Tourist Potential of the Historical Industrial City. Case of Boryslav, Ukraine

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Abstract. The cities formed on the basics of the development of mining industry in the 2nd half of the 19-th – early 20-th centuries are considered to be an extremely interesting realm for urban planning as well as for architectural research. Their life cycle was mainly driven by the rapid (sometimes short-lived) development of industrial production, which led to the specific spatial, planning and functional structuring of the urban environment. Such cities have often faced with the problem of their degradation and decline as a result of the depletion of natural resources. The city of Boryslav situated in Western Ukraine is uniquely located in the industrial oil, gas and ozocerite fields. The purpose of the article is to trace the formation of architectural and urban features of the environment of Boryslav, to analyze the post-industrial transformations at different historical stages in the XX – XXI centuries, to outline the directions of creating the program of the future city. Forming the city of Boryslav in the early 20-th century as the centre of world oil industry has had both the positive and negative sides. On the one hand, mining has contributed to rapid territorial and demographic development and this promoted construction of high-quality public and residential buildings. However, these building solutions were mostly local and aimed at solving tactical social problems without taking into account the complex of strategic social, architectural-urban planning and infrastructure problems. The subsequent decline of industrial development in the interwar and Soviet periods led to the “continuation of the present” – the maintenance of the vitality of the urban organism according to the primary scheme and the logic of its emergence with ideological corrections at each of the historical stages. Today's existing industrial past has also not been a key to Boryslav's successful development, although the objective reasons can be an integral part of this process. So, there arises the question of the ways of city further development. Therefore, the proposed study is not only of historical interest but also of a considerable practical importance in determining the prospects for urban development. Consideration of the city as an artefact of industrial civilization makes it possible to comprehend it from the point of view of the value of industrial heritage as a potential tourist object and, at the same time, as a comfortable space for the life of its inhabitants.
1. Introduction
The cities formed due to development of mining industry are considered to be an extremely interesting realm for urban planning as well as for an architectural research. As a rule, their life cycle was conditioned by the rapid (sometimes short-lived) development of industrial production, which led to the specific spatial, planning and functional architectural as well as urban planning forms. Such cities have often faced with the problem of their degradation and decline as a result of the depletion of natural resources. Thus, the investigation of such cities contains not only a historic interest but a significant practical importance referred to the determination of their further development. The city of Boryslav just belongs to such type of cities. It is situated in Western Ukraine in Lviv region – the only town in the world located in the industrial oil, gas and ozocerite deposit.

The purpose of the article is to trace the formation of architectural and urban features of the environment of Boryslav, to analyze the post-industrial transformations at different historical stages in the XX – XXI centuries, to outline the directions of creating the program of the future city.

2. Prehistory: the development of oil production
The city of Boryslav has the history of long duration. The first written mention concerning Boryslav, one can find in the charter of Polish queen Yadwiga dating back to the year of 1387. In XV – XVII centuries Boryslav was a well-known center of the salt mining, but later this industry declined. However, in 1771 while salt searching it was revealed a rich oil deposit in Runhurska Sloboda, which had been serving people for 100 years. The inhabitants weren’t surprised at this fact as the former name of their village was “Zoloty Potik” (“Golden Stream”). The professor of natural study of Lviv University Baltazar Haket mentioned in his description of Galicia (Haquet, 1794) that in 1791 in the Boryslav suburbs the resident population was digging the 4–6 meters deep wells, where the mixture of water and oil gathered. After water precipitation the upper layer of thick oil was skimmed and sold as wheel grease. In the early 1838 in Boryslav there existed 30 wells annually producing 15 tons of oil, which was mainly used for the economical purposes of resident population. The situation has essentially changed due to the discovery made by Lviv manufacturer Robert Doms in 1853, namely, the discovery of oil and ozocerit («mineral wax») deposit, which appeared to be one of the largest and productive one in the world [1].

Thus, since the second half of the 1850-s in Galicia and, in particular, around Boryslav a true oil “boom” was simmering. The peasants had not appropriate funds and knowledge to deal with these deposit, hence they rent or sold their land shares. But most of entrepreneurs also had limited funds and, therefore, could operate only the minimal production areas. The oil mines were often in disparate locations and under the ground they sometimes intersected that led to the conflicts. In 1865 in Boryslav in nearby Volytsya it was registered 2694 mines, and in 1879 – already 4280 ones. Naturally, that, in time, this “craft” had to be in decline, since a lot of mines, especially not deep ones, had been depleted and only the larger enterprises could survive: in 1880 the quantity of mines and boreholes reduced to 2832, in 1895 – to 449, and in 1900 – it only had 75 left. The year of 1872 became an important period in the history of Boryslav oil deposit developing. Just then it was put into operation the railway, which connected Boryslav not only with Drohobych, but with the monarchy capital – Vienna as well (before this event the oil was transported to Drohobych and Przemysl by carts in the tanks of 15 Vienna hundredweights holding capacity (840 kg)). Due to this, a new oil “boom” gained momentum. Even in 1875 the 75 large enterprises and 175 small ones that mined oil and “mineral wax” functioned in the town. At the same time, in the 1860-s an industrial development of Boryslav oil deposit started and attained its apogee in 1909 (made up 5% of world oil production). At that time the oil production made up about 4% of world amount and 90% – of state amount. Since the second half of XIX century, when the demand for a «back gold» has considerably increased, Boryslav has also developed rapidly. The city became the biggest center of oil mining in Europe and the third – in the world behind Baku and Oil City (American Pennsylvania). In a short time in Boryslav region
there appeared several thousand Dom’s derricks and arose over 800 oil mining enterprises, where in 1870 above 10 thousand laborers worked [1].

By 1918 during the revival of Poland as the Second Polish-Lithuanian Commonwealth, the oil and ozocerite mining had considerably reduced because of essential depletion of the resources and made up only 40% of maximal mining in 1909 [2].

3. Oil and city: urban planning and architectural development of the city in the first third of the 20-th century

In 1906 the settlement of Boryslav obtained the status of town. The town expanded and, in fact, its boundaries amalgamated with the surrounding settlements, therefore, since the mid 1920-s the idea of the creation of Velyky Boryslav was forming in the population consciousness. For the first time this idea was put into words in 1924. Under the authority of the public and according to the Council of Ministers Resolution of the Second Polish-Lithuanian Commonwealth dated 20 May 1930 the surrounding settlements – Tustanivychi, Banya Kotivska, Hubychi and Mraznytsya [3] were joint the town, and on February, 3, 1931 the so-called «Velyky Boryslav» with the area of 60 square kilometers and the population of 42 thousand inhabitants was formed. In general, the urban territory included surrounding villages such as Ratochyn, Volyanka, Ponerlya, Thyganske Selo [4]. On 26, July, 1933 the new urban rights of Boryslav were ratified in legal way [5]. Since 1934 Boryslav was excluded from the submission of Drohobych starostwo and obtained the status of the town of Lviv Voivodship submission.

A rapid industrial development conditioned the growth of the population of Boryslav. Whereas in 1859 in the five of villages having joined a present-day town lived 3051 inhabitants, in 1910 the quantity of a resident population was already 31 859 individuals. In the very Boryslav the number of inhabitants increased from 621 to 15 145 individuals [6]. In 1929 in Velyky Boryslav there lived already 42 460 individuals [7]. The territory of Boryslav increased as well. In 1936 the city area had made up 73.38 square kilometers. In other words, Boryslav took the third place in the territory of Poland behind Warsaw as well as industrial Lodz, and Lviv Voivodship took the third place in population behind Lviv and Przemyśl. Regardless of rapid territorial broadening, Boryslav remained disorganized city with the numerous problems of urban ad architectural planning development. Joining the neighboring population centers had formed polycentric system of an urban planning along the main street. The contemporaries described Boryslav housing system of that time as a chaotic, chiefly low-rise one, where the buildings were in close neighborhood with the rural houses. The building system was interrupted by the oil derricks followed by laying the trackways, which later were transformed into the streets forming, in such a way, irregular urban planning carcass. A special problem laid in a stochastic formation of housing system. An example is the «settling» of the man-made earthen hills – «embankments» – generated by the dumps of spent soil. Just in such way not far from a city center of Boryslav there emerged the settlement of Verhnya Volyanka (Górna Wolanka), built up by the wooden barracks, where the workers as well as homeless and unemployed people lived [8].

The streets formed on the «dumps» needed, at least, elementary public welfare. Therefore, the characteristic elements that formed and restricted the line of the passable and pedestrian parts and created the comfortable conditions of an inhabitants’ movement along the town (especially after foul weather) were the wooden footways. For a long time these footways remained the only elements of good arrangement of Boryslav streets. According to the official statistic data in 1931 only 3% of buildings of the town were made of stone (among 4123 residential buildings only 124 had the brick walls), and the rest ones were wooden or wattle and daub. Sewerage was equipped only in 269 buildings, plumbing – in 425 buildings, and gas heating – only in 125 buildings. Most buildings had no electricity. Only 21 houses with 221 dwellers: entrepreneurs, tradesmen, magistracy and other privileged persons were provided with all the communal conveniences. There was not any park or public garden in the town.
Boryslav with 40 thousand inhabitants had only 2 schools, where studied mainly the children of the entrepreneurs and tradesmen.

The analysis of housing system localization testifies that absolute majority of the new buildings of public purpose were arranged along the present streets such as Shevchenko Street (former Kostyushko Street), D. Galytsky Street (former Motsinsky Street), Karpatska Brama Street (former Slovaksky Street) and School Street (former Legions Street). Such streets as Vesnyana and Marianovsky (former Ternavka), that led up to railway station were actively built up. The construction was mainly realized by such companies as «Karpaty», «Premier», «Galica», «Silva Plana» etc. that were dealing with oil mining.

Thus, the first regulated town boulevard in Boryslav was formed in the 1920-s on both sides of Ternavka Street. This good arrangement was performed by «Gazolina» firm, which had its administrative, industrial and residential buildings in this street. For a long time the boulevard remained the only arranged public space of the town. Not until the 2-nd half of the 1930-s this street like the other streets of the city center (in particular, Karpatska Brama Street) was paved up with black Czech block-stone made of Carpathian basalt.

During the 1920 – 30-s in Boryslav there was erected comparatively great number of the residential buildings for the employees of different qualification and different social groups with funds of private firms. The typology of dwellings was various: the individual and blocked houses, the 3-4-storey profitable houses – for the employees (clerks) and engineers, barracks and casernes – for the workers. Among the first houses were the ones of such size and amplitude worthy to be built in Voivodship of Lviv as well. In particular, it should be mentioned the building of many apartments in Volodymyr Velyky Street, built at the end of the 1920-s: a three-storey house, the corner of which is decorated with the Ionic columns that frame a deep loggia (Figure 1).

Figure 1. The building of many apartments in Volodymyr Velyky Street in Boryslav, built at the end of the 1920-s (photo by S. Linda, 2018)

Separately, in the district of Banya Kotivska and Ternavka Streets there had been organized the working settlements, consisting of the brick-walled casernes, as well as a minimal social infrastructure: front rooms, schools, the work canteens, sewing workshops. The wooden housing barracks faced with the planks or plastered with a limy and loamy mixture were constructed as well. Every of these building contained over ten dwellings, without any plumbing and sewerage, but with electricity and gas [9].
The growth of population and the necessity of an urban infrastructure development provided an incentive to build a number of public objects. In particular, such constructions as humanitarian gymnasia (the early 1920-s), State School for mine and borehole managers (1928-1939), Lindenbaum foundation edifice (the late 1920-s), the schools in Tustanovychi (1929) and Mraznytsya (1929), the house of Communal Savings Bank (1931), city hospital. A style aspect of the buildings reflected the actual trends of their time ranging from the motives of neoclassicism to the bold vanguard solutions.

In 1928 the construction of National House was started on the project of the architects T. Bronyovsky and T. Kendzersky and it lasted up to the WWII. The idea of its erection appeared just in the 1910-s, when the construction committee had been organized. Despite the building has never been fully completed some part of premises in the constructed wing were used. The conference and theatre halls, lecture halls, gymnasium, library were used by numerous public organizations and professional associations (branch office of Central miners’ union, department of metallurgists’ union, women union, etc.) functioned in the city. Besides, the shops, restaurant, rooms for the visitors, barber’s shop, sewing workshop, etc. were located in the edifice too [10]. After the WWII the building was completely reconstructed and the facades were ornamented with the shapes of the «Stalin Empire style» using the great order (Figure 2).

![Figure 2. Former National House in Boryslav, built at the end of the 1920-s and rebuilt in the shapes of the «Stalin Empire style» after WWII (photo by S. Linda, 2018)](image)

The most significant public building of Boryslav became the telephone-telegraph station built in the years of 1929–1931 by the architect Vitold Minkevych – professor of Lviv Polytechnic, one of the most prominent representatives of Polish architectural school of the interwar period. The fact that just V. Minkevych was commissioned to design this building testified to an exclusive importance of this object. A construction site was relatively small. It conditioned the verticality of volume development: at that time it was the tallest edifice in the town as it had six storeys. From the functional point of view the building meets main modernistic principle – submission of form to function. On the first two floors the administrative premises and halls for the work with the clients were situated. In the edifice volume they were a massive block that looked like a «pedestal». On the upper floors the dwellings of the post office employees were located [11] (Figure 3).
Figure 3. The telephone-telegraph station in Boryslav built in the years of 1929–1931 by the architect Vitold Minkevych (photo by S. Linda, 2018)

The sacral objects were also erected. In particular, in Mraznytsya the brick-walled temples arose: Greek-Catholic church (by the architects S. Tymoshenko, O. Perzansky, 1928-1929) and Roman-Catholic church (by the architect Y. Semkovich, 1934). As it is known, apart from these objects in Boryslav there were the three churches (in Potic, in Tustanovychi and in Hubychi) and the two Polish Roman- Catholic churches (parish Saint Barbara church in Tustanovychi built in 1904 with funds of ozocerite miners the polychromy of which was renewed during the period of 1926 – 1932 by the architect A. Protsailovych (Procajlowicz) from Krakow and one more – in Hubychi) [12].

Among the industrial and engineering edifices the most interesting examples were: the first in Galicia and Europe power station that used the natural accompanying oil gas as a raw material and had the capacity of 11200 kilowatt (it was built by French oil and gas firm „Prime” in 1922 in today 22, Hirna Street) as well as a reinforced concrete bridge across the river Tysmenytsya in the intersection of T. Shevchenko, D. Galytsky, V. Ivasyuk and A. Mitskevych Streets (1928).

From Boryslav press of that time we find out the facts concerning a sporting life of an industrial town. The numerous sporting clubs acted in the town, the days of health were held as well. Thus, in the middle of the 1930-s in the suburb of Boryslav the Committee of physical training and military science, after all, had built the first and only sporting and health-improving complex consisting of a football ground with the roofed stands, the two tennis courts, the two swimming pools for children and adults and a target range. Numerous and various sporting clubs, societies, sections and circles actively worked in the town. Among them one could find: football, ski, bicycle, tennis, volleyball, track-and-field, fencing sections, etc. For the first time in 1939 in Boryslav was launched the construction of an airport, however it was not built because of the Second World War outbreak [13].

Though the conditions of Boryslav development were complicated and the town poverty as well as its neglect were discussed and written about, the Boryslav residents were the real patriots and they dreamt of their town prosperity in nearest decades. In a local newspaper “Echo zagłębia naftowego” dated 23, June, 1929 we can find a small article under the title «Boryslav in 1949. (Fantasy or reality?)”.
The author writes about visiting Boryslav in 1949 by the correspondent of American newspaper “New York Herald”. The town arises as a center of mining industry, which has greatly been invested by the government and where the most innovative technologies of natural resources mining are used [14]. But, in fact, in 1949 Boryslav looked quite different…

The development of the town was interrupted by the war. And just at its beginning in September 1939 the territory of Boryslav oil-and-gas bearing basin became the subject of discussion between Germany and the USSR. On 7, August, 1944 the Soviet troops entered Boryslav from the side of Truskavets. While the retreating of the Nazi troops almost all objects of oil production were destroyed. It was burned down 18 powerful derricks, flooded the ozocerite mines, detonated the central mechanical workshops and oil pipeline, put out of action the gasoline plants. At the same time, 835 residential buildings, a cinema, the house of culture for workers were demolished [15].

4. After the Second World War

A postwar destiny of Boryslav appeared to be complicated. Soviet Power realized the nationalization of a city industry. Instead, the new directions of industry development had been formed: creation of a chemical plant on the basis of a former refinery, creation of a shoe factory (1958), operationalization of the factory of non-woven materials (1960) and a porcelain factory (1964). However, the development of Soviet Boryslav was also accompanied by the problems. Among the most resonance events the town had faced with were the following: closure of the Carpathian geological research institute at the beginning of the 1950-s, artificially created accidents and flooding an ozocerite mine, wrecks and conflagrations at the oil fields, liquidation in 1960 of an oil mine in Mraznytsya micro-district, closure and reformation of numerous establishments and organizations, great tragedy in 1972 – as a result of gas explosion a two-storey building was completely ruined and 18 inhabitants perished there, demolition of historic, artistic and religious monuments, etc.

The development of Boryslav was directed toward architectural and planning aspect. Of course, on account of administrative and territorial changes its total area now is only 30 sq. km (less than a half of its pre-war area). Today about 49 thousand people live in the town. Only 2.7 thousand people work in the field of oil and gas industry, and the total quantity of people working in industry is about 5 thousand persons. And all it leads to the problems in a city communal infrastructure, namely, unsatisfactory state of the city roads, garbage removal, providing the city with potable water. Annual nature and man-caused events bring the city a constant threat. The most influential of them are the summer floods. During the last century there were several great and extremely destructive floods which resulted in demolishing the residential and industrial buildings, oil derricks, roads, bridges, and, even, causing human sacrifice. Such floods happened in the early 1989-s, 1997-s and 2008-s. Since Boryslav is situated in the territory of the 20 thousand of, so-called bore pits and small ponds the abyss can happen at any moment. The deep precipices unexpectedly come into being even in the central part of the town or in the vegetable gardens belonging to people. In some places oil surfaces in uncontrolled way and gets into the mouth of the river Tysmenytsya, wells and the surface water [16].

What are the actual aspects for the development of Boryslav? The development of the town as an industrial center can hardly be perspective. This could involve only the preservation of oil and gas industry for the purpose of working places creation. In Boryslav oil and gas district the annual amount of oil mining is about 100 thousand tons and gas mining – 40 million square meters. Despite this amount isn’t considerable enough it makes up almost all Lviv region oil and gas industry. At the same time the continuation of a local industry tradition is of great importance as it forms a specific character and uniqueness of a given region. However, an unrepeatable city landscape is inseparably connected with the oil derricks.
The elimination of city gas pollution and the solution of ecological problems are the significant reason for the development of a tourist-recreation, medical and health activity. An important precondition of the first direction is the preservation of a good many of industry heritage objects that are of great tourist interest. First and foremost they are the monuments of mining industry, which are the unique ones for this locality. Among them the historian O. Mykulych enumerates the objects as the visual remains of above 10 well pits (mines) with the wooden well stands or willowy plait for oil and ozocerite mining, in the floodplain of the river Tysmenytsya appeared in the 1854 – 1880-s (their total amount is above 12 000 in Boryslav), Boryslav ozocerite mine with a workable equipment since 1902, the old oil borehole since 1893, a former borehole of English-Austrian Bank № 78 since 1895, well known across the word oil and gas borehole «Oil City» acted in the 1907 – 1947, the original workable metal riveted buttresses of telephone connection of the1820 – 30-s, etc. (Figure 4.)

![Figure 4. One of the preserved oil borehole in Boryslav (photo by S. Linda, 2018)](image)

Picturesque landscape, mountain scenery, the numerous types of medical and mineral water, like «Naftusya» – all it creates the preconditions of the development of medical and health activity. As a whole it forms a unique situation, which could become a reason of an intensive development of a former industrial city.

5. Conclusions

Thus, the formation of Boryslav as a city – of oil mining had both positive and negative sides. On the one hand this promoted a rapid territorial and demographic development at the turn of XIX-XX centuries and stimulated the construction of numerous public objects, some of which were not inferior to the best Lviv architectural patterns since now remain the best architectural city objects. On the other hand the city was interpreted only as the source of gaining the profit, therefore it wasn’t invested in proper way and its architectural and urban planning development had a natural and stochastic character. This factor promoted formation of a unique city landscape, in which the features a large city building system interweaved with the artifacts of city’s industrial past. That is why Boryslav is an extremely interesting example of city forming under the circumstances of an intensive development and later the decline of mining industry.

Therefore, the proposed study is not only of historical interest but also of considerable practical importance in determining the prospects for urban development. Consideration of the city as an
artefact of industrial civilization makes it possible to comprehend it from the point of view of the value of industrial heritage as a potential tourist object and, at the same time, as a comfortable space for the life of its inhabitants.

References
[1] V. Bileckyy, H. Hajko, P. Saluga, Development of oil production in the Eastern Carpathians: chronology, significance, achievements, SCHID #1 (147), 2017 (in Ukrainian).
[2] S. Bartosiewicz, The petroleum industry, the 10th anniversary of reborn Poland.1918-1928, Kraków-Warszawa, p. 1031-1034, 1928 (in Polish).
[3] Regulation of the Council of Ministers of May 20, 1930 on the extension of the borders of the city of Borysław in the Drohobych powiat, Lviv province [Accessed 06. 2019] Available at: http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19300440375 (in Polish).
[4] L. Będkowski, A. Krupa, and B. Krupa, Borysław in crumbs of memories, W-wa-Bóbrka-Kraków, V. 1, p. 132, 2000 (in Polish).
[5] Regulation of the Minister of the Interior of July 26, 1933, on raising the Borysław commune in the Drohobych powiat, Lviv voivodship to the row of cities covered by the Act of March 13, 1889 [Accessed 02. 2020] Available at: http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19330620467&SessionID=454545DC2C47BB58411BFF5D717D389EA0621770 (in Polish).
[6] 1387-1939 Boryslav, Lviv region, History of cities and villages of the Ukrainian SSR: [Accessed 01. 2020] Available at: https://mistaua.com/setcity=1173 (in Ukrainian).
[7] B. Wojcechowski, The population of Zagłębie and Wielki Borysław, Echo of the oil basin, # 18, p. 1-2, 1929 (in Polish).
[8] L. Będkowski, A. Krupa and B. Krupa, Borysław in crumbs of memories, W-wa-Bóbrka-Kraków, V. 2, p. 57-58, 2004 (in Polish).
[9] O. Mykulych, Monuments of the technology of the Galois industrial school of Boryslav and Shidnytsya, Technical Museum: history, leisure, perspectives, Materials of the First International Scientific-Practical Conference, Kyiv, p.87-93, 2008 (in Russia).
[10] Report of folk house construction committees in the oil industry, Lwów-Borysław, Publishing house of the People's Houses Construction Committee in Borysław, p. 4, 1931 (in Polish).
[11] W. Minkiewicz, Post and telegraph office in Borysław, Architekt, # 1, p. 5-11, 1931 (in Polish).
[12] Tourist in the oil basin: sightseeing, mountaineering, summer and winter tourism: guide, Polish Tatra Society. Drohobycz-Borysław branch, 1936.
[13] B. Lazorak, Sports Chronicle of “Interwar Drohobych”, Drohobych Local History Collection, V. 17-18, p. 314-340, 2014 [Accessed 07. 2019] Available at: www.irbis-nbuv.gov.ua (in Ukrainian).
[14] Boryslav in 1949. Fantasy or reality, Echo of the oil basin, # 17, p. 5, 1929 (in Polish).
[15] M. Nanivs’ka, Borislav's population in the first post-war decade and its contribution to the restoration of the city's economic potential, Topical issues in the humanities, V. 6, p. 52, 2013 [Accessed 08. 2019] Available at: http://nbuv.gov.ua/URJNPagnd (in Ukrainian).
[16] O. Mykulych, Did Borislav ever laugh?, The People's Word, # 5 (425), p.8 (in Ukranian).