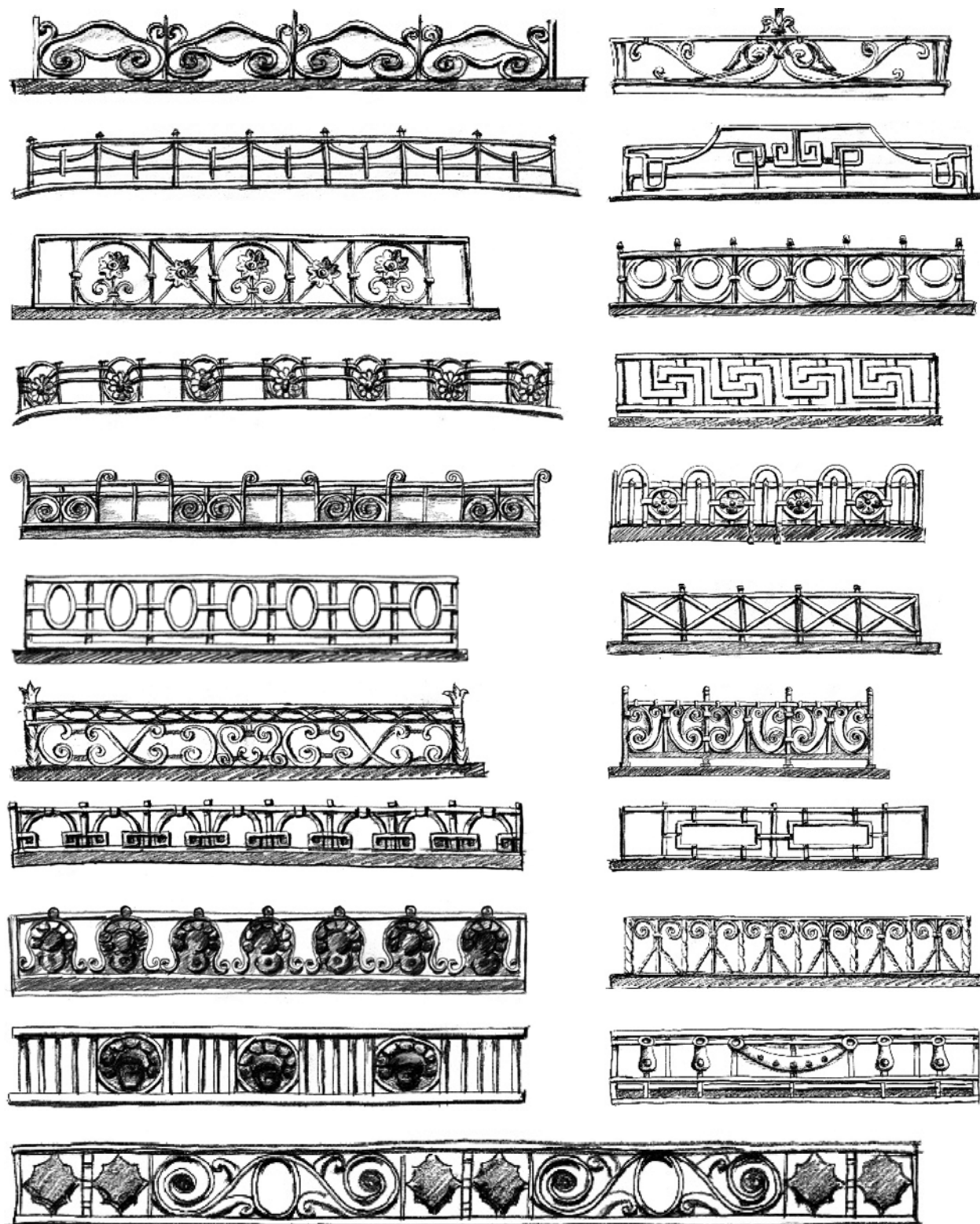


Fig. 6. Full-scale fixed jardinières of Lviv buildings (student works, headed by T. Kazantseva)

There is a preconception that the climbing greening erodes green walls, i.e., the roots decompress cracks and the leaves hold moisture. During the repair-works after removing vines or ivy, we repeatedly saw the plaster of 40–80 years old beneath was intact.

No trace of becoming soaked; conversely, leaves like tiles, guide the rain down, throwing it off the wall. Plant suckers do not put roots into the cracks, but keep to the surface, leaving little trace. In Lviv there used to

be many varieties of climbing plants, also evergreen ones. Wall bushes at the foot of houses were protected by artistically-wrought fences matching the style of the given house. Maybe, the last fence with a hundred-year old vine was destroyed on Shevchenko avenue in the mid 80s of the latter century. Only some side streets preserve such plants fences.

Nowadays, every new repair of the façade brings destruction to plants. Long ago, there was a practice to remove stems before the repair, to roll them into a ball and cover the earth in that place, and after the works, to strengthen it in the erect position.

The greening can be protected by ancient walls. Professor Miroslav Pshylentski, a former citizen of Lviv and a well-known Wrocław restorer, together with botanists developed a method of protecting the ruins with an especially selected greening with shallow roots that choke the seeds of trees and do not allow them to grow and destroy the wall, simultaneously withstanding moisture and the drying-out without requiring any extra maintenance. Protected by this method a wall does not require any correction for over 20 years [6].

How to revive this tradition? We propose to start with the Town Hall. A flowered town hall would proudly meet guests of the city. The residents of Rynok Square should be given some seeds or varieties of seedlings with the payment for them included in the charges for the apartment with the responsibility of taking care of them. It is well-known that in urban gardening proper care requires a large amount of money. Having spent money on seedlings, the city would save some on the care.

Flower shops should be returned to Rynok Square. Flowers in Rynok Square, a trumpeter at the Town Hall are all the old signs of European capitals.

Flowers – fest. Celebration of Our Building. Our Street. Our City.

Conclusions

1. Historical aspects of the buildings' greening of Lviv of the nineteenth century and the third of the twentieth century, despite their conservation and diversity, have remained unnoticed by researchers, with the exception of the restorer and teacher Kostya Prysiazhnyi.

2. The most important element of the buildings' greening in Lviv, in our opinion, is jardinieres which are style metal, (less often wooden or stone) stands for plants. Jardinieres are located on window sills and balconies, in a vase, on a pinnacle or various support configurations around the perimeter of a balcony. Jardinieres of Historicism and Art Nouveau decorative volutes formed combinations, circles, curls adding the unique iron-wrought items. In houses with elements of folk style jardinieres remind of the original decorations, with solid metal elements that provide little transparency. Jardinieres of Rational Secession are often characterised by stylized elements of the previous styles (ovals, circles, garlands). The Art Deco style in jardinieres manifested itself in the graphic ornament of broken lines and semicircles. In Functionalism jardinieres are created by rods that cross at right angles or form meanders.

Jardinieres of Functionalism are formed by rods that intersect at right angles or form meanders. Also, the lights and the floating jetty in the Lviv railway station were decorated with jardinieres, which, unlike jardinieres on the façades, are lost today.

3. Another option of the greening is directing plants vertically in form of a rod that climbs up the façade and is protected by iron artistic fences in the building's style. Now every new repair brings destruction to the climbing plants on façades, which, in addition to protecting the wall from becoming soaked, also enriched the aesthetic image of buildings (polychrome façade and plastic solution).

4. The vertical and chamber greening of modern buildings in the historical city promotes humanization and harmonization of forms of newly built facilities and integrates it into the historical environment.

References

- [1] Lem S. Vysokyy Zamok (per. L. Andriyevs'ka). Piramida, L'viv, 2002.
- [2] Prysyazhnyy K., Kazantseva T. Kvitnuchi stiny: Misto, 2004, 4, 10–12.
- [3] LaBarre, Suzanne (September 13, 2009). "GreenOverGray": Metropolis Magazine, 2012, 12, 27–35.
- [4] Blanc P. The Vertical Garden, from Nature to the City (Revised and Updated). W.W.Norton&Company, New York, 2012.
- [5] <http://chartcorb.free.fr/>

- [6] Przylecki M. Stowarzyszenie Konserwatorów Zabytków Oddział Ślas'ki Zabytki w trwałej ruinie ochrona, konserwacja i ekspozycja [program Ślas'kiego Oddziału Stowarzyszenia Konserwatorów Zabytków]. Silesia, Wrocław, 2001.
- [7] Maksym'yuk T., Didyk V., Tupis' S. Landshaftna karta mista L'vova [in] Visnyk Natsional'noho Universytetu "L'vivs'ka Politekhnikha" Arkhitektura. Vydavnytstvo "L'vivs'ka politekhnikha", 2008, 632, 180–186.

Тетяна Казанцева, Оксана Білінська

**ДО ВАС ІЗ КВІТАМИ. КВІТНУЧІ СТІНИ.
ПАМ'ЯТІ КОСТЯ ПРИСЯЖНОГО**

***Анотація.** Стаття присвячена аспектам історичного озеленення будівель на прикладі Львова. На основі іконографічних та натурних досліджень виділено особливості застосування жардиньєрок (для розміщення вазонів з квітами), трельяжів та огорож для витких рослин. Розкрито напрямки використання озеленення будівель для гуманізації та підвищення атрактивності історичного міста.*

***Ключові слова:** історичне озеленення будівель, Львів, жардиньєрки та трельяжі для витких рослин, озеленення для гуманізації та підвищення атрактивності історичного міста.*

Tetiana Klymeniuk

**THE TOMB OF RÖHRING FAMILY AND PECULIARITIES
OF MONUMENTS INVENTORY WORK AT THE HISTORICAL
AND CULTURAL MUSEUM “LYCHAKIV CEMETERY” IN LVIV**

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, klymeniuk@mail.ru*

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Abstract. The article is dedicated to basic methods of scientific research of cemeteries, peculiarities of measurement and inventory research of monuments at Christian cemeteries. The tomb of the Röhring family, which was found on the Lychakiv cemetery in Lviv during the research, is described.

Key words: cemetery, inventory, tombstones, tomb.

1. Introduction

One of the major carriers of culture for every nation is a cemetery. Tombstones are unique historical sources that contain information on burial rituals, artistic and spiritual traditions of a society. They remind us of famous people and inform about historical events, construction, cultural and artistic features of different periods; they connect the past, the present and the future; they reflect a mentality, customs and traditions, and of course, people's faith. In memorial sculptures of cemeteries the artistic talent of craftsmen is vividly present, as well as regional traditions of craft schools, time tendencies and tastes of individual authors. Moreover, the history of the city cemetery displays an authentic cultural boundary where the unique identity of each community can be seen.

Typical of architectural and historical monuments of cemeteries today is a detailed research and inventory work carried out with the aim to stop the process of destruction of valuable historical architectural environment.

Memorial art is the oldest and most canonized of all types of fine arts and ritual culture, in general. Attempts to reform or adapt it to the needs of the state ideology, governmental cancellation of traditions, customs and rituals, adding to it new forms and symbols never anchored in national culture.

The number of scientific works by modern scholars on the development of memorial stone sculpture in Ukraine is insignificant [1–21].

During its existence historical gravestones are constantly changing, as well as buildings.

Since memorial monuments are located outdoors, in particular at cemeteries, most of them have experienced destructive influences of natural and anthropogenic factors. It is natural that expeditions to study this type of creative work are urgently needed and must be aimed at protection, preservation and analysis of stationary folk culture objects.

2. Basic Theory Part

One of the joint international projects dealt with the research of the Historical and Cultural Museum “Lychakiv cemetery” in Lviv. The cemetery has an area of over 42 hectares with about 300 thousand burials located on 86 fields, over 2 thousand tombs and about 500 sculptures and reliefs. The aim of joint work was to conduct architectural inventory studies using the same methodology that meets the latest European standards for

necropolis studies. As a result of these studies, several thousand units of account cards for examined tombstones were recorded.

Scientific research of the cemetery tombstones was carried out in two directions: identification and study of iconographic, historic and literary sources, that is historic, written documents and graphics stored in libraries, archives, museums and other repositories (preparatory work for field studies) and monuments field research (field, expeditions). For collection of the material dense examination methods – to examine and record all objects - were proposed to be applied.



Fig. 1. Lychakiv cemetery on Lviv map 1922

The inventory and measurements research of Lychakiv cemetery began in 2008 and continued in 2009. The study of 2008–2009 was performed by the students of two universities: Kielce University of Technology, Poland (supervisor: dr A. Deneka, dr T. Rudkovskiy) and the Institute of Architecture of Lviv National Polytechnic University (supervisor: Phd. T. Klymeniuk). The work was carried out on fields No. 1–7 where 3.500 tombstones were examined.

In 2010 this work was continued by students of the Technical University of Lodz, Poland: Aleksandra Gomułczak, Miłosz Słota, B. Schepanyak, Anna Lewkowska (supervisor: Wojciech Walczak and Jacek Lewkowski) and students of the Institute of Architecture of Lviv National Polytechnic University (supervisor: Phd. T. Klymeniuk, Phd. H. Boyko, Phd. H. Kovalchuk, computer processing of collected information – architect O. Kovalchuk). The work was carried out on fields No. 8–11 where over 1.200 tombstones were processed. Of positive aspect was the fact that, in addition to a full-scale survey of the monuments, all the collected information was immediately entered to computer database. But inventory cards looked exactly like those of the previous years and needed a lot of time to fill them in, and the computer program required improvements.



Fig. 2. Inscription of Arnold Röhring from the tomb of Röhring family



Fig. 3. Signature on the Röhring family tomb: L. Makolondra

In general, 348 tombstones were studied on Field No. 8, 289 – on Field No. 9, 260 – on Field No. 10, and 237 on Field No. 11. A large number of representative monuments on Fields No. 8–11 can be easily explained by the fact that the Lychakiv cemetery was founded in 1786 and was destined for the city center and district IV of the city which were inhabited by the most wealthy burghers of Lviv. At that time the cemetery began with the areas which, nowadays, are occupied by Fields No. 6, 7, 9, 10, 14 and the nearby areas. Out of the objects of Lychakiv, examined in 2010, the oldest tombstones located on Field 9 date back to 1818 and 1823; on Field 10 the oldest ones are from 1789 and 1675. There is no guidebook on this cemetery in which one can find an indication that on Field 10 such an old tombstone survived. However, the inscriptions and decorative ornaments point to ethnic origin and the fact that this plate might have been moved from the burial at the Armenian Cathedral during the liquidation of cemeteries around the temples in the city center.

In the following years 2011–2014 inventory and measurement research on the Lychakiv cemetery took place under the direction of W. Walczak. and J. Lewkowski and T. Klymeniuk.

In 2011 there were 418 tombstones inventorised on Field 12, 574 – on Field 13, and 73 tombstones – on Field 14.

In 2012 inventory works were continued on Fields 14–16. Field 14 was completed with 312 inventorised tombstones; Field 15 was also completed, and 611 tombstones were inventorised there; Field 16 was partly inventorised, works concerning tombstones from number 1 till. To improve and speed up inventory works some improvements were made to inventory cards and the computer software was updated with translation of informational database into Ukrainian. All the collected information was immediately entered into computer database.

The monuments master plan of the field that was to be investigated with indication of numbers for grave places was designed before the field survey. An inventory card of a historic gravestone had to reflect historical and bibliographical, inventory, measurement, artistic, engineering, environmental, archaeological and other information. Field survey of the monument consisted of 14 main points: 1. title; 2. address; 3. draft picture and number of the photo; 4. determination of the type of gravestone; 5. dimensions; 6. material; 7. decor; 8. fence; 9. inscriptions; 10. description; 11. state of preservation; 12. remarks; 13. signature of the gravestone author; 14. signature of the inventory card executor.

In 2013 the research continued. The following tombstones were inventorised: on Field 16 tombstones from 152 to 361; on Field 17 tombstones from 1 till 150, and also the family chapel of Cetneres was measured and inventorised; on Field 18–288 tombstones; on Field 19 – tombstones from 1 to 365.

The experience of inventory work of the previous years allowed to add a list of building materials and decoration types that are commonly used at the Lychakiv cemetery to the inventory card, so one needed now only to mark the desired material or type of décor, and thereby, reduce the time for filling in the card. Moreover, the space for a tombstones sketch was increased on the card. Drawing by hand helped to avoid mistakes when entering photographs to the computer database.

In 2014 inventory works continued on Field 19 with tombstones from 366 to 616; on Field 20 – all 589 tombs, and it started on Field 21 from tombstone 1 till 489.

Filled paper inventory cards are kept in the scientific department of Lychakiv Cemetery in Lviv. There is also an access to computerized database through the internet.

The collected material contained accurate information about each object of study, place and time of collection of the material. For example, the inventory card of Röhring family tomb, which is located at 52 field, contains a detailed description of the used materials, dimensions and all of the inscriptions on the tomb.

The computer database provides a long-term storage of collected field data, the possibility to work with it not only for the authors and the project participants, but also for other researchers, makes it possible to find quickly the desired burial by name, the year of gravestone establishment or its author.

For sake of preservation of national identity in the title of the object, surnames and names were not translated from the original language into Ukrainian, but were used with transliteration.

The inventory-measurement research represents the first practical attempt to link the ragged thread of historical continuity, as well as the search for ideas about what is contemporary memorial art in new and traditional forms and symbols, and the desire to predict what trends are formed deep in our culture.

Many years of experience of architectural and inventory studies showed that throughout the time many of the tombstones were completely or partially destroyed or rebuilt, and have lost their original appearance. Conducted measurement and inventory studies provide an opportunity not only to study such monuments, but also a possibility for their restoration or recovery at full scale by carrying out projects.

Розміщення об'єкта
на полі цвинтаря

Cmentarz Łyczakowski we Lwowie

Личаківський цвинтар у Львові

MIESIĄC. Місяць: **04.2016.****KARTA EWIDENCYJNA GROBU. ОБЛІКОВА КАРТА ГРОБНИЦІ**


1. Nagłówek . Назва об'єкту: Родина РЕРІНГІВ		
2. Adres. Адреса: Поле 52, об'єкт 5		10. Фотографія: 
3. Тур. Тип об'єкта: надгробок __, гробниця V , могила __		
4. Wymiary (cm). Розміри (см):		
Горизонтальна частина: висота __, ширина __, довжина __.		Вертикальна частина: Висота 140 , Ширина 199 , Довжина 268 .
5. Tworzywo. Матеріал:		
сланець __, базальт __, бетон V , бетон з мармуровою крихтою __, білий мрамур V , дерево __, залізо __, лабрадорит __, метал __, пісковик V , сплав металів __, чавун __, червоний пісковик __, щербінь __.		габро __, глазурована цегла __, граніт __, земля __, кераміка __, цегла __, мрамур __, порцеляна __, скло __, теразит (терасо) __, інші: __
6. Dekoracje. Декор:		
скульптура __, рельєф __, барельєф __, хрест __, інші: __		Портрет, піскострумінне гравіювання __, порізка на архітектур. обломах __, фотографія на порцеляні __, різблення по каменю V , заглиблений рельєф __.
7. Ogróżeja: € __, ісма V .	Матеріал огорожі: метал __, камінь __, чавун __, бетон __, бетон з м.к. __, інші: __	Тип огорожі: ґрати з декором __, прути __, ланцюги __, штахети __, стовпці __, інші: __
8. Stan zбереженості: добрий V , задовільний __, незадовільний __.		9. Примітки: Плита входу після ремонту, виконана з бетону.
12. Inskrypcje. Інскрипція: Rodzina RÖHRINGÓW На карнизи: Adolf RÖHRING/ inżynier chemik/*4.VI.1875 +13.V.1919 Arnold RÖHRING/ urzędnik magistratu/*1878 +1909 Arnold RÖHRING/ insyckiór ulantacyi micickich/*1840 +1913 Boleslaw RÖHRING/ zmarł 2.II.1921/ w 16 wioŝnie życia. На таблицях з білого мрамору: Z KUŹMIŃSKICH/ Zuzanna RÖHRING/*1840 +1923. Zofia RŁACHOWSKA/ zmarła 16.VI.1919./ w 18 wioŝnie życia. Maryla BŁACHOWSKA/ zmarła 15.XII.1920/ w 17 wioŝnie życia.		
13. Сигнатура (автор об'єкта): L. MAKOLONDRA	14. Дата вставання об'єкта (рік): 1909	15. Прізвище виконавця: Т. Клименюк

Fig. 4. Inventory card of Röhrling family tomb (an original)

Lviv's Lychakiv Cemetery
Mounth: **04.2016**
TOMB RECORD CARD

The object
placement – on
the cemetery
field




1. Object name: Röhring family		10. Photo 
2. Address: field - 52, object - 5		
3. Object type: headstone __, tomb V , grave __		
4. Dimensions (cm):		
Horizontal dimensions: Height - ____, Width - ____, Length - ____.	Vertical dimensions: Height – 140 , Width – 199 , Length – 268 .	
5. Material:		11. Description: The tomb has the entrance on the main façade and is made of sandstone, it is built into a hill and covered with two stacked stairsplates. There is inscription: “Rodzina Röhringów” on the upper plate of overlapping of the main façade. The lower overlapping plate forms tomb’s cornice. Its main façade is carved with four inscriptions. Under the cornice on the right sight of the main façade a signature “L. Makolondra” is carved. The concrete entrance plate is placed in the center of the façade at the level of the socle. There are three white marble inscription tables placed above the entrance slab. There is flower garden in front of the entrance plate filled with gravel. The side tomb façades are decorated with rustication which look like rubble stone and socle is smooth.
shale ____, basalt ____, concrete V , concrete with marble crumb ____, white marble V , wood ____, iron ____, labradorite ____, metal ____, sandstone V , metals alloy ____, cast iron ____,	red sandstone ____, scree ____, gabbro ____, glazed brick ____, granite ____, soil ____, ceramics ____, brick ____, marble ____, porcelain ____, glass ____, terrazyt ____, other ____.	
6. Decor:		
sculpture ____, relief ____, low relief ____, cross ____, other ____.	portrait, sand jet engraving ____, cutting of architectural bummer ____, photo on porcelain ____, stone carving V , deepened relief ____ .	
7. Fencing: yes ____, no V .	Fencing material: metal ____, stone ____, cast iron ____, concrete ____, concrete with m.k. ____,	
8. State of preservation:	9. Note:	12. Inscription : Rodzina Röhringów On the cornice: Adolf RÖHRING/ inżynier chemik/*4.VI.1875+13.V.1919 Arnold RÖHRING / urzędnikmאיstratu / *1878+1909 Arnold RÖHRING / insyckior ulantacyi miciskich /* 1840+1913 Boleslaw RÖHRING / zmarł 2.11.1921 / w 16 wiośnie życia. On the white marble tables: ZKUŹMIŃSKICH / Zuzanna RÖHRING /* 1840+1923. Zofia RŁACHOWSKA / zmarła 16.VI.1919 / w 18 wiośnie życia. Maryla BŁACHOWSKA /zmarła 15.XII.1920 / w 17 wiośnie życia.
good V , satisfactory ____, unsatisfactory ____ .	After the renovated the entrance plate is made of concrete.	
13. Signature (the object's author)	14. The date of object's erection (year)	15. Executant's name
L. Makolondra	1909	Tetiana Klymeniuk

Fig. 5. Inventory card of Röhring family tomb (in English)

References

- [1] Shuvalov R. O. Pro shcho rozpoviv nekropol' (Kuyal'nyts'kekozats'kekladovyshchemistaOdesy) [Tekst] / R. O. Shuvalov ; Akad. Nauk Ukrainy, Ukr. t-vo okhorony pam'yatok istoriyi ta kul'tury, Tsentr pam'yatkoznavstva. K. : [b. v.], 1992. 89 s. :il.
- [2] Nekropoli Ukrainy [Tekst] : [monografiya] / Ukr. t-vo okhorony pam'yatok istoriyi ta kul'tury ; [uporyad.: Dyvnyy I. V., Parkhomenko M. T., Tytova O. M.]. K. : UTOPIK, 1999. – 287 s. :il.
- [3] Nikitenko N. M. Pid pokrovom Svyatoyi Sofiyi. Nekropol' Sofiy's'koho soboru v Kyievi [Tekst] / N. M. Nikitenko ; Ukr. t-vo okhorony pam'yatok istoriyi ta kul'tury, Ukr. tsentr biohr. nekropolistyky. K. : [b.v.], 2000. – 96 s.: il.
- [4] Tomenchuk B. P. Nekropoli Halyts'ko-Bukovyn's'koho Prykarpattya IKh–KhIII st. [Tekst] : avtoref. dys... kand. ist. nauk: 07.00.04 / Tomenchuk B. P. ; NAN Ukrainy, In-t arkeolohiyi. K., 1998. – 18 s.
- [5] Kvyatkov's'kyy A., Ratushnyy R. Tsvyntar na Lychakovi. L'viv: LA "Piramida", 2001. – 198 s.
- [6] Krysa L., Nahay M. Prokhody po Lychakovu: Putivnyk. L'viv, 2007. – 108 s.
- [7] Krysa L., Fihol' R. Lychakiv's'kyy nekropol'. Putivnyk. L'viv, 2006. – 480 s.
- [8] Khodorkov's'kyy, Yu. I. Yevreys'ki nekropoli Ukrainy [Tekst] / Yu. I. Khodorkov's'kyy. K. : [b.v.], 1998. – 80 s.
- [9] Protsenko, L. Luk'yaniv's'ke tsyvil'ne kladovyshche [Tekst] : putivnyk / L. Protsenko, Yu. Kostenko. K. : [b.v.], 1998. – 143 s.
- [10] Kis' A. Sl'ozha i kamin': Prokhody starymy tsvyntaryamy Halychyny / Andriy Kis', 2012. 296 s.
- [11] Mozdyr M. Ukrain's'ka narodna memorial'na skulptura [Tekst] / M. Mozdyr ; NAN Ukrainy, Instytut narodoznavstva. – K. : Nauk. dumka, 1996. – 129 s.
- [12] Malyna V. V. Kam'yani khresty v Ukraini ta yikh proobrazy [Tekst] / V. V. Malyna. – Mykolayiv : Artil' "Khudozhniy khram", 2006. – 128 s.: il.
- [13] Malyna V. V. Kam'yani rozp'yattya v Ukraini [Tekst] / V. V. Malyna. – Mykolayiv : Artil' "Khudozhniy kram", 2006. 192 s.: il.
- [14] Malyna V. V. Arkhitektonika khrestokamenya [Tekst] / V. V. Malyna. – Mykolayiv : Artil' "Khudozhniy kram", 2006. 128 s.: il.
- [15] Malyna V. V. Kam'yani khresty v UkraYini. XVIII–KhKh st. [Tekst] : ontolohiya, typolohiya, symvolika, funktsiya / V. V. Malyna. – Mykolayiv : Khudozhniy kram, 2009. 864 c.: il. – Bibliohr.: s. 846–863.
- [16] Pryymych M. Khresty Zakarpattya // Pam'yatky Ukrainy. – 2001. – # 1–2. – S. 43–45.
- [17] Mozdyr M. I. Ukrain's'ka narodna memorial'na plastyka [Tekst] : [monografiya] / Mykola Mozdyr ; NAN Ukrainy, In-t narodoznav. L. : [b. v.], 2009. 287 s. : il. – Bibliohr.: s. 268–273.
- [18] Odrekhiv's'kyy R. V. Riz'byarstvo Lemkivshchyny [Tekst] : vid davnyny do s'ohodennya / R. V. Odrekhiv's'kyy. L'viv : Spolom, 1998. 262 s.
- [19] Khrest v ukraYins'komu mystetstvi [Tekst] : katalog vystavky / NAN Ukrainy, Instytut narodoznavstva ; avt.-uporyad. S. M. Bon'kov's'ka ; red. M. Ye. Stankevych. L'viv : [b.v.], 1996. – 28 s.
- [20] Khom'yak L. V. Memorial'na riz'ba oseredkiv narodnoho kamenyarstva v Halychyni kintsya KhI Kh-Kh Kh stolittya [Tekst] :dys... kand. mystetstvoznavstva: 17.00.06 / Khom'yak L. V. ; Prykarpats'kyy un-t im. Vasylya Stefanyka. – Ivano-Frankiv's'k, 2002. 192 ark. + 158ark.dod. ark. 171–192.
- [21] Kuzenko P. Ya. Narodni kam'yani nadmohyl'nik hresty Ukrain's'kykh Karpat seredyny XVIII – pershoYi polovyny Kh Khstolittya (istoriya, typolohiya, khudozhniosoblyvosti) [Tekst] :dys. ... kand. mystetstvoznavstva : 17.00.01 / Kuzenko P. Ya. ; Prykarpats. nats. un-tim. V. Stefanyka. Ivano-Frankiv's'k, 2005. 360 ark.: il. – ark. 183–197.

Тетяна Клименюк

ГРОБНИЦЯ РОДИНИ РЕРІНГІВ І ОСОБЛИВОСТІ ІНВЕНТАРИЗАЦІЇ ПАМ'ЯТОК ІСТОРИКО-КУЛЬТУРНОГО МУЗЕЮ-ЗАПОВІДНИКА “ЛИЧАКІВСЬКИЙ ЦВИНТАР” У ЛЬВОВІ

Анотація. Розглянуто основні методи наукового дослідження кладовищ, особливості проведення обмірно-інвентаризаційних досліджень пам'ятників християнських кладовищ. Описано виявлену під час проведення досліджень гробницю родини Рерінгів на Личаківському кладовищі у Львові.

Ключові слова: кладовище, інвентаризація, надгробні пам'ятники, гробниця.

THE BIOGRAPHICAL INFORMATION AND PROJECTS OF THE OUTSTANDING LVIV CITY GARDENER A. RÖHRING

*Lviv Centre of Institute for Space Research of Ukraine,
National Academy of Sciences of Ukraine and National Space Agency of Ukraine, seleonov@gmail.com*

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Abstract. The article deals with the biographical information and the projects of the outstanding Lviv City Gardener Arnold Röhring, an inspector of urban green spaces. He developed projects of all the green spaces in parks, as well as on the main boulevards and squares of the city, supervising their state. He also supplemented them with small architectural forms. Furthermore, he published a textbook for teachers entitled “Sadownictwo” “Gardening” (1881). We can speak of the existence of the Röhring School in Lviv of that time.

Key words: Arnold Röhring, Head Gardener of Lviv, gardens and parks.

1. Introduction

With the inclusion of Lviv in the Austro-Hungarian Empire, the significance of public spaces increased. Namely, parks and gardens gained a priority place in the city infrastructure. It was in the period of the second half of the 19th century, that most of the prominent Lviv parks, considered to be “the green lungs” of Lviv and representing an architectural and artistic value and delight of Lviv residents till our days, have been laid out. Nevertheless, the names of Lviv park creators, i.e., the Head Gardeners Karol Bauer and Arnold Röhring, remain unknown to the general public, and have not been properly highlighted in research till the present time.

The author of the article has investigated more than 80 sources concerned with A. Röhring, out of which only two contain biographical information about him in form of small articles [1, 2]. Most of the sources mention A. Röhring’s participation in the projects and their description, as well as some facts from his biography, scattered in numerous sources.

2. Basic Theoretical Section

2.1. Biographical information

Arnold Karol Röhring (*Arnold Röhring*; 1840–1913, Lviv) was the Inspector of urban green spaces of Lviv (Supervisor of urban gardens, Head Gardener of Lviv). He developed projects of all the green spaces in parks, as well as on the main boulevards and squares of the city, supervising their state. He also supplemented them with small architectural forms [3].

“More than 200 gardens and parks embellished different areas in Halytchyna (Galicia), in the Polish Kingdom, Russia, Prussian Silesia, and Hungary, arranged according to the plans and under the supervision of Röhring. Together with Karol Bauer (1818–1894; the Director of the Botanical Garden in Lviv) he developed plans for Kahlenberg landscapes in Vienna. At the contest those plans were awarded the First Prize and were implemented. Mr. Röhring was invited to participate in almost all the juries in the field of horticulture” [1].

Since his early years, A. Röhring devoted himself to gardening, the profession he loved with all his heart. He was one of the best students of K. Bauer [4]. In 1863 (the first mention about Röhring in Lviv) he got married (Fig. 1) and settled in the mansion in 36 Snopkivska Str. (now 20, Stusa Str.); on the basis of Bauer’s sketches he further developed the “old” Stryiskyi cemetery design, preserved until today. According to that project, the cemetery was divided into seven fields and had two entrances: the first one from Stryiska Str., the second one from the modern Parkova Str. On the side of the entrance from Stryiska Str., the cemetery alley led

to a small rondo. In the cemetery project, the main alleys and green spaces were shown [5]. In 1866, (the first mention in the media) the newspaper “Gazeta Narodowa” placed the advertisement of the project with a price, providing contacts with the gardener Röhring, Head of the municipal arboretum [6]. In 1871, Röhring published a critical article in the “Gazeta Narodowa” about a low level of gardening in Galicia as compared with that in France, Germany, the Czech Republic, Moravia [7]. From 1875, he worked as a horticulture teacher in the charitable Institute for Orphans and the Poor of count Stanislaw Skarbek in Drohovyzh. In the same year his son Adolf was born [8] and in 1881 he wrote his book “Sadownictwo” (Fig. 2). It was possible to buy it in 1881–1885 even in Warsaw bookstores [9] (the Russian Empire). E. Yankovskyy’s review of the book appeared in the Warsaw journal “Ogrodnik Polski” (“The Polish Gardener”) No. 15–17 by 1881 [10].

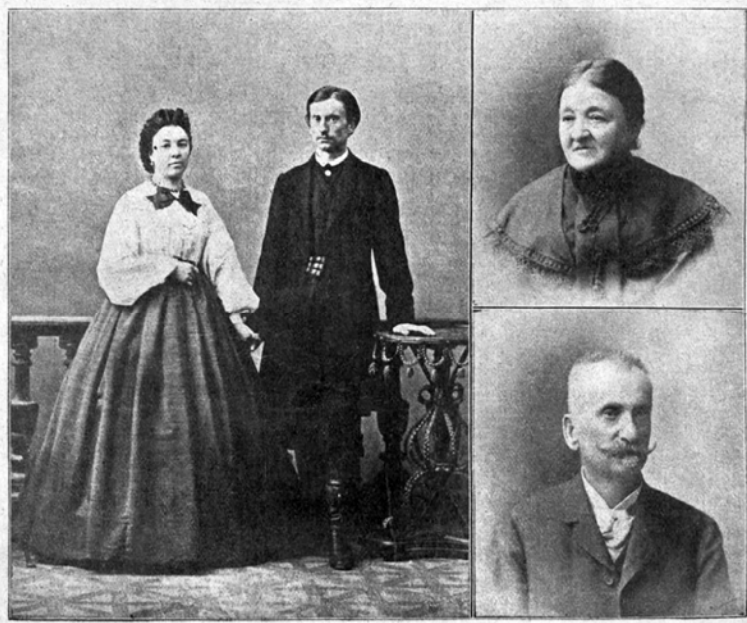


Fig. 1. The golden years: heroes of the day – A. Röhring with his wife Suzanna (1913, 1863), [1]

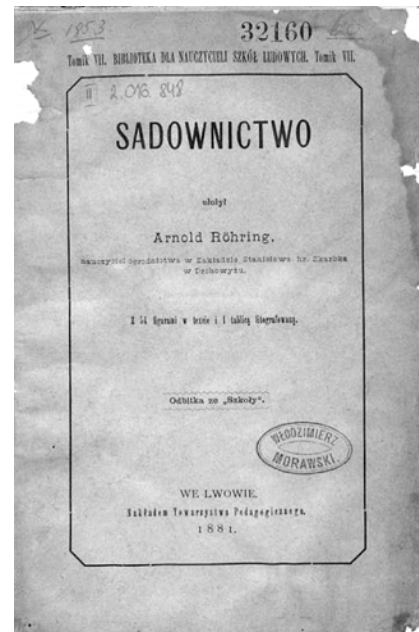


Fig. 2. The cover page “Sadownictwo” [11]



Fig. 3. The Röhring Tomb in Lychakiv Cemetery (field 52). Arnold (1840–1913), wife Suzanna (1840–1923), 2 sons: Adolf (1875–1919), Arnold (1878–1909), 2 granddaughters: Sofia (1901–1919), Maryla (1903–1920) – children of Antonina Blachowska and grandson Boleslaw (1905–1921) – Adolf’s son. Preliminary – and 17 grandchildren of A. Röhring (data need to be verified in the archives)

In 1883, A. Röhring was distinguished with a letter of praise as a Lviv gardener at the gardening exhibition in Lviv [12]. In 1888, he travelled to Paris at the expense of Lviv city budget of [13]. In 1889, there was discussion about the feasibility to delegate and finance Röhring’s next trip to the exhibition in Paris [14]. In 1893–1894 he was a member of the “Society Development and Improvement of the City” [15]. “The Golden Cross of Merit” with a crown (of Franz Joseph) was awarded to A. Röhring for his successful work at the Regional Exhibition of 1894 in Lviv” [16]. Staying in Sanok in 1896, he made several proposals: about a triangular location of the school, construction of a building for the “Sokil” Society and of a restaurant at the entrance to the City Park (now Harcerski Square) [17]. In 1897, he returned from a research trip during which he visited an horticultural exhibition in Hamburg and gardens and parks of Wroclaw, Berlin, Hanover, Bremen, Halle, Leipzig and Dresden [18]. In 1900, he became a vice-Chairman of the Society of Professional Gardeners [19]. In 1901 A. Röhring participated in the exhibition (in the jury)

in Vienna, where a 12-meter plan of Lviv gardens and parks was presented [20]. In 1906, he donated six books for public libraries of the Polish Society for Science [21]. In 1907, he became a member of that Society [22].

In 1913, A. Röhring died and was buried in the Lychakiv Cemetery (Fig. 3). There were such words in his obituary (in the “Gazeta Lwowska”): “Lviv will remember forever the achievements of the deceased Arnold Röhring” [23]. In 1936, the street near the Stryiskiyi park in Lviv was named after A. Röhring and the name of the street remained until 1947. From 1993 it was renamed Dzyndry Str. [24].

2.2. Realized projects

- **Kilinskyi Park** (1877–1894; now Stryiskiyi Park, with an area of 47.61 hectares). In 1877, A. Röhring fulfilled the project of the park planning, taking into account the natural characteristics of the landscape of this part of the city, and thereby, creating one of the most beautiful parks in Europe at that time. He used the motifs of neoclassical compositions of the British architect H. Repton with the introduction of regular compositional elements on the upper terrace [25]. Since 1887, an active work at the project began: rare species of shrubs and trees were planted on the hills, alleys were laid out, parterre lawns were developed. According to the Röhring plan, 40 000 trees were planted in the park area. According to M. Kovalchuk, in the mid-1890-s “red and sycamore maples, chestnuts, alders, birches, weeping beeches, oaks, chestnut trees, acacia, lime-trees, pine-trees of different species, spruce, juniper, yews, larch, American pine and various bushes” grew on the park territory [26]. He designed a picturesque pond near the main entrance, a hot-house and a gardener’s house. In addition to the park, he laid out the surrounding villas’ gardens, which were clearly visible from the cableway. The opening of the park was held in conjunction with the opening of the Regional Exhibition in 1894. In 1892 A. Röhring and Yu. Hoxhberher made out the first situational plan with amendmends by Yu. Zahariievych [27]. A. Röhring transformed the exhibition territory into a wonderful flower garden. In addition, he worked closely with the electric engineers F. Krzhyzhyk and F. Yandurek during the installation of the lighting on the exhibition territory and construction of an electric lift [2]. In Stryiskyj Park near the wellspring, one can see the plaque “Pamięci A. Röhringa. Twórcy ogrodów lwowskich” in honour of A. Röhring, which was recently made by the Department of Restoration of Architectural Heritage of Lviv Polytechnic (Ph. D., assoc. prof. O. Rybchynskyy) (To the memory of A. Röhring, the Designer of Gardens of Lviv). The Polish researcher Ya. Levytskyj compared the project “Kastelivka” with the Stryiskyj park and with the territory of the Regional Exhibition in 1894 and saw many similarities [28].

- **Park in Krynica** (1880, Tomaszewski district, 110 km from the city) A. Röhring transformed it into a landscaped park, now it is abandoned [29].

- **Arboretum of Regional Forest School** (1880-s, the former Milashevsky’s mansion, now the Arboretum of Forestry University, 1 Kobylanska Str.). A. Röhring laid out the school grounds (0,8 hectares), where an orchard grew. The paths were left as they were already laid at that time. Decorative and exotic trees gradually replaced the orchard. According to prof. V. Tynetskyj, only a quarter from the available 130 taxa in 1896 have been preserved till our days [30].

- **Resort Park in Briukhovychi** (about 1887; about 168 hectares). A network of trails and paths and places for public amusement were designed. Small lawns covered with moss, lit with diffused sunlight, making them cheerful and fabulous, were particularly impressive [31, 32].

- When the Poltva was finally put into an underground collector in 1888–1890, Hetman Vally Avenues (now Svobody Avenue) were redesigned under the supervision of A. Röhring. They were expanded, decorated with flowerbeds, and planted with trees. The avenue fragment near St Mary's Square was planted with the lilac, therefore, it was called the “flower salon” [33]. The first results of the **work undertaken to return from oblivion the creative heritage of Arnold Röhring** – an outstanding Gardener of Lviv – are seen on the main avenue – a flowerbed has been restored according to the project of 1903. The flowerbed reconstruction project was designed by the Department of Urban Development of the Institute of Architecture of Lviv Polytechnic National University.

- **Garden Square in Halytska Square** (1890–1893), near the Valova Str. was located in the former Market Square, around which new buildings began to spring up. In 1909–1910 Alfred Zachariewicz together with Arnold Röhring worked out a new composition of the garden square in Halytska Square (the old tall trees were cut down, new trees were planted and a flowerbed was laid out) [3].

- **Park in Buzhany** (1890; 100 hectares, now a village in Volyn region, 120 km from Lviv) was founded by A. Röhring together with the famous parks planner Walerian Kronenberg (1859–1934) [34].

- **Lychakiv Park** (1892; 8.4 hectares) was arranged in a regular style in the northeastern hilly part of Lviv beyond the Lychakiv tollgate. It covered sand and clay quarries. Pathways, running around the perimeter of the park (near Lychakivska and Pasichna Streets) and coiling on the slopes of ravines, were designed. The predominance of black pine-trees is a special feature of the forest stand of the park. Here and there, there are also maple-trees, linden-trees, chestnut-trees, as well as several species of bushes [35].

- **Vilshyna Park** (1894–1898, now Shevchenko Park) in Stryi. On May 6, 1894, A. Röhring took part at the City Council meeting dedicated to the development of the given park. As a result of the commission on the City Park development under the supervision of Alexander Stoyalovsky was created. On July 3, A. Röhring proposed his project to the Mayor L. Hetinher. Subsequently, a sanitary cutting of trees, the marking of the designed roads and trails, and a cleaning-up of the park were carried out [36].

- **Visnovsky Park** (1895, 2.8 hectares) is situated around the “Mountain of Punishment” [36].

- **Lower Terrace of the City Park** (Ivan Franko park) – In the late 19th century it was redesigned and decorated according to the A. Röhring’s project with an intricate flower-bed arranged symmetrically near the axis of the main entrance to the Seim (the Local Parliament of that time, today’s Ivan Franko University) [33].

- **Garden Square in St. Jura Square** (1897) [38]. A great mastery of A. Röhring is evidenced in creating beautiful lawns with trees of first magnitude (30–40 m): larches, pines, European black spruce, maples, linden-trees, *Tilia cordata* broadleaves, and others. A giant oak-tree still stands in the middle of the park. These species create a structure of the forest stand of the park. During an inventory of the greenery in the territory of the garden square in St. George Square 49 species and a variety of trees and shrubs of 32 classes and 16 families were identified [39].

- A. Röhring arranged the **Garden Square around Kornel Ujejski Monument** (1902, not extant now) near the main entrance to the City casinos on Academichna Str. (Shevchenko Av.) [40].

- After the opening of A. Miktsevych’s monument in 1904, the **landscape composition of Mariacka Sq.** (today’s Mitskevych Sq.) was designed by A. Röhring and the architects T. Talovskyi and Z. Hendel [3].

- **Park Zalizna Voda** (Iron Water) (1905). A. Röhring worked at the plan of the park from 1881 until the last days of his life. The park design was original and unique because of the by-pass walking alley, which united the thematic change of the forest groups, e.g. the black pines curtain at the entrance, followed by a larch grove, further by a birch and famous beech grove on the northern slopes [3]. There was a waterfall in the park, which disappeared after World War II, and two Röhring’s wellsprings (on the park’s hill) together with Yankowsky’s wellspring provided with water of the Kaminsky’s pond (now the Dynamo pool).

- **Jordan Park** for the school youth in Stryi (1905). The preliminary drainage and levelling of the territory, the digging of the ditch and the fencing with hedges (according to Röhring’s plan). 5 613 m³ of gravel, 3.800 m³ of soil were used for its installation. Several hundred trees and shrubs were planted. All the necessary buildings, ten play-grounds, a 42-meter pavilion with a veranda, an office, an apartment for the park superintendent, a bowling alley, and some stables were erected [36].

- In 1886, the Poltva was put into the underground collector and A. Röhring laid out a peculiar **nonlinear Boulevard in Academichna Str.** (Shevchenko Av.), which consisted of some trapezoid “islands” with rounded corners. In 1906, A. Zakharevych with A. Röhring modernized the structure of the Boulevard. The axis of the present-day Dudayev Str. was extended with an alley, running along the newly created central oval flowerbed to the main entrance of the future dominant of the street, i.e., the House of the Chamber of Commerce. Only old photographs showing the ancient structure of the Boulevard remain nowadays. The proposal to close down the avenue for cars and to restore the alley’s structure of the late 19th century, laid out by A. Röhring, was not supported by the City Council [3].

- **Park of Dlugosh Palace in Siary** (1908–14 and 1916–25; Röhring’s project, 250 km from Lviv). The famous Lviv sculptor P.Voytovych is the author of 60 allegorical and mythological figures for the park and for the palace of the oil capitalist and Minister for Galicia (Halychyna) Wladyslaw Dlugosh [41].

- **Park reconstruction in Koropets** (in the time of the Galician governor S. Badeni, Ternopil region, 180 km from Lviv). The park was extended to 200 hectares. Great lawns with separate groups of trees were the characteristic feature of the park. The rivers of Koropchik and Mlynivka flowed through the park. White

bridges joined their banks. There was also a pond, and above it – a greenhouse and a hothouse. Chestnuts, maples, silver poplars, oaks, lindens, ash trees, weeping willows, two large tulip trees grew in the park [42].

2.3. Projects, which were not realized or were attributed

- A. Röhring planned to create a functional resort **Jordan Park** (in New Lviv district). Similar “Jordan” parks were created in different cities: Krakow (1889), Stryi (1905, A. Röhring), Warsaw, Ternopil, etc.
- One of the projects was to combine the parks and squares of the city with each other through a network of green streets and alleys and, thus, create a **Corso**, i.e., a green promenade in the middle of the existing outer green circle with the centre in the High Castle area, located directly within the urban net. A. Röhring worked this idea out in the second half of the 19th century. Partially that project was implemented in 1896 within the interval of the Lychakiv park to the Pohulianka area including Kochanowski Str. (now K. Levytskyi Str.) [43].
- The composition of the parterre gardens near the gardener’s house with an exquisite pattern of ovals (similar to the ovals in front of the monument to J. Kilinski in the Stryiskyi park) and the soft irregular contours of each garden element (according to the archive plans) suggest that A. Röhring and K. Bauer (before him) took a direct part in their planning during the reconstruction of the **High Castle park** (1889–1894), as well as in the construction of the gardener’s house and a small greenhouse (1892) [3].
- **Garden in front of Hrushevskij’s House** was decorative, planted with forest trees: beeches and pines. There was a luxurious flowerbed. A. Röhring’s hand is recognized in the creating of this garden [32].

2.4. A. Röhring School

In **1894–1904** a vegetable and horticultural school [44, 45] was located in the building in 38, Snopkivska Str. (now 22 Stusa Str.; construction No. 536 [46]). The building at that address was pulled down in 2015. A. Röhring lived in the neighboring house No. 36 (construction No. 929 [46]). Therefore, it can be possibly assumed that it was Röhring’s school. Stanisław Piątkowski (1870–1934) was one of Röhring’s students, he studied abroad [47]. In 1913–1934, he was an inspector of urban green spaces in Lviv and a member of Polish dendrological Society in Lviv. In 1925, he proposed to create an arboretum in Lviv [48].

3. Conclusions

In the given study 20 projects of A. Röhring (among more than 200) were examined and some of his biographical data were reconstructed. However, we lack information concerning some years of his life. Thus, a further research work is needed. Recently, a memory plaque in Stryiskij Park and a flowerbed in Svobody Ave. (according to the design of 1903) were restored; it is possible that A. Röhring Str. will return (or another street will be named after him). We expect that one will find information about A. Röhring in the parks and gardens of his authorship. On September 24–25, 2016, European Heritage Days were held in Lviv (dedicated to the subject of gardens and parks) where A. Röhring’s name was repeatedly mentioned, including by the author of this article. In 2017 at the Forestry University, a conference is planned, where the report of prof. V. Kucheriavjy about A. Röhring’s creative method is to be presented.

Lviv will long remember the achievements of A. Röhring. And the purpose of this article is to contribute to the long-lasting memory of him.

References

- [1] Nowości Ilustrowane. 1913, 8.
- [2] Sulym B. Fenomen Krajovoji vystavky v Halychyni 1894 roku. – Polli, Lviv 2007.
- [3] Architektura Lvova. Cas i styli. XIII–XXI st. (red. Birjulova Ju.). Centr Jevropy, Lviv 2008.
- [4] Gazeta Lwowska. 1882, 257.
- [5] Harcuk X. Formuvannia Stryiskoho cvyntaria u Lvovi...: Narodoznavci zoshyty. 2012, 6
- [6] Gazeta Narodowa. 1866, 241.
- [7] Gazeta Narodowa. 1871, 286.
- [8] Księga pamiątkowa Towarzystwa “Bratniej Pomocy” słuchaczy Politechniki we Lwowie. 1897.
- [9] Gazeta Warszawska. 1881, 86. Gazeta Świąteczna, 1885, 29.
- [10] Ogródnik Polski, 1881, 15–17.

- [11] Lwów: Towarzystwo Pedagogiczne, Biblioteka dla Nauczycieli Szkół Ludowych. 7 tom., 1881; 124 p., 54 fig., 1 lit. table.
- [12] Gazeta Lwowska, 1883, 226.
- [13] Gazeta Lwowska, 1890, 242.
- [14] Dziennik Polski. 1889, 234.
- [15] Ilustrowany przewodnik po Lwowie i Powszechnej Wystawie Krajowej (1894).
- [16] Narodna Casopys, 1894, 250.
- [17] Gazeta Sanocka, 1896, 63.
- [18] Słowo Polskie, 1897, 233.
- [19] Gazeta Narodowa, 1900, 71.
- [20] Słowo Polskie, 1901, 591.
- [21] Sprawozdanie Wydziału Towarzystwa dla Popierania Nauki Polskiej za rok 1906, 1907.
- [22] Sprawozdanie Wydziału Towarzystwa dla Popierania Nauki Polskiej za rok 1907, 1908.
- [23] Gazeta Lwowska, 1913, 60.
- [24] Center for urban history of East Central Europe. Access: <http://www.lvivcenter.org/uk/streets/Reringa-A/> - Title from the screen.
- [25] Bohdanova Ju. Evolucija landsaftnoho proektuvannja u Lvovi XX–XXI st. Visnyk Nacionalnoho universytetu “Lvivska politehnika”. Arhitektura, 2014, 793.
- [26] Vul. Stryiska – Stryiskyj park. Center for urban history of East Central Europe. – http://www.lvivcenter.org/uk/lia/objects/?ci_objectid=20/ - Title from the screen.
- [27] Birjulov Ju.: Zacharevyczi: Tvorcji stolycnoho Lvova. Centr Jevropy, Lviv 2010.
- [28] Lewicki J.: Architektura Lwowa 1893–1918. Neriton, Warszawa 2005.
- [29] Aftanazy R.: Dzieje rezydencji na dawnych kresach Rzeczypospolitej (T.6). Instytut Sztuki PAN, Warszawa, 1986–1993.
- [30] Botaniczny sad NLTU Ukrainy. <http://botsad.at.ua>
- [31] Krynica: pismo poświęcone sprawom polskich zdrojowisk. 1887, 2.
- [32] Kucerjavj V.: Sady i parky Lvova. Svit, Lviv 2008.
- [33] Lukashchuk H., Petryshyn H. Perlynka u smaragdovomu namysti Lvova. Access: <http://kafedrambd.jimdo.com/> – Title from the screen.
- [34] Aftanazy R.: Dzieje rezydencji na dawnych kresach Rzeczypospolitej (T.5). Instytut Sztuki PAN, Warszawa, 1986–1993.
- [35] vul. Lychakivska – Lychakivskij park. Center for urban history of East Central Europe. Access: <http://www.lvivcenter.org/uk/lia/objects/park-lychakivskij/> - Title from the screen.
- [36] Derzhavnyj Lvivskij obl., f.1060, op.1, spr.74, ark. 38.
- [37] Gazeta Narodowa. 1895, 273.
- [38] Słowo Polskie, 1897, 131.
- [39] Petryshyn H., Lukashchuk H., Tupis S. Inventaryzacija ta ocinka stanu derevnyh nasadzen u skveri na ploschi sv. Jura u Lvovi. Access: <http://kafedrambd.jimdo.com> - Title from the screen.
- [40] Dziennik Polski, 1902, 305.
- [41] Dziennik urzędowy 2009, 455.
- [42] Aftanazy R.: Dzieje rezydencji na dawnych kresach Rzeczypospolitej (T.7). Instytut Sztuki PAN, Warszawa, 1986–1993.
- [43] Gazeta Lwowska. 1896, 262.
- [44] Barański F. Przewodnik po Lwowie, 1904.
- [45] Ilustrowany przewodnik po Lwowie i Powszechnej Wystawie Krajowej, 1894.
- [46] Skorowidz nowych i dawnych numerów realności, 1871. Skorowidz król. stoł. miasta Lwowa, 1889. Księga adresowa Małopolski. – Lwów. Stanisławów. Tarnopól, 1935–1936.
- [47] Gazeta Lwowska, 1936, 166.
- [48] Piątkowski S. W sprawie założenia parku dendrologicznego we Lwowie, 1925.

Сергій Леонов

БІОГРАФІЧНІ ДАНІ ТА ПРОЕКТИ ВИДАТНОГО САДІВНИКА ЛЬВОВА А. РЕРІНГА

Анотація. У статті розглянуто біографічні дані та проекти видатного садівника Львова Арнольда Рерінга – інспектора міських плантацій, який опрацював проекти всіх зелених насаджень у парках, на центральних бульварах та площах і наглядав за їхнім станом, доповнював малими архітектурними формами. Крім того, він видав підручник для вчителів “Sadownictwo” (1881). Зроблено припущення про існування Школи Рерінга у Львові.

Ключові слова. Арнольд Рерінг; головний садівник Львова; сади і парки.

Tetiana Maksymiuk

MODULATION OF SPACE IN THE COMPOSITIONAL CONCEPTION OF STRYISKYI PARK IN LVIV BY ARNOLD RÖHRING

Architect, Member of the Landscape, Architect's Guild of Ukraine

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Abstract. The given article treats the problem of space modulation as used by Arnold Röhring in laying the Stryiskyi Park. The concept was based on the natural rhythm of the Stryiskyi spring valley area. The proportions of the latter were preserved by Arnold Röhring and used in the compositional structure of the park landscape, in formation of green room parterres, enfilades and green valleys.

Key words: space modulation, Stryiskyi park, park composition, Arnold Röhring

1. Introduction

The creative activity of Arnold Röhring (1840–1913), as the Head Gardener and a landscape architect of city gardens and parks in Lviv at the end of the 19th and the beginning of the 20th century, is closely related in terms of compositional concepts and their implementation to the activity and theoretical views of urban studies of Julian Zachariewicz (1837–1898) and his son Alfred Zachariewicz (1871–1937). All of them were the creators of the historical Lviv of that time [1].

In J. Zachariewicz's view, architecture is the art of space formation according to the laws of mathematics. "The main task of an architect is to determine the proportions of a construction. These proportions will be pleasant to the eye, when dimensions of the plans of a building and its details will be made using one and the same geometric system [1, p. 156].

An amazing combination of mathematical logics with fantasy, intellect with imagination is typical for romantic and science fiction writers of the 19th century and it is one of the main features in the works of J. Zachariewicz. This idea is emphasized in his quotation made in December 1889 during a discussion at the Polytechnic Society in Lviv – "... the world has a mathematical structure, and we all subconsciously want to get closer to this mathematical ideal in our work ..., we see geometric forms in all the creation" [1, p. 157]. This view is not accidental. It is important to contrast theoretical and aesthetic principles of spatial and temporal trends in architecture of urban planning in Western Europe in the 17th–19th centuries [2].

In England, the famous theoretician who laid the foundations of aesthetics of the new time, was Francis Bacon (1561–1626), a humanist and a philosopher. The starting point of F. Bacon's aesthetics was his attitude to Nature: "The human being is a servant and an interpreter of Nature...", "Refinement of Nature is much higher than that of senses and mind...", – he wrote in his "The New Organon". Revealing the primary cause of Nature he underlined: "It alone should be honored as the Mother of all Sciences; because if Art or Science are separated from Nature, from their roots, they cannot grow any longer..., and all because of that they do not get their nourishment from the philosophy of Nature, which could give them new strengths and a new development" [2, p. 9]. This quotation illustrates that a constant collation of human activity with the existing natural processes was the main methodologic principle in F. Bacon's philosophy. In his program "A Great Renovation of Sciences" the essence of his conception of architecture of environment is laid out. According to F. Bacon's classification human knowledge is divided into three categories: Memory, Cognition (judgement) and Creativity (fantasy). The first category includes historical sciences, among which is history of art. The second category includes knowledge that is based on creativity (imagination), to which the philosopher refers poetry. The third

category is the most varied one and is dedicated to philosophy. F. Bacon divides it into two parts, i.e., “Of the Interpretation of Man” and “Of the Interpretation of Nature”. The latter deserves a special attention. Among practical and theoretical sciences about Nature, F. Bacon identifies a group of applied sciences related to mathematics, including cosmography, astronomy, music theory, perspective, architecture and theory of machines. F. Bacon interpreted architecture as an artificially created and ordered part of Nature and perceived it as a system of interconnected elements. Also, he considered a person, architectural environment, natural environment and space along one line. The philosopher had conceived by that time and created a system of a consistent spatial development. In F. Bacon’s scientific views there exists one feature that became the basis for the understanding of the process of development of architecture, and especially, of urban science development in England in the 17th–19th centuries. In “The Doctrine of Method” he wrote: “For the art of architecture is not only construction of a building, but also the shape of its elements. The method is a kind of architecture of science. Bacon’s inductive method coincided with the traditional way of architectural and urban conception of England of that time. Therefore, ideas of a perfect city were not popular in England. The family home was seen as the primary element of the environment surrounding a person, regardless of whether the house was located in rural areas or in the city. Firstly, preference was given to fresh air, water, a wood, a scenery, whereas the proximity to business life to the market and good roads came as the second. Bacon’s speculations on suburban housing were connected both with function and the surroundings. In a special section, “About the Gardens”, he expressed his views on landscape architecture: “In the course of time when human civilization would develop along with the taste for the exquisite, people will learn sooner to build beautifully than to plant wonderful gardens; therefore, it means that cultivation of a garden is a more delicate matter and requires more perfection” [2, p. 10–12]. In the description of an exemplary garden Bacon actually drew a prototype of an 18th century landscape park. Though, preferring regular gardens of the Renaissance period, F. Bacon kept in his park in front of his house a central fragment with straight alleys. However, his attention is focused on a lovely description of the green space surrounding the house, as well as on the wild heather curtain: “... what concerns the wild heather curtain, which is the third part of our area, I would like to see in it a wild corner of Nature, free from any human activity”. In other words, the idea of a naturalistic composition of the park was expressed by the philosopher quite clearly. Of great interest is F. Bacon’s description of the image of a city as his imagination.

2. Basic Theory Part

In the study of urban architectural and spatial composition John Roskin’s (1819–1900) idea about “compositional pauses with the emphasis on details” is especially valuable. He came to a conclusion that the function of such pauses in the city can be performed by gardens and parks, as well as areas with a reduced buildings density or by other areas without buildings. Here is his quotation: “the Earth is a great heritage that belongs to us as much as it belongs to those who will come after us, so we do not have no right to plunder it” [2, p. 52]. “Nature is never fully understood it is mysterious and versatile”. These words perfectly correspond to the aesthetic ideal of the 19th century. According to John Roskin, integrity of the natural frame and that of the planning structure are so strongly rooted in English urban building that it makes us pay more attention to the research methodology of an artistically whole landscape. He introduced the concept of historical landscape. The most valuable part of his doctrine is his recommended sequence of urban perception: starting from visual impressions of the city and passing on to a more conscious penetration in its landscapes, whether urban or natural ones. In the same sequence from the general to the detailed space orientation should take place: from geography to urban planning of a street network; from a great historical epoch to its individual time periods, from the total compositional characteristics of buildings or park complexes to its indoor architecture [2, p. 52–56].

Architectonics of urban planning, reflecting the peculiar character of urbanization processes of each epoch of a certain time period, also reflects landscape architecture, improving or correcting the architecture of the Earth’s natural frame according to the characteristics of each of its dimensions according to human needs. This applies to both large-scale natural and territorial complexes and systems and separate local formations.

A. Röhring’s cooperation with Ju. Zachariewicz in formation of urban planning conception of the development of Lviv, the necessity to work out a new construction status, aesthetization of squares, gardens and parks in the city did not go in vain, especially his thought: “... the world has a mathematical structure ...”. Which confirms the fact that also the natural frame of Lviv and its components is not an exception. And that the valley of the Stryiskyy park with its springs, streamlets, meadows and hills, all the natural “bel vedere” sights, were harmonized with when laying out the park by A. Röhring.

In the 1877–1894 of the 19th century A. Röhring, felt the secret of Nature’s beauty in the valley of the Stryiskyi spring selecting this space for the laying out of the Kilinski park, today known as the Stryiskyi park. Laid out according to the motifs of romantic park compositions and Historicism existing at that time, which preceded the Lviv Secession style, the Stryiskyi park was considered at that time to be the most exquisite park not only in Galicia, but also in Europe.

At the end of the 19th century after 100 years since the park’s foundation, a need rose to develop a research program of its compositional structure with the aim to determine directions of restoration and reconstruction. In the process of the park’s compositional analysis the essence of compositional structure of the park’s landscape, both of the valley space and of its upper terraces, was discovered. The afore-mentioned analysis was based on comparing the topography of the park plan of 1894 with the exact topography, including configuration of trees, the relief and the planning structure of the end of the 70–80-ies of the 20th century (on a scale 1: 500). It turned out that when planning the compositional axis of each visual space used as a basis the natural rhythm of the valley space proportions of the Stryiskyi spring. This method applies both to the structure of park landscapes and enclaves of green areas of parterre gardens and green “rivers”, including the park street as an avant-zone of the main entrance to the park.

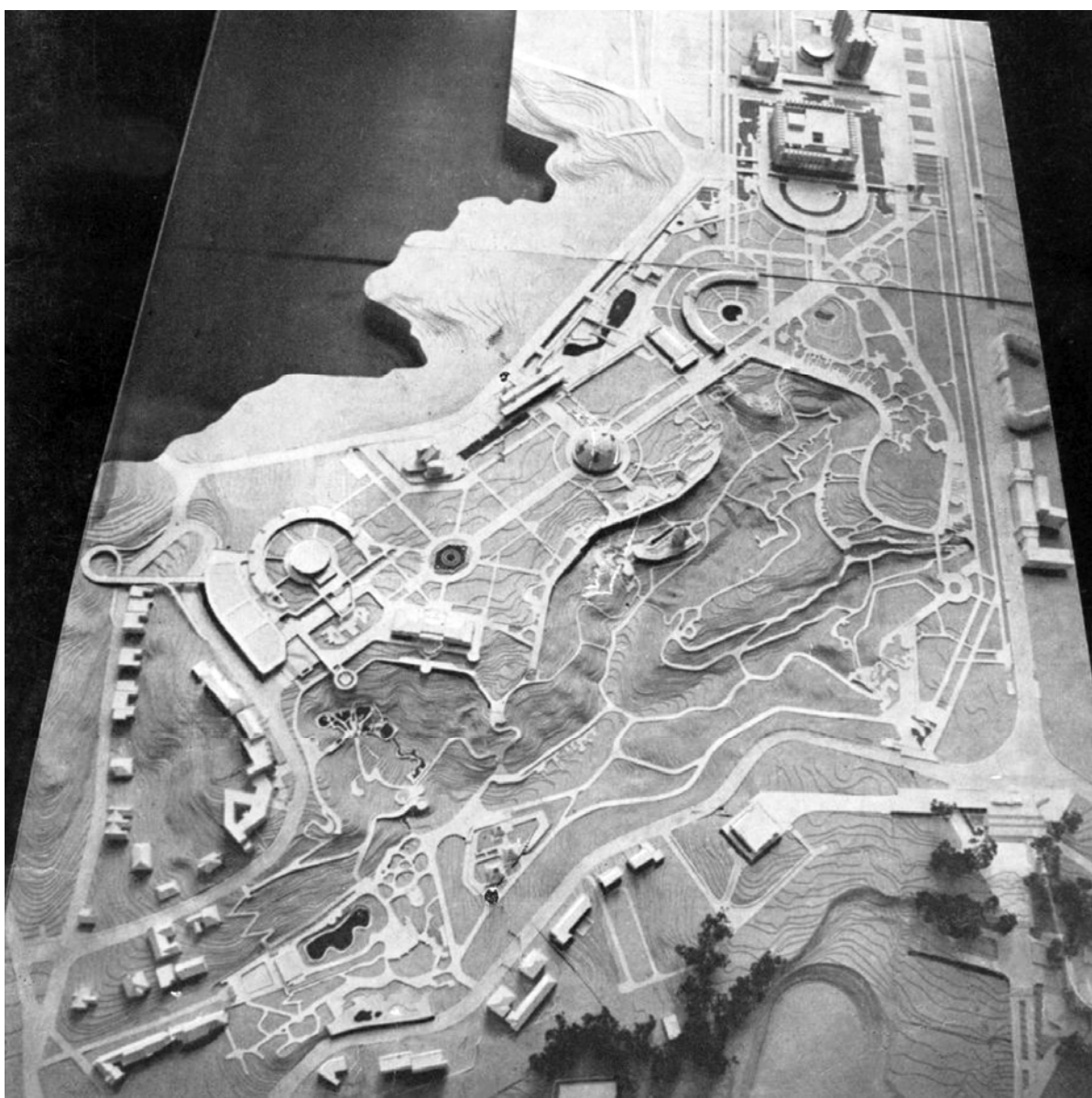


Fig. 1. The model of the Stryiskyi park in 1980.
Photo from the cover of the journal “Architecture of the SSSR”, No. 12. – 1980

The analysis revealed that each segment of the longitudinal axis line of the space coincides with the natural direction of the valley line. A shift is found at the intersection of the transverse compositional axis, fixed by the elements of plant forms, relief fluctuation, often artificially emphasized by the author's intention. For example, it can be seen in form of a belvedere or water surfaces and spring sources, sculptures, and art details. The frequency of such transection rhythms coincides with the frequency of watershed lines of the relief. The modulation range of the space evidences the existence of several mathematical levels of scale dependence, namely: the **module of the circle with the diameter of 130 m** [3].

The first circle is the space of the park street with the center at a barely visible shift in the middle of the street (radius of the circle 65 m). **The second circle** is the module from the main entrance arcade to the peninsula with a weeping willow over the water parterre with a swan pond with the center, fixed by, the once trimmed forms of hornbeams on the grass parterre with forms of pyramidal shape oak-trees in the background. The center of the radius of the second circle goes through meadows on the slopes, fixed with a white poplar on the left side and with a beech-tree on the right side. **The third circle**, spans from the peninsula to a two-story pavilion-restaurant with the center, where the monument to Jan Kilinski stands (made by J. Markowski), and passes through the center of the oval details composition of the decorative parterre in front of the monument. There is a wooden arch of 1894 and the pavilion-restaurant designed by J. Zachariewicz.

Of interest is the fact that the modulation of the spatial structure of the park is mathematical in proportions (130; 65; 32,5; 16,25). It coincides with the rhythm of the structure and geoplastics of the relief, i.e. the natural frame of the Earth, close to the Golden Section. Therefore, it is so pleasant for people to walk there. The module of the squares net is one quarter of the diameter of the circle and it equals 32.5 m. The module of the net of diagonal squares is formed around the main axis of the visual and compositional space. The diagonal of the rectangle of two squares determines the direction of connection of parterre gardens with the valley of green rivers with a large belvedere and artificial ruins as major elements of romanticism. The longitudinal compositional axis of the lower parterres is enhanced with a blue fir-tree in front of the pavilion-restaurant. From the first floor of the latter one gets a back view on the swan pond water parterre, the grass parterre, main entrance arch and the villas panorama on the Skalka Hill.

The diagonal longitudinal axis between the small belvedere and the plateau with the pavilion-restaurant forms a transition-passage from the low parterre gardens on to the central glade and then to the meadow parterre. A group of beeches completes the composition. In this place, three artificially formed belvederes appear, complemented by some natural ones leading to the valley of green rivers and artificial ruins with a belvedere of reverse visual connection.

There is a completely different modulation of the upper terrace of the General Regional Exhibition with a linden alley "CORSO", designed according to the neo- baroque compositions with the space modulation of 100 m the same as it is in Versailles. The first situational plan of the exhibition was made by A. Röhring in 1892. The program of the exhibition scenario included expressive principles of the integrity and interaction of architectural styles, monumental and decorative art, such as sculpture and landscape art. The compositional planning character of the exhibition's layout was based on the motifs of Baroque gardens of André Lenotre of French Classicism (the 17th century).

The scenario of the plan was based on the contrast of Romantic motifs of the composition of lower parterre gardens of the Stryiskyi park with its serpentine belvederes on the park slopes. From there a panorama of the city and of the High Castle opened.

A. Röhring turned the area of the exhibition in a permanent luxurious exhibition of flower and water parterres.



Fig. 2. Compositional and spatial model of Stryiskyi park and scape structure.
Research work by T. Maksymiuk at the end of 70s – beginning of 80-s of 20-th century

3. Conclusions

The compositional analysis helps to understand that the Romanticism style of Lviv school of landscape art of the end of XIXth century emphasizes the beauty of natural landscape, and its originality.

References

- [1] Biriuliov Ju. Zaharievychi – Twortsi istorychnogo Lvova / Ju. Biriulov. – Lviv: Type in “Tsenter Europy”, 2010. – 335 p. – S. 152–167.
- [2] Savarenskaya T. F. Zapadnoevropeiskoe gradostroytelstvo XVII-XIX vekov : Estetychskoe y teoretychskoe predposylky / T. F Savarenskaya. Moskow: Strojzdat, 1987. – 191 p. – P. 9–12; 52–56.

- [3] Maksymiuk T.M. Romantyzm Lvivskojy shkoly sadovo-parkovogo mystetstva kintsia XIX st. Starovynni parky i problema jyh zberezhenia. Tezy dopovidei drugogo miznarodnogo sympoziumu, prysviachenogo 200-richiu dendrologichnogo parku Sofijyvka / T. M. Maksymiuk – Uman: The National Academy of Sciences of Ukraine. Publishing company L. M. Rybchynski, 1996. – 284 p. – P.190.

Тетяна Максим'юк

МОДУЛЯЦІЯ ПРОСТОРУ В КОМПОЗИЦІЙНОМУ ЗАДУМІ СТРИЙСЬКОГО ПАРКУ АВТОРСТВА АРНОЛЬДА РЕРІНГА

Анотація. У статті представлено модуляцію простору, використану Арнольдом Рерінгом під час закладення Стрийського парку, ґрунтованого на натуральному ритмі пропорцій долинного простору Стрийського потоку, що проявляється у композиційній структурі паркових краєвидів, картин, анфілади зелених зал-партерів та зелених рік і долин.

Ключові слова: модуляція простору, Стрийський парк, композиція парку, Арнольд Рерінг.

THE PALACE AND THE PARK COMPLEX IN THE TOWN OF KOROPETS IN TERNOPIL REGION

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, tmazur1@ukr.net*

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Abstract. In the given article the authors analyze the actual state of the Koropets palace and its park complex, as well as its inherent difficulties. They explain the significance of this architectural ensemble as a remarkable landmark and an excellent artwork of landscape by Arnold Rohring. It is an integral part of the natural park of the Dniester canyon and a promising tourist attraction in Ternopil region.

Key words: Koropets palace and park complex of Counts Badeni, landscape park by Arnold Rohring.

1. Introduction

The town of Koropets emerged in the confluence of the river of Koropets into the Dniester river among the picturesque Carpathian landscapes: meadows and wooded slopes of rocky hills, ravines and gullies with powerful waterfalls, which altogether create a unique beauty and grandeur of the natural territorial complex of the Dniester canyon (Fig. 1).

The first written mention of Koropets dates back to the year 1421. In 1427 the town was granted Magdeburg rights. Despite numerous wars and disastrous Turkish and Tatar invasions, the town managed to preserve its original look.



Fig. 1. Panorama of the natural park of the Dniester canyon [1]

2. Basic Theory Part

Extremely favorable natural conditions and the existing unique monuments of history, culture, and architecture, like the famous palace and the park complex of Counts Badeni, provide good conditions for transforming this small town into a successful touristic and recreational center of Ternopil region (Fig. 2).

In 1615 the town of Koropets, which formerly belonged to the Polish crown, became the property of Stefan Potocki, the governor of Bratslav. At the end of the 18th century the estate was sold to Myslovsky family from little-known Polish nobility. At the beginning of the 19th century the Myslovskys built a small classic-style palace and a landscape park around it. The park was laid on the place of the former oakery that stretched on the slopes of the river Dniester.

In 1893 Koropets, together with the palace, becomes a property of Count Stanislaw Marcin Badeni (Stanislaw Marcin Badeni) (1850–1912), Marshal of the Galician Sejm. Immediately, Stanislaw begins the restructuring of the small palace into a refined residence in the style of “Vienna Renaissance”. It is believed that the architect of the new palace must have been one of the famous Lviv or Viennese architects at that time, but his name was preserved.

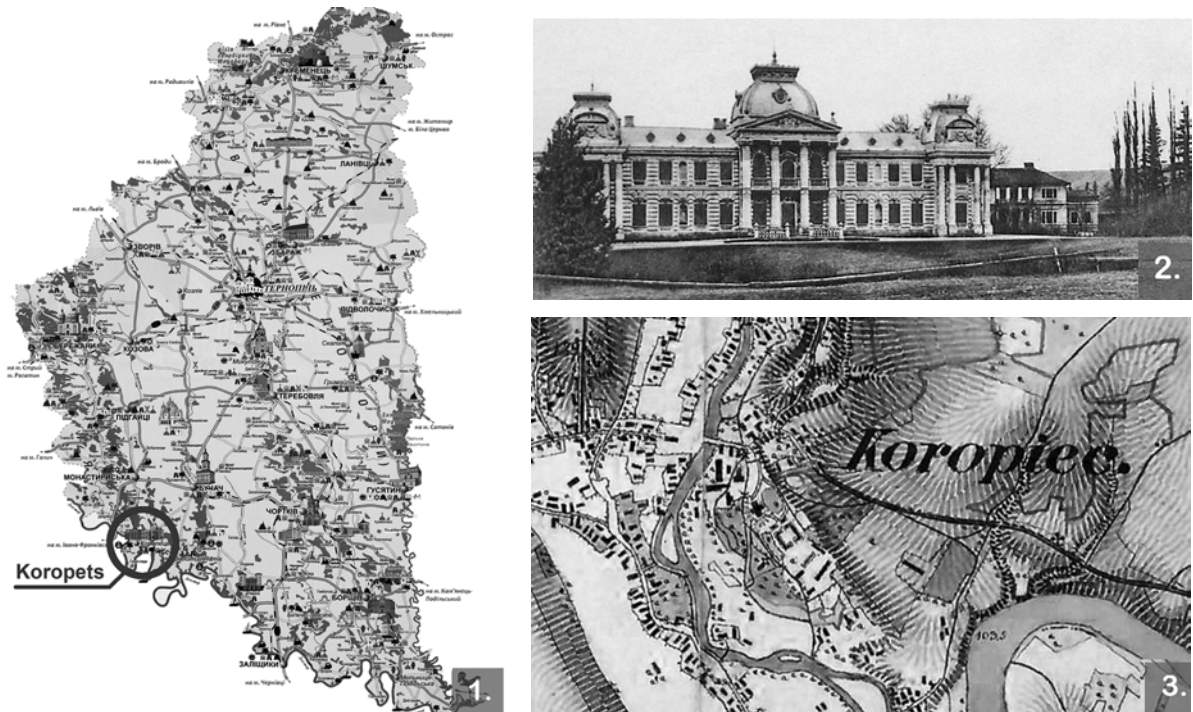


Fig. 2. The Koropets palace and the park complex as a tourist and recreational facility of Ternopil oblast
 1 – the tourist map of Ternopil oblast [3]; 2 – the palace of Counts Badeni – Koropets [1];
 3 – the plan of Koropets, including the palace and the park [4]

The palace had two floors and was decorated with three risalits and a shaped roof. The most impressive was the artistic combination of colored wood for the flooring and panels on the walls. Till our times an oval ballroom with a black marble fireplace, the so-called royal room, was preserved. The room was decorated with the portraits of Polish Kings by Marcel Mashkovsky, which were the exact copies of the famous works of Jan Matejko. A dining room, library, and a chapel were placed next to the ballroom. The other side of the building served for housing purposes, as well as the first floor, which was more ordinary (Fig. 3) [2, p. 95–96].



Fig. 3. The Koropets palace and the park complex – the Badeni palace and the remains of the nearby landscape park on the Dniester river, 2015 [1, 5]

Construction works were finished in 1906, shortly before WWI. At the same time Stanislav Badeni started renovation of the park and, for this purpose, invited Arnold Karol Röhring, a well-known Galician gardener at that time and a founder of the famous Stryiskyi park in Lviv.

Röhring's project envisaged a significant expansion of the park to 200 hectares and a thorough reconstruction of its planning structure. A peculiar feature of the park's composition were broad meadows with scattered picturesque groups of trees and ornamental shrubs. The lawn before the palace was covered with bright and vivid flower-beds and the area behind the palace with beautiful tall roses. The rivers of Koropchuk and Mlynivka, ran through the park, and the opposite banks of the rivers were united by wooden bridges painted white. There was also a pond with a greenhouse and a glasshouse over it (Fig. 4). The park was planted with diverse greenery, i.e., silver poplars, oaks, chestnuts, maples, linden-tress, weeping willows and even two huge tulip trees. Vast plantations of apricots and walnut gardens stretched at the outskirts of the park. [6, p. 98].

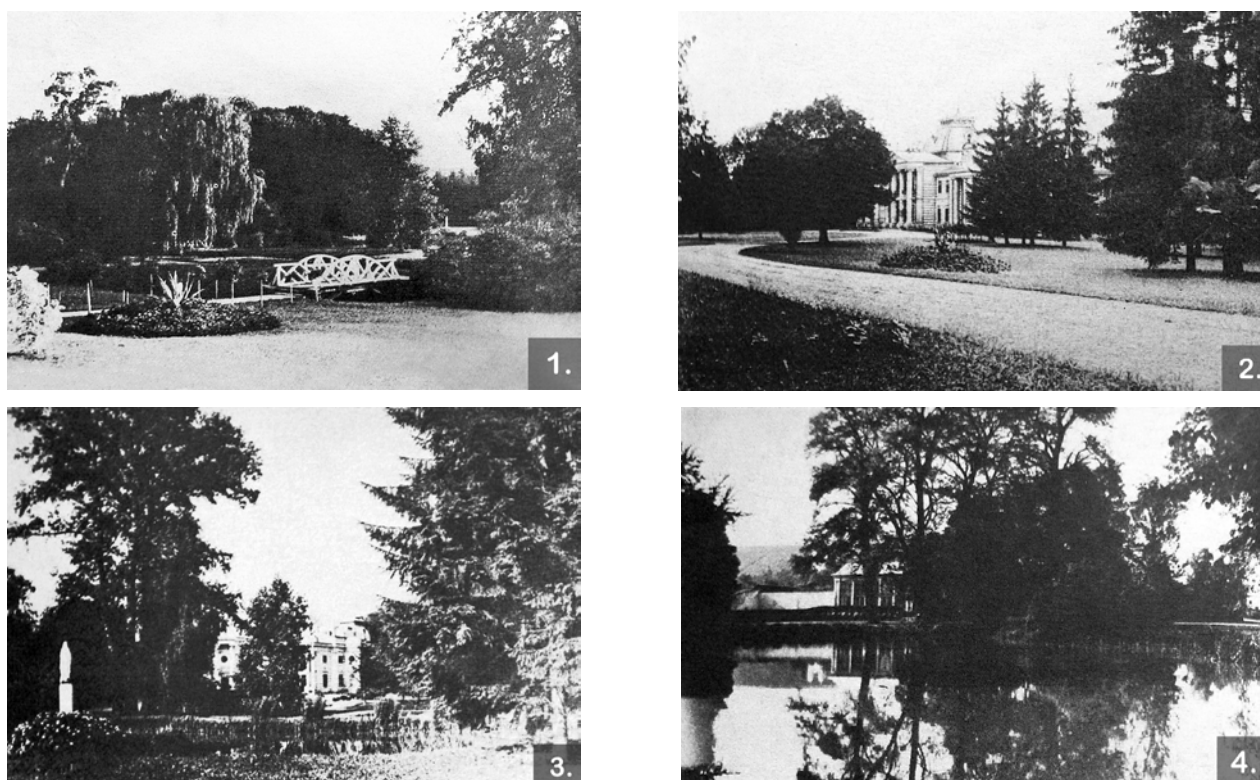


Fig. 4. 1 – A fragment of the park with a white wooden bridge over the river, 1914; 2 – The walkway to the main facade, 1914; 3 – A fragment of the park, 1938; 4 – A fragment of the park with an orangery, 1938; [7. p. 53–54]

After the death of Stanislav Badeni in 1912 the estate became property of the younger son of the Count, Stephan Badeni, who was the last owner of the estate. During WWI the Koropets palace and the park complex were substantially damaged. However, after the war Badeni almost completely restored the family residence to its original look.

Being the property of the Badeni family till September 1939, the palace and the park complex were carefully maintained. The team of 30 gardeners took care of the park. In 1939 the Soviets came to Koropets and the owners of the estate emigrated to Budapest.

In 1944–1955 Koropets became a district center, and the palace was used as the headquarters for the communist party local administration. In 1959 a regional military boarding school was opened in the former Badeni mansion. Eventually, new functional uses caused irreparable damage to the authentic look of the palace and the park complex.

The military boarding school was steadily enlarged and new academic, administrative buildings and sport playgrounds were built in the place of the park and in front of the palace. Currently, the park is a neglected state requiring professional supervision.

Given the importance of the palace and the park complex for the town of Koropets, the Ternopil Regional Council granted the Koropets park the status of garden and park landmark of local importance (decree No. 870,

dated 20.12.1968). In 1972 by decree No. 228 the status of landmark was modified. In 2001 the park was named the object of natural reserves fond of Ukraine (decree No. 238, dated 27.04.2001).

Nowadays, the palace and the park around it are in a very poor condition. Despite the great concern among the local community and tourists, no investments have been made in its reconstruction.



Fig. 5. A military boarding school, placed on the territory of the palace and the Badeni park complex in Koropets, 2014 [8]

Conclusions

Being conscious of the importance to preserve the historical and cultural heritage, the community should look for new possible ways and means to restore the outstanding architectural landmark and art-work of Arnold Röhrling, a famous Austrian gardener in Galicia. The change in functionality of the palace and the park complex to a tourist and recreational one would promote the transfer of Koropets into a successful tourist resort of Ternopil region.

References

- [1] Official site of Koropets. Access:<http://koropets.in.ua/>.
- [2] Aftanazy R. Materiały do dziejów rezydencji / edited by A. Baranowski // T.VIIa Dawne Województwo Ruskie. Ziemia Halicka i Lwowska. – Polska Akademia Nauk Instytut Sztuki. – Warszawa 1991.
- [3] Ternopil Directory. Access: http://west-express.info/ternopil_20.html.
- [4] Österreichisches Staatsarchiv. Second Military Survey (1806–1869). Access: <http://mapire.eu/en/>.
- [5] Palac w Badeni. Access: <http://wikimapia.org>.
- [6] Aftanazy R. “Dzieje rezydencji na dawnych kresach Rzeczypospolitej” (“History of residencies at the outskirts of Reich Pospolita”). – Volume 7b: Województwo Ruskie. Ziemia Halicka i Lwowska (Rus province, Galician and Lviv land). – Instytut Sztuki PAN. – Warszawa, 1993.
- [7] Baranowski A. Dawne Województwo Ruskie. Ziemia Halicka i Lwowska. Tom VIIIb. – Polska Akademia Nauk Instytut Sztuki. – Warszawa, 1991.
- [8] Castles and Churches of Ukraine. Palac Badeni v Koropetsi: wresen-2014, chergovyi obval. Access: <http://www.castles.com.ua/badeni.html>

Тамара Мазур, Євгенія Король

КОРОПЕЦЬКИЙ ПАЛЦОВО-ПАРКОВИЙ КОМПЛЕКС МОНАСТІРСЬКОГО РАЙОНУ ТЕРНОПІЛЬСЬКОЇ ОБЛАСТІ

Анотація. Проаналізовано сучасний стан та проблеми Коропецького палацово-паркового комплексу. Визначено його роль як видатної архітектурної пам'ятки та пам'ятки садово-паркового мистецтва авторства Арнольда Рерінга, що є невід'ємною складовою природного парку Дністровського каньйону та перспективного туристичного об'єкта Тернопільської області.

Ключові слова: Коропецький палацово-парковий комплекс графів Бадені, ландшафтний парк авторства Арнольда Рерінга

Andriy Pavliv

ECOLOGICAL CHALLENGES IN URBAN DEVELOPMENT OF LVIV NOWADAYS

*Lviv Polytechnic National University, 12, S. Bandery str., Lviv, 79013, Ukraine,
apavelli1116@gmail.com, AndriyPavliv*

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Abstract. In this article we look at the problems of hazardous waste in Lviv, as well as the global experience in solving such problems. We review the main steps and measures Lviv authorities have been taking to tackle the issue of household waste, recycling of electrical and electronic equipment. We analyse the results of these steps and measures.

Key words: household waste of electrical and electronic equipment, hazardous waste management, creation of municipal waste management system, integrated municipal programme, Lviv.

1. Introduction

Green areas make an integral and essential part of a comfortable city. They not only ensure the existence of city ecosystems, but also please the eye. Forming and maintaining the aesthetics of green spaces of parks, central boulevards, avenues and squares of Lviv, the so-called landscape architecture, was mainly done in the last century (1888–1913 years) by Carol Arnold Rering – the inspector of municipal plantations. Today, most of the exterior of green spaces is not that pompous as that of the late nineteenth century, but the loss of its aesthetic appearance is not the biggest problem in our time. There is a threat of their total destruction due to high levels of pollution with hazardous waste, including household waste of electrical and electronic equipment.

In European countries, environmental protection is an issue of great public and governmental attention, while in Ukraine it is quite far from being among the top problems to be tackled. Some measures in this sphere have been taken in Lviv.

For Lviv, the problem of solid waste is one of the most pressing issues. There is no waste recycling plant in the city, the Hrybovychi landfill site is overloaded, there are littered spots in some remote areas of the outskirts, no implemented garbage separation and just an initial sorting of all types of waste.

2. Basic Theory Part

In this article we will look at the problem of environmental pollution with household waste of electrical and electronic equipment in Lviv and measures to address it.

By household waste of electrical and electronic equipment (hereinafter – WEEE) we mean: energy saving and fluorescent lamps, batteries, computers, refrigerators and other small and large devices that are outdated and not used for their purposes or are out of order; electronic devices used for data processing and telecommunications in private households [1, p. 8].

These waste products which contain heavy metals (lead, cadmium, mercury and others), contaminate the soil, surface and groundwater. Hazardous substances which are emitted into the atmosphere when these waste products burn, contaminate the air. Energy saving, fluorescent lamps fall into the category of extremely hazardous waste and are graded as 1 class of toxicity.

Problems of household waste of electrical and electronic equipment in Lviv. Lviv is an important business, cultural and tourist center of western Ukraine, home for a significant number of research institutes, educational institutions, hotels, restaurant management facilities, industrial plants. *Major producers of WEEE in Lviv* are:

- *household users of electrical and electronic equipment:*

a) local residents. In one year 150 000 families in Lviv (758.351 pers.) dispose of 75 tons of waste batteries of low power. Consequently, the landfill, according to rough estimates, gets in 5 to 15 kg of mercury annually;

b) tourists. In 2015 due to numerous scientific conferences, festivals, art events and just with touristic purposes, Lviv was attended by about 2 million people. Numerous international roads, rail and air routes go across the city. Streams of tourists, whose number is increasing every year, produce significant amounts of waste, including WEEE;

- *public and educational institutions, industrial enterprises.*

Similarly to global trends, volumes of WEEE in Lviv are growing every year.

To establish an efficient system of proper WEEE management in Ukraine, on the whole, and in Lviv, in particular, we need to overcome and find solutions to *the following problems*:

– ***Imperfect legislation and regulatory framework.*** Today in Ukraine there are such laws, regulations and other documents in the field of solid waste:

- *Laws of Ukraine* “On Waste” (No. 187/98-VR of 05.03.1998), “On Chemical Power Sources” (No. 3503-IV of 23.02.2006); “On environmental protection” (No. 1264-XII of 25.06.1991) “On ensuring sanitary and epidemiological welfare” (No. 4004-XII of 24.02.1994), “On the Fundamentals (strategy) of the State Environmental Policy of Ukraine until 2020”, “On local government in Ukraine” (No. 280 / 97-VR of 21.05.1997), “On licensing certain types of activities” (No. 1775-III of 01.06.2000);

- “*National Action Plan on Environmental Protection for 2011–2015*” approved by the Cabinet of Ministers of Ukraine No. 577-r of 25.05.2011;

- “*Regulations on the Control of Transboundary Movements of Hazardous Waste and its disposal / utilization and the Yellow and Green lists of waste*” approved by the Cabinet of Ministers of Ukraine No. 1120 of 13.07.2000;

- *program and the concept of the program*: “The program of solid waste management” approved by the Cabinet of Ministers of Ukraine No. 265 of 4.03.2004; “The regional program of solid waste management for the period of 2007–2015”, approved by the Lviv Regional Council No. 310 of 12.06.07; “The concept of a national waste management program for the years 2013–2020”, approved by the Cabinet of Ministers of Ukraine, No. 22-r of 03.01.2013;

- *guidelines and procedures*: “Guidelines for the preparation of local programs of solid waste management”, approved by the Ministry of Construction, Architecture and Housing and Communal Services of Ukraine (hereinafter – MCAHCSU) No. 2 of 10.01.2006; “Guidelines for the formation of national awareness on ecologically- friendly household waste management”, approved by the Ministry of Housing and Communal Services of Ukraine of 16.02.2010 No. 38; and “separate collection of waste”, approved by MCAHCSU No. 133 of 01.08.2011; “Guidelines for collecting waste of electrical and electronic equipment, which is the part of household waste”, approved by MCAHCSU No. 15 of 22/01/2013;

- “*License conditions for economic activity with operations in hazardous waste management*”, approved by the Ministry of Ecology and Natural Resources of Ukraine No. 433 of 04.11.2011.

Some of these documents contain some inconsistencies. Thus, the use of the provisions of the Cabinet of Ministers of Ukraine № 1120 of 13.07.2000, within the legal framework of the Law of Ukraine “On Waste” or relevant regulations is quite incorrect [2].

There are also some inconsistencies in management of waste batteries and other chemical electric sources of small capacity, including those which are generated in households. According to the Law “On Chemical Power Sources” waste batteries, accumulators and so on, which are generated in households, do not have the legal status of waste, including household waste. ... The vast majority of batteries and accumulators used in households are much lower capacity than it is specified in Article 17 of the Law “On Chemical Power Sources” and, accordingly, does not fall under the mandatory deposit requirement for disposal [3].

The “Guidelines for the formation of national awareness on ecologically-friendly waste management” do not contain any provisions on dealing with waste of electrical and electronic equipment, only batteries are mentioned in terms of their separation before combustion [2].

– **The lack of reliable statistics on the number of produced, imported or sold EEE**, which does not allow the control of volume of hazardous waste and minimum amount of its utilization or processing;

– **Lack of ecological education**, thus very low public interest in ways to reduce the impact of waste on the environment;

– **Lack of awareness about the harm of WEEE and its proper management.** The survey, conducted among Lviv residents and the analysis of collected data showed that only 27 % of respondents are aware of the dangers of spent energy saving lamps and batteries, 50.3 % are partially aware, 22.7 % are not aware at all (Fig. 1).

Only 13.5 % of surveyed households keep these waste products at home or take them to the collection points, 86.5 % throw batteries and lamps in the trash (the largest proportion of respondents aged 18–25).

The respondents aged between 46–60 are prepared to the responsible management of spent energy saving lamps and batteries, of which 94.9 % are set to carry the waste to organized collection points [1, p. 10];

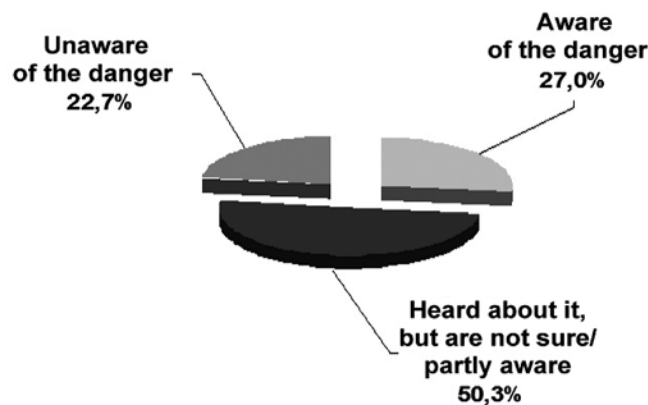


Fig. 1. Awareness of the dangers of waste energy saving lamps and batteries

– **reluctance of electrical and electronic equipment producers to report the presence of harmful substances in their products and the lack of required markings;**

– **lack of companies that recycle or dispose of hazardous waste.** In Lviv, SE “Argentum” works in this sphere, in the Lviv region, recycling of mercury-containing devices is done by the Scientific and Production Private Enterprise “Ecocenter”. Note that all companies do not have enough of necessary raw materials;

– **lack of experience in implementing similar projects in Ukraine.**

Global experience in electrical and electronic equipment waste management.

One of regulations for WEEE in the European Union is the EU Directive 2002/96 / EC of 27 January 2003 (updated 2008) on used electrical and electronic equipment (WEEE – Waste Electrical and Electronic Equipment), according to which:

- equipment must be suitable for disassembly and recycling;
- electronic devices manufacturers are obliged to accept spent or not suitable for use EEE free of charge, carry responsibility for its disposal, including financial;
- specialized processing (recycling) of WEEE must be insured. The priority is to re-use parts;
- citizens should be aware of:
 - possible impact of WEEE on the environment and human health due to the presence of these hazardous substances;
 - contribution of population in reduction of the impact on the environment;
 - necessity of separate collection of waste, points of WEEE collection;
 - importance of marking;
- the state should create a register of producers and collect information, including annual estimates of the number and categories of electrical and electronic equipment available on the market and collected, already

reused, recycled and recovered within the EU Member States and information on weight and the amount of collected waste which was exported;

- set technical requirements for WEEE storage (including temporary), places and equipment for its processing [4, p. 63].

Global practice shows using the following techniques in WEEE management :

- disposal of solid household waste in landfills;
- high-temperature incineration at waste incineration plants;
- export to the countries of the “third world”, mainly as humanitarian assistance;
- processing at specialized plants for recycling electrical and electronic equipment [1, p. 15].

Directive 2012/19 / EU of the European Parliament and Council of 4 July 2012 on waste of electrical and electronic equipment, which came into force on 13 August 2012 provides that Member States shall ensure that in 2016 45 % of electronic equipment sold in each country is processed, and by 2019 this figure should rise to 65 % (or 85 % of electronic waste collected separately) [4, p. 66].

The responsibility for the collection and disposal of WEEE in most EU countries lies with the municipalities and suppliers. Only in Belgium the collection of electronic waste is organized and monitored by the government.

The project “Creation of municipal waste management system of household electrical and electronic equipment in Lviv based on the experience of Lublin”. “Integrated Municipal Programme of household waste management of electrical and electronic equipment in Lviv in 2013–2017”.

The need to address problems of pollution in Lviv, including issues of hazardous waste, prompted the Department of City Development of Lviv City Council (applicant and lead partner of the project) together with the Lublin municipality (Poland) and the NGO “Environmental Initiatives” within the framework of cross-border cooperation Poland-Belarus-Ukraine 2007–2013, which is co-funded by the European Neighbourhood and Partnership Instrument (ENPI), (priority 2.1 – “protection of the environment in the border areas”) to implement the project “On creation of a municipal system of household waste management of electrical and electronic equipment in Lviv using the experience of Lublin” ; the timeframe was set for the period of February 2013– November 2015.

The project, submitted in September 2011 to the second set of competition of Transboundary Cooperation Programme Poland-Belarus-Ukraine 2007–2013, was selected from 130 projects and received additional financing from the funds of the European Union.

The project included:

- development and approval of “Integrated Municipal Programme of WEEE management in Lviv”;
- implementation of this programme.

“Integrated Municipal Programme of WEEE management in Lviv in 2013–2017”, was approved by the City Council, order No. 3066 of 20/03/2014, a first initiative of such a kind in Ukraine. The city obtained a quality and long-term tool to implement system activities in the sphere of WEEE.

This municipal program aimed to address the following issues:

- *urban development.* The narrow streets of the central part of Lviv and lack of space for container collection sites for WEEE collection, prompted to provide the installation of mobile collection points of waste. For this purpose we purchased and equipped two minibuses;

- *environmental,* including reducing the direct negative impact of WEEE on the environment as well as technological burden due to mining of raw materials for EEU; rational use of resources;

- *economic.* Products of WEEE processing make a valuable source of secondary raw materials. Purchased and installed special containers for separate collection and mobile collection points, will improve the performance of the companies that specialize in disposal and recycling of such waste products;

- *social.* Industry of processing of waste electronic equipment creates jobs. For example, according to the estimates of Electronics TakeBack Coalition, processing of 10,000 tons of WEEE annually creates about 300 jobs [4, p. 82]. Educational activities in this area involve people to participate in various programs, educate responsible attitude in dealing with waste.

The results of the “Integrated Municipal Programme of WEEE management in Lviv in 2013–2017” in terms of the project “Formation of a system of municipal waste management of household electrical and electronic equipment in Lviv using the experience of Lublin”:

- we estimated the capacity, purchased and installed a line for disposal of used fluorescent lamps and other mercury-containing items of equipment;
- we designated the points for separate collection of waste batteries, purchased and placed there 80 special containers (Fig. 2, 3);
- we organized two specially equipped mobile units (minibuses) (Fig. 4) for the collection of waste batteries and fluorescent lamps, determined their routes and parking places;
- we conducted the information and education campaign on coverage of WEEE management aimed at raising awareness in this sphere;
- we hosted an international conference on dissemination of best international practices in the sphere of WEEE.

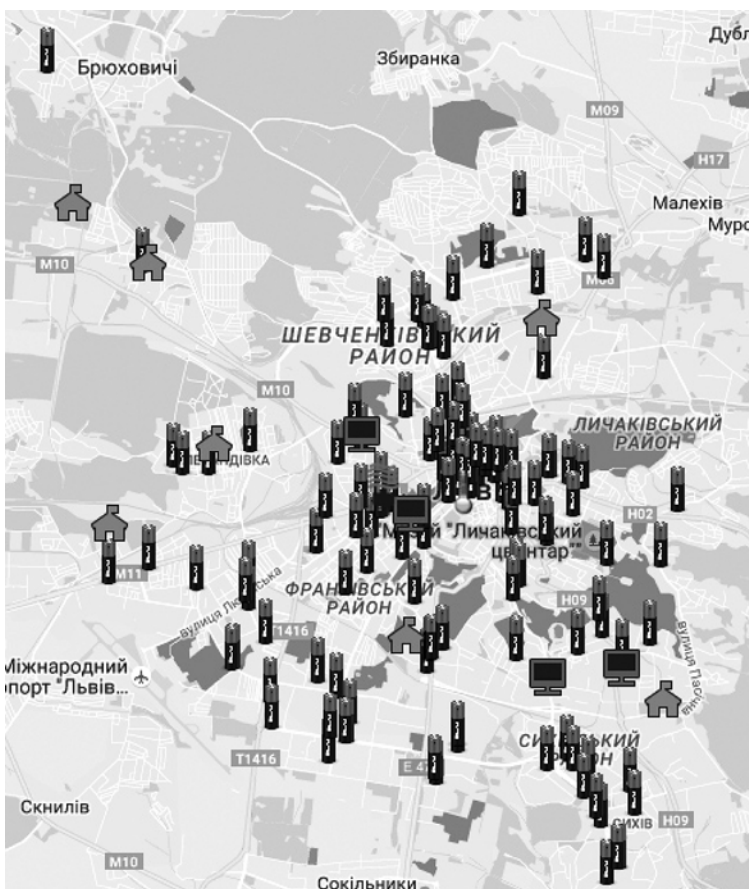


Fig. 2. Interactive map of Lviv marked with the points of separate collection of waste batteries, thermometers, mercury-containing light bulbs, electronic waste; made by the publishing house “Velyka Epoha”, November 2015 [5]



Fig. 3. Special containers for collection of waste batteries



Fig. 4. Specially equipped mobile collection point for waste batteries and luminescent light bulbs

Today the issue of WEEE management is particularly relevant not only for Lviv, but also for Ukraine on the whole, which seeks to implement EU standards in this sphere. Thus, the project Twinning “Implementation of management systems of waste of electrical and electronic equipment (WEEE) in Ukraine” started in 2016, its estimated duration is 21 months.

The aim of this project is to minimize the negative impact of household hazardous waste to preserve the quality of soil, water and air based on the principles stipulated by the EU Directive on waste.

Twinning project is implemented jointly by the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine with the Austrian Agency for the Environment (Umweltbundesamt

GmbH), French International bureau on Water (Office International de l'Eau), Spanish International and Ibero-American Foundation of Public Management and Public Policy (Fundación Internacional y para Iberoamérica de Administración y Políticas Públicas (FIIAPP) [6].

3. Result and Discussion

The problem of WEEE management in Lviv and in all Ukraine is extremely urgent. The project “Creation of a municipal system of WEEE management in Lviv using the experience of Lublin”, which was implemented during February 2013–November 2015 and developed “Integrated Municipal Programme of Waste Management of household electrical and electronic equipment in Lviv in 2013–2017” – is one of the steps to address this problem locally. Their implementation helped establish in Lviv the mechanism for collection and recycling of waste batteries and fluorescent lamps, raise national awareness in dealing with WEEE, encourage the population to take part in the fight for healthier and cleaner environment, part of which is precious green spaces.

4. Conclusions

The next step in dealing with ecology issues in Lviv is implementation of a registry system, collection and utilization of other kinds of hazardous waste.

Lviv’s experience in WEEE management may be used by other cities of Ukraine.

References

- [1] Departament mistobuduvannya Lvivskoi miskoi rady, Lvivskiy natsionalnyi universytet imeni Ivana Franka. Kompleksna munitsypalna prohrama povodzhennia z vidkhodamy pobutovoho elektronnoho ta elektrychnoho ustatkuvannia u misti Lvovi na 2013–2017 rr. Lviv 2013.
- [2] Ukrainske zakonodavstvo u sferi povodzhennia iz vidkhodamy elektrychnoho ta elektronnoho ustatkuvannia. Chastyna 1. Zahalni polozhennia shchodo povodzhennia iz vidkhodamy (2015, September 5)[Online]. Available: <http://e-waste.lviv.ua/statti/8-zakonodavstvo-vidhody-1>.
- [3] Ukrainske zakonodavstvo u sferi povodzhennia iz vidkhodamy elektrychnoho ta elektronnoho ustatkuvannia. Chastyna 2. Zakonodavstvo u sferi khimichnykh dzherel strumu (2014, February 18) [Online]. Available: <http://e-waste.lviv.ua/statti/15-zakonodavstvo-vidhody-2>.
- [4] International Renaissance foundation, Vseukrainska ekolohichna hromadska orhanizatsiia “MAMA-86”. Suchasnyi stan polityky povodzhennia z elektronnyimi vidkhodamy v Ukraini ta Yevropeiskomu Soiuzi: kroky do zblyzhennia. VEHO “MAMA-86”, Kyiv 2013.
- [5] Kudy zdaty vidkhody u Lvovi [Online]. Available: <http://www.epochtimes.com.ua/maps/ recycle/lviv.php>.
- [6] Minrehion prodovzhuie spivpratsiu z YeS v sferi upravlinnia vidkhodamy elektrychnoho ta elektronnoho obladdannia (2016, June 15)[Online]. Available: <http://www.vidhody.org.ua/news/view/16-06-2016-minregion-prodovju-spivpratsyu-z-s-v-sferi-upravlinnya-vidhodami-elektrichnogo-ta-elektronnoho-obladdannya>.

Андрій Павлів

СУЧАСНІ ЕКОЛОГІЧНІ ВИКЛИКИ В УРБАНІСТИЧНОМУ РОЗВИТКУ м. ЛЬВОВА

Анотація. У статті розглянуто проблеми у сфері поводження з небезпечними відходами у м. Львові, а також існуючий світовий досвід у вирішенні таких проблем. Висвітлено реалізовані заходи для вирішення проблем у сфері поводження з відходами побутового електронного та електричного устаткування у м. Львові. Проаналізовано результати впровадження цих заходів.

Ключові слова: відходи побутового електронного та електричного устаткування, поводження з небезпечними відходами, створення муніципальної системи поводження із відходами, комплексна муніципальна програма, Львів.

Halyna Petryshyn, Halyna Lukashchuk, Stepan Tupis

THE PARTERRE ON THE SVOBODY AVENUE – A “VISITING CARD” OF MODERN LVIV

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine,
kafedrmbd@gmail.com*

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Abstract. At the turn of the 19th – 20th centuries Lviv underwent an active urban development, becoming a significant European cultural center. This period was marked by the construction of a number of interesting large-scale, highly artistic architectural and urban ensembles which until now play an important role in the architectural self-identification of the city and its inhabitants. A special place in Lviv is occupied by Prospect Svobody (Svobody Avenue or Liberty Avenue), which, unfortunately, does not have the status of a protected site.

Key words: Lviv, architecture and urban planning of early 20th century, Boulevard, landscape architecture, greenery, flower stalls.

1. Introduction

Since 1998 the downtown Lviv belongs to the world heritage protected by UNESCO [1]. The latter's urban studies and the architecture of the city document many evolutionary layers, however, not all are properly evaluated.

In the period between the end of the 18th and the early 20th centuries, when Lviv got the status of the administrative capital under the Austrian crown land, urban construction changes took place, based on contemporary urban principles embodied through detailed orders and regulations. In the years 1772–1914 there a permanent reconstruction of the medieval downtown was going on, which resulted in the complete elimination of the city walls, the expansion of functions of the city center in the former suburbs, the creation of public space and greenery, reconstruction, rehabilitation and sanitation of the urban planning structure within the historical downtown.

The first undertaken measures concerning reorganization and the “embellishment of the city (stadtverschönerung)” effected the territory of the old, obsolete and abandoned, defensive walls with the view to use that area for the city development. The demolition of the medieval fortifications began in 1777 and lasted until 1825. [2; 3] City plans of that time include proposals for the improvement of the downtown and its further development. [4] Concurrently, plans for reorganization and consolidation of the downtown area, as well as the creation of a green ring around it, at the example of other European cities, were worked out. Also, during the city's reorganization, the first steps were made towards development of active gardening in the city. They were followed by intensification and expansion of construction activities (namely, construction of blocks along Valova and Lesia Ukrainka Streets, the Skarbek Theatre). The green fortification ring was

reduced, being turned into a number of green areas and parks, mostly the Hetman Vally (Svoboda Avenue) and the Governor Vally (Vynnychenko Str.).

2. Basic Theory

Svoboda Avenue as an urban boulevard was developed through several stages, which, altogether, took about 80 years. Initially, at the beginning of the 19th century the city banks with walls were removed freeing, thus, 1.1 ha of space. The city banks with walls, the name of which was preserved in the newly created Untere Wallgasse Boulevard, had the character of two parallel ground embankments between which flowed the Poltva river, acting as a defensive moat. The exit near the Jesuits' cathedral led out of the city through the gate and the bridge. After the demolition of the city walls the river became accessible on both sides. A two-row boulevard with a pedestrian alley in the middle was constructed on the right bank of the Poltva from the city center. The arrangement of the left bank was slower because of the wet meadows stretching down to the foot of the Svyatoyurskyj Hill. [5] The boulevard over the Poltva surrounded, like a crescent, the western part of the downtown (Fig. 1). Although, Lombardy poplars dominated the landscape of of the late 18th – the first half of the 19th century Lviv, which can be seen from the numerous engravings [6], other species, such as lime-trees and ash-trees were planted, as well (Fig. 3).

At the next stage of the city development in the late 1830s, during construction of the Skarbek theater, the Poltva channel was put into an underground reservoir, forming a square in front of the theater (1839–1843), the so-called Theater Square. Similarly, the river was blocked on the south-western corner of the downtown, where Ferdinand Square was formed (Fig. 4). More bridges across the Poltva river were added, and the boulevards became wider with four lines on the right side, creating a luxurious Obere Karl Ludwig Straße and one line on the left side. The transport artery became a street on the left bank, called Untere Karl Ludwig Straße.



Fig. 1. Plan of the city of Lviv, 1828 [7]

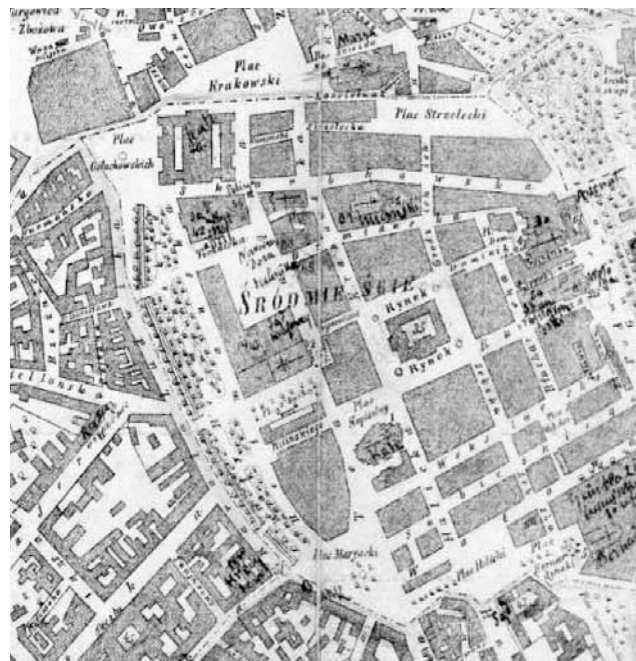


Fig. 2. Plan of the city of Lviv, 1872 [8]



Fig. 3. Landscape of Krakow Suburb in Lviv, taken from Penthera House (lit. C. Auer). 1830 [9]



Fig. 4. The end of Square Ferdinand tunnelling and Poltva river channel. 1840 [10]

At the next stage of the city development in the late 1830s, during construction of the Skarbek theater, the Poltva channel was put into an underground reservoir, forming a square in front of the theater (1839–1843), the so-called Theater Square. Similarly, the river was blocked on the south-western corner of the downtown, where Ferdinand Square was formed (Fig. 4). More bridges across the Poltva river were added, and the boulevards became wider with four lines on the right side, creating a luxurious Obere Karl Ludwig Straße and one line on the left side. The transport artery became a street on the left bank, called Untere Karl Ludwig Straße.



*Lwów. Ulica Karola Ludwika.
Lemberg. Karl Ludwigs-Straße.*

Fig. 5. Lviv, Karl Ludwigs st., 1906 [12]

In the 80's of the 19th century an architectural arrangement of the Poltva river was carried out. In 1887–1888 the engineer Waclaw Ibiński covered the Poltva with concrete arches near the boulevard. The project of redevelopment of the area with the new planting of trees and flowers was developed by Arnold Röhring. A new imposing green interior of Lviv was formed, which became its visiting card. Maples, ashes and chestnut trees were planted [11]. This laying of the greenery, one of the most famous

of A. Röhring, was planned out as a boulevard with a central pedestrian alley and several flower stalls, designed in the historical tradition of landscape art. The completion of the City Theatre (today, the Opera House) in 1900 was an important focus in the spatial composition of the Avenue with the perspective view on the new theater being one of the most attractive ones in Lviv urban landscape.



Fig. 6. Lviv, Hetman Waly (city banks) [13], a great parterre in front of the City Theater



Fig. 7. Construction of the City Monument to King Jan III Sobeski, 1894-5 [14].
(Nowadays, there is a Monument to Taras Shevchenko)

Svoboda Avenue is, by its nature, a chamber space. Its landscape spatial composition is axial, formed by a longitudinal central pedestrian alley, on which there are beaded alley and parterre spaces and squares. Due to this combination, the dynamics of the space perception is changed and enriched (Fig. 8). The Avenue parterres changed their shape over time. Also, the urban artifacts and symbols of different historical periods varied [15]. All the greenery items had low forged fences (the original fence is preserved around the Figure of Virgin Mary). The Avenue was equipped with lights, benches, kiosks, toilets and formed the main public space of the city. It was planned to enrich the composition of the Avenue with a fountain. Michal Luzecki’s project of 1905, as well as a later light fountain plan of 1930, were not implemented.

- 1 – a small parterre with flowers in front of the theatre remained unchanged until 1953 when the monument to Lenin was erected; the ramps of the city were lost during the reconstruction of the area in the 1880s;
- 2 – a great pit in front of the Theater with lawns and flowers with a central focus existed unchanged until 1953, the year of erection of the monument to Lenin;
- 3 – the avenue with an internal alley formed by chestnut trees, the crown of the latter was trimmed along the central axis to improve the perception of the main theater façade. The avenue was crossed by paths and pedestrian passages, with traffic intensification it lost some of its fragments;
- 4 – an island boulevard, now converted into a roadway;
- 5 – the central parterre near the monument to J. Sobieski, 1898. The monument was dismantled in 1954 and the area was arranged, hence, for the erection of the monument to Taras Shevchenko in 1992–1995;
- 6 – modern Virgin Mary Square. The theme of the Avenue continued till here. The parterre and the removed well (the fountain) with the figure of Virgin Mary was combined with the “florists salon”. Lime trees formed a complete composition;
- 7 – the parterre on Virgin Mary Square is the only one with the well-preserved contour of the original inception;
- 8 – Statue of Virgin Mary, moved from the Ferdinand Square to make space for construction of the monument to Adam Mickiewicz, after WW II and replaced with a decorative fountain, returned and received a new view in 1990s.

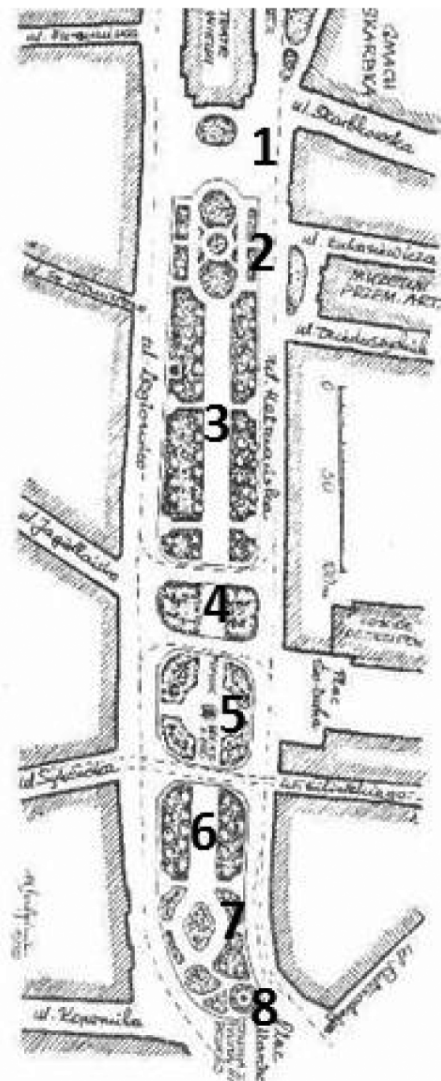


Fig. 8. Scheme of Spaces of Svobody Avenue and its Metamorphosis

Reconstruction of Svobody Avenue in 1980–2000

Reconstruction of the Theatre, which survived two world wars and whose building was in poor condition, started in 1979. The use of triangulation measurements showed that the Theater sagged 55 to 72 cm in the 80 years time [16]. Simultaneously, the square in front of the Theater was reconstructed, as well. It was raised and levelled. A decorative pavement of Horodenka sandstone with a total area of 4000 m² was laid there. In early 1980’s a fountain was built, however, it did not work for years, and in its place a flower bed was set. There was also a flower garden arranged around the monument to Lenin.

The pedestrian walkway of the main street was organically linked to the Theater. The reconstruction project of the square in front of the Theater was developed by the Lviv branch of the Institute "Dipromist"[17]. The profiles blocks of a marble fountain bowl were made using an especially designed machine equipped with nozzles with a diamond coating. The working out of the details by such a machine guaranteed that the installation of individual parts of the joints of the fountain were well matched. The placement of fountain pumps and other devices, being technologically cumbersome time-consuming remained contentious. A pump space was arranged under the lawn, and as a temporary solution it was proposed to use pots for flower plantings. In September 1990 the Lenin monument, standing in the square in front of the Theater, was dismantled.

According to the Head of the TMA-2 Mistoproject Vitalij Dubina, reconstruction of the Theater foundations was undertaken. After the dismantling of the monument to Lenin the idea of closing the passage and creating a square instead was suggested. The difficulty, however, lay in the fact that more than one meter height existed between the left and right side of the avenue. Therefore, the area became slightly raised above the previous level and hid the height of the Theater basement. Thus, the idea of placing the fountain in the square was proposed, which due to a deep water reservoir, would lower the level of perception of the Theater, lending it monumentality. The previous (Röhring's) design of the area was lost in 1950. The Monument to Lenin was surrounded with a modernist rectangular flower-bed planted with flowers of "proletarian color". Those were, as the photos of those times show, cannas.

The authors M. Fedyk and I. Ivanechko, using the historical research, proposed an improvement project, which was based on historical details such as the rounded endings of lawns, a drive-way to the theater, including a fountain bowl. All the finishing parts, by the suggestion of the authors, were to be made of durable granite and marble. Instead, it was decided to use sandstone as a local traditional material. So, the patterned tiling was made of sandstone panels, but, soon, it wore out and needed a replacement. The new tiling was made of marble.

The next repair of buildings and reconstruction of the square in front of the Theater took place in 1999 and was occasioned by the Summit of Heads of Central and Eastern Europe States. Nowadays, the whole area of Svobody Avenue requires a new architectural project of arrangement, green spaces would be of special importance.

3. Results and Discussion

In 2016 during an inventory of green spaces in Svobody Avenue area¹ 14 species of trees and shrubs belonging to 10 families were identified (Table 3). In total, 244 trees and shrubs: 77 specimens in good condition, 147 specimens – satisfactory and 20 specimens in poor condition (Table 3) grow there. Among them there are old-aged specimens of trees such as: oaks and maples (opposite the Grand Hotel), chestnut trees (the alley opposite the Opera House), maple trees (along the avenue) (Table 1).

There is a little number of bushes in the Avenue area. Among coniferous species there grow European spruce and Western arborvitae. Four specimens of European spruce (fir-tree) are in poor condition (two specimens are withered), the other two have a deformed crown on one side. Green fences and bunch plantings of Western arborvitae near the monument are damaged (62 specimens are in a satisfactory condition, five in a poor state). Due to an improper trimming some maple- and oak-trees got hollow and dried-out branches, some other trees became affected with tinder and white mistletoe. Virtually, there are no flowering bushes. Old-aged lilac bushes had totally lost their decorative effect and require replanting of young species.

The new planting of young specimens of trees, that were not previously present in the original composition, is made (namely, four young trees of the red oak were added). Unfortunately,

¹ H. Lukashchuk.

the spare lawns are planted with young specimens of trees without a proper compositional analysis (Table 1).

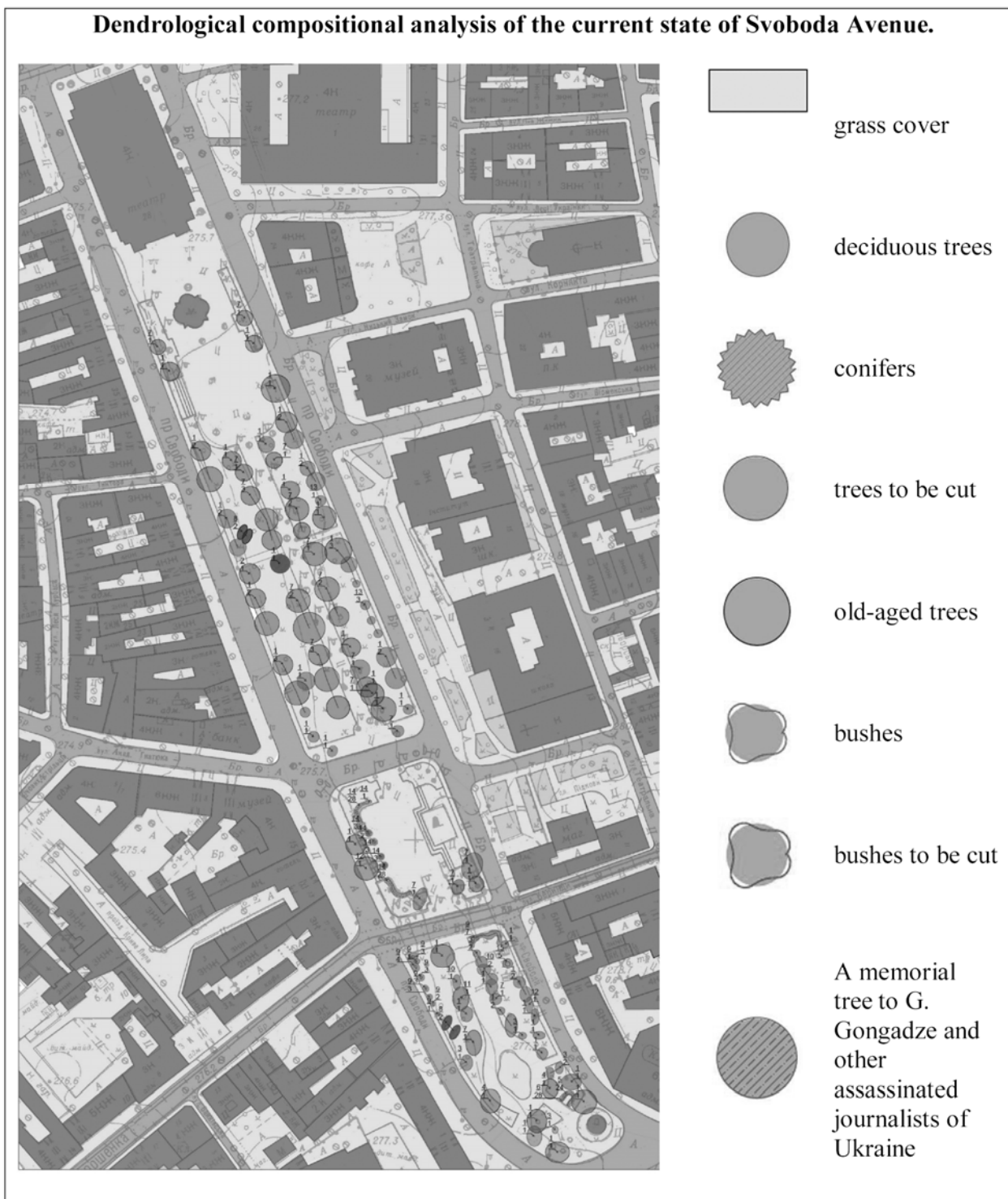


Fig. 9. Dendrological plan of Svoboda Avenue (H. Lukashchuk, 2016)

Table 1

Overall inventory sheet.

No. on the scheme	Species name (Lat.)	№ in the inventory sheet	Species present at the laying
1.	<i>Acer platanoides</i> L.	1, 2, 3, 5, 10, 13, 15, 16, 17, 30, 33, 34, 37, 38, 39, 45, 49, 55, 61, 62, 65, 66, 67, 70, 71, 77, 84, 87, 88, 89, 90, 91, 92, 94, 96, 97, 98, 102, 103, 104, 105, 106, 107, 108, 112, 113, 114, 115, 117, 118, 119	X
2.	<i>Acer pseudoplatanus</i> L.	101	X
3.	<i>Tilia cordata</i> Mill.	4, 11, 12, 14, 19, 43, 44	X
4.	<i>Tiliapl typhyllos</i> Scop.	6, 7	
5.	<i>Berberis thunbergii</i> 'Purpurea'	8	
6.	<i>Spiraea japonica</i> L.	9	
7.	<i>Aesculus hippocastanum</i> L.	18, 36, 47, 48, 50, 60, 63, 64, 68, 69, 72, 73, 74, 75, 76, 78, 79, 80, 81, 82, 83, 85, 86, 93, 95	X
8.	<i>Picea abies</i> (L.) Karst.	20, 21, 99, 100	X
9.	<i>Syringa vulgaris</i> L.	22, 23, 24, 25, 26, 27, 28, 29, 46	X
10.	<i>Fraxinus lanceniata</i> L.	31, 40, 42	
11.	<i>Fraxinus excelsior</i> L.	32	
12.	<i>Quercus robur</i> L.	35, 54	X
13.	<i>Quercus rubra</i> L.	109, 110, 111, 116	
14.	<i>Thuja occidentalis</i> 'Columna'	51, 52, 53, 56, 57, 58, 59	
15.	<i>Buxus sempervirens</i> L.	41	X

Table 2

Evaluation of the quality of trees and bushes on Svoboda Avenue

No. On the scheme	Species name (Lat.)	Quality condition			In total, units
		Good, units	Satisfactory, units	Poor, units	
1.	2	3	4	5	6
1.	<i>Acer platanoides</i> L.	19	25	7	51
2.	<i>Acer pseudoplatanus</i> L.	1	-	-	1
3.	<i>Tilia cordata</i> Mill.	6	1	-	7
4.	<i>Tiliapl typhyllos</i> Scop.	2	-	-	2
5.	<i>Berberis thunbergii</i> 'Purpurea'	-	28	-	28*
6.	<i>Spiraea japonica</i> L.	24	-	-	24*
7.	<i>Aesculus hippocastanum</i> L.	15	10	-	25
8.	<i>Picea abies</i> (L.) Karst.	-	-	4	4
9.	<i>Syringa vulgaris</i> L.	3	13	4	20
10.	<i>Fraxinus lanceniata</i> L.	1	2	-	3
11.	<i>Fraxinus excelsior</i> L.	1	-	-	1
12.	<i>Quercus robur</i> L.	1	1	-	2
13.	<i>Quercus rubra</i> L.	4	-	-	4
14.	<i>Thuja occidentalis</i> 'Columna'	-	62	5	67*
15.	<i>Buxus sempervirens</i> L.	-	5	-	5*
In total		77	147	20	244

*The number of species in hedges can be specified

Table 3

The distribution of trees and shrubs on Svobody Avenue according to families

No. on the scheme	Species name (Lat.)	Natural habitat	Total number, units
<i>Pinophyta</i>			
<i>Pinaceae</i> Lindl.			
8	<i>Picea abies</i> (L.) Karst	Europe	4
<i>Cupressaceae</i> F. W. Neder.			
14	<i>Thuja occidentalis</i> ‘Columna’	-	67*
Total gymnosperms			71
<i>Magnoliophyta</i>			
<i>Berberidaceae</i> TOR. ET GRAY.			
5	<i>Berberis thunbergii</i> DC ‘Purpurea’	-	28*
<i>Buxaceae</i> DUMORT.			
15	<i>Buxus sempervirens</i> L.	Southern Europe, West Asia, Northern Africa	5*
<i>Fagaceae</i> A.BR.			
12	<i>Quercus robur</i> L.	Europe, Caucasus	2
13	<i>Quercus rubra</i> L.	Northern America	4
<i>Tiliaceae</i> JUSS.			
3	<i>Tilia cordata</i> Mill.	Europe, West Сибір	7
4	<i>Tilia platyphyllos</i> Scop	Southern and Middle Europe, Caucasus	2
<i>Rosaceae</i> JUSS.			
6	<i>Spiraea japonica</i> L.	Japan	24*
<i>Aceraceae</i> LINDL.			
1	<i>Acer platanoides</i> L.	Europe	51
2	<i>Acer pseudoplatanus</i> L.	Middle Europe, Caucasus	1
<i>Hippocastanaceae</i> ET GRAY			
7	<i>Aesculus hippocastanum</i> L.	Southern Balkans	25
<i>Oleaceae</i> LINDL.			
11	<i>Fraxinus excelsior</i> L.	Europe, West Asia, Caucasus	1
10	<i>Fraxinus lanceolata</i> Borkh. (<i>F. viridis</i> Mishx)	Northern America	3
9	<i>Syringa vulgaris</i> L.	Balkans	20
Total of angiosperms			173
In total			244

* The number of species in hedges can be specified

Recovery of the parterre in the Virgin Mary Square.

Lviv is open to the world nowadays. We should watch over the condition of garden and park monuments of our city, especially downtown public spaces, which are experiencing more and more degradation.

For the opening of the Symposium dedicated to A. Röhring and his author’s style the Department of City Planning proposed to the Lviv City Council a project of parterre reconstruction in Virgin Maria Square on Svoboda Avenue (the so-called “flowerbed”). The given project was based on historical and urban studies carried out by H. Petryshyn, H. Lukashchuk, S. Tupis. This is the only parterre in Lviv, which preserved its overall shape and the authentic fence since the time of its creation. Therefore, it requires a special treatment. Especially so, after the rash plantings and installations made for football matches of Euro 2012.

The total area of the parterre is 277 square meters. The main coverage of the lawn (182 square meters), is strewn with white marble chippings with a geometric pattern (area – 50 square meters). To form ornament outlines and to support a decorative effect in autumn and winter seasons, it was proposed to use perennial

green plants, i.e. *Alternanthera amoeme* (with green leaves). The filling of the ornament is made of annual plantings selected in active mauve tones, like *Begonia semperflorens*-Hybrids (pink flowers, green leaves) and *Begonia semperflorens* 'Ascot F1 Rose' (red flowers, green leaves), some inclusions of *Heucherax hybrida* 'Rasberri Rippl' or 'Midnight Rose' (dark red leaves with pink spots) and *Cineraria maritima* (silver leaves). In the center of the parterre there the dominant on the lawn hill is formed with *Yucca filamentosa* (evergreen leaves, white flowers).



a 1898-99 (picture of bookseller)



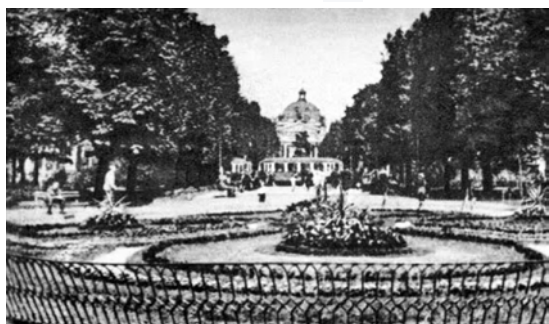
b 1925 [18]



c 1939 [19]



d 1940 [20]



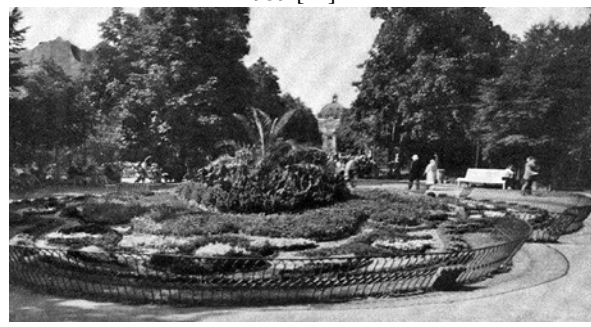
e 1942 [21]



f 1959 [22]



g 1960-1970



h 1960-1970

Fig. 10. Historical changes of the “flowerbed” in the area of Virgin Mary Square (a–h)



i 2009 [23]



j 2012 [24]



k 2005 (photo of H.Petryshyn)



l 2016

Fig. 10. Historical changes of the “flowerbed” in the area of Virgin Mary Square (i–l)

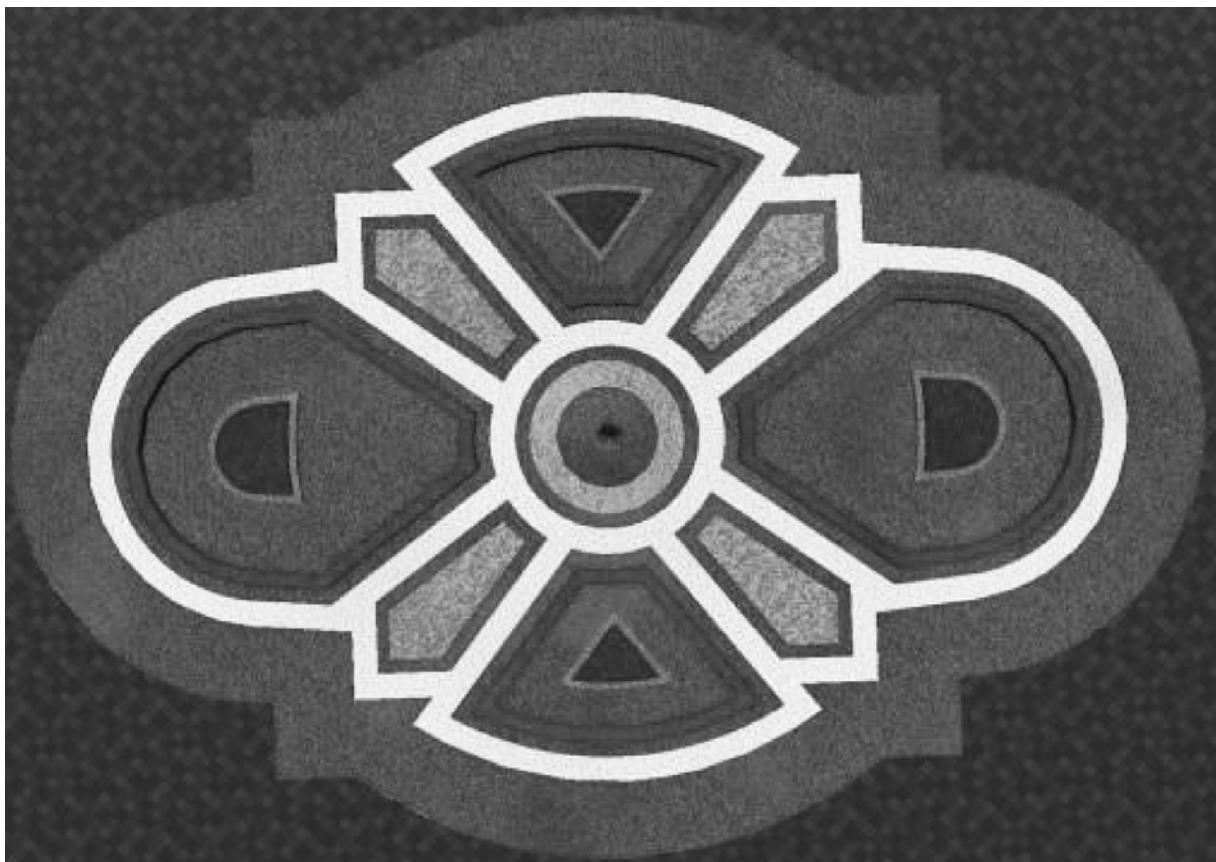


Fig. 11. The Project of the parterre on Virgin Mary Square
(by H. Petryshyn, H. Lukashchuk, S. Tupis)

We hope that after this pilot project has been implemented the city of Lviv will succeed to reconstruct the entire boulevard, restore its beauty and vitality, and return the appearance of the main representative area of the city.

4. Conclusions

Svoboda Avenue emerged as a major public and representative space of the city of Lviv during 1820–1900. The final arrangement of this area was completed by the City Gardener Arnold Röhring, the author of more than 100 landscape layings in Lviv and in Galicia (Halychyna).

The examination of Svoboda Avenue revealed its gradual urban, often useless transformations (a loss of the parterre, aging trees, a loss of shrubs, the decreasing number of decorative floral plantings) and increasing of gastronomic and entertaining functions which leads to the degradation of plantings and the loss of original foundation elements.

The dendrological analysis revealed that plantings are thoughtlessly complemented with nontypical species for the Avenue. Moreover, improper compositional tools are used.

In the design of Svoboda Avenue there is a lack of plants with decorative leaves and of flowering shrubs that would provide for attractiveness of the Avenue the whole year round. The authors of the article made the first step towards preservation of the heritage of Arnold Röhring by focusing attention of the restoring of the flower parterre in Virgin Maria Square.

References

- [1] Lviv – the Ensemble of the Historic Centre <http://whc.unesco.org/en/list/865>
- [2] Ivanochko U. Urbanistychni transformaciyi Lvova pidavstrijskoho periodu (1772–1918) P. 178–188. Lviv, NULP 2004 <http://ena.lp.edu.ua:8080/bitstream/ntb/9610/1/24.pdf>
- [3] Prokopovych M. Habsburg Lemberg: architecture, public space, and politics in the Galician capital. USA Purdue University, 2009.
- [4] Ivanochko U. Ibidem.
- [5] Jaworski F. Lwów stary i wczorajszy. Lwów 1910.
- [6] Kucheriavyy V. introdukciya derevnyh i chaharnykovykh pored ta problem yih ohorony na prykladi mista Lvova. Ukr. Derzh. Lisoteh. Univ., Naukovyy visnyk, 2004, vyp. 14.8. P. 134–139.
- [7] Plan der Stadt Lemberg mit ihren Vorstädten und äußersten Gränzen, Localization: Lviv, 1828. Scale: c. 1:36 000. Publisher: Unknown. Source: Courtesy of the Austrian National Library, FKB 274-68 <http://www.lvivcenter.org/en/umd/map/plan-stadt-lemburg-mit-vorstadt-und-granzen-c1825/>
- [8] Plan Królewskiego Stołecznego miasta Lwowa z uwzględnieniem nowych nazw ulic i placów, 1872. Scale: 1:7 200. Publisher: Karol Wild's Bookstore. Lviv. Source: Science Library of the Ivan Franko National University of Lviv (NB LNU I. Franko). Lviv 1224 III, <http://www.lvivcenter.org/en/umd/map/plan-kr-stol-miasta-lwowa-1872/>
- [9] Widoki Lwowa na XIX-wiecznych rycinach <http://www.kresy.pl/kresopedia,historia,archiwalia?zobacz/widoki-lwowa-i-okolic-na-xix-wiecznych-rycinach,38385#f,38394>
- [10] Czyszkowski T. foto, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=44379720>
- [11] Szolginia W. Tamten Lwow. Oblicze miasta. Tom 1. Wroclaw: Sudety, 1992. – S. 99–111.
- [12] Lwow, ulica Karola Ludwika, 1917. <http://www.lvivcenter.org>.
- [13] Lwow-Lemberg, Waly Hetmanskie, 1906/ <http://www.lvivcenter.org>.
- [14] http://lviv-lwow.blogspot.com/2012_01_01_archive.html
- [15] Petryshyn H., Sosnova N. Prospekt wolności punktem kulminacyjnym w poszukiwaniu samoidentyfikacji Lwowa. In: Człowiek-Ekologia-Architektura. Poznan, 2016. P. 111–124.
- [16] Grankin P., Sobolevskiy Ye. Lvivskyy opernyy teatr: istoriya budovy i restavraciyi “Buduyemo inakshe”, 2000. – No. 6. – S. 42–45.
- [17] Grankin P., Sobolevskiy Ye. Lvivskyy opernyy teatr: istoriya budovy i restavraciyi “Buduyemo inakshe”, 2001. – No. 1. – S. 37–47
- [18] Moj Lwow. www.Lwow.com.pl, access 2016. – 10–13.
- [19] Polona. <http://polona.pl/>, access 2016-10-13.
- [20] Fotografii starogo Lvova. <http://photo-lviv.in.ua>, access 2016-10-13.
- [21] Delcampe, www.delcampe.net, access 2016. – 10–13.
- [22] Centr miskoi istorii Centralno-Shidnoi Jevropy: Urbanistychni obrazy, www.lvivcenter.org, access 2016. – 10–13.
- [23] VisitLviv, <http://visitlviv.net>, access 2016. – 10–13/
- [24] Lvivska Poshta, <http://www.lvivpost.net>, access 2016. – 10–13/

Галина Петришин, Галина Лукацук, Степан Тупісь

ПАРТЕРНІ САДИ НА ПРОСПЕКТІ СВОБОДИ – “ВІЗИТНА КАРТКА” СУЧАСНОГО ЛЬВОВА

***Анотація.** Львів на зламі XIX–XX століть зазнав активного містобудівного розвитку, перетворюючись у значний європейський культурний осередок. Цей період відзначений зведенням низки цікавих, масштабних високомистецьких архітектурно-містобудівних ансамблів, які до сьогодні відіграють важливу роль у побудові самоідентифікації міста та його мешканців. Особливе місце Львові займає проспект Свободи, який на жаль не посідає пам’ятко-охоронного статусу.*

***Ключові слова:** Львів, архітектура та містобудування початку XX століття, бульвар, садово-паркове мистецтво, зелені насадження.*

Bohdan Posatskyy, Mykhailo Hrytsak

**LANDSCAPE ORGANIZATION OF MONUMENTAL SCULPTURE
IN THE CREATIVE WORK OF ARNOLD RÖHRING
(squares, streets and parks of the city)**

*Lviv Polytechnic National University
12, S. Bandery str., Lviv, 79013, Ukraine, posatsky@i.ua*

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Abstract. The article deals with the landscape arrangement of monumental sculptures in the creative work of Arnold Röhring. The text reviews the role and the importance of landscape arrangement of monumental sculptures in the architectural composition of the city of Lviv. Examples of works of monumental sculpture of the turn of the 19th and 20th centuries are described in the article.

Key words: monumental sculpture, Arnold Röhring, landscape organization, city parks.

1. Introduction

The city center of Lviv is characterized by richness and diversity of natural, urban and architectural forms, which, together, form a unique historical landscape-architectural complex.

At the turn of the 19th and 20th centuries, the city center developed rapidly by building up, mainly, the southern sector of the city. After construction of an underground reservoir for the Poltva river, a new central cell began to be formed. Construction of a considerable number of residential and public buildings led, among others, to erection of the building of the Diet of Galicia and Lodomeria. According to the principles of urban contemporary European development, the planning of planted boulevards and city parks was initiated.

On the boulevards, squares and parks there were located monumental sculptures, mostly the memorials of famous public figures, writers and poets. The tradition of combination of sculptures and objects of the landscape in Europe goes back to Ancient Rome. It was further developed in Italy, especially, during the Renaissance and Baroque in the 16th–17th century. Such formed architectural and landscape compositions are a combination of Nature's art and technology, only historic bird's-eye view engravings can provide a perspective of the overall composition [1].

2. Basic Theory Part

During the 19th and the early 20th century, on the squares, streets and parks of the city there were built a number of memorials, i.e., monumental sculptures and the landscape surrounding them was arranged by Arnold Röhring. They are the figures of Jan Kilinski in the Stryiskyi park, Aleksander Fredro on Academic Square (now Square at the intersection of Shevchenko avenue and Dragomanova street), Agenor Romuald Goluchowski on the edge of the Jesuit Park (now Ivan Franko Park), Adam Mickiewicz on Mariatska Square (now Mickiewicz Square), Kornel Ujejski on Akademicka street (now Taras Shevchenko Avenue)¹.

To the oldest surviving monumental sculptures, preserved till the present time, belongs the Jan Kilinski monument (sculptor Julian Markowski). It was set in the lower ground floor of the Stryiskyi park in 1894. The landscape arrangement surrounding the monument belongs to the authorship of Arnold Röhring.

The project plan of the Kilinski park (now the Stryiskyi park) was drawn up by A. Röhring much earlier, still in 1877. During its design the natural characteristics of the landscape of the city were taken into account, making it possible to create one of the most beautiful parks in contemporary Europe [2].

¹ It is noteworthy that all of the persons listed in the text representing the Polish part of the Galician society, which at the turn of 19th–20th centuries occupied the dominant position of that time province of Galicia and Lodomeria Austro-Hungarian monarchy.

It may be assumed that by providing a regular plan of the lower stalls of the park, Röhring made it possible to set up herein a sculpture. At present, the figure is set against an array of trees. In front of it there are traditionally formed symmetrical flower beds and herbalists.



Fig. 1. Jan Kilinski monument in the lower ground floor of Stryiskyi park at 1895. Sculptor Julian Markowski, landscape organization – Arnold Röhring. Picture from private collection of Ihor Kotlobulatov

In the late 19th century, according to the project of Arnold Röhring, the terrace of the lower Jesuit Park parterre (Ivan Franko park) underwent alterations and was decorated with flower beds and flower gardens. A semicircular area was formed in the symmetrical composition, focused on the main entrance to the building of the Diet of Galicia and Lodomeria (the Main Building of Ivan Franko National University of Lviv). The building represented the Diet and personified the legislative power, being marked by monumental symmetrical forms. It was natural that the same approach was adopted in the formation of the lower parterre of the Jesuit Park.

Opposite the main entrance in the center of the square there was located a flowerbed with a large cast-iron vase, which dominated on the axis of the building entrance of the Diet of Galicia and Lodomeria. On it, there were designed several alleys [3].

During 1894–1896, in the perimeter of the square, around the vase, busts of the honored people in the city, i.e., the journalist and politician Jan Dobrzanski, the Director of Theater and actor Jan Kaminski, the Marshal of the Galician Diet Leon Sapiega, the artist Artur Grottger, the Bishop Samuel Growinski were set up. Close to the alley a bust of the poet and the researcher of antiquity Count Jozef Dunin-Borkowski was put up. The sculptures were made by Tadeush Baronch, Leonard Marconi and Antoni Popiel. After World War II, in the Soviet times, these sculptures disappeared. Nowadays, their fate is unknown [4].

On the left and right sides the composition was complemented with stone obelisks, stele-obelisks with images of lions' heads (today, not preserved). The flower-bed was separated from the green park massif by semicircular wallpaper, accented by a number of pedestals with busts of famous people of Lviv (today, not preserved). This approach to the formation of the park's parterre is believed to have been used by Röhring in front of the Diet, referring to the composite connection between the sculptures on the façade of the Diet and the sculptural figures in the park. These decorative plastic motifs are complemented by each other, substantially enriching the overall composition of the space. This is evidenced on the existing compositions of the parks surrounded by Baroque and Renaissance villas [5].

The original composition of the square with a cast-iron vase existed for some time still after the removal of the sculptures. A flower portrait of Ivan Franko was arranged on the symmetry axis. We can see it in one of the pictures of the late 1940s. During the 1960s, the architectural and landscape composition of this part of the park parterre changed. In 1964 a monument to Ivan Franko was set in this place.



a



b

Fig 2. Lower Jesuit Park parterre terrace (Ivan Franko park): a – Picture between 1912–1913, source: publisher “Centre of Europe”; b – Picture from the end of 1940s, with a flower portrait of Ivan Franko

In 1901, at the approach to the main alley of the park the monument to the Governor of Galicia Agenor Romuald Goluchowski (sculptor Cyprian Godebski) was set up. It became the dominant of the park's lower part and the intersection of Third of May Street (now Sichovi Striltsi Street) and Slovatskyi Street. The monument was removed by the Soviet authorities in 1947. In its place a bizarre flower vase was set. Here, today, you can see a large cast-iron vase with bas-reliefs of free interpretation of the work by B. Thorvaldsen "The Course of People Life" [6].

In addition to the park areas, the landscapes surrounding several monuments in the center of Lviv also belong to the authorship of Arnold Röhring. In 1897 in Akademicka Square (Shevchenko Avenue) a monument to the playwright Aleksander Fredro of Leonardo Marconi's authorship was set up. From the remaining photos it can be concluded that around the Fredro monument a round-shaped pedestrian zone was formed organized with three flowerbeds and trees. The flowerbed in the front side of the monument was fenced round with the same metal fence as the flowerbed on Hetmanski Valy (Hetman's Ramparts, present Svoboda Avenue). In the square, in front of the monument, a view of Akademicka with a silhouette of the bell tower of Latin Cathedral is revealed.



Fig. 3. Monument to the playwright Aleksander Fredro, Academic Square (Shevchenko Avenue), Lviv.

Photo: D. Mazur. – 1900–1904

In the landscape composition of Akademicka Street an oval flowerbed surrounded by a low fence was formed by Röhring. In 1901, for the purpose of setting the monument to the poet Kornel Ujejski (sculptor Anton Popel), the flowerbed was redesigned, i.e., its sectoral composition was simplified, the fence was removed and a monumental sculpture was placed in the middle [7]. After World War II the monument was transported to Poland and, in 1956, it was set up in Szczecin [8].

A distinct feature of the spatial dominant is the monument to the poet Adam Mickiewicz (sculptor Anton Popel, 1904), set up in the middle plaza of the same name in the first half of the twentieth century. It was considered the "most magnificent" monument in Lviv. [9]

After the opening of the monument to Adam Mickiewicz the landscape arrangement of Mariacka Square (Mickiewicz Square) was ordered. It was carried out by the architects A. Röhring and T. Talovski and S. Handel [7]. In different periods the landscape composition around the monument underwent changes.

Generally, it consisted of lawns, flowerbeds, borders, linear plantings of trees and shrubs. However, the feature of symmetrical construction and subordination of monumental sculpture remained.

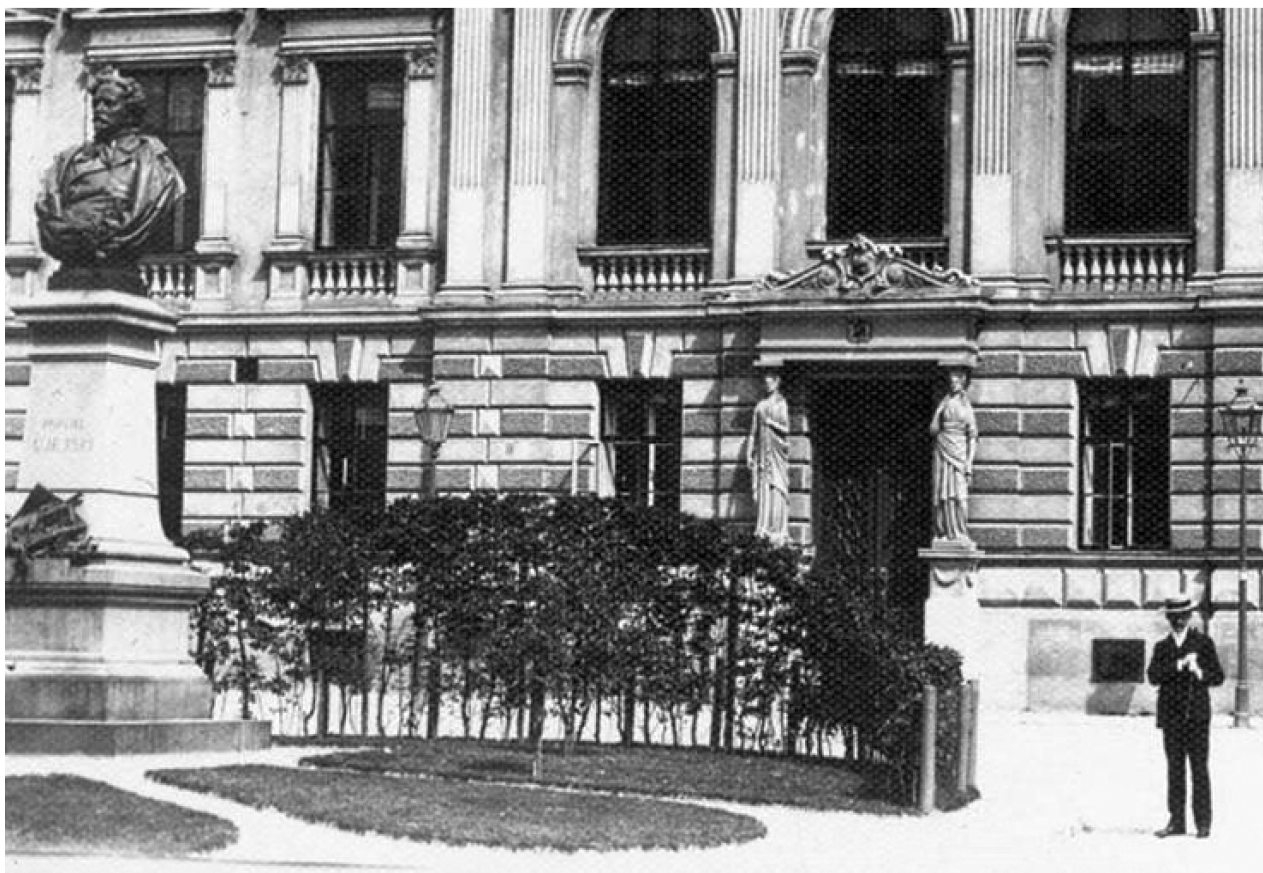


Fig. 4. Monument to the poet Kornel Ujejski, Akademicka Street (Shevchenko Avenue), Lviv. Photo of 1902

3. Conclusions

After reviewing examples of the landscape surrounding works of monumental sculpture in the center of Lviv of A. Röhring's authorship, it must be noted that at the turn of the 19th and 20th centuries, due to the combination of architecture, construction and the natural environment, the city became enriched with features of a large European city

References

- [1] The Elegant Garden. Architecture and Landscape of the Worlds Finest Gardens. Rizzoly, New York, 2012. P.14.
- [2] Lviv. A Guide book for the Visitor. The Centre of Europe Publishing House. Lviv 2007. P. 306.
- [3] Biryulov Yu.: Arkhitektura Lvova. Chas i styli XIII–XXI st. Center of Europe, Lviv 2008. P. 372.
- [4] Melnyk I., Masyk R. Pamiatnyky ta memorialni tablytsi mista Lvova. Apriori, Lviv 2012. P. 265.
- [5] Michelangelo Muraro, Paolo Marton. Venetian Villas. Konemann, Cologne 1999. P.116, 126.
- [6] Biryulov Yu. Lvivska skulptura vid rannoho klasysyzmu do avanhadyzmu (seredyna XVIII – seredyna XX st.). Apriori, Lviv 2015. – P.128.
- [7] Arnold Rering. Wikipedia, the free encyclopedia [Elektronikal Source: http://uk.wikipedia.org/wiki/Arnold_Rering, access 13.10.2016].
- [8] Biryulov Yu. Lvivska skulptura vid rannoho klasysyzmu do avanhadyzmu (seredyna XVIII – seredyna XX st.). Apriori, Lviv 2015. S. 207.
- [9] Medynski Aleksander. Lwow. Przewodnik. Lwow 1936. 3. 130.

**ЛАНДШАФТНА ОРГАНІЗАЦІЯ ТВОРІВ МОНУМЕНТАЛЬНОЇ
СКУЛЬПТУРИ У ТВОРЧОСТІ РЕРІНГА
(на площах, вулицях та у парках Львова)**

Анотація. Статтю присвячено аналізу ландшафтного оточення монументальної скульптури у творчості Арнольда Рерінга. Розглянуто роль і значення ландшафтної організації монументальної скульптури у архітектурній композиції Львова. Наведено приклади організації творів монументальної скульптури на зламі XIX–XX ст.

Ключові слова: монументальна скульптура, Арнольд Рерінг, ландшафтна організація, парки Львова.

Oleh Rybchynskyi

PROBLEMS OF RESTORATION OF NATURAL STONE MONUMENTS LOCATED IN THE CITY PARKS

*Lviv Polytechnic National University
12, Bandery Str., 12, 79013 Lviv, Ukraine, zoroleh@gmail.com*

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Abstract. In the given article the problem of restoration of natural stone monuments, located in the city parks, is analyzed. The main causes of stone deterioration, as well as programs and techniques of conservation and restoration of monuments, located in city parks, have been determined.

Key words: natural stone sculptures, small architectural form, restoration, city park.

1. Introduction

Today, natural stone monuments in the city parks are in a very poor condition. The City administration, utility companies and the local communities have no worked-out programs for restoration of decoration elements, located in the city parks, or of other small architectural forms. In the contemporary world natural stone monuments in city parks are protected by law and preventive measures for restoration of these must be taken.

Preservation and renovation of deteriorated monuments; the repairing and upgrading of the technical infrastructure; development of the sphere of consumer services; the reviving of traditions and culture of design of natural stone works, all of these, belong to the urgent tasks of city parks management in Ukraine. Identifying problems of restoration of natural stone monuments provides a basis for preservation of urban parks.

The article is based on an analysis of the latest research and publications. The results of the research show that restoration work on natural stone monuments must be performed according to the requirements of State Building Codes of Ukraine [1], and the Methodological Guide on Conservation and Restoration of Architectural Monuments [2].

Such foreign researchers as Domaslowski W. [3], Malachowicz E. [4], Koss A. [5], Lukasiewicz J. [6], Tajhman J. [7], Ciabah J. [8], Ważny J., Karys J.; Foyutowski A. [9], Saunders D. [10], Brandi C. [11] thoroughly investigated the problem of restoration of natural stone objects.

In their research works objects, arranged in architectural ensembles and complexes, are analyzed. However, monuments located in city parks have not been the subject of a separate analysis, so far.

In this article, the natural research methods, measurements, photofixation, analysis of the existing state of monuments before and after restoration have been applied. When determining problems of parks located in the historic cities of Ukraine, the method of systematization of cartographic material, the study of archival and literary sources, interviews of witnesses about the presence of monuments in parks have been used.

2. The main material research

A city park is a public space formed under the influence of ideological, economic and artistic factors. Ideological and economic and natural factors influence the scale and the size of a park. Only then the artistic factor is applied in the planning of the environment. The urban park space consisted not only of gardening compositions and walking trails, but also of sculptures, small architectural forms, monuments, etc. During the

18th and the mid-20th centuries the main material for sculptures and small architectural forms in parks was natural stone. In the second half of the 20th century it was replaced mostly by concrete mixture. For example, natural stone monuments were used in the arrangement of such parks and places of residences as: the residence of Metropolitan of Bukovina and Dalmatia, the Italian park in the village of Pidhirtsi, in the Vyshnivtsi palace park, in Khrystynopol (Chervonohrad), the village of Liashky Murovani, the town of Rozdil, the village of Obroshyno, the town of Burshtyn, the Sofiyivka park in Uman, the Alexandria park in the town of Bila Tserkva, and others.

During the second half of the 20th century natural stone monuments, located in the city parks, were not protected and suffered damage and destruction. In most cases, they used Portland cement mixture for the repair of natural stone monuments. Given the growing space requirements for urban parks it is important not to disturb their historical image. Conservation of natural stone monuments should be based on the principles of restoration. Therefore, before proceeding to restoration works it is necessary to carry out measurements, visual studies and to determine the extent of the previous repairs identifying the causes of stone deterioration.

The main causes of natural stone deterioration are as follows:

1. Influence of water (chemical processes, biological fouling, physical destruction)
– dissolution, softening and wash-out structural elements of stone.
2. Effect of atmospheric gases and air pollution
– oxidation, reduction, hydration and dehydration, hydrolysis, carbonization.
3. Impact of of water soluble salts
– crystallization and increase the volume of crystals.
4. Effect of changes in temperature and humidity regime.
5. Effect of mechanical factors
– abrasion, cracking and separation.
6. Influence of biological factors.

On natural stone monuments of city parks we can often see losses of authentic polychrome covered, instead, by oil paint multi-layer coating. The oil paints stop the exit of gases and moisture from the stone and activate deterioration of the monument's plastics. During the cleaning of monuments, the oil paints must be taken off according to the following requirements: the clearing method should not violate the original surface of the stone, its dimensions and structure must be left intact, and no harm to the environment should be done.

Most natural stone monuments located in urban parks are highly humidified. At the bottom of the pedestal, on the bases and on sculptures there are visible stains formed due to the capillary moisture. Due to the excess of moisture and the shadiness the softening and abscission of the stone is noticeable. On top of the monuments, because of the resin and juices dropping from tree branches, stains appear on the stone surface. Problems of humidification may be solved by the waterproofing of bottoms of monuments and the hydrophobic coating of surfaces.

Excessive moisture can activate the stone's salinity. Water-soluble salts adversely affect a monument, i.e. they accelerate their destruction. An analysis of the presence of water-soluble salts on the sights must be confirmed by laboratory tests [1, 3]. Natural stone sights are aggressively affected by the following agents: water-soluble salt sulphates, nitrates and chlorides. Extrusion of stone salts is best carried out using compresses of distilled water and cellulose. The process of removing salt can be done in two or three stages. After this procedure it is necessary to strengthen the structure of stone by organosilicon substance.

Monuments, located in city parks, have numerous caverns and chips; transverse cracks; their condition risks being broken down into pieces; on the surface of the stone there is a dense and strong contamination and a black "false" patina; on the carved curv one can see vast colonies of mosses and lichens, grout and putty of portland cement, layers of bird droppings, as well as numerous mechanical damages caused by vandalism.

Thus, restoration works were carried out at the monument to Jan Kilinski, located in the Stryiskyi park (Lviv), in 2009. However, a few years later, the monument was covered again with numerous colonies of lichens; the upper part was covered with layers of bird droppings, tar stains and tree juices; and the lower parts of the pedestal were affected by humidification. The visual inspection of the retaining wall of the spring in the Stryiskyi park has revealed a serious problem of moisture and salinity of the stone. The

joining and numerous additions of portland cement adversely affect aesthetical properties, as well as the structural strength of stone masonry.

The monuments of the Alexandria park in the town of Bila Tserkva, i.e., garden houses, bridges, pavilions also present similar problems to those in Lviv, namely: an active use of portland cement, tar stains and tree juices, moisture of monuments' lower parts, biological fouling, etc.

The park in Sofiyivka (Uman) revealed the following problems: moisture, bio-fouling, tar stains and tree juices, sculptures covering an oil paint, cracks, chips and unprofessionally complemented fragments of monuments.

The parks' sculptures in the villages of Pidhirtsi and Obroshyno have numerous damages, such as: cracks, an overall black "false" patina, large colonies of mosses and lichens, patches of tar and tree juices.

The field-research shows that most sculptures are made of stone while sculpture pedestals are made of bricks. Traditionally, as a coherent element lime and sand mixtures were used in laying monuments. During later repair works mostly cement was used. As a result of visual inspection, it was found that pedestals are damaged mostly by strong moisture, bio-fouling, salinization, and due to the cement putty joining preventing evaporation of moisture.

Due to a lack of resources laboratory studies to identify the percentage of salinity have not been conducted. However, a visual study revealed growths of crystals and salt stains. Therefore, during the working-out of the concept of restoration of natural stone monuments the first stage should include extrusion of salts.

In addition, the study of iconographic material is important for reproduction of lost objects or fragments of preserved monuments. For example, a scientific research will help to establish stylistic and artistic features of sculptures and small architectural forms in the parks of Krakivec, Radehiv, Burshtyn, Kukeziv, Teofiopol, Rivne, Skala-Podilska, Horohiv, Vyshnivec, Tulchyn, Antoniny, Nemyriv and other.

In spring 2016 restoration works of the memorial plate of Arnold Röhring in the Stryiskyj park were conducted. The monument was in a poor condition. A visual inspection of it showed a solid cement layer over the plate, absence of several letters in the main inscription and some unclear letters in the auxiliary text on the plate (Fig. 1).



Fig. 1. The memorial table before restoration.
Photo by the author

Before starting restoration works a restoration program was worked out:

1. Preliminary examination;
2. Diagnosis status and material of monument;
3. Conducting conservation work;
4. Structural strengthening of monument;
5. Implementation of local reconstruction;
6. Expressiveness of forms and details of monument;
7. Implementation of glazing;
8. Blocking the cement inserts and putty.

The method consists of such restoration stages:

1. Water and dry cleaning of the surface of volatile contaminants;
2. Steam cleaning of the surface from sustainable chemical, biological and atmospheric formations affecting the monument surface;
3. Chemical cleaning of the surface from persistent pollutants;
4. Removal of later aggressive and cement inserts;
5. Filling-in of cracks and caverns with selected materials;
6. Implementing of additions to lost fragments with compatible materials;

7. Implementing the glazing of silicon-organic solutions and mineral pigments.

As a result of the undertaken restoration works, the surface cement coverage of the slab has been taken off, additions of the damaged parts have been made, the lost letter inscription was restored, as well as the auxiliary inscriptions (Małopolskie Tow. Ogrodnicze). 60 % of the surface plates have been restored. Also, the filling-in of edges around the plate's perimeter was done to protect it from excess moisture that comes through the capillaries of the spring. (Fig. 2) After the clearing the memorial plate got back its authentic dark-ocher color.



Fig. 2. Memorial plate after restoration. Photo by the author

In case of static deformation of natural stone monuments an arrangement should be provided for conservation of the monument by banding. In case monuments have an exceptional artistic value the technique of micro-sandblasting or laser cleaning of stone should be used [10, 11].

Conclusions

Monuments of natural stone are important and valuable elements of the historic environment of city parks. Improper treatment causes a loss of the initial appearance and an unsatisfactory technical condition. Therefore, a number of key problems concerning their restoration should be identified: an inventory of lost elements made by scientific research; periodic preventive restoration works carried out (clearing from mosses, bird droppings, resinous stains and juice greenery, enhancement of resistance of stone coating by biocide solutions); prevention of damaging the environment (pruning trees and bushes); prohibition of the use of portland cement mixtures in repair works; performance of restoration works carried out only by specialists in restoration of stone art works.

References.

- [1] Derzhavni budivelni normy Ukrainy. Restavraciyni, konservaciyni ta remontni roboty na pamyatkah kylturnoyi spadshchyny, DBN B.3.2-1-2004.
- [2] Konservaciya i restavraciya pamyatok arhitektury. Metodychnyi posibnyk. Kyiv-Lviv 1996, 143–149
- [3] Domasłowski W.: Profilaktyczna konserwacja kamiennych obiektów zabytkowych. Toruń 1993.
- [4] Małachowicz E.: Konserwacja i rewaloryzacja architektury w zespołach i krajobrazie. Wrocław 1994, 284–294
- [5] Koss A.: Konserwacja zabytkowych elewacji aktem kreacji i kontynuacji. Wiadomości konserwatorskie Województwa krakowskiego 5. Kraków 1996, 57–65.
- [6] Łukasiewicz J.: Tworzenie się patyny i problem jej zachowania na zabytkach kamiennych. Wiadomości konserwatorskie Województwa krakowskiego 5. Kraków 1996, 125–135.
- [7] Tajchman J.: Metoda konserwacji i restauracji dziedzictwa architektonicznego w zakresie zabytkowych budowli. Toruń 2009.
- [8] Ciabach J.: Zywice i tworzywa sztuczne stosowane w konserwacji zabytkow. Torun 1998.
- [9] Ważny J., Karyś J., Fojutowski A.: Ochrona budynków przed korozją biologiczną. Warszawa 2001.
- [10] Saunders D.: Lasers in the conservation of artworks IX. London 2013.
- [11] Brandi C.: Theory of Restoration, trans. Cynthia Rockwell. Florence 2005.

As the next stage of repair works, a thorough restoration of the wall to which is fixed the memorial plate must be carried out. It requires the applying of waterproof barrier, restoration of authentic relief composition, etc.

Each monument located in the park needs an individual program of restoration. The impact of greenery must be considered, as well: destruction of the foundations of small architectural forms by roots of trees and shrubs, protection from falling branches.

Олег Рибчинський

**ПРОБЛЕМИ РЕСТАВРАЦІЇ ПАМ'ЯТНИКІВ З НАТУРАЛЬНОГО
КАМЕНЮ, РОЗТАШОВАНИХ У МІСЬКИХ ПАРКАХ**

***Анотація.** Проаналізовано проблеми, які виникають під час реставрації натурального каменю, розташованих у міських парках. Були визначені основні причини руйнування каменю, програми та техніки консервації та реставрації монументів, які розташовані у міських парках.*

***Ключові слова:** пам'ятники з натурального каменю, малі архітектурні форми, реставрація, міський парк.*

MAYOR HERMAN HAKEN AND ARCHITECT WILHELM MEYER-SCHWARTAU – FORMING OF SZCZECIN CITY LANDSCAPE AT THE TURN OF 19TH AND 20TH CENTURY

*Westpomeranian University of Technology in Szczecin,
Słowacki Str., 17, 71-374 Szczecin, Poland, mrzeszotarskapalka@zut.edu.pl*

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Abstract. In the context of shaping the city landscape, including shaping of the green areas in the late nineteenth and early twentieth centuries, a special attention is deserved by the activity of Hermann Haken – the Mayor of Szczecin and Wilhelm Meyer-Schwartau – Municipal Construction Counsel. The aim of this study is to present the impact of the decisions taken by Haken and the designs prepared by Meyer-Schwartau on the development of Szczecin in terms of shaping the landscape of the city utilizing of its natural values and greenery.

Key words: green areas, city landscape, Szczecin.

*Możesz z Wałów Chrobrego dotknąć nieba wytartego szmatą obłoków
by odkryć na dnie wzruszenia kształt zielonego miasta*

Tymoteusz Karpowicz, Dzień

1. Introduction

In the nineteenth and early twentieth centuries, a significant spatial development of European cities resulting from the industrial revolution occurred. This involved economic, social and, above all, demographic changes. The territorial development of Szczecin at that time fundamentally changed the nature of the city which was transformed from a fortress with a cramped layout of medieval streets encompassed by a wall into an agglomeration of diversified spatial composition and architecture. According to Łopuch, Szczecin, for more than 600 years, remained an essentially medieval city and was changed only in the nineteenth and twentieth centuries when it obtained new buildings of monumental character [1, p. 16]. The spatial transformations that took place during that period have been preserved in the landscape of the city and, despite the ravages of war, they are still visible in its structure.

In the context of shaping the landscape of the city, including shaping of the green areas in the late nineteenth and early twentieth centuries, a special attention is deserved by the activity of Hermann Haken – the Mayor of Szczecin in the years 1877–1907 and the architect he imported to Szczecin – Wilhelm Meyer-Schwartau that performed the function of the Municipal Construction Counsel within 1891–1921.

The aim of this study is to present the impact of the decisions taken by Haken and the designs prepared by Meyer-Schwartau on the development of the metropolitan Szczecin in terms of shaping the landscape of the city utilizing of its natural values and green areas. The study analyses the background conditions and the historical development of selected objectives of the design by Meyer-Schwartau that had the greatest influence on the “green” image of the city and that, at the same time, represent the identity of Szczecin for its past, present and future generations.

Just as the designs of parks by Arnold Röhrling and his activities as the Director of public gardens and the Chief Gardener of Lvov influenced shaping of the landscape of the city, in the same way, the designs by Wilhelm Meyer-Schwartau and the decisions taken by the City Mayor Hermann Haken determined the image of Szczecin as a rapidly expanding city at the turn of the century.

In scientific work, the architecture of Szczecin from the late nineteenth and early twentieth centuries was described from the perspective of the spatial development of the city, which was to be a result of demographic and economic processes. There is quite a rich literature, both German and post-war Polish, about the history of the spatial development of both the city itself and its green areas. Kozińska and Włodarczyk discuss the processes of the demographic and spatial development of the city, similarly as Białecki and Turek-Kwiatkowska as well as Zaremba and Orlińska¹. Pieces of valuable information for the subject studies are provided by the publications on Meyer-Schwartau's work by Wojciech and Maria Łopuch [2; 1; 3] as well as publications on the Central Cemetery by Słonimski [4; 5] and the collective work under the guidance of prof. Stachak [6; 7].

2. Hermann Haken – Mayor of Szczecin

Hermann Haken² took up the function of the Mayor in Szczecin in one of the most important moments in the history of the development of the city – when the decision about the demolition of the fortifications was taken. By virtue of the Act of 1873, it was decided to liquidate eight fortresses in Germany, including the Szczecin ones. During Haken's tenure, the current downtown bristles with their characteristic stellar squares, wide boulevards and elegant buildings came to existence. The most important role in the new structure of the city was played by Kaiser Wilhelmstrasse (at present the avenue of John Paul II) constituting the main compositional axis of the new city that connected the Old Town with its verdant Westend District (at present the Pogodno District) and extensive green areas in the west (Kasprowicz Park, Arkoński Park and Forest)

After taking office in Szczecin, Haken attracted the young generation of educated architects and officials from Berlin: W. Meyer-Schwartau, E. Drews, Osterwold, Rosener, Sternberg who, together with the older ones: K. Kruhl and C. Schmidt, changed the architectural image of Szczecin [1, p. 86].

As presented by Łopuch in his publications, Haken played a decisive role in the architectural development of Szczecin; being a broad-minded person, he maintained contacts with high-ranking government officials and implemented the concept of Szczecin as a great industrial centre of the Province of Pomerania. As he himself maintained, he won the battle for the architectural shape of the city by drawing young educated officers headed by Meyer-Schwartau to the magistrate [3, p. 5].

3. Wilhelm Meyer-Schwartau – urbanist, architect, Municipal Construction Counsel

Wilhelm Meyer-Schwartau was born in Lübeck-Schwartau in 1854, he was a student of prof. Friedrich Adler in the Berlin Building Academy. At the age of 37, he was appointed to the position of the Municipal Construction Counsel in Szczecin and performed these duties for 30 years [3, p. 7]. He was the author of many monumental neo-style buildings that shape the today's image of Szczecin: the buildings of the Municipal Savings Bank (at present Pomeranian Medical University) and the Customs Office (at present – the same office), the church on the Łasztownia Island (at present The Trinity Church) and the school buildings: Municipal Gymnasium (at present Secondary School no. 1), Royal Prussian School of Construction Crafts (at present Chemical Department ZUT).

¹ B. Kozińska, *Rozwój nowoczesnego Szczecina od początku XIX wieku do II wojny światowej*, Szczecin 2002; E. Włodarczyk, *Wielkomijski rozwój Szczecina w l. 1871–1918*, *Dzieje Szczecina*, t. III pod red. B. Wachowiaka, Szczecin 1994, p. 279–519; E. Włodarczyk, *Przekształcenie śródmieścia Szczecina (1870–1918)*, *Przegląd Zachodniopomorski* 1982, z.3/4; E. Włodarczyk, *Wielkomijski rozwój Szczecina w XIX i pierwszej połowie XX wieku (do 1945 r.)*, Szczecin 1993; Białecki T., Turek-Kwiatkowska L., *Szczecin stary i nowy*, Szczecin 1991; P. Zaremba, H. Orlińska, *Urbanistyczny rozwój Szczecina*, Poznań 1996.

² Hermann Haken (1828–1916) – Mayor of Szczecin (earlier – for 10 years Mayor of Kołobrzeg) – he was for 30 years decided of the shape of growing city. During his times, city has not only developed, but it has also become strong industrial center – shipyard Vulcan has developed, the custom port has been started to built. Honor citizen of Szczecin (1913), his name was imprinted in then citizens of Szczecin memory in the name of Odra terraces – Hakenterrasse, in 2000 his name was given to newly build roundabout in Szczecin [8, p. 314].

His most famous designs are related to shaping the city's landscape and green areas that today play a key role in the urban structure of Szczecin. These are – Haken Terraces (at present, Wały Chrobrego) established on the Odra River and the compositional layout of the eastern – oldest part of the Central Cemetery, the largest cemetery in Poland and the third largest in Europe.

The architectural image of Szczecin was, in a large part, shaped by Meyer-Schwartau. While descending down the monumental staircase from Wały Chrobrego towards the Odra embankment, we will see the building of the former Customs Office on the other side of the river and, on the right, the slender tower of St. Gertrude church. His output, consisting of a number of representative buildings and schools as well as the Central Cemetery, is marked by a momentum in urban planning, impressive dimensions of objects and rich architectural decorations. Certainly, it can be stated that the buildings designed by Meyer-Schwartau in the modern, often unified, urban landscape continue to represent the individual character of the city [3, p. 30].

4. Green layouts of Meyer-Schwartau's design that define the character of Szczecin

4.1. Haken Terraces (at present Wały Chrobrego)

The establishment of the Odra terraces was initiated by Hermann Haken, the Mayor of the city who on behalf of the city authorities signed with the State of Prussia, the then-owner of Fort Leopold, an agreement enabling to build the terraces. The design of the whole layout prepared by Meyer-Schwartau assumed the creation of viewing terraces located at the distance of 80 meters from the Odra river bank and rising 18 m above the river level. The width of the layout was intended to correspond to the width of the old fort – 480 m. The highest part of the terraces with a walking promenade was planted with linden trees and connected by a wide staircase with a semi-circular observation deck which, in turn, was joined with side flights of stairs to the passenger harbour. The monumental nature of the layout was emphasised by a strictly symmetrical composition referring to the principles of Baroque (Italian cascading palace gardens), while the architecture of the terraces gained Neo-Baroque forms: the semi-circular outlines of the observation deck and fountain pool; the S-shaped side stairs together with the pavilions on top that were erected at the close of the streets; stone facing of the retaining walls with a characteristic Cyclopean motif, supplemented by a fountain, located at the foot of the layout, with a shallow pool and a huge semi-circular niche containing a sculpture in the middle that refers to the Baroque garden caverns. The development of the terrace crown was also designed according to the principles of symmetry: at the axis of the layout (monumental stairs, terrace and fountain niche) there was designed the building of the Municipal Museum in the centre and the administrative buildings at the sides. At the back of these buildings, towards the city centre, a vast square with flower beds discounts was planned; it was to be surrounded by elegant buildings and linked with the Grabowski Park (at present Żeromski Park) [1, 24–28].

A complex of buildings designed at the top of the terraces was intended for the seat of the Regency (German administrative region) authorities, the Municipal Museum, the Insurance Institution and the Finance Office that combined the municipal, cultural and economic functions together emphasizing in this way the rank of the layout [1, p. 97]. The importance of the place was to be additionally enhanced by the equestrian statue of Emperor Wilhelm III by L. Manzel which, however, due to the very large size did not fit on the terrace and was set in the greenery (in the place where now the monument to Adam Mickiewicz stands) and in front of the Museum a sculptural group was placed: Hercules fighting with a centaur (also by L. Manzel).

The terraces were erected in the years 1901–1907. At that time, the buildings intended to stand on the main promenade were designed. First, the headquarters of the National Insurance Institution (at present Maritime Academy) designed by E. Drews – an architect from Szczecin, were established at the southern end of the layout. Then, the imposing building of the Szczecin Regency (at present Voivod ship Office), designed by P. Kieschke, a Berlin architect, was built in the northern quarter. Whereas, the centrally located building of the Municipal Museum (at present National Museum and Theatre), designed by W. Meyer-Schwartau, was completed in 1913. The massive and symmetrical body of the museum building with a tower and extended arcade driveway, faced with bright-yellow sandstone and grey granite identical as on the walls of the terrace buildings, forms a perfect culmination of the terrace crown [2, p. 62]. As the last, the building of the Main Custom Directorate (at present Maritime Academy), designed by K. Hinckeldeyn, an architect from Berlin, was erected in the southern part of the terraces.

Execution of the layout assumptions lasted nearly twenty years: in 1901 Wilhelm Meyer-Schwartau prepared the whole design and in 1921 the construction of the last of the buildings was completed [2, p. 97]. The City Council of Szczecin in recognition of the achievements named the terraces after the initiator of their creation, City Mayor Hermann Haken. [9, p. 19–39]

In the Grabowski Park joining the greenery at the back of Haken Terraces, Meyer-Schwartau designed a “Park House” (at present Hotel Park) that was built in 1912. The building, a “land haus” -type comprehensive family house, housed a restaurant, a cafe and guest rooms in the middle of a garden. The sculptured shape of the building that was covered with a mansard roof and a turret created a climate of familiarity and its terrace opened to a carefully designed garden with exotic plants (palm trees that were popular in Szczecin at that time) resembling a residential layout [3, p. 27].

After the end of the Second World War, the first representatives of the Polish authorities came to Szczecin and occupied the buildings on Haken Terraces which, as one of the few, survived the carpet bombing in 1944. In the building of the Szczecin Regency, the seats of the Office of the Plenipotentiary of the Polish Government and the City Mayor were established and it is here that the Polish flag was first hoisted on the flag pole and City Mayor Piotr Zaremba issued a proclamation to the Polish people on April 30, 1945.

The terrace outlay established at the beginning of the twentieth century opened the city on to the Odra River creating a monumentally composed portion of its panorama (Fig. 1). The design of the representative part of the city by Meyer-Schwartau is characterised by a momentum, loosened arrangement of development at the back of the administration buildings and the museum as well as by that the space is filled with greenery. To this day, there have been preserved the lime avenue along the promenade at the crown of the terraces and the rows of oaks along A. Mickiewicz Square. However, the original composition of the greenery at the rear of the buildings (the present A. Mickiewicz Square) with beautiful perennial flower bed and the lawn founded in a sunken garden did not survive. [7, p. 29–30] They are replaced by a modern system of lawns and paths.

The beautiful layout of Haken Terraces by taking advantage of the natural values of the landscape and complementing it with a monumental architecture became a permanent part of the spatial structure of the city and inscribed in the consciousness of its residents, both past and present ones, acting as a recognizable distinguishing mark of the landscape³ of Szczecin.



Fig. 1. HakenTerraces (Wały Chrobrego), photo by M. Rzeszotarska-Pałka 2016)

³ Mark of landscape – identification mark in space, that serves to characterize sources in every town and village in order to distinguish one from another. Definition after I. Niedźwiecka – Filipiak, [10, p. 52].

4.2. Central Cemetery in Szczecin.

Almost parallelly with the work on the construction of Haken Terraces, works at the establishment of a new municipal cemetery were carried out. The official opening of the cemetery took place on December 6, 1901 [7, p. 23–25] Meyer-Schwartau was the author of the eastern part of the design, while the western part was designed by Georg Hanning (together with Luise Lotte Hüger) – the Director of the cemetery until 1928. The eastern part was completed as the first one in 1918. The area of the cemetery then had 64 ha and in 1943 the cemetery already covered 164 ha.

The Szczecin necropolis is distinguished by a unique park character with a carefully designed composition of the main east – west axis that utilizes the natural qualities of the terrain. The main axis of observation was marked with a flourish – its beginning was accentuated by the chapel building with a central projection located on a hill exposing a decorative pool at the foot and three terraced ground-floor gardens (at present it is the War Cemetery) (Fig. 2). On both sides of the axis of observation, avenues running in bends are designed. The Neo-Romanesque chapel with an octagonal interior is covered with an eight-walled polychrome dome and refers to the Holy Sepulchre in Jerusalem, while in architectural details it is dominated by Romanesque decorations [3, p. 12].



Fig. 2. Central Cemetery, photo by M. Rzeszotarska-Pałka 2016

Meyer-Schwartau in shaping the main compositional axis of the layout perfectly took advantage of the existing terrain making it at the same time an impressive axis of observation and engaging the viewer in the landscape. According to Słonimski, the designer borrowed the general principles from the layouts of the cemetery-gardens realized in the 70s of the nineteenth century in Vienna and Hamburg-Ohlsdorf according to which a “garden of the dead” had to combine the aspects of a landscape, greenery, architecture and grave sculpture in harmony with the surrounding landscape [5, p. 86–87]. The creators of the Szczecin cemetery: Meyer and Hanning were guided by the idea of “transferring funerals from churches and towns to gardens” [3, p. 12]

“A huge park to bury the dead” wrote Francis Gilin 1947 [11, p. 220]. Various parts of the vast cemetery were designed in an individual way focusing attention on the role of greenery separating intimate garden interiors. Additionally, many places were left free of burials and they formed natural-looking glades and

thickets⁴. There are many species that are rare in Poland on the cemetery area: *Abies koreana* Wils., *Pinus ponderosa* Dougl., *Picea omorica* Pancic, *Larix leptolepis* Gord., *Quercus pseudo turneri* Schneid., *Calycanthus floridus* L [12, p. 19–0].

The exhibition of cemetery art that was held in Szczecin in 1911 became an inspiration for the creation in the next year of the Cemetery Regulations which included provisions on the principles of the formation of lodgings and the forms of graves and tombstones. After 1918, the Cemetery was enlarged with the western part with avenues that run perpendicularly to the main axis. In this part, there were marked rectangular lodgings separated by tall hedges that constituted independent interiors with a centrally located narrow courtyard.

Despite the destruction of many historic objects of sepulchral art, the Szczecin necropolis is still the largest and most valuable example of a landscape cemetery in Poland that is also of European importance. It is planned to initiate a procedure for the recognition of this cemetery as a monument of history and, in the future, also to seek entry on the UNESCO World Heritage List [5, p. 102].

5. Results. The role played by the green layouts designed by Meyer-Schwartau in contemporary Szczecin

According to Raszeja and Gałecka, the lack of clarity and legibility of space as well as the loss of characteristic elements that determine the identity of an urban landscape are the problems of modern cities [13, p. 143]. As proved by analyses, both the present Wały Chrobrego and the Central Cemetery are unique elements of the landscape of the city that define its character and are recognizable to the residents and people from outside of Szczecin. They are not only covered by a legal monument protection⁵, but are also treated with a special care by the city authorities and still continue to have a usable value in the life of the city inhabitants and also an aesthetic function as well as a sensual one by creating a space full of meanings and close to the heart.

The Central Cemetery, although limited for new burials due to the lack of space (the city has a new cemetery at Bronowicka Str.), still plays a very important role in the lives of the city residents. Since its creation, nearly 300 thousand people have been buried in the Cemetery, many of them are still visited by relatives. Periodically, in June, symphonic outdoor concerts dedicated to the memory of “*those who did not return from the sea ...*” are held in a beautiful setting of the performance of the “*lights on the water*”. The Cemetery is one of the most valuable green areas in Szczecin due to the rich collection of over 415 species and varieties of trees and shrubs [6, p. 112] which were selected with consideration of interesting shapes, colour of leaves in different seasons as well as the appearance during flowering and ripening of fruit. All this makes it a destination of numerous trips both for lovers of greeneries as well as for professionals walking along the paths demarcated in 2010: the botanical path⁶ and historical route which enable to view the most interesting places of the eastern part of the necropolis. Thanks to the unique composition created by Meyer-Schwartau that endows the Cemetery with a park nature, it has become a place not only for the dead but also for the living. After the war, the road leading to the cemetery, Pasewalker Chaussee, received a new unusual name “Towards the Sun”, given by Helena Kurcysz, the Main Spatial Planner of the Szczecin Voivodeship⁷. The symbolic name of the street perfectly corresponds to the layout of the main compositional axis of the necropolis.

⁴ Unfortunately, many of those places were assigned to burials after the II World War.

⁵ Wały Chrobrego (view terraces) has been inscribed to monuments register of West Pomerania voivodship – no. 851, decision no. DZ-4200/22/O/96 on 18.12.1996. Central Cemetery has been inscribed to monuments register of West Pomerania voivodship – no. 905, decision no. Kl.III/5340/10/85 on 16.06.1985.

⁶ Botanical path was designed in the eastern part of the cemetery. There were 32 boards with information of interesting trees and shrubs located. The path begins and ends at main cemetery gate, it was created by Marcin Kubus from ZUT in Szczecin. Exactly, in that place terrain lessons of Dendrology for landscape architecture students from ZUT are given.

⁷ Helena Kurcysz was living nearby the Cemetery after the war and she has everyday walked from Cemetery to Wały Chrobrego (to Support Committee for Poles, where the food was given). She was always wandering towards the sun: in the morning – towards east, while in the evening – towards west. That is the idea of the name “Towards Sun” [14; 5, p. 99–100].

On the other hand, the old Haken Terraces and the present Wały Chrobrego were the scene of many events in the history of post-war Szczecin, functioning for the residents as a traditional goal of family walks and the most important place where they take their guests while trying to show the city. A postcard from Szczecin usually represents just the panoramic view of Wały Chrobrego. Here are held the annual Days of the Sea, as well as rallies of the largest tall ships in the world – the Tall Ship Races. Czekieli-Świtalska exactly in this place finds the heart of the city, which is so difficult to define in Szczecin (the city does not have a traditional market square), “*The heart of the city, which are Wały Chrobrego in Szczecin, is surrounded by a greenery and from its terraces there is a splendid view of the green Grodzka Island (...) make the most impressive view from the area of the Łasztownia Island, however, this view can only be seen during large outdoor events*” [15, p. 166].

6. Conclusions

The historical development of Szczecin that was clearly intensified as a result of the decision to liquidate the Prussian fortifications in the late nineteenth and early twentieth centuries, had a major impact on shaping of the landscape of the city and its system of urban greeneries. The activity of the then Mayor H. Haken and the Municipal Construction Counsel W. Meyer-Schwartau resulted in a number of objects endowing the city with a distinct character and forming its identity till nowadays.

Meyer-Schwartau was able to masterly use the terrain in shaping vast perspectives. When designing Haken Terraces he achieved the monumental effect using the high embankment of the river where he led the representational stairs towards the front of the Museum while in the Central Cemetery he created a broad perspective by drawing the viewer’s attention to the distant landscape. [4, p. 27] He created designs of representative green areas that constitute essential elements in the landscape of the city. The designs by Meyer-Schwartau could not be, however, implemented without the support of the then Mayor Herman Haken who was consistently building the spatial structure of modern Szczecin.

References

- [1] Łopuch W. Dzieje architektoniczne nowoczesnego Szczecina 1808-1945, Książnica Pomorska, Szczecin 1999.
- [2] Łopuch M. Wały Chrobrego, Hakenterrasse, Stowarzyszenie Czas Przestrzeń Tożsamość, Szczecin 2008.
- [3] Łopuch W. Architekt, urbanista, urzędnik...: Wilhelm Meyer-Schwartau twórca wielkomięjskiego Szczecina, Zęszyty szczecińskie, 9, Wydawnictwo Publisher's, Szczecin 2003.
- [4] Słonimski M., Cmentarz Centralny w Szczecinie. Ogromny park pochował umarłych..., Kadruk, Szczecin 2005.
- [5] Słonimski M., Cmentarz Centralny w Szczecinie, zarys problematyki konserwatorskiej, Ochrona zabytków 2005, 4, 85–104.
- [6] Stachak A., Grinn U., Drzewa i krzewy Cmentarza Centralnego Szczecina, Zęszyty Naukowe AR Szczecin 153, Szczecin 1992/93, 111–127.
- [7] Stachak A. i in, Zieleń Szczecina, ilustrowany przewodnik dendrologiczny, Oficyna IN PLUS, Szczecin 2000.
- [8] Koziańska B. Rozwój nowoczesnego Szczecina od początku XIX wieku do II wojny światowej, KAMPOL 2, Szczecin 2002.
- [9] Makala R. Gmach dawnego Muzeum Miejskiego, Materiały Zachodniopomorskie, t.1, z.2, Szczecin 2004, 19–39.
- [10] Niedźwiecka – Filipiak I., Wyróżniki krajobrazu i architektury wsi Polski południowo – zachodniej, Wydawnictwo Uniwersytetu Przyrodniczego, Wrocław 2009.
- [11] Gil F., Szczecin – port świata, Ziemia i Morze, Kraków 1954, 220.
- [12] Grinn U. Cmentarz Centralny, Konferencja naukowa nt. Zieleń Szczecina, Szczecin 1987, 19–20.
- [13] Raszeja E., Gałęcka A., Zieleń jako element wizerunku Poznania – między ochroną historycznej struktury a kreacją współczesnej przestrzeni, Tożsamość krajobrazu miasta, editorship by H. Petryszyn, E. Sochacka-Sutkowska, Szczecin 2012, 143–151.
- [14] Kurcysz H. Chrzcilał ulice Szczecina, Kurier Szczeciński 1995, 195, 9.
- [15] Czekieli-Świtalska E., Rola zieleni w mieście na przykładzie centrum Szczecina, Przestrzeń i Forma 2010, 13, 165–179.

**МІСЬКИЙ ГОЛОВА ГЕРМАН ГАКЕН ТА АРХІТЕКТОР ВІЛЬГЕЛЬМ МЕЙЕР-ШВАРТАУ –
ФОРМУВАННЯ МІСЬКОГО ЛАНДШАФТУ ЩЕЦІНА НА ЗЛАМІ ХІХ–ХХ СТОЛІТЬ**

***Анотація.** Особливої уваги у контексті формування міського ландшафту на зламі ХІХ–ХХ століття заслуговує діяльність Германа Гакена – міського голови Щеціна та архітектора Вільгельма Меєра-Швартау. Стаття має на меті показати вплив рішень, прийнятих Гакеном, та проєктів, виконаних Меєром-Швартау для розвитку Щеціна в контексті формування міського ландшафту міста враховуючи його природні умови та зелені насадження.*

***Ключові слова:** озеленені території, міський ландшафт, Щецін.*

Ewa Janina Sadowska

THE PALACE PARK IN SUDOVA VYSHNIA AS A WORK OF THE ENGINEER ARNOLD RÖHRING

*Institute of the History of Architecture and Historical Monuments Conservation
The Tadeusz Kościuszko University of Technology in Krakow,
ul. Kanonicza,1, 31-002 Kraków, Poland ewas@pk.edu.pl*

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Abstract. In Sudova Vyshnia there is a palace, dated to the 18th century, which was modified numerous times and is known from iconographic sources to have been built in a manner that made it look as if it had a “a French costume”, which was later rebuilt in the neo-renaissance style. During the time when the residence was the property of the Komorowski family of the coat of arms of Korczak, the area around the palace was turned into a 6 hectare naturalistic English landscape park. The greenery of the park was composed of the local deciduous trees: beeches, hornbeams, ash trees and black poplars, while the coniferous ones included larches. The area in front of the palace sported a lawn, with an arrangement that included both grouped and free-standing trees. During the time when the palace was the property of the Komorowski family, the municipal garden inspector of Lviv, the engineer Arnold Röhring designed and conducted “a beautification of the surroundings of the palace” and an adaptation of the park. The design called for having certain existing trees down, as well as the planting of new ones. The park in Sudova Vyshnia was provided with imported red oaks, tulip trees and magnolia trees, which were ordered as a part of a single transaction which included plants meant for the Park of Jan Kiliński, which was being built at the same time in Lviv. A pond with boats was also built and seeded with waterborne plants – water lilies. Various choice rose bushes were planted along the road that led to the palace. The park, even though it has grown wild, is still under protection as a natural monument. It has also been selected to be included in a project that features the preparing of a documentation of the extant state of historical garden complexes of the Polish-Ukrainian borderland, which is going to be developed by the employees of the Arboretum in Bolestraszyce. The project is being supported by funds from the Ministry of Culture and National Heritage.

Key words: Sudova Vyshnia, palace, English landscape garden, naturalistic, Antoni Komorowski, Jan Nepomucen Mars, Arnold Röhring

1. Introduction

The town of Sudova Vyshnia lies around halfway on the road between Przemyśl and Lviv, at a distance of around 46 km from the former and 48 km from the latter. It lies on the Vyshnia river – which is a right side confluence of the river Sian, Wiszeńka and Rakówka. Geographically, it lies on the Tarnograd Plateau, which has been a part of the Lvivskyi Oblast, in the Mostyska Raion, since the changing of the border in the year 1945. The name “Sudova” (Polish, adjective form of “court”, as in “court of law”) comes from the fact that the area was used to host general *sejms* of the Ruthenian Voivodship during the times of the Polish-Lithuanian Commonwealth, which comprised the lands of Lviv, Przemyśl, Sanok and Żydaczów, with the first *sejm* being held in the year 1545.

2. The past

In the year 1806, the village of Sudova Vyshnia was purchased from Franciszek Stadnicki (1742–1810) by a member of the States of Galicia – Antoni Komorowski of the coat of arms of Korczak (1769–1826), the son of Jakub – the starost of Nowosielec – and Antonina née Pawłowska. He was the brother of the much more famous Gertruda Szczęsnowa Potocka née Komorowska. Komorowski was married to Konstancja Karnicka of the coat of arms of Kościeszka and had two daughters with her – Henryka (1807–1893), which married an officer of the Polish army under Leonard Górski of the coat of arms of Pobóg, and Antonina (1812–1891), the wife of Ferdynand Bąkowski of the coat of arms of Gryf, the owner of the lands of Uście Zielone (currently Ustya-Zelene in Ukraine).

After the death of Komorowski, the estate was inherited by his younger daughter, Henryka, who was also called Henriette, from French, and who died without issue. During the second half of the 19 century, the estate was owned by her older sister, Antonina Bąkowska. Antonina Bąkowska was the mother of Gabriela, the wife of Władysław Karnicki. The residence was also the property of the Komorowski family of the coat of arms of Korczak – of Antoni and his daughters – the countess Henrietta Górka née Komorowska and Antonina Bąkowska née Komorowska. The lands were then bought at an auction during the final years of the 19 century by Roman Drohojowski, who soon sold it to a man named Strojnowski (a name which was also attested as being written Strojnowski). The estate was then bought by a man of three names, Jan Nepomucen Stanisław Witalis Mars of the coat of arms of Noga, a well known collector of art, who greatly cared for the furnishings of the residence and its library. The manor was then inherited in 1924 by Krzysztof Mars (1897–1974) – the son of the brother of Jan Nepomucen Mars, who died childless – and his wife Olga Marsowa née Chrzęszcz, who were the last owners of the palace before the start of the Second World War.

The last member of the family, Krystyna Gawlikowska née Mars, lives in Warsaw, the capital of Poland, to this day.

On the south-eastern edge of the town, in the Dworskie Przedmieście quarter, there is a low hill with the roofless ruins of a masonry palace, dated to a period between the middle of the 18 century to the start of the XX century. The appearance of the palace from before the end of the 19 century is unknown, as there was no archaeological and architectural research performed on it. In addition, no source materials on the topic have survived – there is only the tradition of the existence of an earlier residential building¹. The palace had a single floor up to the year 1850, after which it was expanded by the addition of another floor and a tower. It was “dressed in a French costume”, which is especially evident in the shape of the comparably tall mansard roof and volute-framed windows. The polygonal tower was also covered by a tall conical roof².

The palace gained its neo-renaissance form and furnishings during the period of its ownership by Jan Nepomucen Mars - in the beginning of the 20 century, most probably after the year 1914. During the First World War, the palace in Sudova Vyshnia was raided by the Soviet army – one of their generals took all of its furnishings, furniture, paintings, sculptures and manuscripts, i.e. the entire collection of Jan Nepomucen Mars – to Kiev, with no reports of them being seen again ever since. After it had been plundered, the palace was burned down. Meticulously reconstructed, it was modernised and provided with amenities like water, sewage disposal and electric lighting.

The building has two floors, with a facade decorated with a low portico supported by relatively massive pillars. On its outer axes there are two shallow pseudo *avants-corps*. Two analogous *avants-corps* are located on the posterior facade, with one of them taking on the form of an octagonal tower, covered by a flattened roof with an attic wall that took on the form of a railing with balusters, with vases and spheres adorning the tops of the plinths. The planes between the *avants-corps* on both the level of the ground and first floors were partitioned by channelled pilasters topped by capitols in the Corinthian order. At the height of the first floor, between the *avants-corps*, was a narrow balcony secured with an iron railing.

¹ The palace was never a subject of architectural and archaeological research. Roman Aftenazy believes that “perhaps the building that obtained its final form in the XIX century incorporated into it a much older structure”, which could be a confirmation of the information contained in the *Rolnik 1867-1927* publication, published in Lviv in 1938, inspired by the contemporary owner of the palace, Krzysztof Mars, which stated that the palace was built in the XVIII century [1].

² provides a definition of such a manor: “the shape of its floor plan is similar to a rectangle, with a very simple partition of the interior, with a corner tower (or towers), as well as a rectangle with *avant-corps*, the interior of which is diverse and properly grouped [...] the first shows the manor in Szymbark, while the other the manor in Graboszyce” [2]

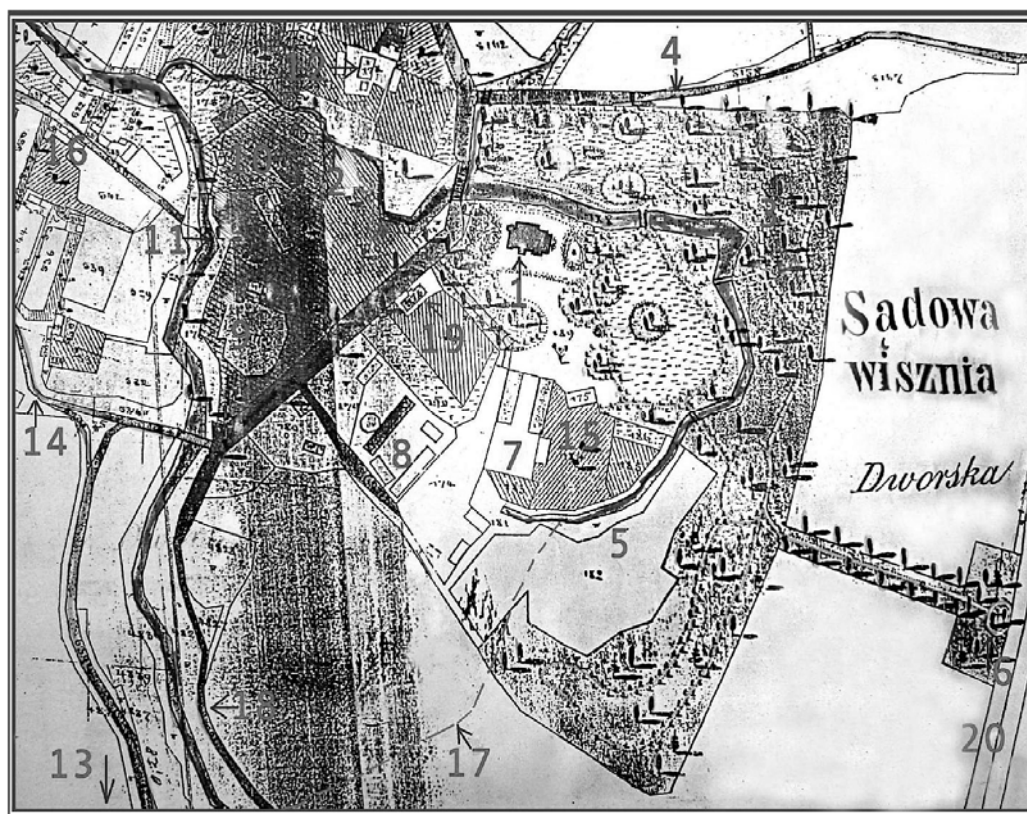


Fig. 1. Cadastral map of Sudova Vyshnia: 1 – the palace, 3 – the park, 6 – the manorial chapel, 10 – the quadruplets

The dominating accent of the posterior facade was a monumental portico with eight columns and a terrace, which existed until the Second World War – its existence is attested in photographic and written sources. The columns of the portico stood on square plinths and were topped by capitols in the Corinthian order. The two outermost columns stood by the corners of the *avants-corps*, while the remaining six were placed about two meters to the front. The portico was covered by a flat roof hidden by an attic wall in the form of a masonry railing. The entire residence was crowned by a frieze that was analogous to the one that underlined the partition between the floors, with a profiled cornice resting on a row of corbels. The side facade to the right of the front facade had an axially placed extension, with a floor that was much lower than that of the ground floor, with a small, protruding vestibule covered by a terrace surrounded by a masonry railing with balusters and vases. The *corps de logis* of the building was covered by a Polish style hipped and pent-hipped roof with double eaves, while the *avants-corps* were covered by hipped roofs sloping in three directions. The roof was covered in ceramic roof tiles. The rich exterior furnishing of the palace in Sudova Vyshnia is composed of pilasters decorated with channelling, semicircular dormers, bossage, the belt of the frieze and the corbelled cornice. The author of the adaptation is unknown. The problem demands further research in historical archives. The repertoire of the neo-renaissance forms of the building is, however, very similar to the one used by Władysław Ekielski in his Krakow works, such as the house on Studencka street 14, which was called the House of Barabasaz due to the name of its first owner, as well as the architect's own house - with a cylindrical tower on Piłsudskiego street 40 – or the Palace of the Pusłowski family on Westerplatte street 10 (a design developed in cooperation with Tadeusz Stryjeński)³ [3]. Before the Second World War, the palace grounds featured a gate with a pavilion and a natural fence surrounding the entire area. During the second half of the 19 or in the first years of the 20 century, the interior of the palace was rearranged - the representative section was moved from the *piano*

³ The author based her work on her own research and on the interview with a sister of the last palace owner in Sudova Vyshnia – Maria Payger née Mars [12].

nobile to the ground floor. The layout of both floors remained arranged into two irregular bays. The ground floor was the location of the so-called white hall. To the right of the white hall, extended by the *avant-corps*, was the smaller salon, which was located in the extension, while still further was the smoking room, called *fumoir* in French. The floor also contained a winter garden. Almost the entirety of the first floor was used for residential purposes, the exception being the left side of the bay from the side of the garden, which was taken up by the library, while the room in the *avant-corps* above the winter garden was used as a home chapel. During the time in which the building was owned by the Komorowski family the surroundings of the palace were turned into a naturalistic 6 hectare free-flowing park in the style of the English landscape garden. Behind the once-defensive moat, which was fitted with a timber bridge with truss-like railings, there was a forest of predominantly oak and hornbeam trees, some of which were cut down in order to create walkways covered with sand. It is known that the trees that surrounded the palace were mostly composed of black poplars (*populus nigra L.*), larches (*larix mill*), and the aforementioned hornbeam trees (*carpinus L.*), beeches (*fagus sylvatica L.*) and ash trees (*fraxinus L.*) [3]. The area in front of the palace was arranged into a lawn with trees that either stood individually or were placed into small groups. These were hornbeams and larches. The sides of the palace courtyard were also planted with trees and decorative bushes. The plantings would form a walkway garden, which was connected with an orchard of fruit trees. Behind the palace, below the colonnade of the extended portico, which was composed of six columns with capitols in the Corinthian order, there was a terrace with stone seats. It was expanded along its entire length by the means of another masonry terrace made out of brick, which was covered in plaster and decorated with flowerbeds which formed carpet-like patterns. The spaces between the flowerbeds were delineated as walkways. The space inside the terrace was used as a cellar, while the railing around it was decorated with vases made from sandstone. Below the masonry terrace, parallel to the facade from the side of the garden, is the former defensive moat, which has been widened and deliberately made shallower. Behind the moat there was a cleanly cut lawn. During those times, similar parks were established in other smaller or larger residential or municipal complex of Lublin or in smaller towns like Krzeszowice, near Krakow, which belonged to the Potocki family, or in farming estates [13] The materials that have been preserved in the Lviv National Archives, the Stefanyk National Library (which took over a large part of the catalogue of the Library of the Ossoliński family) and in the possession of private persons, attest that Henryka (Henrietta) and Antonina Komorowska asked the engineer Arnold Röhring (1840–1813) – the municipal garden inspector of Lviv, to design a beautification of the palace and the park. [19]

It was also at this time (1877–1891) that the Park of Jan Kiliński (Stryiskyi Park) was being established in Lviv, which required the importing of exotic plants. [23] The same merchants that provided those plants also supplied the ones used in the park of the Komorowski family, including the red oaks (*quercus rubra L.*) of Northern America, which were fashionable in the XIX century and were a heliophytic, mildly frost-resistant invasive species of tree, which was dangerous to domestic flora. Other imported plants included tulip trees (*tulipifera L.*), decorative plants such as magnolias (*magnolia L.*), which came in the bull bay, hybrid, star, purple and Yulan versions, as well water plants for the pond such as water lilies (nenuphars) of various colours, as well as roses, which were planted along the road leading to the palace. Arnold Röhring supervised the delineation of alleys and walkways, the cutting down of some old trees and the planting of new ones. The moat that used to surround the old castle (the manor of the starost), was widened. A section of a cadastral map from the collection of an amateur historian from Sudova Vyshnia, Roman Wójcicki, a member of the Society of Polish Culture in the Land of Lviv, shows:

1. the palace, located atop an artificial hill;
2. the municipal creek, which flowed from the side of the forest located behind the town of Dovhomostys'ka;
3. the manorial park;
4. the old road that lead in the direction of Horodok (opreviously called Gródek Jagielloński in Polish) and Lviv;
5. a field used to gather clay for the brick factory. The brick factory was owned by Jan Nepomucen Mars (1853–1924). The factory operated as a state-owned business until the 1990's, bankrupting afterwards due

to intense competition on the local ceramic construction materials market, despite the fact that the clay in Sudova Vyshnia was of the best quality.

6. the neo-gothic chapel belonging to the owner of the estate, dated to the year 1830, also called the chapel of the Bąkowski family. Its cellars are the resting place of the bodies of the Komorowski sisters – Henryka (Henrietta) Górską née Komorowska, the wife of Leonard and Antonina Bąkowska, wife of Ferdynand [25];

10. the quadruplets – a building for four peasant families that were employed at the farm, dated to the end of the 19 century. Archaeological findings have shown that it was located in place of a 13th century gord [26];

11. the town of Sudova Vyshnia;

12. the manorial distillery and brewery.

Before the year 1939, the estate included 450 hectares of farmland, a part of which was leased to the Artificial Fertilizer Factory of Chorzów for experimental purposes. Olga Mars established a small strawberry plantation on a couple of acres. The fruits were packaged in lettuce leaves in order to preserve their moisture and then placed into baskets woven by the older workers of the estate from the refuse from the lumber mill. Once a week, they were transported by plane from Lviv to London to be sold at the Harrod's. The English landscape garden was overseen by a hired gardener. During the time when the estate was owned by Krzysztof Mars, cages with wild animals were placed in the manorial park, while peacocks strolled around it. Two rowing boats were kept at the pond for recreational purposes. According to interviews with the oldest residents of Sudova Vyshnia and the memories of the last of the former owners of the manor, the park was fenced off and the inhabitants of the town were not allowed to enter it.

3. The present

After the Second World War, the political transformation and a change in the delineation of national borders, the former owners of the estate were stripped of their property (due to being classified as “landowners” by the regime) and repatriated to Poland. The building of the manor was used as a boarding house for the girls who studied at the Veterinary School in Sudova Vyshnia until the year 1994. In 1994, the School decided to move to a new location in a different town. The palace, abandoned, gradually fell into ruin, finally succumbing to a fire during the final years of the 20 century - the loss of its roof rounded out the destruction. There was no one willing to purchase the palace and the land around it for a symbolic one *hrivna*, which entailed carrying out its conservation and reconstruction by adapting it into a Centre of the Integration of Ukraine with the European Union⁴.

The park gradually became overgrown by wild plants, which makes the restoration of its original form problematic. Presently, only the outlines of some of the pathways can be seen, with the original plants growing unkempt among the preserved fragments of a rough stone wall, a moat and a pond. Sadly, the fate of the park is similar to that of the majority of manorial gardens that have survived the Second World War in some manner, which the author came to know firsthand as a supervisor of extant state documentation development practices held for third year students in the land around Lublin, which included “Project Chełm”, as well as during 30 years of systematic research under the supervision of the professors of the Institute of the History of Architecture and Historical Monuments Conservation of the Faculty of Architecture of the Cracow University of Technology – Wiktor Zin and Bonawentura Maciej Pawlicki. The author also participated in the research conducted by Józef Tomasz Frazik, another professor of the aforementioned institute, in the areas around Przemyśl, in addition to carrying out her own research on the manorial complexes of the area around Krakow [28].

⁴ *The information about the early Christian people's settlement here are mentioned in the Polish sources, which note about the “osiedle Deberki XI–XII w., osiedle Czworaki XII–XV”. There is no information about Deberki and Chworaki but the separate parts of the city are named after them until the present day. There is also a tomb not far from the city which is identified as Tatarsky Kopec [27].*



Fig. 2. The palace after the fire, without a roof. Phot. by Roman Wójcicki, 2013



Fig. 3. A beech tree in the park.
Photo by Roman Wójcicki, 2015



Fig. 4. The pond. Photo by Roman Wójcicki, 2015

4. The future

A master's diploma thesis titled “The Restoration and Adaptation of the 18–19 Century Palace of the Mars Family in Sudova Vyshnia, in the Area around Lviv, in the Mostyska Raion” was developed at the Faculty of Architecture of the Lviv University of Technology, and is yet to be implemented⁵ [29].

⁵For today at the request of the Sudova Vyshnya City Council and the initiative of the graduate of architectural and urban planning faculty of Lviv Polytechnic Institute the design and exploration work were conducted. Also the defense of graduate work “The restoration and adaptation of the monument of architecture of 18–19 centuries – Mars family palace of Sudova Vyshnya city, Lviv region Mostyska area” was carried out [30].

Thanks to the Polish Ministry of Culture and National Heritage, the former manorial park in Sudova Vyshnia – the fruit of the labours of the engineer Arnold Röhring, was included in the plans of the program called “The Development of the Documentation of the Extant State of the Garden Complexes of the Eastern Borderlands – Continuation, Stage II, the Lviv Voivodship, the former Mostyska powiat, Sudova Vyshnia”. The basis for the carrying out of this task is to be composed of field work, performed in Ukraine by the employees of the Arboretum in Bolestraszyce in order to complete the necessary tasks required to develop documentation of the extant state of historical garden complexes and analyse their current condition and state of preservation. Wherever possible, they are to document the remains of their historical structure and perform on-site research. This is to be performed after an initial dendrological analysis and the identification of the most precious, oldest, rarest and protected plant specimens. The tasks are going to be carried out by a multidisciplinary research team, comprised of botanists, gardening historians, as well as an arts historian with a lot of experience in conducting work on the development of extant state documentation in the area of the Borderlands. The development of this documentation is supervised by dr Rafał Nestorow of the Institute of the Arts of the Polish Academy of Sciences in Warsaw. The goal of the project is first and foremost the carrying out of field work that can allow the team to make an estimate of the number of and the state of preservation of historical garden complexes of the Borderlands, as well as the development of a photographic and written documentation which can later serve as the basis for publishing a detailed inventory of the gardens of the Lviv voivodship and, further down the line, of those located in other voivodships of the former Borderlands of the south-western Commonwealth. The publication is intended to have the same wide historical and artistic framework as that of “Materiały do Dziejów Sztuki Sakralnej na dawnych Kresach Rzeczypospolitej”, a work that had been published by a team of employees of the Institute of the History of Art of the Jagiellonian University in Krakow. Due to the endeavour being a pilot program, the materials that are going to be gathered will include basic historical information and iconographic materials regarding the sites. This approach can provide us with the ability to compare the current state of the preservation of the palace and park complex with its original form. In the future, this documentation can provide a wider perception of the matter for a larger group of readers. The material result of the project is going to be the gathering of photographic and written documentation, its arrangement and the preparation of catalogue charts, which is going to facilitate further and more detailed research. It is possible that we will get to know the original appearance of the park and the state of what has been left of it after the project starts.

The palace park in Sudova Vyshnia is under protection as it is a precious natural site, at least according to the plaques located near its entrance. [31]

References

- [1] Aftanazy R., Sądowa Wisznia. Ziemia Przemyska województwa ruskiego /in:/ Dzieje rezydencji na dawnych kresach Rzeczypospolitej, Wydawnictwo Ossolineum, Wrocław, vol. 7, iss. 3.7.2.
- [2] Komornicki S., Dwory murowane w Małopolsce z czasów Odrodzenia (1510–1630)//Prace Komisji Historii Sztuki, Vol. 5, 1930, p. 64.
- [3] Sadowska E.J. Kasztel renesansowy w Graboszycach//Wiadomości Konserwatorskie, iss. 14-2003, p. 58–63.
- [4] ib. Oboronnyj renesansnyj dwir u Graboszycach, Visnyk D. U. Lwiwska Politechnika vol. 53-2005, p. 60–64.
- [5] Inwentarz ekonomiczny Dóbr Sądowa Wisznia z przyległościami Bortiatyn, Xięży Most, Polaki, Zagrody Ruskie i Zagrody Podzamkowe w Cyrkule Przemyskim położonych do Jaśnie Wielmożnej Henrietty Komorowskiej i Antoniny z hrabiów Komorowskich hrabiny Bąkowskiej 5 kwietnia 1831 roku wydany na zaspokojenie sumy 50 000 fr. Archiwum dawnego Zakładu imienia Ossolińskich – Lwivska natsionalna naukova biblioteka Ukrainy imeni V. Stefanyka, sygnatury F.141/I,1146/III.
- [6] Sadowska E.-J., Spilna kultura spadszczyna prykordonnnyh misteczok Hałyczyny, Visnyk D. U. “Lwivska Politechnika” UDK 711, Architektura 379. Kniga Mist Hałyczyny, ed. H. Petryshyn. – 1999, p. 221–230, 268–269.
- [7] Jaroszewski T. S., Kostium francuski architektury polskiej 2 połowy XIX wieku/in:/Tradycja i innowacja. Materiały Sesji Stowarzyszenia Historyków Sztuki , Łódź, listopad 1979, Warszawa-1981.
- [8] Sadowski Ł. M., “Kostium francuski” a architektura rezydencjonalna polskiej arystokracji i ziemiaństwa w latach 1864–1914, Wydawnictwo DiG, Warszawa-2006.
- [9] Rąkowski G., Przewodnik krajoznawczo- historyczny po Ukrainie Zachodniej, część 3 Ziemia Lwowska, Oficyna Wydawnicza Rewasz, Pruszków-2007, p. 484–485.
- [10] Sadowska E. J., Conservation of the neo- renaissance House at Studencka street 14 in Kraków with the use of hydraulic lime/In:/ 2nd Congress of polish conservators/ Warsaw-Cracow 2015. Past for the future, vol. 6, Technical transactions.Architecture, iss.6A(9), year 2015(112), P. 167–181.

- [11] Zgórniak M., Wokół neorenesansu w architekturze XIX wieku, 2nd edition, Krakow-2013.
- [12] Aftenazy R. op. Cit.
- [13] Bogdanowski J., Problemy genezy i systematyki polskiej sztuki ogrodowej. Dla potrzeb słuchaczy Studium Podyplomowego Konserwacji Zabytków i Architektury i Urbanistyki, Politechnika Krakowska. Instytut Historii Architektury i Konserwacji Zabytków, Krakow-1975, p. 11–13;
- [14] Ciołek G. Ogrody polskie. Przemiana treści i formy, Warszawa-1954.
- [15] Jankowska M., Gerard Ciołek. Badacz i konserwator ogrodów zabytkowych. Ośrodek Informacji Państwowego Przedsiębiorstwa Pracownie Konserwacji Zabytków, Warszawa, 1981.
- [16] Jankowski E., Dzieje ogrodnictwa w Polsce, Warszawa-1923;
- [17] Gorochow W. A., Łunc Ł. B., Parki Mira, Strojizdat, Moskwa, 1985.
- [18] Morawińska A., Augusta Fryderyka Moszyńskiego Rozprawa o ogrodnictwie angielskim, 1774, Wydawnictwo Ossolineum, Wrocław-1977.
- [19] Ciołek G., Ogrody Lublina w 19 wieku // Ochrona Zabytków, R.7-1954, iss. 4, p. 263–270.
- [20] Ciołek G., Bogdanowski J., Ogrody polskie. Wydawnictwo Arkady, Warszawa-1974.
- [21] Baraniewski W. Zespół rezydencjonalny w Krzeszowicach w 19 wieku/in:/Dzieła czy kicze, Państwowe Wydawnictwo Naukowe, Warszawa-1981.
- [22] Fijałkowski D., Kseniak M., Parki wiejskie Lubelszczyzny- stan, ochrona i rewitalizacja biocenotyczna, Państwowe Wydawnictwo Naukowe, Warszawa, 1982.
- [23] Ciołek G., Łoza S., Polscy architekci i planiści ogrodów // Prace Instytutu Urbanistyki i Architektury, R.I, z.3-1953 // Prace Instytutu Urbanistyki i Architektury, R.II, iss. 4-1952/1953 // Prace Instytutu Urbanistyki i Architektury, R.III-1953, iss. 2.
- [24] Ciołek G., Plapis W., Materiały do słownika twórców ogrodów polskich, Warszawa-1968.
- [25] Evolutsiya landshaftnogo proektuvania u Lvovi XX–XXI stolitia / Yu. L. Bogdanowa // Visnyk National university Lviv Politchnik. Athitectura – 2014. – Iss. 793. – P. 126–134.
- [26] Sudowa Vyshnia // Słownik geograficzny Królestwa Polskiego i innych krajów słowiańskich. – ed. Chlebowski B., Sulimierski F., Walewski W., Warszawa-1889. – T. X : Rukszenice – Sochaczew. – P. 361–362.
- [27] Sadowska E. J., Budownictwo mieszkalne dla służby dworskiej na terenie Małopolski. doctoral thesis written at the Faculty of Architecture of the Cracow University of Technology, manuscript held at the Main Library of the Cracow University of Technology, 1979.
- [28] Frazikowa R., Józef Tomasz Frazik (1922–1998)/in:/Studia z historii architektury i urbanistyki poświęcone profesorowi Józefowi Tomaszowi Frazikowi, ed. by K. Kuśnierz, Z. Tołłoczko, Politechnika Krakowska, Kraków-1999, p. 14.
- [29] Chałupski J., Obiekty mieszkalne dla służby dworskiej na Pogórzu Rzeszowskim//Czasopismo Techniczne, iss. 1 i 3 B(216 and 218). – 1979, p. 88–93.
- [30] ibidem, Czworaki//Spotkania z zabytkami, iss. 5-1988, p. 37–39.
- [31] Gubańska R., Trwanie czy przemijanie mieszkań dawnych pracowników folwarcznych//Architektura Krajobrazu. Uniwersytet Przyrodniczy we Wrocławiu, iss. 4-2011, p. 17–23.
- [32] Na Lvivshchyni za odnu hryvniu prodajut palac // Lvivska gazeta. – 2013. Access: 27.11.2016.
- [33] Fijałkowski D., Kseniak M., Stan parków wiejskich regionu Lubelskiego/in:/Człowiek i środowisko, R.I, iss.4, Instytut Kształtowania Środowiska, Warszawa-1977.
- [34] Majdecki L., Historia ogrodów, Państwowe Wydawnictwo Naukowe, Warszawa-1978.
- [35] Historic Gardens (The Florence Charter)1984.
- [36] Kalińska B., Współczesne wartości użytkowo-funkcjonalne naturalistycznych parków podworskich, manuscript of the diploma thesis held in the archive of the Warsaw University of Life Sciences-1984.
- [37] Rokosza J., Rylke J. Roślinność podstawową wartością historycznych parków wiejskich// Ogrodnictwo, iss. 4-1980.
- [38] Rylke J., Wartości starych parków. Rozprawy naukowe i Monografie. Szkoła Główna Gospodarstwa Wiejskiego-Akademia Rolnicza, Katedra Projektowania w architekturze krajobrazu, Wydawnictwa Szkoły Głównej Gospodarstwa Wiejskiego Akademii Rolniczej w Warszawie, Warszawa-1987.

Ева-Яніна Садовська

ПАРК ПРИ ПАЛАЦІ У СУДОВІЙ ВИШНІ АВТОРСТВА ІНЖЕНЕРА АРНОЛЬДА РЕРІНГА

Анотація. У статті подано інформацію про парк при палаці у Судовій Вишні. Ландшафтний об'єкт запроєктований інженером Арнольдом Рерінгом за часів, коли неоренесансний палац був власністю родини Коморовських гербу Корчак. Парк, хоча і зничавлий, охороняється як пам'ятка природи і має великі шанси бути відреставрованим завдяки зусиллям працівників дендрарію у Болестрашищах, котрі будуть проводити його інвентаризацію.

Ключові слова: Судова Вишня, палац, англійський ландшафтний парк, натуралізм, Антоній Коморовський, Ян Непомуцен Марс, Арнольд Рерінг.

Nadiya Sosnova

LVIV PUBLIC SPACES OF THE 18th–19th CENTURIES

*Lviv Polytechnic National University
12, Bandery str., 79013 Lviv, Ukraine, rektime08@ukr.net*

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Annotation. The landmark public spaces for Lviv are Svobody and Shevchenko Avenues. These boulevards took on the role of a central representative city space since their laying. Socio-economic and political changes altered the cultural and symbolic image of Lviv; Lviv's structure became complicated over the years, however the central public spaces – boulevards, parks, squares, formed by the end of the nineteenth century remain the main formative elements in the issue of identity of the city.

Key words: public space, Hetmanski Valy Boulevard, Akademichna Street, landscape and spatial arrangement

1. Statement of Purpose

Landscapes of promenade representative spaces of the city were formed by the early 20th century – Hubernatorski Valy (Governor's Ramparts), Hetmanski Valy (Hetman's Ramparts), Akademichna Street and Halytska Square and a square near the Bernardine Church – Lviv received a network of high quality new public spaces.

Today, a part of once known representative spaces of the city has acquired signs of the urban space recession due to the urbanization processes. An issue of spatial arrangement and stylistics of the object arises during the reconstruction and improvement of the central public historically formed spaces. The dilemma is as follows: whether to carry out the redevelopment of urban public space according to modern globalization stereotypes or to return to the historical nature of the central space of the city.

The study of the genesis of the public spaces of Lviv should be the basis in a controversial issue.

The purpose of the article

To study the genesis of public spaces of Lviv in the 18th–19th centuries and the impact of socio-political factors and European trends in landscape architecture on their formation.

2. The main part

Throughout history the architectural and spatial pattern of the city center, as the main public space, has been a determining factor in the character of the city. The central space points to the belonging of the city to a certain culture and it is responsible for the identity of the city.

The central spaces of the cities meet two basic functions of the city: the first one, according to Weber [4], is trade, the second one is a visual vivid confirmation of the ability of authorities and the outlining of its achievements and intentions; as well as a statement of the political system and the socio-economic status in the state. Architecture and landscape architecture have always been a tool of visualization of transformations in the society. Change of style, fashion in architecture and landscape architecture occurred in the periods of political and economic changes. With the change of financially wealthy elites or political power, as formulated by professor B. Cherkes, in architecture "a search is initiated for means of expression of changes that have occurred in the society" [3].

There are many direct examples of the above-said in history. Thus, the Palace and Park of Versailles had to single out the French king along with France among other European ruling people. The glory of Versailles

only strengthened due to imitation of principles of design of Le Nôtre's creation throughout Europe. Only after the weakening of the French dominance in Europe, a new approach of England to arrangement of landscape without excessive costs managed to spread in the 18th–19th centuries. Again, the rest of the European countries began to redesign their gardens not to be outdated compared to England – an economically powerful fashion setter. A visual confirmation of the economic capacity of the country was required. Architecture and gardens were the means for demonstrating the status.

The late XVIII century was marked by a significant development of urban public landscape compositions in Europe. The defensive walls were torn down; wide boulevards were planned in their place that became the center of public life of the city. One of the most famous boulevard ensembles became the Ring in Vienna. In 1857 Emperor Franz Joseph I signed a decree to demolish the defensive city walls, which surrounded Vienna at that time, and to construct the boulevard in their place. The new Ring Boulevard and the buildings had to show the majesty of the Habsburgs and the Austrian Empire.

Transferring Lviv to the rank of the capital city of the crown province - Kingdom of Galicia and Lodomeria, obliged to develop the city. Since the late 18th century the Austrian authorities began arranging municipal facilities by demolition of city walls and by laying broad streets. New quarters, residential buildings, banks, hotels, administrative and public buildings were constructed.

The architecture of residential and public buildings for the late 18th – early 20th centuries Lviv, marked by a vivid emphasis on Europeanness of the city and its belonging to the Austrian culture, was extended by the development of a system of public spaces, among which the main ones were Hetmanski Valy and Akademichna Street - modern Svobody and Shevchenko Avenues. These boulevards fulfilled the function of a central representative urban space as an important element in the city's status.

In the second half of the 19th century a constitutional and liberal reform was introduced in the Habsburg monarchy that stipulated territorial self-government. Some powers were handed over to the lower levels, to Lviv in particular, to avoid public discontent with authoritativeness of the power. The province acquired the powers which it did not have until that time. "Ustawa gminna" (municipal act) adopted in 1862 became a documentary proof of municipal self-government. The organization of the two largest cities of Galicia, i.e. Lviv and Krakow, was based on their own statutes. The highest authority in Lviv was the City Council. Its main objectives were: to take care of the property of the city, take care of order and beautification in the city, and culture and leisure of its residents. Over time, according to the Polish historian Łukasz Sroka, the key ones were the matters that dealt with public spaces of the city. [8] It was necessary to build new sidewalks, squares, streets and parks. The cost estimate of improvement of the capital city of Lviv was higher than the possibilities of the city budget. But the importance of vivid demonstration of the economic power of the new government and attempts to show qualitative changes to the residents of eastern Galicia, required not a lengthy development, but a rapid transformation of Lviv into the capital city. In the late 19th century the city budget and funds under loans, which the city government was forced to take to develop the city, were distributed largely for the improvement of the central public space. Thus, 500.000 zlotys were allocated to continue covering of the Poltva River with a concrete vault, 600.000 zlotys – for laying the streets with cobblestones, 700.000 zlotys were allocated for the construction of the theater, 250.000 – for development of a network of urban lighting, 100.000 – for surveying works on regulation of streets and squares [8].

The created commission called "For construction and public works" by the City Council consisting of 25 people, speaks for the importance of the development of the capital Lviv [8]. Those experts worked on spatial and aesthetic development of the city. Their duties also included control over the condition of streets, sidewalks, public gardens.

Sending delegations in the middle 19th century for business trips to the capitals of the European countries to get acquainted with the planning of administrative buildings [2] and experience of the cities development in general, is also indicative of the attempts to bring Lviv in compliance with the standards of the capital city.

Arrangement of the Svobody Avenue - the second public space of Lviv after the Market Square – began in the 1780's. Rampart fortifications were redesigned by 1800 and the Nyzhni Valy (Lower Ramparts) Boulevard with a pedestrian alley along the Poltva River were laid in their place. While the Market Square was protected against reconstruction by the city authorities, the surrounding territories underwent significant changes. And their development was carried out in the new contemporary forms and styles that could not be of interest to residents, unlike the "old" unchanged Market.

We can speak about the shaped public space of Lviv as a system of promenades, squares and public gardens since the XIXth century. Arnold Röhring was the main city gardener of this period who arranged and redesigned the main boulevards, gardens and squares of Lviv.

After covering the Poltva River in 1886–1890, the Nyzhni Valy Boulevard was called the Hetmanski Valy. Its redevelopment was carried out under the direction of A. Röhring. A central pedestrian alley was laid in the middle of the boulevard, the linear composition of which was decorated with two flower stalls.

A boulevard on Akademichna Street was also arranged under the A. Röhring's project. It consisted of separate trapezoidal shapes with rounded corners in the layout. Poplar, spruce and maple trees were among the plantations that gave shade over the benches set first on the avenue [1].

English naturalistic gardens were still relevant in the 19th century. Since the public space of Lviv was formed with consideration for the European trends, the municipal planted spaces also had features of landscapes. The main boulevards and squares were given a fashionable appearance of the recreational private garden that did not emphasize the linear composition of boulevards. The examples are the groups of different-sized plantations of Akademichna Street (Fig. 1), public garden of Mariacka Square (Fig. 2), public garden on Halytska Square.



Fig. 1. Akademichna Street, early XXth century



Fig. 2. Public garden of Mariacka Square

The criteria for urban landscape gardening changed over time. Lviv central landscapes also changed to match the trends. In 1922–1930-ies the boulevard on Akademichna Street was redesigned into a straight pedestrian alley with two rows of poplars. Trees on the green islands were uprooted, benches were taken away and flowerbeds were eliminated. The avenue changed by its content. After being a promenade and recreational space it became a transit one. Although benches are standing there again, the space is, in general, read as a component of the pedestrian network of the city, and not a place for a long rest. Active traffic in both sides of the boulevard is the root cause of this, however, the regular landscape composition with rows of trees is read as a steering, and not a recreational one (Fig. 3).



Fig. 3. Landscape and spatial transformations of Akademicka street during the XX century :
a – early 20 c.; b – middle 20 c.; c – late 20 c.

At the beginning of the XIX century the Victorian garden established in Europe, where all other components were subject to flower gardens arrangement. The landscape fashion in the late 19th century spread to the public spaces of the city as well. They were actively decorated with flower beds and flower gardens as the components of landscape arrangement fashionable at that time in Europe. A wide-spread shape of the flower bed was a circle divided into segments (Fig. 4).



Fig. 4. Trentham castle, Staffordshire. England. Late 18th century. Project by Lancelot Brown. [5]

Other public spaces of the city also acquired fashion traits as a result of redevelopment by A. Röhring. Thus, the public garden on Halytska Square, founded in 1890–1893, was rearranged in 1909–1910 by A. Röhring and A. Zakharevych, and plants were replaced: old tall trees were uprooted, new were planted and flower gardens were laid [1]. The lower terrace of the City Park (now Ivan Franko Park) was redesigned in the late 19th century. According to the draft, the terrace acquired decorations with symmetric flower beds and flower gardens with regard to the axis of the main entrance to the university.



Fig. 5. Flower garden in front of the pavilion of industry at the Galician National Exhibition. Lviv, late 19th century. Project by A. Röhring



Fig. 6. Flowerbed around the monument to Kornel Ujejski on Akademichna Street. Lviv early XXth century. Project by A. Röhring

During the arrangement of less dominant green areas of the city, they responded to changes of landscape fashion not so quickly. For example, the landscape near the monument to A. Mickiewicz that united the spaces of the two Lviv boulevards was arranged in only a couple of years after opening of the monument to A. Mickiewicz in 1904. The architect T. Talovskyi in 1907 designed a project that suggested making a “green island” among the streets with traffic. [7] Although this piece of the urban green area cannot be interpreted as a pedestrian and recreational space, since it is cut off from the rest with the streets, but visually a single central area of the city is formed by its mediation.

Urbanization processes of the early 20th century, including the growth of population in Lviv¹, promoted further development of public spaces of the city. The number of the arranged squares and public gardens free from development was increasing.

3. Conclusions

The urban structure of Lviv became complicated over the years, however the central public spaces - boulevards, squares, public gardens, formed by the first third of the XX century remain the main formative elements in the issue of identity of the city.

Today the Ukrainian society needs changes, and this is reflected in the architecture and the desire to meet the world's architectural and spatial fashion, to build new. However, it is expedient to return to the traditional types of central urban spaces for the historically developed cities of Ukraine instead of the single-type patterns of globalized fashion.

References

- [1] *Arhitektura Lvova chas i styli. XIII – XXI st.* / ed. Ju. Biriulov. – Lviv: Center Europy, 2008. – 720. – S. 512.
- [2] Mudryi M. *Budivlia Galytskogo Seimu: ambitsiji, mozhlyvosti, smysly* // *Visnyl Lvivskogo universytetu. Seriiia istorychna.* 2016. – S. 158.
- [3] Cherkas B. *Natsionalna identychnist v arhitekturi mist: monografiia* / B. Cherkas. – Lviv: National univercity Lviv Politehnic, 2008. – 268 s.
- [4] Weber M. *Die Stadt. – Wirtschaft und Gesellschaft, Kap 8. Grundriss der Sozialökonomik. III. Abt.* Tübingen, 1922, S. 513–600. // Maks Weber. *Gorod.* Electronic Publication: Center for Humanitarian Technologies. – 2008. Access: <http://gtmarket.ru/laboratory/basis/3597>. (viewed on November 25, 2016). – Title from the screen.

¹⁵ In 1776 the number of residents of Lviv was 29,500; in 1869–87, 109 residents; in 1910 – about 200,000 (residents along with the military); in 1921 – about 220,000 [6].

- [5] Formal Gardens in England and Scotland. Their Planning and Arrangement. Architectural and Ornamental Features. Published by B. T. Batsford, London, 1902. Access: <https://www.abebooks.co.uk/servlet/BookDetailsPL?bi=1650521050&searchurl=tn%3Dformal%2Bgardens%26sortby%3D17%26an%3Dtriggs> (viewed on November 25, 2016). – Title from the screen.
- [6] Fryderyk Papée. Historia miasta Lwowa w zarysie // Książnica Polska, Wydanie drugie, poprawione i uzupełnione, Lwów-Warszawa 1924.
- [7] Jurij Smirnow. Pomnik Adama Mickiewicza we Lwowie // Artykuły z kategorii Sztuki wizualne. Culture.pl 2005/07/05.
- [8] Łukasz Tomasz Sroka. Wpływ samorządu Lwowa na przestrzeń publiczną miasta (1870–1914) // Visnyk Lvivskogo universytetu. Seriya istorychna. – 2016. – S. 256–257

Надія Соснова

ПУБЛІЧНІ ПРОСТОРИ ЛЬВОВА XVIII–XIX СТ.

***Анотація.** Для Львова знаковими публічними просторами є проспект Свободи та проспект Т. Шевченка. Від часу закладення ці бульвари взяли на себе роль центрального репрезентативного міського простору. Соціально-економічні та політичні зміни міняли культурно-символічний образ Львова; з роками структура Львова ускладнювалась, однак центральні публічні простори – бульвари, сквери, площі, сформовані до кінця XIX ст., залишаються основними формотворчими елементами в питанні ідентичності міста.*

***Ключові слова:** публічний простір, бульвар Гетьманські вали, вулиця Академічна, ландшафтно-просторова організація.*

ARNOLD RÖHRING AND THE RESIDENTIAL GARDEN IN SIARY IN VIEW OF THE GARDEN ART TRENDS OF THAT TIME

*Institute of Landscape Architecture, Faculty of Architecture, Cracow University of Technology,
ul. Warszawska 24, 31-155 Kraków, Poland, azachar@pk.edu.pl*

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Abstract: The article discusses the garden in Siary near Gorlice located in the territory of the former Galicia. The palace complex owned by the senator Wladyslaw Dlugosz was famous for its sophisticated style, a magnificent use of *genius loci*, a perfect setting in landscape, and scenic connections. The garden combined features typical of eclecticism and naturalism. According to the family sources, it was designed by Arnold Röhring, the designer of Stryiskyi Park in Lviv. The work also attempts to determine similarities in terms of features typical of the works designed by Röhring and the garden in Siary in view of landscape architecture trends of that time.

Key words: garden styles, naturalism, eclecticism, picturesque, garden composition, parterres and bedstypes

1. Introduction

The main gardener of Lviv, the inspector and director of green areas in the city, Arnold Karol Röhring (1840–1913), was famous for his sophisticated taste [8]. In Lviv itself he himself, as well as in collaboration with others, designed gardens such as the Stryiskyi park, referred to as the Jan Kilinski park, with exhibition grounds (1877–1894) [1], Zelizna Woda (1894), Lyczakowski (1892) and greens on the Halicki (1890–93) and St. Jura (1897) squares [9, 10, 29, 30]. His merits were described in his obituary reading as follows: “As regards the history of reviving Lviv, the name of the inspector of city green areas went down in history for ever: our beautiful gardens and parks envied by others are to a great extent his work and eternal monument of his merits and works whispering in eternal sound of leaves” [11]. Over 200 gardens and parks” [9] which made towns in Galicia, Kingdom of Poland, Russia, Silesia and Hungary more beautiful, were designed according to his plans and under his supervision. He designed parks and public spaces, as well as residential, exhibition and theme gardens. Röhring was a student of Karl Bauer, the professor of Botany and the director of university botanic gardens in Lviv and Czernivtsi [2], a designer of the Strzelecki garden in Krakow among other complexes [12]. Bauer was regarded as an exquisite gardener. He used to design private and public gardens in the Kingdom of Poland, in Volhynia, Ukraine and Podolia. “The garden plans he made were regarded as masterpieces /.../ Bauer used to specialize in English gardens where trees could grow freely and which imitated the nature of forests or meadows in terms of grouping flower beds and lawns [12]. Röhring continued this style. His oeuvre includes works whose authorship is attributed to him solely through oral tradition and definite proofs have yet to be found. Among other works, Koropets on Dniester [3] and Siary near Gorlice located in the area covered by former Galicia, should be mentioned. Siary was owned by the senator Wladyslaw Dlugosz (1865–1937), the minister for Galicia, and a long-standing president of the National Petroleum Oil Society [13]. According to family tradition, the design of the residential park in Siary was drawn up by the inspector of the Lviv gardens, Arnold Röhring [27].

2. Work methods

The present article attempts to serve as a comparative study with a view to prove validity of the thesis that Röhring is the author of the project for Siary. Selected works by Röhring were analysed based on archive,

iconographic and cartographic materials, descriptions of his works and *status quo*. The purpose was to list the characteristics of compositional elements employed by the designer. They were compared to the residential park in Siary. The analysis was conducted by taking into consideration historical background, including trends and currents in the garden art of that time.

3. The garden art at the end of the 19th and beginning of the 20th centuries

Röhring lived in the times when the garden art was subject to dynamic developments and transformations. At that time, the landscape style was still widely spread. Natural values of places with diverse topography, as well as riverside and riparian areas were appreciated because they allowed for creating views, including the borrowed ones. Existing forests, both broad-leaved and riparian, were regarded as additional advantages. The 19th century was the time when plant hunters used to be very active; at the same time, the popularity of various types of decorative beddings and flower beds was very high. It is then that the bedding systems, subtropical and picturesque beddings were introduced. For some short period of time it reached the point when this phenomenon was referred to as *phyllomania*, i.e. love for leaves. Furthermore, this is exactly when carpet beddings became used [14, 15]. Their development was additionally favoured by historicism and eclecticism. This, in turn, allowed for creating sophisticated arrangements inspired by historical beddings alluding to patterned carpets. At the same time, naturalism grew stronger. Hence, regular beddings by architectural objects were accompanied by a wild, forest-like, landscape and picturesque area on the fringes. In 1870 William Robinson published *Wild Garden* (1870) [4] and laid foundations for a new trend in designing natural gardens. Wilderness involved the use of wild and cultivated plants, both domestic and exotic ones, including those subtropical, which could survive outside all year long in the environment similar to the natural one, e.g. boggy, water and alpine areas. By their form, wild gardens aimed to underline individual beauty of plants in a complex arrangement. Robinson recommended it for private and public gardens and parks. Moreover, what became popular was Arts and Crafts gardening, in which designers highly valued familiar, vernacular houses combined with cottage gardens. What was desired was an individual and regional character, which was reflected in the use of traditional building materials related to a specific place. Harmonious combination of geometrical construction of architectural elements with colourful patches composed by plants used in beddings, flowerbeds and flower walls, was very popular. Contrasting and pastel plants with diverse textures and shapes toned down formal compositions and complemented the free ones. What was typical were earth-sheltered gardens or beddings intentionally designed on lower levels with a view to ensuring better views. Pergolas, garden houses, stairs, vases and solar clocks, stairways with various structures, stone or brick retaining walls as well as abundance and diversity of plants used to complement the image of a garden which served as continuation of the house [5].

As a city gardener of Lviv, Arnold Röhring gained experience in diverse fields by designing, supervising projects and participating professional societies and occasionally acting as a judge in various competitions [16, 17]. He used to learn about European gardening. He managed to do that by way of visiting various exhibitions [18], including the gardening exhibition in Vienna (where he acted as a judge during a contest), Hamburg as well as the World Fair in Paris (where he aimed to “gain knowledge regarding French plantations”). He also undoubtedly appreciated the projects by Jean-Charles Alphand and Eduard Andre in Paris, which could be referred to as “decorative gardening” or “great mannerism”. The said projects belong to the 19th century historicism. What is important for them is the arrangement of park alleys shaped as if drawn with the use of a compass, arches composing beautiful curves, which all offered the possibility to look at diverse views. Another typical feature included sequences of extensive interiors, areas shaped as small valleys, grassy hollows, distinctive trees, flower beds made of bushes as well as decorative, geometrical beddings taking rectangular, circular and hippodrome-like forms. This elegant style, referred to contemptuously later as pretzel style was defined by Janusz Bogdanowski as calligraphic style [6]; it was popular in the 2nd half of the 19th and at the beginning of the 20th century. This way of designing can be found in Röhring's works located in Lviv as well as in Siary.

4. Characteristics of Arnold Röhring's works on selected examples

The features typical of the works by Röhring are identified by way of analysing his selected projects in Lviv, descriptions of his works and the project of the garden by the residence in Koropec whose authorship is assigned to him [3].

The Stryjski Park was set in the area littered with deep ravines which endows it with picturesque and diversely shaped landscape. Its area also covers the old Stryjski cemetery closed in 1823. The area was tree-covered, equipped with alleys, artificial ruins and a pond with waterfowl. Notes in the press give an idea of what the most famous work by Röhring was like. This is what was written: "In 1887 the (Stryjski) park was set, which is the pride of our city owing to its mountainous landscape and meticulous selection of tress as well as thanks to highly aesthetical arrangement of pathways, passages, alleys and flower beds" [1]. On the square in the Stryjski park, in 1894 the National Exhibition was organized; it featured economic and cultural accomplishments from the first 30 years of Galicia as an autonomous state. The area of the exhibition covered approximately 50 ha divided into 34 parts with 129 pavilions. Works on the exhibition were supervised by the engineer of the event, count Lubiński, while the person responsible for the gardening in the main part was Röhring who also embarked upon arranging the "Polish garden" in front of the manor house, where the plants featured in "Sir Thaddeus" played the most important part [19]. The park itself constituted a harmonious combination of naturalism with geometrical and calligraphic forms. Furthermore, decorative beddings appeared in the exhibition part among other areas. Pictures show narrow ribbon-like flower beds along the lawns, which flowerbeds were composed of climbing roses; smooth lawns featured carpet beddings and cropped forms. Trees were also diverse and included species such as spruces, birches, impressive solitary forms, coniferous formed bushes as well as naturally shaped broadleaf bushes planted under the trees. Edmund Jankowski wrote that in the park there were beautiful groves and groupings of spruces, maple trees, limes, solitary trees, grand beeches and firs, vivid lawns and, what is the most important, breathtaking views from the upper part [7]. Over time the slope was additionally decorated with serpentine paths. Except for domestic species, the park boasted exotic, rare and precious ones. What was written in 1925 as an expression of protest against cutting down trees in the Stryjski park, "a magnificent work by Rohring", was that under the pretext of too little sunlight, "entire forests, flowerbeds and groupings of old beautiful tress are cut down. This is an excuse to cut down the spruce forest leading to the "Palace of Arts"... The old alley composed of trimmed hornbeams disappeared nearly completely and only one of three beautiful rows survived". Furthermore, the disappearance of birches and destruction of hornbeams serving as undergrowth was also noticed [20].

Another source of information about the taste of the gardener of Lvov are the newspapers of that time. This is what was written in 1896: "On the 6th day of this month, Sanok was visited by Mr. Röhring, a famous architect and gardener, who was invited by Mr. Mayor C. Ładyżyński with a view to giving instructions regarding the plantation in the city park. Mr. Röhring was amazed by the beauty of our region and breathtaking views from the park hill which he advised to improve by using fine radial paths seen from afar and winding among groupings of mainly coniferous trees and bushes, which ploy would endow it with sophistication and more diverse form as well as infuse new life in the park just like it happens in the parks in Lvov, which are free of soulless patterns" [21]. The walking paths to the Aptekarka mountain resemble serpentine from the Stryjski park.

It is also said that Röhring transformed the park by the residence in Koropec by Dniester (Buczacki district) purchased by Stanislaw Badeni in 1893. Roman Aftanazy describes a vast, 200-hectare landscape park surrounding a beautiful Viennese renaissance palace designed by an unknown architect. The park was located in an extensive valley surrounded by hills with soft slopes; the park was cut by two rivulets: Koropczyk and Młynówka, whose banks were connected by means of white bridges. Furthermore, it included a pond, orangery and greenhouses. Vast glades decorated with picturesque groupings of trees and bushes, both single-species (pseudotsugas?, birches, white poplars) and mixed, were very pleasing to the eye. There were also many other species of trees, including maples, ashes, lindens, weeping willows and two magnificent tulip trees. The front elevation was decorated with flower beddings, while the garden elevation with climbing roses on the lawns [3].

The works of Röhring include diverse complexes both public and residential; it demonstrates that he was skilled in the use of *genius loci* and designing in difficult conditions, i.e. places with diverse and rich topography. He was fond of naturalistic forms with domestic plants complemented with exotic flora. He made use of flower beds and beddings as well as trimmed forms in the vicinity of architectural objects (buildings, pavilions, structures and sculptures). He enjoyed enriching park composition with water elements. His works reflect the diversity of the epoch where naturalistic, eclectic and early modernist styles were frequently combined with harmonious and picturesque compositions. This is how his works can be described.

5. The residence of Władysław Długosz in Siary and its main compositional elements

Siary is a 14th-century royal village founded on the German law (currently it forms part of Gorlice). The village included Siary Dolne and Siary Górne divided by the slope of Bartnia Góra where the residence, probably a defensive one, was originally located. The palace complex in Siary was constructed in the area covered by the former manor complex located in the Sękówka stream valley. Even now it impresses the visitors with its scale, logics and exceptional skill in the use of *genius loci*. The area of the park covers the piece of a hill descending eastwards, cut with ravines and crowned with a distinctive erosion escarpment. The height of the escarpment's edge is approximately 18 meters when counted from the base, while the distance from Sękówka, where the palace was located, is about 20 meters.

The cadastral map of Siary of 1850 including indicative sketches (The National Archive in Przemysł) features a complex on a river embankment. The sketches show the changes that took place after 1850 [22, 23, 27], including the location of a new mansion on the embankment, which opened views to the east – to the Sękówka valley, Sękowa village, fields and cemetery [28]. The mansion could be accessed through the driveway from the west, from the Hungarian route. The mansion complex was surrounded by forests from three sides, from the east and south – with by the river forests, while from the north – broadleaved forest in a ravine. In the southern part, there was an orchard and utility garden as well as three long and narrow ponds separated from one another with causeways. Around 1870, Władysław Dembowski became the owner of the mansion; he modernized the existing mansion and added a brick wing visible in the pictures from that time. As a result of financial failures, around 1898 Dembowski sold the property to his son-in-law, Władysław Długosz, an industrialist handling petroleum. It is at that time that the magnificent palace with a beautiful, nearly 10-hectare park was constructed. The creation of a new image of Siary was possible thanks to money and gifted designers. The lack of archive data from the last few years is compensated by the photos showing the property from the beginning of the 20th century to approximately 1945. Among them there are aerial photos featuring the layout of the complex [27, 23].

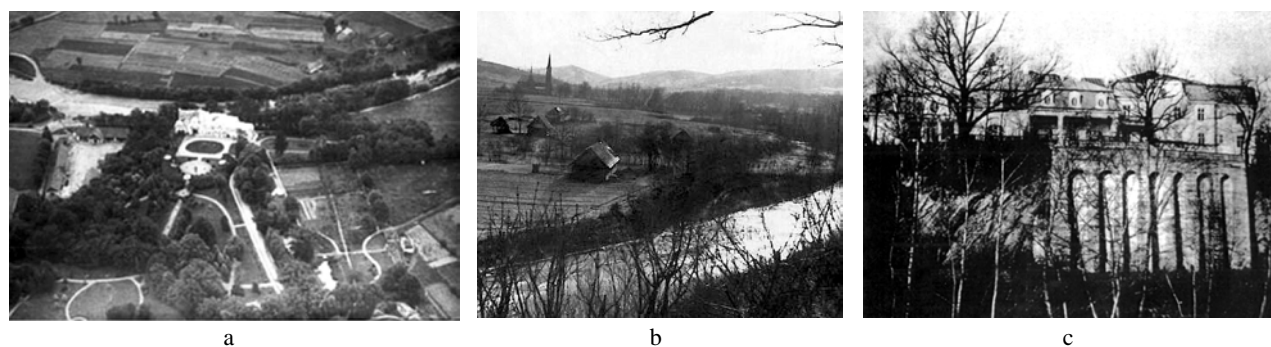


Fig. 1. Bird's eye view on the palace complex in Siary around 1935 (a); View from the palace terrace on the church in Sekowa around 1920 (b); View on the Siary palace from the Sekowka river, a monumental embankment (c) (pictures from the archive of A. Zachariasz)

Although the complex was set in relatively recent times, there are many uncertainties regarding the authorship of the palace and the park that belong to the complex in Siary. The palace, guardhouse, orangery, gardener's house and pergola were most probably designed by the same architect. According to Tadeusz S. Jaroszewski, Ferdynand Fellner from Vienna, from the Fellner & Helmer studio, is the author of the palace [24]. However, Z. Junosza writes: “The manor house beautifully located on a significant height (26 m) nearly perpendicularly by the river, old trees ensured conditions for the creation of a sophisticated and stylish residence. The bench, magnificent pergola in the park by the pond, newly constructed route from the upper part of the river are gems of architecture whose creation was supervised by the Lviv architect, Halicki, who is in love with Siary [25]”. This is where the second architect, Władysław Halicki, (1850 – d. after 1939), assistant of Juliana Zachariewicz educated in Lviv and Rome, comes into play. However, the writings of that time state that he supervised the works rather than was their author. Moreover, the authorship of the park is also a matter of speculation. According to family sources, it was designed by Arnold Röhring. The park was set between approx. 1908–1914 and 1914–1925 [23]. Typical compositional elements of the new arrangement were based on an earlier layout. Farm buildings were removed and only the granary was preserved; it was transformed for

gardening purposes. A manor farm with historicising features was constructed in the northern part of the complex below the embankment. The main axis of the composition running from east to west was retained. The construction of the palace started around 1900. It was located in the area covered by the former manor house (which was partially used). What was constructed was an eclectic, neo-baroque complex boasting art nouveau features with irregular and diverse mass. It was expanded after the damages caused during the war in 1914 (winter garden was destroyed) and after the fire in 1928. From the side of the Sękówka river, a three-level terrace on an embankment was constructed and strengthened by a strong concrete structure. The terrace overlooked a magnificent landscape closed with mountains with gently running slopes, fields, church and cemetery with a mausoleum of the Długosz family in Sękowa. A magnificent and consistent garden architecture as well as beautiful sculptures, including pergola with sculptures, circular fountain, Sylena's fountain by the wall, the Holy Mary sculpture (by Piotr Wojtowicz from Lviv) [23, 27], a group of sculptures referred to as Poseidon's procession (Neptune and Nereids), stone vases, balustrades and retaining walls, had a huge importance for the image of the garden. Biriulow writes that Wojtowicz made sixty sculptures for Siary [26].

The access road from Węgieńska street was designed in line with the former composition and was framed by a black locust alley with mock orange as the undergrowth. The western boarder of the park was constituted by a trimmed hornbeam alley. Alleys crossing at right angles provided a frame for the orchard. The existing tree stand was fully used in the new concept. A complex composition was employed in the park, where geometrical arrangements by the palace were replaced with the free ones near the borders. Regularly shaped areas by the palace were decorated with lawns with flowerbeds. The first one was constituted by the forecourt, the second one was closed with the arms of pergola, while the third one, located in the southern part, a statue of Holy Mary. Looking from pergola towards the glade there was an alley with stone vases as well as a red bridge over the ravine, which divided the park in the central part. The glade was decorated with two solitary plane trees, Lombardy poplar and groupings of trees. The ponds were merged into one with an island housing a marina (from the north) and which could be accessed via a bridge. From the east the pond was crowned with a picturesque grouping of sculptures, Poseidon's retinue (Neptune and the Nereids). What was arranged behind the pergola, along the alley with vases, were "wild beds", i.e. perennial beds; irises, peonies, lupines and phloxes reflected ideas of William Robinson and works of Gertude Jekyll. Furthermore, cranesbills were also planted in the park. As regards flora in general, the complex was full of mixed and domestic plants of diverse shapes and contrasting colours, including oaks, ashes, hornbeams, maples, limes, birches, alders, willows, elms; foreign species were also very prominent and among them the following could be mentioned: plane trees, chestnuts, sweet chestnuts, locusts, silver maples. Coniferous trees were also used on a large scale, including domestic species such as spruces, firs, larches and pinewood, and foreign, including Weymouth pine, eastern hemlock, pseudotsuga. Ball-shaped trimmed thuyas served as decoration of the driveway. The pergola was covered with plants such as climbing roses; mixed and carpet beddings were employed; along the lawns there were climbing roses and perennial beddings [27].

The Siary residence can undoubtedly be counted as one of the most beautiful complexes in Poland not only because of the location, but also owing to compositional, architectural, gardening solutions and magnificent equipment.



Fig. 2. Palace complex in Siary around 1935 r. : 1. Mansion; 2. Pergola; 3. Grange; 4. Garage; 5. Statue of the Virgin Mary; 6. Pond with an island; 7. Gardener's house; 8. Greenhouse; 9. Orangery. (Drawing by A. Zachariasz) (a) Palace in Siary as seen from the driveway, (From the collection of A. Zachariasz) (b); A piece of a group of sculptures Neptune and Nereids (c) (Picture by A. Zachariasz 1995)

6. Conclusions

In his obituary it was stated that Röhring designed over 200 gardens. Despite such an extensive scope of work, his detailed biography and description of achievements have yet to be written; so far only approximately 20 of his works have been mentioned in various sources [29, 30]. Not all of them can be regarded as fully confirmed in terms of his authorship. The most famous work by Röhring is still the Stryiskyi park considered one of the most beautiful in Europe and the area of the National Exhibition (1894) as well as other projects carried out in Lviv. Research on his works and compositional analyses [10] are being conducted; they all demonstrate how complex his works are.

As regards the present research, comparative analyses focused on analogical elements of selected works by Röhring and the park in Siary (Table 1) became the essential element.

Table 1

Comparison of composition, style and elements of the Stryiskyi park and the park in Siary (prepared by A. Zachariasz)

Complex Analysed elements	Selected projects by A. Röhring Stryiskyi park with Exhibition Square	Park in Siary
• Natural conditions (lie of the land, scenic connections, original nature)	<ul style="list-style-type: none"> • Diverse lie of the land, ravines, steep slopes, use of various levels • Excellent scenic connections, scenic openings, the use of both passive and active exposition 	<ul style="list-style-type: none"> • Varied topography, riverside area, steep bank and ravines; use of various levels, terracing • Excellent scenic connections, the use of both passive and active exposition • The use of natural forest and riverside areas
§ Composition	<ul style="list-style-type: none"> • Complex geometrical composition – exhibition and free composition – park • Contracting forms, varying landscapes 	<ul style="list-style-type: none"> • Complex geometrical and free compositions • Contracting forms, varying landscapes and meticulous planning of sequences of gardens • Free standing elements at nodes at closings and intersections of axes
• Water	<ul style="list-style-type: none"> • Pond with waterfowl, picturesque, naturalistic 	<ul style="list-style-type: none"> • Pond with an island, marine and sculpture, a fountain by the wall and at the pergola's axis
• Flora	<ul style="list-style-type: none"> • Diverse and rich, exotic plants, new species and varieties make a set of domestic plants more attractive • Forest areas, forest clearings with skilfully placed solitary forms and groupings • Use of plastic features variability of plants during the year; contrasting forms, shapes and texture of plants • Carpet beddings, flower beds in the form of ribbons along the lawns, climbing roses • Greenery forms: groupings of coniferous trees, groupings of birches, climbing roses, trimmed hornbeam alleys, formal gardens emphasise representational elements (here they stress the monument of Kilinski) 	<ul style="list-style-type: none"> • Diverse and rich, exotic plants, new species and varieties make a set of domestic plants more attractive, many species of coniferous plants • Preserved fragments of the natural forest, forest clearing with skilfully places solitary forms and groupings • Use of plastic features variability of plants during the year; contrasting forms, shapes and texture of plants • Use of historicising, rather modest, beddings, flower beds in the form of ribbons along the lawns, climbing roses, plants forming “wild beds”, ground covers • Greenery forms: groupings of coniferous trees, groupings of birches, climbing roses, trimmed hornbeam alleys; • Formal gardens emphasize representative areas of the driveway and by the pergola
• Buildings	<ul style="list-style-type: none"> • Historicising, eclectic 	<ul style="list-style-type: none"> • Historicising, eclectic
• Small architecture elements	<ul style="list-style-type: none"> • Ruins, monument of Kilinski • Exhibition pavilions; after the exhibition: the art pavilion and Raclawicka Panorama building 	<ul style="list-style-type: none"> • Very rich equipment in terms of sculptures, mainly mythological as regards the theme, terraces, retaining walls, pergola, bridges, grillages
• Style	<ul style="list-style-type: none"> • Calligraphic, eclectic, naturalistic 	<ul style="list-style-type: none"> • Calligraphic, eclectic, naturalistic

The comparison made demonstrates similarities in terms of style, composition and shaping of plants. It cannot be explicitly confirmed that Röhring was the author of Siary, but the similarity is undoubtedly striking. As regards the surface, the parks differ significantly; they are also different in terms of functions and equipments. The Stryiskyi Park was nearly 5 times more extensive than the complex in Siary. The residence of Długosz is sophisticated and what was used in the park in line with the eclectic nature of the palace are diverse sculptures and elements of small architecture. The juxtaposition of complexes shows that both have many advantages in terms of topography, which guarantees far reaching views and picturesque shaping of gardens within the park. These are the features of space so much appreciated by Röhring. The parks stand out in terms of certain features, including readability of the composition, space arrangement, complexity, extensive diversity of elements, which ensure attractive views and contribute to changing scenery in specific sequences of gardens. The style of the works is similar in terms of calligraphic, eclectic and naturalistic elements. Geometrical forms were used mainly in regularly shaped gardens and they complemented naturalistic arrangements.

This article serves as an argument for research on the works by Arnold Röhring which undoubtedly deserve to be known in a greater detail. His works perfectly complement the epoch in terms of complexity of arrangements, aesthetics as well as program and diversity of functions; this statement applies to public parks, exhibition areas, greenery projects for representative streets as well as school and residential gardens. They fully reflect the requirements of the new profession of that time, namely, that of a landscape architect.

References

Books:

- [1] Stankiewicz Z. Ogrody i plantacje miejskie [in:] Lwów dawny i dzisiejszy, B. Janusz (Ed.), "MAR" (Małop. Agencja Reklamowa), Lwów 1928, 62–71.
- [2] Skład C.K. Uniwersytetu imienia cesarza Franciszka we Lwowie w roku 1877: CK Uniwersytet we Lwowie, Lwów 1877, 15.
- [3] Aftanazy R. Dzieje rezydencji na dawnych kresach Rzeczypospolitej. Województwo ruskie, Ziemia Halicka i Lwowska, Vol. 7, Zakład Narodowy im. Ossolińskich. Wrocław, Warszawa 1995, 90–96.
- [4] Robinson W. The Wild Garden, London 1870
- [5] Zachariasz A., Zieleń jako współczesny czynnik miastotwórczy ze szczególnym uwzględnieniem roli parków publicznych [Greenery as a modern city-forming factor with particular emphasis on the role played by public parks], Cracow, Cracow University of Technology Publishing, 2006.
- [6] Bogdanowski J. Polskie ogrody ozdobne, Arkady, Warszawa 2000.
- [7] Jankowski E. Ogrody ozdobne w Polsce [in:] Pamiętnik Jubileuszowej Wystawy Ogrodniczej w Poznaniu 25.IX.-3.X.1926, J. Rączkowski (Ed.), Poznań 1926, 103, 104.

Journal papers:

- [8] Słowo Polskie (wyd. południowe): 1905, 142, 5.
- [9] Nowości Ilustrowane: Złote gody, 1913, 8, 17.
- [10] Petryshyn H., Kryvoruchko O., Lukashchuk H., Tupis S., The park in St. Yuri (St. George) Square – the jewel in the emerald necklace of the city of Lviv: Technical Transactions, 2015, 112, 10-A, 3.
- [11] Gazeta Lwowska: Nekrolog A.Röhring 1913, 60, 4.
- [12] Lichończak G.: Krzysztofory Zeszyty Naukowe Muzeum Historycznego Miasta Krakowa, 1985, 12, 47.
- [13] Przemysł Naftowy: Lwów, 1937, 13, 314.
- [14] Zachariasz A. Oranżerie, szklarnie i XIX-wieczne szaleństwa mody ogrodowej: Zeszyty Naukowe Akademii Rolniczej w Krakowie, 2001, 80, 29
- [15] Zachariasz A.: Teka Komisji Urbanistyki i Architektury, Rośliny rodzime i introdukowane w kompozycji: 2008, XXXVIII, 175.
- [16] Słowo Polskie (wydanie poranne): Zjazd ogrodników, 1899, 62, 2.
- [17] Słowo Polskie (wydanie południowe): 1903, 455, 6.
- [18] Słowo Polskie (wydanie poranne): 1897, 233, 1.
- [19] Gazeta Lwowska: Wystawa. Na placu, 1894, 107, 4.
- [20] Kurjer Lwowski: Lwów w magistrackiej niewoli. 1925, 58, 3.
- [21] Gazeta Sanocka: O plantacjach w parku miejskim, 1896, 63, 3.
- [22] Zachariasz A.: Prace Komisji Krajobrazu Kulturowego, Przydatność archiwalnych źródeł kartograficznych dla współczesnych badań krajoznawczych, 2012, 16, 63.
- [23] Zachariasz A.: Teka Komisji Urbanistyki i Architektury, Założenie parkowo-pałacowe w Siarach, 1990, XXIII, 187.
- [24] Jaroszewski T.S.: Rocznik Historii Sztuki, Wiedeńskie atelier Fellner & Helmer i Polska, 1986, XVI, 311.

- [25] Junosza Z.: Sztuka, miesięcznik ilustrowany poświęcony sztuce i kulturze, Siary, 1912, 1, 116.
 [26] Biriulow J.: Acta Universitatis Nicolai Copernici, Zabytkoznawstwo i Konserwatorstwo, Nauki humanistyczno-społeczne, Piotr Wójtowicz – Iwowski Bernini, 2002, XXXIII, 355, 189.

Unpublished works:

- [27] Zachariasz A., Monografia i projekt rewaloryzacji założenia pałacowo-parkowego w Siarach koło Gorlic, master's dissertation written at the Faculty of Architecture, Cracow University of Technology, under the supervision of prof. J. Bogdanowski, Kraków 1987, author's archive.

Internet sources:

- [28] Dorf Siary in Galizien Jasloer Kreis, Cadastral map, 1850, 1:2880, <http://searcharchives.pl/56/126/0/-/1497/skan/full/hSeZeC8-TYbTYBA3GioEiA> accessed in 03.2015;
 [29] Leonow Siergiej (Leon Serg), Siergiej Leonow from Lviv has a Facebook page devoted to A. Röhring, where a lot of information was collected (source materials, including newspapers excerpts) <https://www.facebook.com/photo.php?fbid=10209036799139400&set=a.10207793126928372.1073741959.1300307980&type=3&theater> accessed in 03.2016
 [30] Röhring Arnold https://pl.wikipedia.org/wiki/Arnold_R%C3%B6hring, accessed in 03.2016

Агата Захаріяш

АРНОЛЬД РЕРІНГ ТА САД ПРИ ПАЛАЦІ В СЯРАХ НА ФОНІ СУЧАСНИХ ТЕНДЕНЦІЙ У ЛАНДШАФТНОМУ МИСТЕЦТВІ

***Анотація.** У статті представлено сад при палаці в Сярах, розташований неподалік від Горлиць у колишній Галичині. Палацовий комплекс належав сенаторові Владиславу Длугошу і був відомий своїм витонченим стилем, прекрасним використанням *genius loci*, досконалого розташування у ландшафті та візуальних зв'язках. Сад поєднував характерні риси еkleктики та натуралізму. За родинними переказами, автором проекту парку був Арнольд Рерінг – автор проекту Стрийського парку у Львові.*

У статті представлено також спробу пошуку аналогічних елементів характерних для творчості Рерінга та саду при палаці в Сярах з тогочасними тенденціями у ландшафтному мистецтві.

***Ключові слова:** ландшафтні стилі, натуралізм, еkleктизм, мальовничість, композиція саду, типи партерів рабаток.*

Ihor Zhuk

THE “EMERALD MANTLE” OF LVIV: GARDEN AND PARK DESIGN IN THE CAPITAL CITY OF GALICIA, 1770–1910s

*Department of Modern and Contemporary History of Ukraine, Ukrainian Catholic University
2a, Kozelnytska Str., Lviv, 79026, Ukraine, leopolis@gmail.com*

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Abstract. The article is dedicated to the history of garden and park design in the city of Lviv from the 1770s until the 1910s. The projects of Hetman Vally (Ramparts), the former Jesuit Garden, Stryiskyi Park and other noted developments are under discussion. A special accent is put on the creative work of Arnold Röhring, an Austrian scientist, garden and park designer.

Key words: Lviv, park design, Jesuit Garden, Stryiskyi Park, Karl Bauer, Arnold Röhring.

1. Introduction

The history of Lviv’s magnificent complex of urban gardens and parks, with its core shaped during the “long” nineteenth century, makes up a fascinating topic deserving special attention and an extra scholarly effort. Although a number of publications by Polish authors (Michał Kowalczyk, Franciszek Jaworski, Zygmunt Stankiewicz) [1], and later, by Ukrainian researchers (Tetiana Maksymiuk) [2] were dedicated to it, the theme still requires further research.

The short introductory text presented here is based on the information provided mainly by the above-mentioned authors in their earlier publications and does not pretend to be comprehensive. The development of garden and park design in Lviv of the 1770–1910s needs a further systematic study, especially, on the basis of thorough archival work.

2. Natural Conditions and Historical Background

“Lviv is located in such a [special] place, like a bower amidst the paradise” reads a description of the city compiled in 1582 by the German traveler Martin Gruneweg [3]. Indeed, the site admired by Gruneweg was unique in view of the city’s natural conditions. A rare mixture of specific features, i.e. a hilly terrain, the net of waterbodies, as well as the composition of flora, should be taken into account here.

The city of Lviv occupies the territory of the valley of the Poltva River and the surrounding hills, at the juncture of Podillia Upland (lying to the south-east) and the strip of Roztochia Heights (stretching in the north-west direction). The valley is fringed by the Castle Hill, the highest of the local hills, featuring prominently in the cityscape with the nearby Sand Hill, and the ridge of Znesinnia Heights from the east. The western border is outlined by the Kortum Hill, St. George Hill, and the Citadel Hill. These hills, along with numerous smaller hillocks scattered in between, determine the complex topography of the site. For centuries, the “dramatic” character of this terrain stimulated creativity of local garden and park designers (as well as the achievements in the field of architecture, generally).

The city was founded in the area featuring peculiar hydrological characteristics, abundant in lakes, streams and springs. Another unique feature of Lviv is its location on the main European watershed.

Finally, the region displays an extraordinary richness of flora with a blend of variegated species originating from different natural zones [4].

The unique natural conditions contributed to the development of gardening. “I do not know another place within the whole of the [Polish] kingdom, which would be richer in gardens”, was Martin Gruneweg’s another statement [5]. Numerous gardens were planted around since the King Władysław Jagiello endowed the city with vast adjacent areas increasing, thus, Lviv’s holdings outside the defensive walls up to 18 thousand morgs of land [6].

At the dawn of the modern era, Lviv managed to develop a distinct tradition of its own in the realm of gardening. Its oldest image drawn by Aurelius Passarotti (ca 1614) depicts the city of Leopoli surrounded by a wide ring of well-groomed plantations. Their planning was influenced by the Italian garden style during the age of Baroque, and English park patterns became fashionable from the end of the 18th century [7].

On the other hand, the possibilities for developing gardens and parks around the city were much restricted in view of the turbulent events of history full of wars. Time and again over the whole of the early modern period, Lviv found itself in the epicenter of war campaigns enduring many exhausting sieges. And each time the areas outside the fortified zone were burned down along with the suburban plantations. This situation persisted until the latter third of the 18th century.

In 1772, the south-eastern part of the Polish-Lithuanian Commonwealth was annexed by the Habsburg Empire becoming its crownland under the name of the Kingdom of Galicia and Lodomeria. With Habsburgian administration ensuring stable conditions for further investing in urban infrastructure, the city got a fair chance to develop its greenery, the so-called Lviv’s “emerald mantle” (in Polish, *smaragdowa szata*, a figurative definition coined by Zygmunt Stankiewicz) [8]. During the period of 1772–1918 the royal capital city of Lemberg / Lviv was lucky to take advantage of this chance. The network of local gardens and parks in the course of its evolution passed a number of consequent stages correlating with the main events of political, military, and social history, namely:

1) Initial stage – Josephinian era and the Napoleonic Wars period. The fortifications of Lviv were dismantled at that time, and simultaneously the first allée of Hetman Vally and the first public (former Jesuit) garden were planted, as well as the plantations of Kortumivka and Tsetnerivka. Adoption of the English park concept.

2) The Biedermeier period, three decades from the Congress of Vienna to the Spring of Nations. Putting in order the Governor Vally allées and the High Castle Park, popularity of the green zone of Pohulianka.

3) 1850–1860s – the policy of Neo-absolutism and preparations for the upcoming constitutional reforms. Karl Bauer, the director of city gardens, is active in Lviv (neoromantic designs for the former Jesuit Garden and the Lychakiv Cemetery).

4) 1870–1890s – initial decades of Galicia’s autonomy after introduction of liberal reforms after formation of Austria-Hungary Empire. The model of the eclectic park becomes prevalent. The activities of the Austrian Arnold Röring, Lviv’s municipal inspector of Lviv gardens (re-designing of the Hetman Vally above the vaulted bed of the Poltva River, creation of Stryiskyi Park).

5) Early 20th century, the last years of Austria-Hungary Empire. Neoclassical and functionalist tendencies manifest themselves in garden and park design of Lviv.

Having outlined the general scheme of chronology, let us proceed to the historical description of the main parks and gardens of the city of Lviv dating from the 1770–1910s.

Hetman Vally

Urban gardens and allées in Lviv downtown were once dubbed “Vally” (Ramparts) as they had been planted on the site of city fortifications demolished by the order of Austrian administration. After the demolition, it was decided to arrange there a ring of promenades (on the model of Glacis in Vienna). The alley of the so-called Hetman Vally (Hetmanski Ramparts) was laid along the western segment of the former defense walls, beside the Poltva River bed. The opposite, eastern segment provided a site for the Gubernatorski Vally (Governor Ramparts) [9].

The strip of Hetman Vally ran over the earthwork pedestrian terrace with some gaps interrupting it for the passing of cattle, the latter being an annoying obstacle for the promenading people [10]. Nevertheless, in the

course of time the site became popular as the focus of public life. Thus, by the end of the 18th century a new center of city life, an alternative to the medieval Market Square, was established. The center shifted westwards from the market place (Rynok Square), once planned in accordance with the Magdeburg Law regulations, towards the promenades and modern plantations.

The basic planning structure of Hetman Vally took shape during the Biedermeier era. Two parallel streets, i.e. Karl Ludwig Street and Hetmanska Street, were laid along, correspondingly, the western and the eastern banks of the Poltva river. Impressive new buildings, such as the Hausner House (1822), the Count Skarbek Theater (1842) and others, were erected on both sides of the river. The public greenery started to be planted here in 1826. The new streets were adorned with rows of poplars, as depicted on engravings and watercolors dating from the mid-19th century [11].

In 1859, the statue of Hetman Stanisław Jabłonowski was installed on the Vally, the first of the monuments erected there. In fact, it was since then that the western segment of the former fortifications zone along with its newly-planted allées began to be referred to as the Hetman Vally. Popularity of the site grew in the mid-19th century when ornate kiosks treating Lvivians with lemonade, sweets, and ice cream were installed along the line of promenade.

Since the late 1860s, with the advent of liberal political reforms and the accompanying economic transformations, the image of the Hetman Vally assumed new features. Besides the “esteemed” public enjoying promenades and greenery, the representatives of the local “black market”, i.e. entrepreneurial dealers and financial speculators, chose this area for traditional business meetings. During the Vienna Stock Exchange collapse of 1873, according to reports of the day, “Dante” scenes used to be observed there [12].

A new chapter in the history of the Hetman Vally started after the Poltva River became an underground channel. During the period of 1887–1889, its bed was vaulted from St. Mary's Square to Gołuchowski Square, and spacious new allées were planted above the hidden flow [13]. Thus, the Hetman Vally were turned into a boulevard named, by the end of the 20th century, Prospekt Svobody (Freedom Avenue).

“During the years 1888–1890, after the tunnelling of the Poltva, new greenery, more spacious and stately, as well as flower beds, chestnut, maple, acacia, and ash tree allées were planted”, reported a contemporary [14]. The design reminding the parterre compositions of the Baroque period was provided by Arnold Röhring, the Inspector of city gardens. The total area of the Hetman Vally gardens and allées amounted to 1.26 ha.

Simultaneously, a new architectural setting was developed in the vicinity: the monumental buildings representing the architecture of late historicism, like the Galician Saving Bank (1891), the Museum of Industry (1904), and the City Theater (1900) were constructed close to the allées. After the construction of the City Theater at the northern edge of the Hetman Vally, the architectural ensemble of Lviv's central boulevard was concluded and took on its ultimate shape. The new monuments of Adam Mickiewicz (1904) and Jan Sobieski equestrian statue (1898), marking the midway of the promenade, belonged to the same époque [15].

Governor Vally

“Governor Vally are the land of love and memories... recognized by a sudden silence and seclusion, and the melancholically murmuring trees... But this landscape, although retaining many signs of the past, used to be... a military one, and emanating the spirit of war” such a poetic image was drawn by Franciszek Jaworski a hundred years ago [16].

The reference to the “military” character of the place had its historical justification: the allées of the Governor Vally were arranged in the first half of the 19th century on the site of the eastern segment of fortifications which was the strongest link in the system of Lviv's defensive walls, bastions, and ramparts (of these, the buildings of City Arsenal, Royal Arsenal, and Powder Tower have survived until today).

By the early 19th century, this eastern edge of Lviv became a devastated area full of ruins, debris, and heaps of trash. It was redeveloped in 1816 in the course of the preparations for the visit of the Emperor Franz I [17]. The name “Governor Vally” was coined after the new governors' residence was built in the vicinity in the 1820s.

According to the pre-WWII publications the green areas were arranged here in 1821 on the initiative of the Province Councilor Reizenheim, a local official who was remembered in Lviv as a devoted enthusiast of gardening [18]. An idyllic view presenting the Governor Vally of the 1830s, typical for the Biedermeier era, was depicted on a lithograph by Karl Auer.

One day in the 1850s, a powerful storm devastated the Governor Vally area overthrowing the oldest trees in its allées. Afterwards, the greenery was restored according to the project of Karl Bauer, the director of city parks and gardens. The main axis of the allée passed over an earthwork terrace from where visitors had a chance of enjoying magnificent vistas of the mid-town.

During the last third of the 19th century, after the construction of the near-by building for the Governor administration, more features of modernity were added to the traditional Biedermeier image of the Governor Vally. In the 1890s, according to a contemporary description, the garden possessed “straight allées planted with lime, chestnut, and ash trees, and maples”, its territory occupied an area of 3.05 ha [19]. These cozy allées were gladly visited by the retired officials who had chosen the Governor Vally as a place for their daily meetings and enjoyed a rest on park benches next to the headquarters of the Governor of Galicia, the former place of their service [20].

Former Jesuit Garden

The public park traditionally referred to as the former Jesuit Garden (Poiezuitskyi sad in Polish) was established at the site of a big suburban plot belonging formerly to the local community of Jesuit monks, to the southwest from the midtown. Its emergence was the starting point of formation of the second ring of greenery (after the inner ring of the Vally allées) in the city’s complex of the “emerald mantle”. This outer ring, extended afterwards through inclusion of the High Castle Park, Lychakiv Cemetery, Stryiskyi Park, and other parks and gardens, embraced the historic center of Lviv like a green necklace.

In the 16th century, this plot was owned by the members of the local patrician Scholz-Wolfowicz family, and by Antonio Massari, the Venetian consul residing in Lviv. Subsequently, it became property of Jesuits. After the incorporation of Galicia into the Habsburg Realm, the Emperor Joseph II seized the manor, acting in accordance with his policy of expropriating monastic property, and afterwards, gave it to the citizens of Lviv as a gift [21].

But soon the newly established municipal park fell into decay because of lack of proper maintenance, and in 1799 the city authorities decided to give it up on an unlimited lease to a restaurant keeper Johann Höcht. The latter was obliged to keep the former Jesuit Garden in fine condition meeting the needs of the local public [22].

Johann Höcht rearranged the park providing it with public baths, summer houses, an outdoor theater, a site for fireworks shows, and a carousel, in concordance with the “French manner” of the day. A building known as Höcht Casino was erected close to the garden to house various balls, entertainments, and the annual commercial meetings, known as kontrakty (contractus), the Galician Diet building was constructed on this site in the late 1870s. The maps of Lviv dating from the first half of the 19th century demonstrate a regular geometric (“French”) planning style of the former Jesuit Garden [23].

A vulnerable point of this park’s location was lack of water outflow from its lower terrace. Thus, rain water flowing down the slope from the hillock of St. Mary Magdalene Church was retained on the surface, and the area gradually became more and more swampy. Although Johann Höcht’s heirs tried to fix the problem, the park once more fell into decay. As a result, the respectable burghers abstained from visiting it. The disappointed owners made an attempt to get rid of the obligation of keeping the site and started, in 1839, the appropriate negotiations with the authorities of the city [24].

In the meantime the former Jesuit Garden was sold to a new owner (1847) which implied additional legal obstacles. The problem was solved only with the intervention of the Governor of Galicia. Finally, the park became municipal property. According to a report of the day, “the thoughtful government... took care of the city and got involved in providing appropriate places for promenades, for public meetings, wishing, thus, to contribute to health maintenance” [25]. After the tumultuous events of 1848, the authorities were interested in gathering approval of the citizens, this was the background of the governmental initiative for redesigning the former Jesuit Garden and converting it to a respected place of entertainment and leisure.

On April 12, 1855 the project for the former Jesuit Garden redevelopment, worked out by Karl Bauer, the director of urban parks and gardens, was approved. It followed the landscape park model. Over the succeeding decades Lviv former Jesuit Garden, the present-day Ivan Franko Park, retained the basic compositional features determined by Bauer. In 1881, the lower terrace of the park, adjacent to the Galician Diet building, was redesigned employing regular patterns typical for the gardens of the Baroque period.

By the end of the 19th century the former Jesuit Garden occupied an area of 10.17 ha with hornbeams, elms, lindens, larches, white cedars, firs, and spruces growing there, as well as elderberry, hawthorn, hazel and other shrubs [26].

Other Gardens and Parks of the Late 18th and Early 19th Century

Besides the former Jesuit Garden and the greenery at the site of the demolished fortifications, Lviv possessed a number of other historic parks and gardens remembered since the 18th century. Unfortunately, not all of them survived to our time. This, particularly, applies to those located to the west from the Poltva River valley, namely: the Jabłonowski Park, the park of the Citadel hills, and Kortumivka area.

The Jabłonowski Park was planted at the southern outskirts of the city, next to the Soroka stream flowing into the Poltva river. Hetman Stanisław Jabłonowski built his residence there in the late 17th century. Eight groups of linden trees, planned as quadrangles, grew in the adjacent private park. But in 1822 the estate was sold to the Austrian military. The buildings on the site subsequently were used as barracks [27].

To the north of the Jabłonowski Park an upland is located consisting of the three heights: Kalicha Hill, Pelchynska Hill, and Szembek Hill (the latter was also known as Wronowski Hill, named after the philanthropist Stanisław Wronowski who had his manor there in the early 19th century). Numerous lakes were scattered around, and the local picturesque gardens were famous in the whole neighborhood. The idyll came to its end with construction of the Citadel, a modern military complex erected in the 1850s to meet the needs of the Austrian army [28].

Kortumivka, an extended area of Kortum Hill, located at the north-western periphery of Lviv was another landmark dating from the period of Romanticism. The toponym was derived from the name of the Guberniumrat Ernst Traugott von Kortum, the author of the work entitled *Magna Charta Libertatum* (published in 1790) and the owner of the local manor with an orchard where over 2,000 trees had been planted, along with a vineyard and an extended park (by the early 20th century, the latter was still in fine condition). There was also a summer house mounted on the top of the hill from where visitors could survey magnificent views of Lviv. The tomb of Kortum's wife Friederike was erected in the park amid birches and weeping willows, and the manor was called Friederikenhof in her memory. Thus, Kortumivka showed distinct features of the “sentimental” park. Another detail may also be of interest: Kortum himself was a member of the local Masonic Lodge. After his death (1811) the Kortumivka area, like the previously mentioned parks, became property of the Austrian military and was used as a shooting range [29].

The opposite eastern edge of the city was framed by an extended tract of greenery including areas of Lonshanivka, Cetnerivka and Pohulianka (or Węgliński Grove) stretching between Znesinnia in the north and the Stryiskyi Park in the south.

The suburban locality of Lonshanivka was once property of Longchamp family (the historic toponym derives from the owners' name). Since the late 18th century its hilly terrain became a popular site for strolling due to a picturesque path twisting across the groves. According to a legend, the Emperor Joseph II staying in Galicia in 1780 visited Lonshanivka and admired much its beauty. For this reason the area was also named Kaiserwald. It has retained its importance as a recreation zone to the present day. Since 1960s, Lviv's open-air museum of folk architecture has been located here [30].

The garden of Cetnerivka was founded in the late 18th century by Ignacy Cetner, a wealthy magnate and a noted collector of old books, coins, engravings, and minerals. Besides collecting antiques, his strong passion was botany. Having built his residence beside a forest, at the very edge of Lviv's eastern suburb, Cetner established there an extended garden. Being himself a skilled amateur gardener he carefully cultivated his flourishing plantations with a number of rare species of trees and flowers [31]. Remembered as a legendary garden from the époque of Romanticism Cetnerivka, since the 20th century, provided a site for the new botanic garden of Lviv University.

The wood of Pohulianka became an attractive area of outings since the late 18th century, although its heyday was Biedermeier period. In 1810, it became property of the lawyer Franciszek Węgliński known in Lviv as a highly enterprising and inventive person, noted also for the fancy entertainments staged in his mansion amidst the greenery, on the bank of a lovely pond. It was in the days of Węgliński that the locality was named Pohulanka, or Węgliński Grove. In 1821, Pohulanka was bought by a restaurateur Johann Diestl who used to arrange cheerful summer festivities in his Biergarten [32].

High Castle Park

The creation of a public park on the slopes of the Castle Hill, the highest hill of Lviv, became the next chapter in the history of the city's “emerald mantle”. During the medieval period, a castle named “high” was

erected there (another one, the “Low” castle, once stood on the site of Castrum Square (near the Drama Theater), close to the Hetman Vally).

By the 18th century the “high” castle lost its military importance and the local burghers started to dismantle it extracting stone for new construction. In the early 19th century, clouds of dust and sand from the hill used to drift down in the days of dry weather, and streams of mud flowed down towards the midtown when it was raining. To do away with this nuisance, the city authorities decided to coat the bare hill with greenery creating, thus, a new municipal park. Its allées were designed as a continuation of the Governor Vally promenades: in the 1820–1830s, small neat lanes climbing upwards connected the Vally with the Castle Hill [33].

The work on planting trees and shrubs over the Castle Hill slopes was initiated in the second half of the 1830s. The compositional framework of the High Castle Park with its lace of allées and pathways employed the landscape park pattern reminding the design of the neoromantic Potsdam parks by Peter Joseph Lenné.

In 1845, a summer restaurant was opened here. The gardener’s house was constructed in 1868. By the end of the 19th century the High Castle Park occupied the area of 26.34 ha displaying a fine set of trees such as chestnuts, maples, ashes, lindens, birches, poplars, acacias, pines, larches, arborvitae, and a variety of shrubs [34].

The final accent shaping the spatial layout of the High Castle Park was the memorial mound heaped over its upper terrace to celebrate the 300th anniversary of the Union of Lublin. Its construction started in 1869 on the initiative of liberal politician Franciszek Smolka [35].

In the early and mid-20th century, the High Castle Park was connected with the downtown by an electric tram line which facilitated much access to the site. This tramway route was closed in the 1970s.

Other Gardens and Parks of the Second Quarter of the 19th Century

During the Biedermeier era, i.e. the period of 1820–1840s, the city was successful in extending further the network of its gardens and parks. Dating from those years, the newly created green areas pertaining to the eastern segment of Lviv’s ring of greenery (the tract of High Castle – Lonshanivka – Cetnerivka – Pohulianka) became valuable additions to the “emerald mantle”.

One of these was the park of Lviv Riflemen Confraternity planted not far from the foot of the Castle Hill on a parcel owned since 1775 by the local corporation of city militia members (*confraternitas jaculatorum*). This territory was arranged in 1823 due to the efforts of Professor Ernst Wittmann who founded a botanical garden here. The further development dates from 1890 when, with the generous funding provided by the Confraternity member Leon Bratkowski the garden was extended and reshaped as a landscape park [36].

The gardens of Sofiiivka occupied a site in the south-eastern sector of Lviv bordering the Stryiskyi Park. A small castellated Church of St. Sophia was constructed here in the late 16th century on the order of Sophia Hanl, the local landlady. Since then, this suburban possession was referred to as Sofiiivka. According to the info provided by publications of the early 20th century, the master builder Florian Onderka established a public garden and a restaurant within this area (1839), and a number of nearby villas were designed and constructed since 1841 by the architect Johann Salzmann [37]. The next stage of Sofiiivka’s development was the period of the 1890s when the city administration took a special care of its territory because of the Provincial Exhibition held in 1894 in the neighboring Stryiskyi Park. During the decade, a new colony of villas and cottages was added to the local hilly landscape along with a number of newly-planted private gardens.

Compositionally, the eastward extension of Sofiiivka’s green zone became the area of Zalizna Voda Park, which used to be a popular recreation area since the époque of Biedermeier. The German theater directed by Franz Kratter performed here in the first half of the 19th century. In 1905, the public park of Zalizna Voda was arranged based on the design worked out by Arnold Röhring [38].

Lychakiv Cemetery

The Lychakiv Cemetery was established in 1786 after the governmental decree, issued in 1783, prohibited using older burial grounds belonging to the city churches. As an alternative, a new municipal cemetery was opened to the southeast of the Lviv’s historic center, located outside the midtown in a distant picturesque suburb of Lychakiv (where previously only victims of epidemics and suicides had been buried) [39]. In the 19th century, the Lychakiv Cemetery was bordered on the west by St. Peter Street connecting Kaiserwald with Pohulanka, and Cetnerivka marked the eastern edge. In 1853–1854, Karl Bauer redesigned it in accordance with the landscape park compositional principles.

It was during those years that “the Burgertum slowly gave up the cozy domesticity of the Biedermeier for a more cosmopolitan garden style...” [40]. By the mid-19th century the planning model of the English park had already been assimilated by Central-European designers in a version developed by Humphry Repton and popularized through the neoromantic projects of Lenné and the Prince Pückler-Muskau. Also in Lviv, the garden and park design of the age followed the same line. With the execution of the plan provided by Karl Bauer for the Lychakiv Cemetery, as well as of his design for the former Jesuit Garden the above-mentioned neoromantic model became ubiquitously dominant in the city.

For almost two hundred years, the Lychakiv Cemetery has been much admired for its harmonious synthesis of park design and memorial sculpture, the latter represented by the highly valuable burial monuments decorated by Anton Schimser, Hartmann Wittwer, Cyprian Godebski, Julian Markowski, Leonard Marconi, Tadeusz Barącz, and other prominent sculptors.

Other Green Areas of the Mid-19th Century

Simultaneously with the redesigning of the former Jesuit Garden and the Lychakiv Cemetery, during the two decades separating the revolutionary events of 1848 from the granting of the autonomous status to the Kingdom of Galicia several new parks and gardens, planned on a somewhat smaller scale, were developed in Lviv. The owners of the gardens dating from the mid-19th century were often educational, academic, or charitable institutions. Among those, Zygmunt Stankiewicz mentioned in his article Lviv University, the Ossolineum (Count Ossoliński’s library and research institute), the school for deaf-and-dumb students, and the local orphanage, connecting creation of their gardens with Karl Bauer’s activities [41].

Of special interest was the University’s botanic garden, one of the most noted among Bauer’s works. This was planted close to the University building, the former Jesuit border school (konwikt), which was given over to the University in 1851 (after the old premises burned down as a result of Austrian artillery bombardment during the tumult of 1848). A smaller garden once existed on the site, carefully cultivated by the vicar of the nearby St. Nicholas Church. The idea of reviving local plantations was supported by the Count Agenor Gołuchowski, viceroy of Galicia. “A sheer paradise of greenery blossomed here anew at Bauer’s hand, extended at the expense of the neighboring plots purchased for greenhouses and horticultural buildings”, relates Stankiewicz. The development of the University botanic garden dating from the 1850s was also related to the scholarly activities of Hiacynt Łoborzewski, the professor of mineralogy, botany, and zoology [42].

Stryiskyi Park

The largest of all Lvivian parks, the Stryiskyi Park was taking its shape during the 1870–1890s to become the basic element of Lviv’s “emerald mantle” and its most valuable ornament. Its formation close to the southern periphery of Lviv was predetermined by the logic of the territorial development.

The system of green areas built up over the 19th century embraced the historical center of the city with two tracts of greenery, from the east and from the west. The parks and gardens of High Castle, Lonshanivka, Lychakiv, Pohulianka, and Sofiiivka rimmed the eastern side. And to the west, the former Jesuit Garden was located with the adjacent buildings of the Polytechnic School (1877) and the Galician Diet (1881) positioned on a single south-western axis. The area of Kastelivka with its brand-new villas and beautiful private gardens extended further in the same direction. With the emergence of the new spacious park at Lviv’s southern outskirts the eastern and the western tracts were connected forming a ring. This way an integrated system of urban greenery was composed (a similar concept had its earlier embodiment in the park systems of Manchester and Liverpool).

The idea of developing in Lviv a ring of parks and gardens attracted the representatives of local liberal establishment who wished to emphasize the new, higher status of the capital of the autonomous Kingdom of Galicia by all means, employing park design as well. The project of creating the Stryiskyi Park was the initiative of Stanisław Niemczynowski, a member of the City Council [43].

The park was planted near an old cemetery closed in 1828 (Stryiskyi Cemetery). For long, this area remained intact as the terrain would not do for pasture or for construction [44]. The territory of the to-be park was marked off by the borders of Sofiiivka from the east, the suburban settlements of Kulparkiv and Persenkivka from the south, and by Stryiska Road from the west and north-west. Until the late 1870s it consisted of marshy

wastelands overgrown with shrubbery and scarred by ravines. The work on creating the municipal park started here in 1879 according to the design worked up by Arnold Röhring [45].

It is generally considered to be the best of Röhring's works. The planning of the Stryiskyi Park testifies of the high professional qualifications of the author of the project who harnessed the natural topography in most inventive way. The proposed design was based on the principles of a landscape park successfully employed in Lviv by Karl Bauer in the 1850s. These principles correlated with the spirit of liberal reforms carried out in the early years of Galicia's autonomy ("the free development of the landscape, like the development of the civil society, was emblematic of the liberal movement") [46].

Röhring's design derived from the English park tradition. On the other hand, the largest park of Lviv demonstrated dissimilarity from the sentimental symbolism and accessories of the romantic period. The Stryiskyi Park was a typical urban park from the era of positivism and "scientific" historicism. Specifically, unlike the English park of the 18th century, it had a well-defined perimeter boundary. Its territory is clearly segregated from adjacent neighborhoods and access roads. The allées of the Stryiskyi Park showed off their irregularity, in line with the aesthetics of the English park. Also, an important compositional element was a pond with swans. However, the irregular pattern of the alleys and the fluid contours of the shore resulted from careful calculation. Picturesque outlines of the lawns and paths dominated in the midst of park terrain. But a regular ("French") planning structure was employed near the buildings constructed in the park.

The basic compositional elements were single trees (not groups of trees), as well as carefully modeled bushes and grass lawns. Despite the naturalistic imitation of wild flora, a closer inspection would reveal combinations of species never occurring in natural conditions. In the 1890s the area of the Stryiskyi Park was planted with red maples, sycamores, chestnuts, alders, birches, beeches, oaks, platanuses, acacias, lindens, spruces, junipers, yews, larches, pines, and a great variety of shrubs [47]. The park combined features of the arboretum with those of the Lustgarten. It showed plastic contrasts and rich colors, unlike the typical English park featuring delicate halftones.

By 1887, the development of the lower terrace of the Stryiskyi Park was completed. A year later, the park territory was extended to the south-east at the expense of the neighboring lots. The upper terrace was developed there during the early 1890s, with its central allée and fountains. Its planning, in contrast to the lower terrace, referred to the regular compositional schemes of the Baroque and Classicism.

Thus, the Stryiskyi Park displayed distinct features of the eclectic park from the period of historicism mixing diverse historical traditions and styles of design. In the 1890s, its total area amounted to 47.61 ha [48].

In 1894, the upper terrace became the site for the grand Provincial exhibition [49]. Over a hundred pavilions were built there after designs by noted architects, namely Franciszek Skowron, Julian Zachariewicz, Juliusz Hochberger, Zygmunt Gorgolewski and others, visited in total by 1 million 150 thousand people. Thus, the newly-developed green areas of the Stryiskyi Park formed a kind of "symbiosis" with a grand exhibition modeled on the famous European and American exhibitions of the second half of the 19th century.

Another trend was employment of modern technical devices within the park area (a local railway line, an electric fountain, and a funicular were operating in the Stryiskyi Park during the exhibition). The park was treated as an educational hub adapted for family and school excursions. And the fields for sport exercises were located nearby, as well as the racing track.

The Provincial Exhibition of 1894 was dedicated to the centenary of the Polish national uprising led by Tadeusz Kościuszko. Among the pavilions located in the Stryiskyi Park the most-visited one was the monumental rotunda displaying a painted panorama which depicted the victory of Kościuszko's army over Russian troops near the village of Raclawice (April 4, 1894), the key episode of the rising. So, at the end of the 19th century the urban park acquired an additional function, i.e., that of providing a site for patriotic monuments (the Victoria Park in Berlin may be considered a typical example in this respect) [50].

This way park design dating from the fin-de-siècle reflected a growing activity of national movements in the region of Central-East Europe and strengthening of local nationalisms.

Other Gardens and Parks of the Late 19th Century

The three decades preceding the First World war were for Lviv a period of rapid territorial growth, highly intensive construction activity, and further development of the system of urban gardens and parks. The extended

tram communication (electric tram lines operated in Lviv since 1894) contributed much to these developments. The authorities worked hard establishing a number of new urban gardens and parks. Only during the short period from 1886 to 1888, some 60,000 trees were planted in Lviv.

In 1884, the Lychakiv Park was opened, located on the sandy hillocks to the east of the Lychakiv Cemetery and Cetnerivka, occupying 8.4 ha of territory with coniferous and birch trees growing there [51]. Another small park, Wiśniowski Park, was established in 1895 in the north-western area, beside Kleperivska Street, not far from Kortum Hill. The revolutionaries Teofil Wiśniowski and Józef Kapuściński were executed on this site in 1847, and an obelisk was erected in their memory in the center of the new park [52].

The Lychakiv Park and Wiśniowski Park were designed by Arnold Röhrling who, in both cases, confirmed his adherence to the concept of landscape park.

Greenery of the Early 20th Century

In the 1900–1910s, a critical reassessment of the neo-romantic models and the landscape park planning principles dominating throughout the 19th century manifested itself in Lviv. During these decades, an alternative pattern of a “reformed” park matching the criteria of “functionality” became more and more popular. Of special significance became the observance of norms of modern sanitation and hygiene. This was the case of the green zones designed for new medical institutions (for example, for the new psychiatric facilities in the suburban Kulparkiv area, 1906).

A kind of stricter geometric layout became preferable in the early 20th century, its simplicity and logic seen as unambiguous attributes of “modernity”. A regular structure of the gardens was considered more suitable for functions of modern architecture such as the complexes of industrial buildings. An example may be the power plant of Persenkivka (1908) with the adjacent green areas which were designed according to these “functional” principles [53].

3. Conclusions

The network of gardens and parks developed in the city of Lviv throughout the period of the 1770–1910s ranks among highly valuable contributions to the cultural heritage of East-Central Europe. Success of this development was secured by the creative work of a number of professional architects, gardeners, and planners, including prominent figures like Karl Bauer and Arnold Röhrling, as well as numerous amateurs of gardening active in Lviv over the “long” nineteenth century.

Still, it should be noted that Lviv’s “emerald mantle” suffered, especially since the period of WWII, considerable losses caused by the factor of time and by negligence of the authorities. Unfortunately the ring of urban greenery has lost its once organic association with natural spaces of outer suburban zone.

Most of the public parks dating from the period under discussion have retained their traditional functions as sites for recreation and public activity until the present day. They are gladly visited both by Lviv residents and numerous tourists.

References

- [1] Kowalczyk M.: *Rozwój terytorialny miasta* [in:] *Miasto Lwów w okresie samorządu 1870–1895*. Lwów, 1896, 299–351; Jaworski F.: *Lwów stary i wczorajszy. Szkice i opowiadania z ilustracjami na podstawie starych rycin i rysunków rekonstrukcyjnych* P. Kowaliszyna. Lwów, 1910; Stankiewicz Z.: *Ogrody i plantacje miejskie* [in:] *Lwów dawny i dzisiejszy. Praca zbiorowa pod redakcją B. Janusza*. Lwów, 1928, 62–71.
- [2] Maksymiuk T., Didyk V., Tupis S.: *Starovynni sady v strukturi istorychnoho budnokraiu Lvova* [in:] *Pam’iatky ta vyznachni mistsia shevchenkivskoho kraiu. Problemy okhorony ta doslidzhennia*. Kaniv, 1997, 103–111.
- [3] Gruneweg M.: *Zhovten*, 1980, 10, 109.
- [4] Maksymiuk T.: *System zieleni i ciagi komunikacyjne Lwowa*. ... 140.
- [5] Gruneweg M.: 109.
- [6] Stankiewicz Z.: 67.
- [7] Ciołek G.: *Ogrody polskie*. Warszawa, 1978, 58.
- [8] Stankiewicz Z.: 63.
- [9] Kowalczyk M.: 319–320.
- [10] Stankiewicz Z.: 64.
- [11] *Ibid.*: 65.

- [12] Bandrowski J.: Świat, 1913, 47, 6.
 [13] Kowalczyk M.: 322–323.
 [14] Ibid.: 318–320.
 [15] Somochkin I.: Halytska brama, 1998, 2, 14–15.
 [16] Jaworski F.: 249–250.
 [17] Stankiewicz Z.: 64–65.
 [18] Jaworski F.: 256.
 [19] Kowalczyk M.: 318–319.
 [20] Bandrowski J.: 6.
 [21] Stankiewicz Z.: 63.
 [22] Jaworski F.: 270.
 [23] Janusz B.: Przewodnik po Lwowie (z planem miasta). Lwów, 1922, 54–55.
 [24] Stankiewicz Z.: 63.
 [25] Ibid.: 66.
 [26] Kowalczyk M.: 319.
 [27] Jaworski F.: 261–264.
 [28] Janusz B.: 53–54.
 [29] Кryp'iakevych I.: Istorychni prokhody po Lvovu. Lviv, 1932, 132.
 [30] Jaworski F.: 332.
 [31] Кryp'iakevych I.: 97.
 [32] Krajewski A.: Lwowskie przedmieścia. Obrazki i szkice z przed pół wieku. Lwów, 1909, 52.
 [33] Stankiewicz Z.: 64–65.
 [34] Kowalczyk M.: 318–319.
 [35] Czołowski A.: Wysoki Zamek. Z 19 rycinami w tekście. Lwów, 1910, 102.
 [36] Kowalczyk M.: 319.
 [37] Jaworski F.: 343–346.
 [38] Orłowicz M. Ilustrowany przewodnik po Lwowie. Ze 102 ilustracjami i planem miasta. Lwów-Warszawa, 1925, 132.
 [39] Niceja S.: Cmentarz Łyczakowski we Lwowie w latach 1786–1986. Wrocław-Warszawa-Kraków-Gdańsk-Łódź, 1988, 9–10.
 [40] Rotenberg R.: Landscape and Power in Vienna. Baltimore- London, 1995, 110.
 [41] Stankiewicz Z.: 66.
 [42] Ibid.
 [43] Kowalczyk M.: 349.
 [44] Stankiewicz Z.: 67.
 [45] Ibid.: 67–68.
 [46] Rotenberg R.: 67.
 [47] Kowalczyk M.: 320.
 [48] Kowalczyk M.: 318.
 [49] Stankiewicz Z.: 68.
 [50] Heinrich V. The Viktoriapark in Berlin [in:] Monique M. and Teyssot G. (Eds.) The History of Garden Design. The Western Tradition from the Renaissance to the Present Day. London, 1991, 435–436.
 [51] Kowalczyk M.: 320
 [52] Ibid.
 [53] Orłowicz M.: 136.

Igor Zhuk

**“СМАРАГДОВА МАНТІЯ” ЛЬВОВА: САДОВО-ПАРКОВЕ МИСТЕЦТВО
У СТОЛИЦІ ГАЛИЧИНИ У 1770–1910 РОКАХ**

***Анотація.** Стаття присвячена історії садово-паркового мистецтва Львова від 1770-х до 1910-х років. Детально розглянуто Гетьманські вали, колишній єзуїтський сад, Стрийський парк, а також ряд інших відомих на той час садів та парків міста. Особливу увагу приділено творчості Арнольда Рерінга.*

***Ключові слова:** Львів, садово-паркове мистецтво, Єзуїтський сад, Стрийський парк, Карл Бауер, Арнольд Рерінг.*

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Indents: left – 18 mm, right – 25 mm, top – 20 mm, bottom – 27 mm. Font – **Times New Roman**, size 10,5 – point with line spacing 1,1. All pages, starting with the front one, must be numbered.

Figures and tables must be inserted into the text and additionally submitted by separate files.

Composition of the manuscript:

1. The first page of the article should contain:

- Full first and last names of the author and all collaborators.
- The title of the article typed in capital letters, font size – 14
- Full mailing address of author’s (authors’) working place, including country.
- Name and e-mail address of the author(s) to whom the correspondence and reprints should be sent.

2. **Abstract** should contain no more than 50 words. It should represent the essence of the article and its novelty.

3. **Keywords** (a maximum of 5–6) should reflect the contents of the article and be specific to the field of study, avoiding general forms of wordiness, abbreviations (only abbreviations conventional in the certain field are allowed).

4. **Introduction** should be brief and clear. It may indicate the connection with previous works.

5. All materials and methods used for obtaining results of the article should be depicted in the **experimental or basic theoretical section**. The subheadings for different sections may be used (e.g. 2.1 (2.1.1., 2.1.2...), 2.2.)

6. **Results** should be present accurately and clearly. The **Discussion** should deal with the results and depicts their analysis. Subheadings can be used in this section. Discussion of the already known data should be avoided. Descriptions of methods or examples of achievements, formulas should be presented in experimental or theoretical base section.

7. **Conclusions** should emphasize main achievements of the work, underline its importance and give examples of possible application.

8. The **gratitude** for financial support, technical assistance and other forms of assistance can also be mentioned at the end of the article.

9. **References** should be numbered in the order of their appearance in the text in square brackets. Names of the books should be referenced, titles of articles – shouldn't. Authors' first and last names and names of journal originally written with Cyrillic alphabet should be typed with Latin letters without translation.

Example:

Book: The author (s) or editor (s), book title or chapter, publisher, city, year.

[1] Kovalskiy D. and Plekhov V.: Neorganichna Khimiya. Naukova dumka, Kyiv 1990.

[2] Hess M.: High Performance Polymers [in:] W. Brostow (Ed.), Performance of Plastics. Hanser, Munich-Cincinnati 2000, 277–289.

Journalpaper : Authors (4), journal (all the words with a capital letter), year, volume, initial page

[3] Yamamoto T., Furuhashi T., Arai N. *etal.*: Energy, 2001, 26, 239.

[4] Novakivskiy V., Gerber D. and Malynovskiy D.: Dopovidi Nats. Akad. Nauk Ukrainy, 2007, **66**, 198.

Patents: Authors, country and patent number, date of publication

[5] Vaynberg M., Horn H. And Horn R.: Pat. US 6981377, Publ. Oct. 13, 2006.

Conference: author, title of the conference, country, city, year, initial page.

[6] Young C. And Jordan T.: Proceed. 10th Annual Conference on Engineering, Greece, Patras 2008, 34.

10. **Illustrations** (figures, graphics, photos) must be inserted in the text and be given by separate graphic files as separate objects, suitable for corrections or changes, and which fit the page size. All illustrations should be signed and numbered (if more than one) under the illustrations, with centered alignment, font size – 9. Photos and photocopies must be of high quality, suitable for copying.

11. **Tables** should be formatted in Excel for Windows and MS Word. The main table font – 10, heading font – 10,5. Heading is placed in the center of the table with bold font and numbered (if more than one) at the right margin of the table, italics font.

12. **Formulas** should be centred and numbered in parentheses at the right margin.

Units. All data should be given in International System of Units (SI units). If other units used, provide SI equivalents.