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HISTORICAL FORTIFICATIONS IN THE ARCHITECTURAL AND URBAN PLANNING STRUCTURE OF LVIV (ON MARGINES DOCUMENTATION "HISTORICAL AND ARCHITECTURAL REFERENCE PLAN OF LVIV")

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Abstract. Ancient city fortifications are one of the specific types of defensive architecture. Along with the buildings of castles, blocks of urban residential development, monastery complexes and field defensive structures, they formed a special type of architectural and urban planning objects. During their construction, the skills of both an architect, builder, and military engineer were often combined. Not so many objects of urban defence architecture have come down to our time. Therefore, every fragment of the city's defensive walls and earthen fortifications preserved today, as a rule, is a valuable document of its era and needs careful protection and preservation. Urban fortifications (as opposed to fortifications of castles or fortresses) were the objects of priority liquidation in the process of urban development. There are very few of them preserved in Ukraine, so their preservation and study is a matter of extreme importance. Lviv is a unique city on the map of Ukraine in terms of the development of urban fortifications.

The article analyzes the reflection of objects and monuments of defence construction in the scientific and design documentation "Historical and Architectural Reference Plan of the City of Lviv". Data on the stages of development of Lviv fortifications are high lighted. Special attention is paid to the remains of fortifications that have been preserved in the archaeological form. Their identification, conservation and identification is important task for modern urban development projects. The paper makes hypotheses about some hitherto unidentified elements of fortifications of the XVII–XVIII centuries. Special emphasis is placed on the need for a special scientific study on the detailed reconstruction of all stages of the development of defence belts around the city centre and suburbs of Lviv.

Key words: Fortifications, Lviv, XIII–XIX centuries, conservation, urban planning documentation.

Relevance of the study

Many scientific works were devoted to the development of fortifications in the Lviv city centre. First of all, we should mention Franz Kovalishin, who at the beginning of the twentieth century, collaborating with the historian A. Cholovsky, left sketches of objects still preserved at that time or submitted his graphic

reconstructions of their original appearance. The first synthesizing works on the line of fortifications of Lviv include the research of A. Cholovsky (Czolowski, 1891). The next study was by B. Tomkevich, who gives a general outline of the development of the city's fortifications from the XIV to the XVII centuries. This author used a wide range of sources and is responsible for the first comprehensive assessment of urban fortifications and the establishment of the stages of their construction (Tomkiewicz, 1971).

The second famous author who worked in this field was Janusz Witwicki, who owns the reconstruction of the fortifications (three main lines) of the city centre as of the end of the XVIII century. This is the only architect who worked on the topic under study. However, his analysis concerned mainly the reproduction of the appearance of structures as of the XVII–XVIII centuries. But it is he who is responsible for establishing the exact contour of the high and low walls in the planning structure of the city centre, specifying the number of towers, and many other issues (Witwicki, 1971).

I. Kripyakevich, who clarified many dates of Lviv's history, also addressed the issue of covering the history of Lviv fortifications. A. Stepaniv revealed the general schemes of development of the urban structure, Ya. Lobotsky performed a study of the defensive line of F. Getkant (Lobocki, 1982). Historians Gronsky (Gronsky, 1979) and V. Vujtsik revealed the history of individual buildings, clarified the names of fortifiers, clarified the works carried out in the XVII century, etc. (Vujtsik, 1994). Modern authors O. Cherner, A. Rudnitsky, Ya. Isaevich and V. Ovsiychuk touched upon the issue of defence architecture only in general aspects. Some issues of the development of fortifications are touched upon in their research. Hoshko, M. Kapral, Yu. Dyba, M. Bevz, I. Okonchenko et al.

The second author who tried to systematize and clarify the general scheme and reconstruct the stages of construction of fortifications around the centre of Lviv was T. Tregubova. The work of this author describes the main consecutive changes in the construction and modernization of urban fortifications in different periods (Tregubova and Myh, 1987). In the study of R. Mogitich, a hypothesis is put forward about the first stages of development of the territory of the city centre.

Fortification complexes were a particularly important element in the development of urban structures in the past. Their complexes most influenced the planning structure of the city. Fortifications often dictated the development of the city in one direction or another. Therefore, the theoretical reconstruction of the stages of development of urban defence systems is an extremely important task for understanding the architectural biography of the city and should be reflected in great detail in such documentation as a historical and architectural reference plan.

Results and discussion

The enterprise of the association of citizens "Institute of cultural heritage" of the All-Ukrainian Council for the protection of cultural heritage (Kyiv) has developed a scientific and design project documentation "historical and architectural reference plan of Lviv" in 2018–2019 (IAOP, 2020). Even at previous reviews of the documentation, reviewers pointed out the superficial nature of the text presentation and graphical representation of individual sections of the documentation. Special reservations arose regarding the scientific interpretation of the stages of Lviv's development. In the process of correcting the documentation, the authors formally increased (detailed) some stages in the development of the architectural and planning structure of the city, but in the graphic part, four stages do not disclose the purpose of this section according to the requirements of building code B. 2.2-3:2012 (5.4.A). It requires showing "the borders of the locality at each of the stages of development, the most important historical paths, streets, squares, outstanding historical buildings, structures and complexes, tracing the preserved and lost lines of fortifications" (building code, 2012). Below is a fragment of the drawing of the historical and architectural reference plan of the 3rd stage of development of the planning structure of Lviv (Fig. 1), which, according to the author's classification, covers the period from the middle of the XIV to the third quarter of the XVII century (IAOP, 2020). For any specialist who wants to navigate at this stage and distinguish which ones "streets, squares, outstanding historical buildings, structures and complexes" occur in different periods

in the central part of Lviv, there is no such information. In addition, a logical question arises: what is the justification for allocating such a long period? After all, in different segments of this period, there are completely different complexes in terms of planning and architectural features, for example, sacred buildings, and here they are all marked with the same type of cross. One colour in the diagram shows completely different urban planning complexes and formations: a pre–location city, city centre, and suburbs. In addition, the diagram does not show some key objects – for example, the Church of the Holy Cross since 1534 or the Jesuit church (which significantly changed the planning structure of the city centre and the lines of fortifications at the beginning of the XVII century), synagogue buildings, etc. The diagram demonstrates a simplified approach to analyzing the city's development. Lviv, a city with a rich architectural history, which is quite fully represented in scientific publications, does not deserve such a superficial way of performing documentation. We recall the "historical and architectural reference plans" that we had to see implemented by the Institute "Ukrzahidproektrestavratsiya" back in the late 1980s and 1990s. These were real analytical and meaningful works. Unfortunately, today, with immeasurably greater technical performance capabilities of designers, simplified approaches to the implementation of research and design tasks are being implemented.

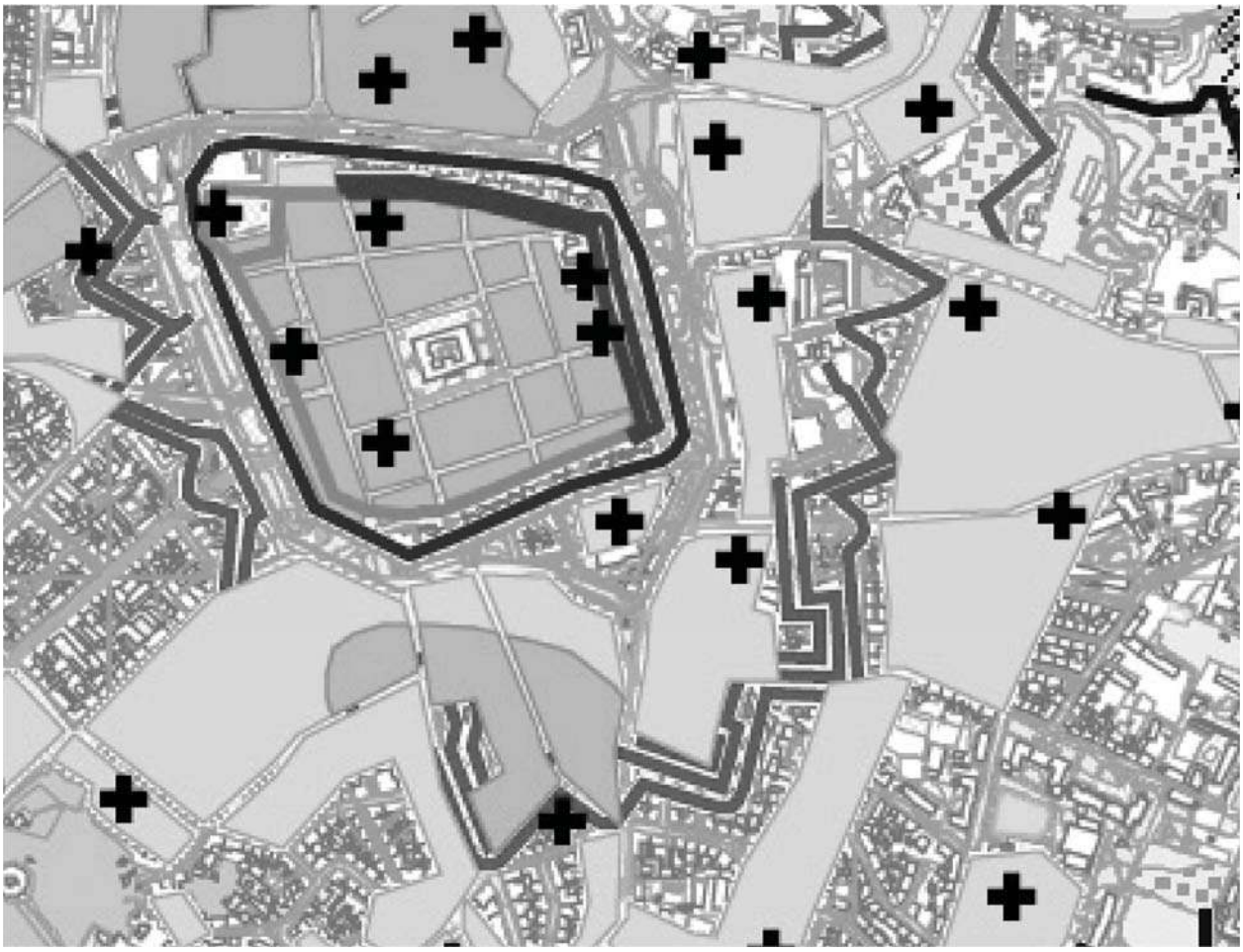

Fig. 1. Fragment of the scheme of the 3rd stage of Lviv development from the IAOP material (IAOP, 2020)

Separately, you should point out errors and inaccuracies in revealing the stages of development and showing the unique system of fortifications of the city. The shown stages of development of the city do not correlate with the stages of development of fortification belts. For example, for the third stage of development of the city in the XV–mid. XVII century (Fig. 1), the fortifications of the oldest part of the city – the so-called pre-location city – are not marked.

Although these fortifications undoubtedly existed and there are scientific publications about their configuration and localization. But on the diagram, in the central part of the city, a line of Bastion fortifications is marked, which could not be implemented here in the first half of the XVII century. A high defensive wall is marked without specifying towers or gates (Fig. 1). Although, the latter significantly influenced the development of the planning structure of suburban territories. With a simple line without specifying bastions, the fortifications of the low wall and the so-called "third defensive line" are shown. The authors forgot to show the southern spinning wheel of a low wall at all. The defence complexes of the Galician and Krakow gates, which had complex and specific different-time defensive structures, were not designated. The authors also forgot about the special system of fortifications of the Bernardine monastery, some of which have been preserved to this day. Similarly, the fortifications of The Barefoot Carmelite monasteries, the Benedictine monastery, and the St. Onufriy monastery Onufriy are not marked.

About the line of Bastion fortifications in the text of the work is said only in one sentence, stating its existence, but not revealing its planning nature and features of structures. None of their characteristics is presented. There is no data on the F. Getkant line, The J. Behrens line is not characterized, and the extent to which the Desro line was implemented is not indicated. But these defensive belts significantly influenced the development of the city's planning and spatial structure.

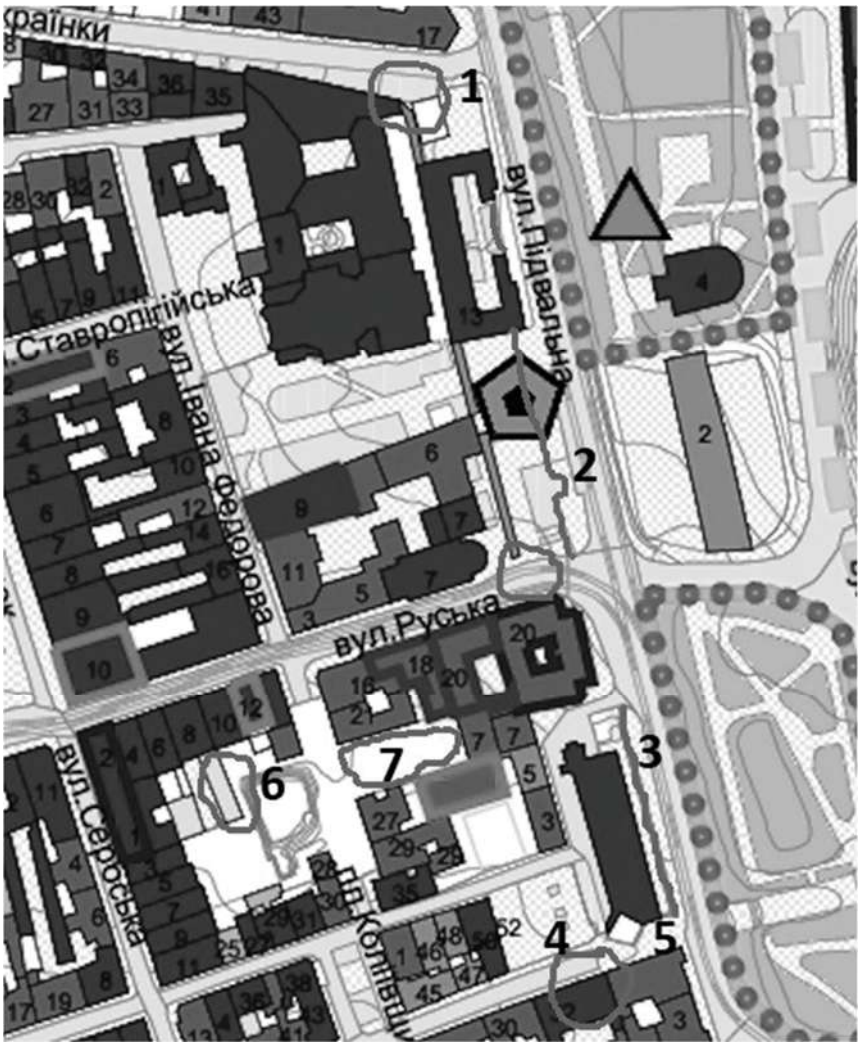

Fig. 2. Fragment of the IAOP drawing. We have marked the remains of fortifications on Pidvalna St the authors ignored: 1 – The Remains of the Rymarska tower and the high defensive wall; 2 – basteya and a fragment of the low wall near the Kornyakta Tower; archaeological remains of the Russian Gate; 3 – the low wall near the City Arsenal, 4 – basteya in the basement of the house on 32 Brothers Rogatyntsi St; 5 – archaeological remains and a recreated fragment of the Shevska tower of the High wall

In the third volume of the publication "monuments of urban construction and architecture of the Ukrainian SSR" (Monuments, 1985) on page 80 is filed under the Security number 327 – "walls of urban fortifications, the end of XIV – beginning of XV century" Of the objects described in this volume, the authors included and marked only a fragment of the wall (high defensive wall) on Svobody Avenue. But the authors did not identify the disharmonious development that completely covered the authentic remains of this defensive monument. Other objects of the high wall – the remains of the Rymarska Tower, a fragment of the wall in the courtyard of the Royal Arsenal, the remains of the Mulyarska tower are not classified as a complex attraction by the authors (position 327). However, some of these objects are offered for registration. But they have already been registered and have a security number. Why the "proposed" also does not include the bastey of the low wall next to the Assumption Church, a fragment of the low wall near the City Arsenal is also unclear (Fig. 2). In the publication we cited under the number 1266, the remains of the Bastei of the low wall in the basements of the house on 32 Brothers Rogatintsiv St are listed as a monument. It is not marked as a separate memo in the drawings (Fig. 2). Since this monument has its number, it should have been marked, even though the authors designate the house itself as a monument.

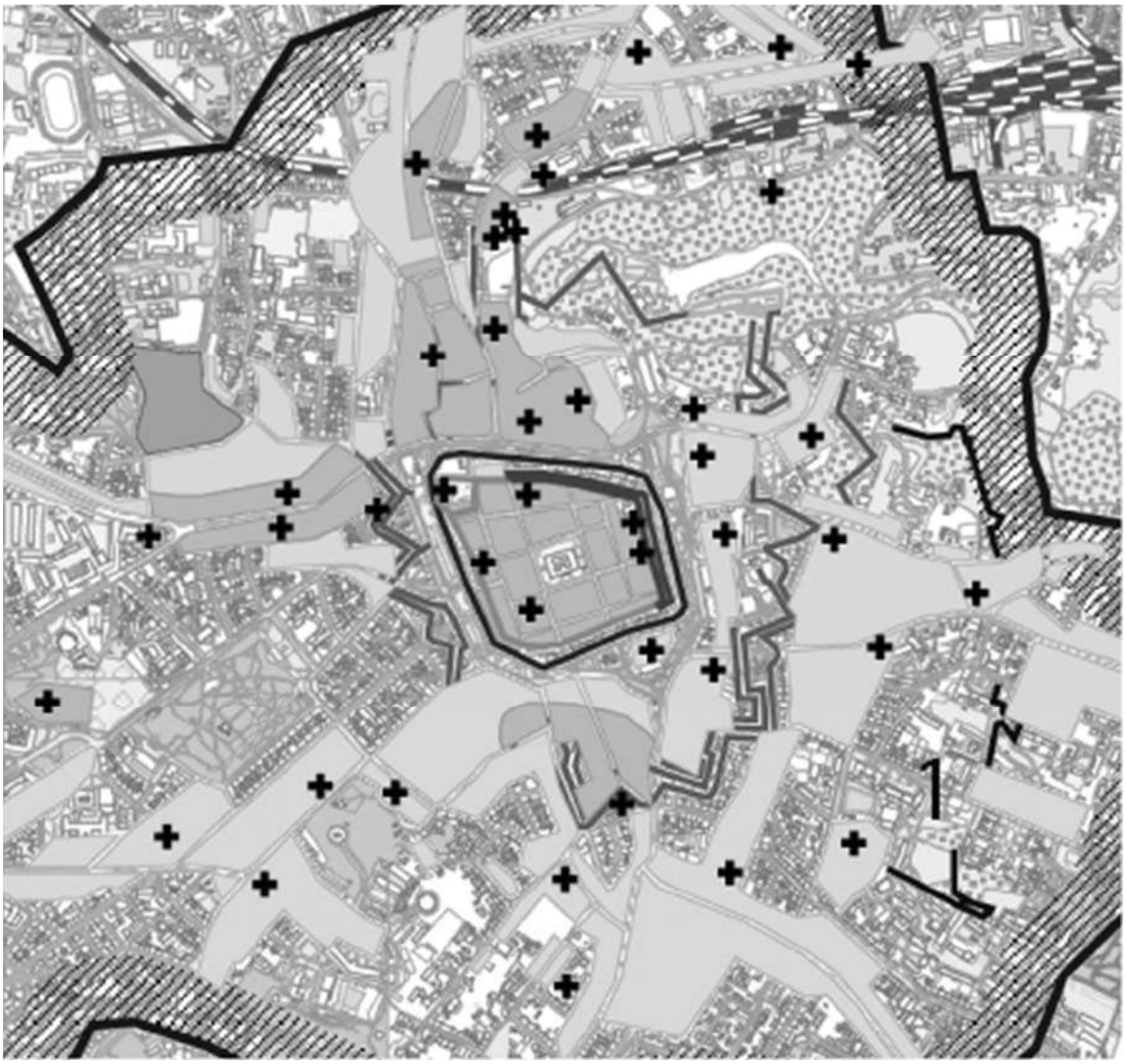

Fig. 3. Combined scheme of the third (mid XIV–mid XVII century) and 4th (second half of XVII–end of XVIII century) stages of development of Lviv according to the IAOP documentation (IAOP, 2020). The remains of F. Getkant's defensive line to the east of the city centre are indicated by the number 4. The authors have not identified or marked the remains of the Getkant line in other parts of the city. I n particular, on The Citadel, on Arkhipenko Str., Zolota Str. and other places

In the table with the objects of archaeology proposed for registration (IAOP, 2020; Vol. V) there are several items (No. 36-41) that are designated as remnants (fragments) of fortifications of the XVII century. They are presented without names, although it would be necessary to indicate which defensive line they belong to and from what time of construction these fragments originate. For example, we point out that positions 36–38 belong to the remnants of the so-called defensive line authored by Jan Behrens from 1678–1680. This line was built at a specific time during the reign of King Jan III Sobieski, and the table shows an incorrect dating of it – "the first half of the XVII century". But positions 38–41 belong to the defensive line, which was built according to the project of Getkant in the 1635–1640s. These objects belong to the first half of the XVII century. The table does not contain names or addresses for any of these objects. Position 38 is the hypothetical remains of several objects – the corner North-Eastern bastion, the curtain shaft, and the 4-corner bastion. It was more expedient to submit the numbers of each of these objects separately: 38a – earthen remains of the bastion; 38b – remains of the curtain shaft, 38b – remains of the 4-corner bastion. Position 37 in our opinion may refer to the fortifications of the territory of the Church of St. Wojciech. This should be reflected in the object name. No 39 is a bastion of Combined Shape with so-called "pincers" at the head of the Spinning Wheel of the Getkant line. The designation of the plan form of this bastion is debatable, as is the designation of another more southern corner bastion (see Fig. 3 and 4, with the bastion configuration designation on the plan of J. Desfile). In our opinion, only fragments of the ramparts of the Bastion are archaeological remains in kind. The rest of its flanking elements are lost, covered with buildings.

The Getkant line had a large length and was built specially. Only bastions were made of earth-stone, and curtains were built using natural terrain features in the form of ordinary low earthen ramparts, which often did not run in a continuous line, but were filled in fragments in the most suitable places (Lobocki, 1982). Unencrypted position 41 can only belong to the defensive walls of the Bonifrath monastery, which we have great doubts about. This object does not belong to the Getkant line fortifications. This should also have been indicated in the drawing and the note.

From a scientific point of view, it looks like a very important task – preliminary determination of the full list of monuments of fortification cultural heritage from various urban planning stages of Lviv's development. Drawing up such a list has both historical, architectural, and monument protection significance. Subsequent identification of the list of objects on the historical plans and the plan of the modern city would allow us to identify the exact places of their localization and develop proposals for their protection and inclusion in the State Register of immovable monuments of Ukraine. In the scientific interpretation of fortification objects, it is very important to consider them not alone, but as defensive complexes from a certain time and purpose. Unfortunately, such an assessment was not made during the development of the IAOP.

Let's try to reveal the features of the construction of fortifications in Lviv on the example of the period of the XVII–XVIII centuries. In urban terms, this period is characterized by two interesting phenomena. The first is that in the XVII century several fortified monasteries and temples were built around the city centre, which created a very interesting system of architectural and spatial dominants and fortified outposts on the slopes of the Poltvynsky Basin.

The second was an attempt to build a new belt of fortifications around the territory of the city centre, along with the suburbs, which would be suitable for increasing the defence capability of the city, which was very often under the threat of enemy invasions and robberies.

The implementation of the first urban phenomenon was not a specially planned action. To a certain extent, the emergence and development of both Catholic and Ukrainian monastic complexes in Lviv was a missionary in nature. For some, Lviv was a major eastern outpost in spreading its influence. For others, it was, on the contrary, one of the most Western centres of religious and national identity. Armenians and for some time the reformist Protestant church were also noted in the construction of shrines in Lviv. Active competition in the "extraction" of urban territory and the construction of sacred complexes led in the middle of the XVIII century to the emergence of a unique urban planning formation. For about 150 years, around

the city centre on the slopes and hills of the Poltvynsky Basin, a very peculiar belt of monasteries and temples in compositional and urban planning terms was formed, which included 46 objects.

As you can see, this peculiar belt of walled churches and monasteries, which numbered about 50 objects in the middle of the XVIII century, was a special urban planning feature of Lviv. From a historical and urban planning point of view, the presence of such a ring is a very interesting phenomenon that is not found in other Ukrainian and foreign cities. In the XVII century, these monasteries were included as components of the outer belt of defensive bastion fortifications of Lviv, complementing it as independent fortifications and forts. Many objects from this belt were lost in the XIX or XX century. These are the Church of St. Stanislav, Church of the Cherevichkovy Carmelite Monastery (cell building of the XVII century. preserved to this day, but not registered as a monument), the former Church of the Holy Spirit with the buildings of the Greek Catholic seminary, St. Cross church, a church of the same name, and some other objects. The unique urban planning formation of the ring of monasteries and churches of the XVII–XVIII centuries around the city centre is not reflected in any way in the materials of the historical and architectural reference plan, although this ring is an important element of the historical compositional and planning structure of the central part of the city.

In the XVII century, the city was actively developing at the expense of its suburbs. Since the city at this time was constantly under the threat of enemy invasions, accordingly, there was a problem of building new fortifications around the city centre, which would also include the suburbs. Taking care of improving the defence capability, several projects for creating new fortifications were worked out in the city in the XVII century, which included urban and suburban territories. The initiators of the construction of new defensive lines were most often residents of the suburbs. In response to their appeal, some projects were developed with the participation of city architects and Royal fortification engineers, which can be divided into two groups. The first is projects to improve and complete the existing defensive fortifications of the city (works by A. Del Aqua, P. Hrodzytsky, D. Briano). These also include projects for strengthening individual monasteries that were located behind the walls of the city: Bernardine, The Barefoot Carmelites, St. Lazarus, the Basilian Fathers near the Cathedral of St. Yura, St. Onufriy are not marked. Moreover, we meet among them projects for creating defensive walls of the simplest nature (the monastery of St. Lazarus), as well as plans for the construction of perfect bastey or bastion fortifications (monastery of Bernardines, monastery of Barefoot Carmelites, St. Yura Cathedral complex).

The second group is projects to create a new defensive line that would cover the territory of the suburbs for protection. We have drawings of three such projects (these are the works of F. Getkant, Ya. Behrens, Desro). Several other projects have only written references to their consideration by the magistrate (Project of A. Pasaroti, P. Rymlianyn, B. Morando et al.), but their drawings have not yet been found. From the works of architectural historians V. Tomkevich and V. Vuitsyk, you can also cite the names of other fortifiers who worked on improving the Lviv fortifications in the XVII century. These are Bernardo Morando (1589), Aurelio Passarotti (1607), Theophilus Schemberg (1608), Paul the Roman, Ambrosius the benevolent and Wojciech Kapinos (project 1614), Nikola Rutsky (1614), Wilhelm Appelmann (1615), Pavlo Hrodzytsky (1633), Frideric Getkant (1634–1635), Jacob Boni (1647), Andrea del aqua (1652), Jan Behrens (1678–1682), Desro (1695) (Vujicik, 1994b). These facts show that Lviv, which was one of the richest cities in what was then south-eastern Poland, made consistent attempts to build a more advanced system of fortifications.

It is worth noting that the factor of building new fortifications often caused another interesting phenomenon in the cities of this period - the emergence of a “parallel”, a new city near the existing one. The essence of this phenomenon was that in the suburban areas near the old city (outside its medieval city fortifications), another city was laid, but with a more advanced Bastion system of fortifications, designed for autonomous defence or for the creation of an external belt that was defended jointly by the inhabitants of the new and old cities. All Lviv projects provided the second option of creating fortifications.

This new city was probably founded based on a separate location privilege. In Lviv, residents of the Galician suburb at the beginning of the XVII century repeatedly made attempts to form an independent city and build a belt of Bastion defensive structures.

But these intentions were never completed, although a certain part of the fortifications around the Lviv suburbs was still built. For the first time, residents of the Galician suburb turned to King Sigismund III with a request for the privilege of laying a new city called Volodyslav in the suburbs in 1607 (Czerner, 1997). Actually, in response to this request, the king sent engineer Aurelio Passarotti to Lviv with instructions to work out a project for creating a new fortification line. Passarotti completed the project, and residents even began to implement it. However, these plans were not implemented due to the protests of the Lviv magistrate, under whose jurisdiction the suburban grounds were located.

Fig. 4. Fragment of the map of the city of Lviv from 1766 with the designation of the cornerstone of the south-eastern bastion of the Getcant line

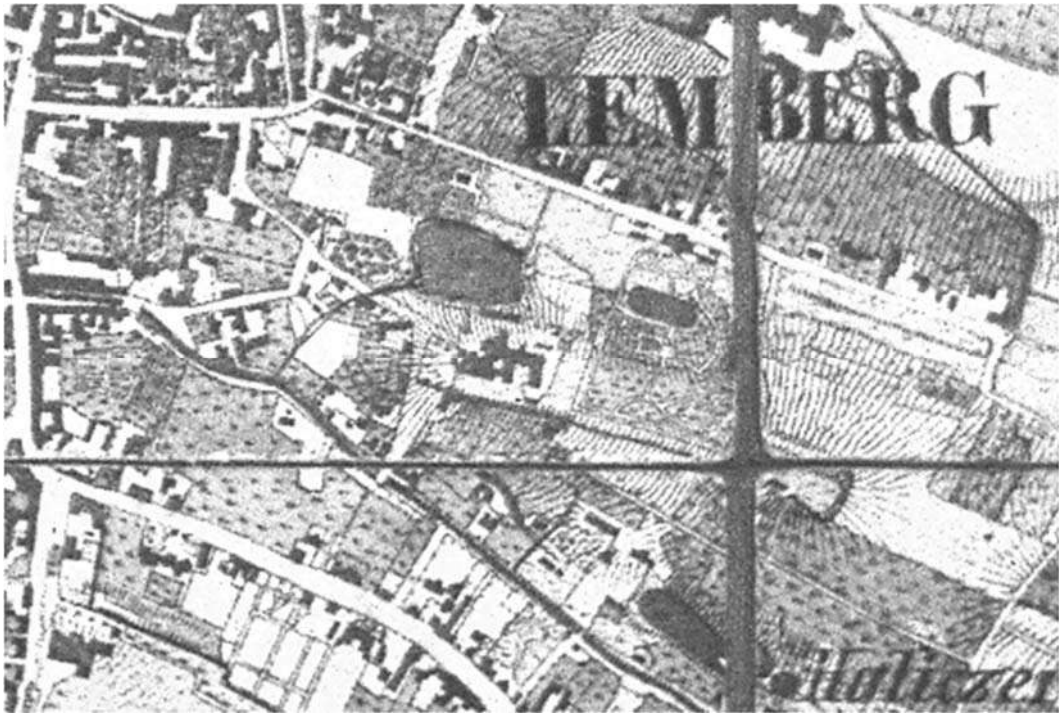

Fig. 5. South-eastern corner bastion of the Getkant line. Fragment of the map of 1829

Subsequently, in 1634–1635, the suburbs of the Galicia organized themselves, made another attempt to strengthen their territory and began to pour earthen bastions and dig foss (Kis, 1961). But, for various reasons, these works were also not completed. This time, the new city was to appear with the consent of King Vladislav IV with the name Casimir (Tomkiewicz, 1971). The project of new fortifications in 1635 was developed by engineer Friederik Getkant.

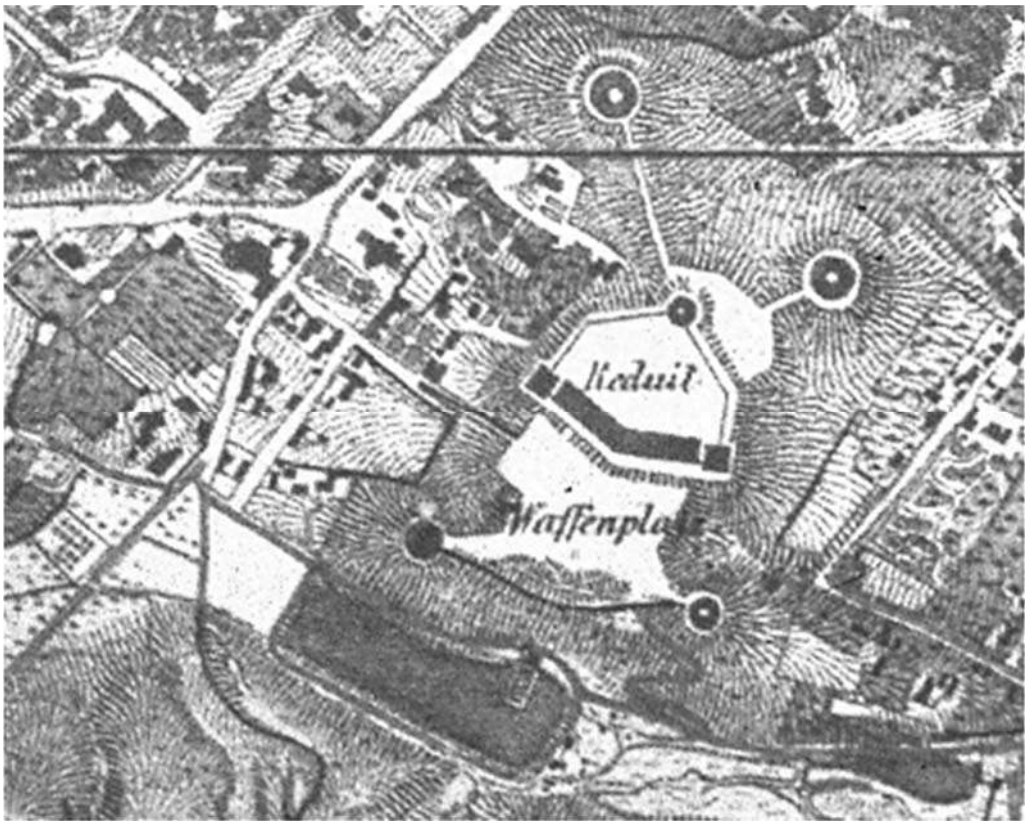

Fig. 6. Citadel fortifications on the map as of 1861 The southern part of the complex is marked with two towers and a rampart between them

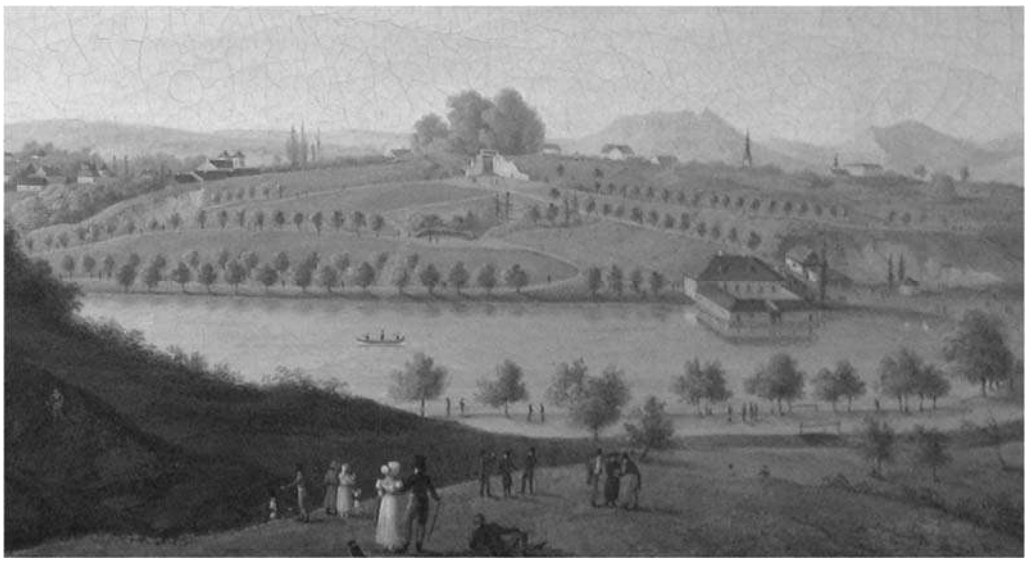

Fig. 7. Pelchinsky arise in Lviv on an oil painting by Anthony Lange in 1824, fragment (Lange, 1824). The Citadel fortifications did not yet exist at the time of drawing the picture, but we see an image of a rampart with a large stone gate on the mountain

remains of the Getcant defensive line are marked on several historical maps, in particular on the plan of Lviv in 1766 made by Jean Ignatius Desfill (Fig. 4), on the map of F. von Miga in 1782, on maps from the beginning of the XIX century (Fig. 4, 5, 6, 10). These fortifications are especially seen in the eastern part of the city, where a fragmentary defensive line can be traced, which, in shape, resembles the bastion line designed by Friederik Getkant in 1635. To more accurately attribute this defensive line, it would be necessary to continue previous studies of Ya. Lobocki (Lobocki, 1982), starting with full-scale surveys of the territory through which it ran, and analyzing its technical and stylistic characteristics to find out whether previously built ramparts were included in it according to a project of A. Passarotti. After all, it is known that the ramparts of Passarotti were started built (Vujcik, 1994). Similar identification works were carried out in the 1980s at the Institute of Ukrzahidproektrestavratsiya.

The main disadvantage of the IAOP documentation is the very schematic representation of the Getkant defensive line in all drawings and the lack of designations for well-preserved fragments of this line. First of all, you should indicate the most preserved object of the line – the rampart, preserved at its original height in the southern strand of Mount Citadel. The stone entrance gate is also preserved in the body of the rampart. Although the walls of the gate represent architectural elements of the XIX century, its image on cartographic and iconographic documents from the end of the XVIII – beginning of the XIX century indicates the construction of this object as earlier than the construction of the Austrian fortifications of the Citadel in 1855. That is, the gate, like the rampart itself, could have been built during the construction of the Getkant line. The gate may appear in connection with some work on the modernization of the Getkant fortifications at the end of the XVII or XVIII centuries. Perhaps the rampart and gate were built as part of the Getkant line, later maintained and modernized as objects that were part of the defensive yard of the Kyiv Voivode Potocki. The Voivode's court existed on the mountain even before the construction of the Citadel fortress by the Austrian authorities. Hypotheses were put forward that this Rampart could be part of the so-called Turkish trenches, which were built on the mountain in 1672 (Okonchenko, 2009; Dubyk, Pinyazhko, 2009). However, these assumptions are questionable, since the trenches were built by the Turks for artillery shelling of the city and should have had the main structures on the north, and not on the south side of the mountain. Preserved to its full height, the seventeenth-century rampart in the southern part of the mountain should have been more thoroughly studied and interpreted accordingly in the graphic and textual parts of the IAOP's work.

Confirmation of the earlier (even before the construction of the Citadel) existence of the rampart in this part of the mountain is its designation on the plans from 1820, 1829, 1844 (Plan, 1820) (Fig. 6). In particular, the plan from 1820 on the mountain on the southern side shows a wide shaft of somewhat irregular outline.

Here, too, in the southwestern corner (this is on the mountainside), there is a powder room, which has a territory fenced with a wall on three sides.

F. Getkant’s defensive bastion line is particularly well marked on the map of Lviv in 1820 from the Vienna Military Archive (Plan, 1820). It is indicated that the ramparts of Getkant start from Mount Leo in the form of a long large line of the rampart of a triangular shape in plan, with a corner opposite the monastery and the Church of St. Wojciech (which is designated as a gunpowder warehouse). An interesting fact is that on this segment, the rampart line does not have the features of a bastion line and the corners are not solved in the form of bastions (is this not a sign of some older system of fortifications to which the Getkant line was added?). The line of the rampart goes south to the later location of the Franciscan monastery, but here it ends at house number 61. On the territory of the quarter of the Church of St. Antony line is not shown. Then the line of Ramparts appears behind the eastern part of the Piyar college building. It shows a two-part bastion with a moat of a very interesting shape. Initially, this is a flattened plan bastion from the southern horn of which a long triangular bastion protrudes, but the triangle is oriented in the field not by the horn, but by the smaller side.

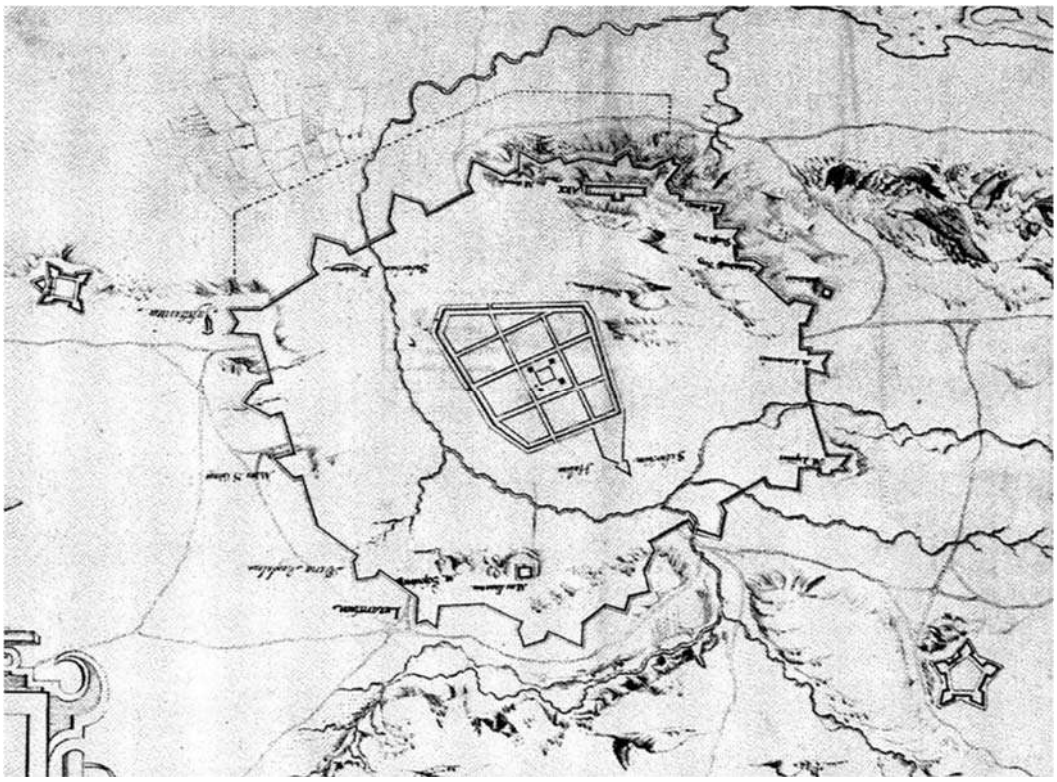

Fig. 8. The project of fortifications of the suburbs of Lviv was carried out by F. Getkant in 1635 (Getkant, 1635)

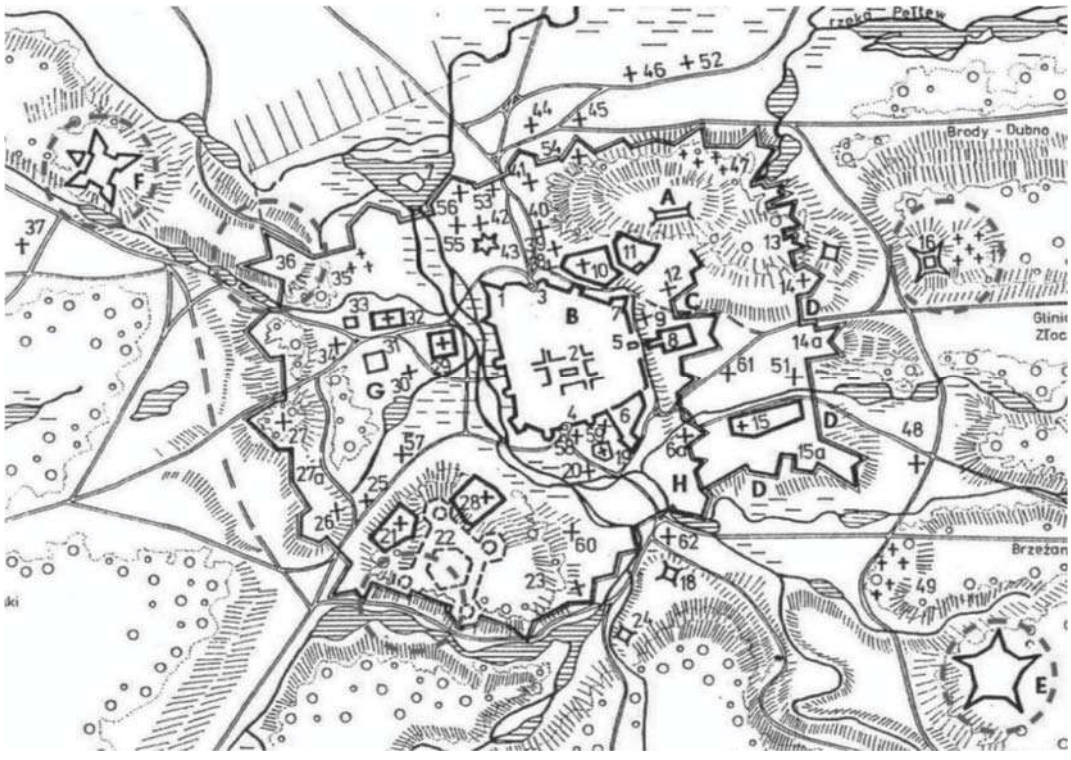

Fig. 9. Diagram of an essay on the fortifications of Lviv of the XVII century with the fortified lines of F. Getkant and Jan Behrens (worked out by Jan Modest Lobocki (Łobocki, 1982). F-north-western "Citadel" on the Krakow suburb from the project of F. Getkant; E – south-eastern "Citadel" on the Galician suburb from the project of F. Getkant; 16 – Castle of the Princes Vishnevetsky; 17 – Church of the Annunciation of the Most Holy Theotokos with a cemetery; 36 – tick-shaped bastion on "Mons Justitiae" (on Mount Strat)

This solution resembles the shape of the so-called “ticks” (Fig. 10). To the south of the bastion, a straight line of the rampart is shown down the relief, which ends approaching the development along Pekarska street. Behind the rampart in the direction of the city is a large regular garden of the College of Piyars.

The Church of the college of piyars is shown not in red but black with grey watercolours filled in (this may mean that it is in a state of construction or ruins?). In the apse part, a rectangular transverse building or aisle is marked.

The shaft is again shown on the right side of the Pekarska St after finishing the garden behind the palace, which is designated No. 422. Some other buildings are shown to the left and right of the palace. In the middle of the garden is a regular rectangular pond.

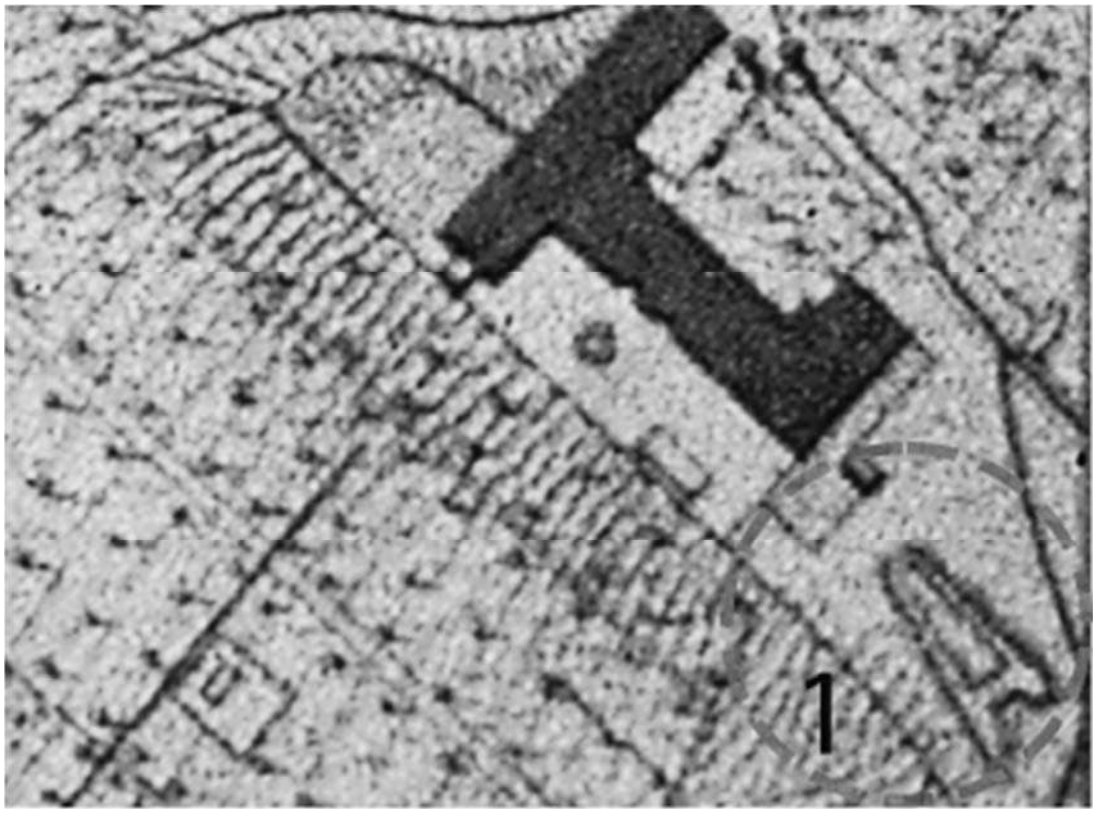

Fig. 10. Remains of the bastion of Getkant (1) near the College of Piyars on the map of Lviv in 1844

The corner of the shaft is drawn completely including a straight section of the shaft that turned here to the west and reaches the site of the Monastery of Sacramentky. The shape of the cornerstone in the plan is decided on the same principles as that of the Piyar college. This is a two-part bastion of elongated rectangular shape, the shaft lines of which are not parallel but slightly diverge in the external direction. Unlike the previous one, in this bastion, a small triangular platform shaft is added to the outer part of the bastion. Only the second outer part of the cornerstone is surrounded by a moat. Near the Monastery of Sacramentky, the rampart breaks off. You can also guess the place of its passage along the narrow strip of territory between the southern border of the Sacramentkymonastery site and the northern borders of two sites (461 and 462) near the Apiary stream (on the K. Levytsky Str.). Further west or south, the remnants of the ramparts of this line are not marked. They are absent on the mountain near the 28th school (here a brick house is marked at the foot) and on the Citadel mountain. In general, the map of 1820 was to be used as a basis for the reconstruction of the Getkant defensive belt.

Special attention should be paid to finding traces of two forts, which are marked with the letters “F” and “E” on the Getkant project plan. These forts were part of the fortifications of Lviv, which

were proposed to be built by Friederik Getkant. It was believed that these forts were not built. They probably were built first.

On the remains of Fort "F" in the time after World War II, a stadium was built, and then a market. The remains of this unique object of the XVII century are preserved to this day (Fig. 11), but they are not reflected in the text and graphic parts of the historical and architectural reference plan.

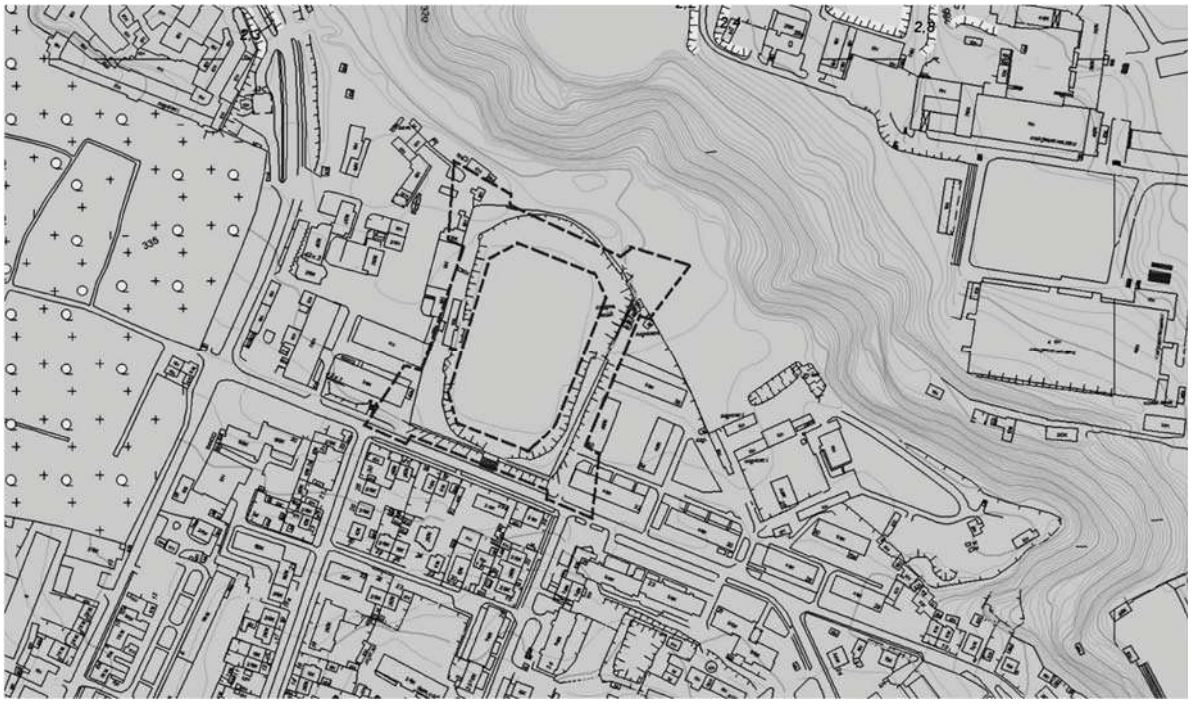

Fig. 11. Hypothetical reconstruction of the bastion fort of the defence line of F. Getkant in 1635 in the area of Zolota Street (M. Bevz, 2020)

We think that similarly, it would be possible to find traces of the pentagonal Fort "E" on the south-eastern outskirts of Lviv in the area of Snopkivska Mountain (Fig. 8 and 9).

On the IAOP drawings, the territories of lost defensive structures should be marked as lost fortifications, because their remains may be preserved in the ground or under construction. Iconic fortifications of all periods need to be accurately localized and shown in drawings since it is known that some of them are fragmentarily preserved and still "read" in the relief structure.

The place of the Church of the Annunciation of the Most Holy Theotokos and the cemetery near Kharkivska Street is indicated as a lost archaeological site in the historical and architectural reference plan. But next to this temple, to the west of it was the fortified courtyard of the Vishnevetsky Princes (Lobocki, 1982). The authors did not search for its location and did not mention this object in the text part. If you look at the maps of Lviv at the beginning of the XIX century, then the location of this object is not difficult to track. Therefore, this object should also be added to the drawings and text part of the work. Fortified with four basteys or towers, the Vishnevetsky courtyard is marked on the map of Jean Desfile (Fig. 12).

The works of Jan Behrens in the development of Lviv suburban fortifications of the XVII century are analyzed in new studies (Bevz M. and Okonchenko I., 1999; Bevz M. and Okonchenko I., 2000). It is recorded that in 1678–1682, at the request of Hetman Stanislav Yablonovsky, in Lviv, under the leadership of Behrens, the construction of earth-stone fortifications of the new Bastion system was carried out (Jozefowicz, 1854). First, work was carried out near the High Castle Mountain (it is possible that the bastions were modernized, which in 1589 were filled in according to the project of B. Morando). Later, according to the project, on the hill, on the eastern side of the city, the Monastery of The Barefoot Carmelites was previously fortified. According to the data provided by T. Jozefowicz, it was a start for a rampart outside the monastery of the Cherevychkov Carmelites (Jozefowicz, 1854).

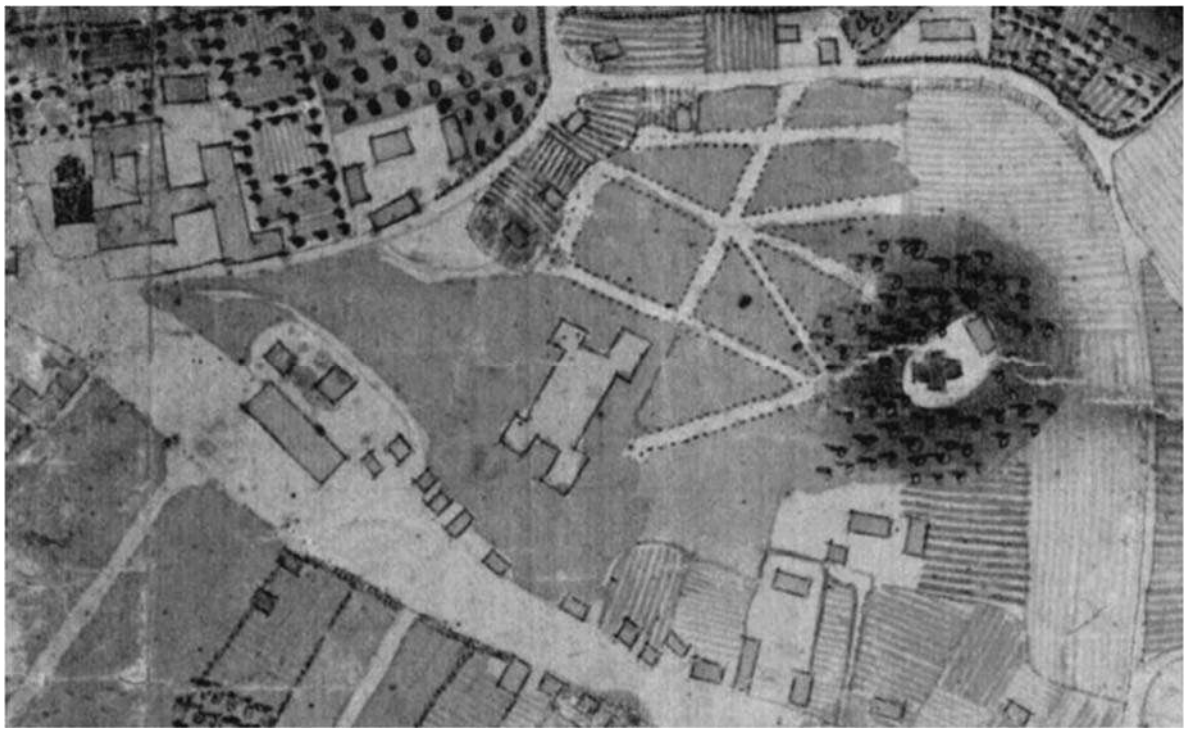

Fig. 12. Fortified courtyard (Castle) of the Vishnevetsky with four corner basteys or towers on the map of J. desfiles in 1766. Near the courtyard, there is a small regular park. To the east of the courtyard is the Church of the Annunciation of the Most Holy Theotokos, surrounded by a dense ring of trees

That the date of construction of this defensive line is mentioned in the Chronicle of T. Josefovich is true, as well as the fact that this rampart was the implementation of the Behrens project is evidenced by archival city documents of the XVII century, which repeatedly mention the costs of the construction of new fortifications by Jan Behrens. This is exactly the version developed in the works by V. Tomkiewicz, Ya. Lobotsky and V. Vujcik, unlike some other authors, believed that Behrens' project was not implemented at all. To confirm the authorship of Ya. Berens and the special scale and architecture of the defensive line implemented in Lviv at the end of the XVII century (Fig. 13, 14), a few additional arguments can be made. The most significant of them is a unique photo from the end of the XIX century, which shows the dismantling of the southwestern corner bastion of the Behrens line (Fig. 15). This bastion was near the Poltva River and, by the plan, there was a nadshanets at the top. The photo clearly shows the dimensions of the structure, which had two-tiered casemates. This bastion with a nadshanets is also depicted on the map of D. Huber in 1777. Photos with the actual dimensions of the remains of the Behrens bastion line are extremely valuable information since, during archaeological studies of the south-eastern bastion of this line, R. Mogitich discovered only one small casemate chamber in 1990 (near P. Rimlyanin St).

Ignoring the interpretation of the city's defence facilities is also present in other sections of the IARP. In particular, the IAOP documentation does not contain the scheme recommended in building code B. 2.2-3: 2012, clause 4.2.3. B – historical districts of the locality (1:10000, 1:25000,1:50000). This scheme should naturally be implemented after identifying and analyzing the stages of city development and linking this zoning with fortification lines, which served as the main barriers and restrictions for the planning and spatial laying of urban areas. If such a scheme could be ignored by performing the historical and architectural reference plan of a small city, then how can you not implement such a scheme for Lviv? After all, this is a synthesizing document, thanks to which we should clearly see from the results of the IAOP, where there are preserved architectural and planning complexes of the XIII or XIV centuries, or XVII centuries, where there are preserved sections of the "garden city", and where there are complexes of the palace and park gentry estates (of which there were about a hundred on the suburbs of Lviv), etc.

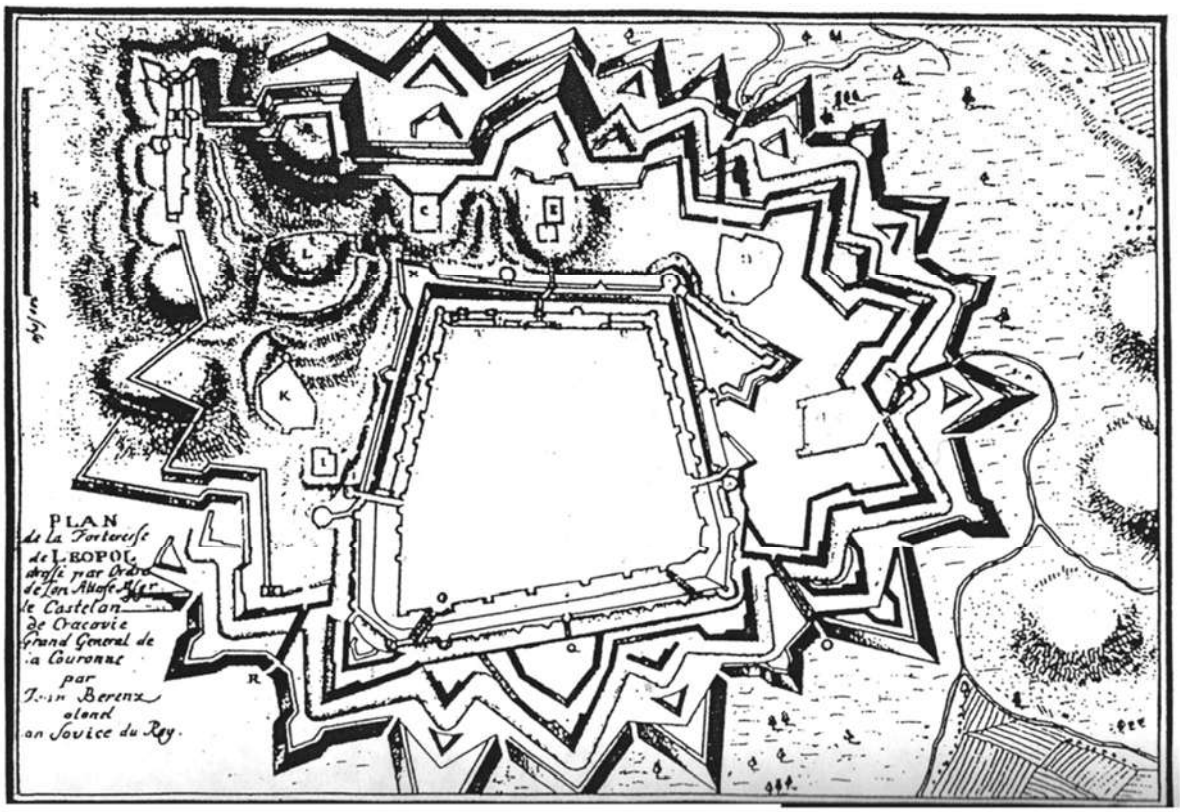

Fig. 13. Plan-project of Lviv fortifications by Jan Behrens (Behrens, 1680)

Similarly, in the documentation of the historical and architectural reference plan, no scheme is required according to the requirements of building code B. 2.2-3:2012 (clause 4.2.3.d) "Specific disclosure of architectural and urban planning monuments (1:5000, 1:10000)". The scheme "Compositional and artistic assessment" presented in the IAOP does not meet the tasks that should be solved and disclosed in this section in terms of content. The diagram formally shows only nodes, axes, dominants, and main viewing points. But according to the requirements of the norms, you will have to submit viewing areas of architectural monuments that are architectural dominants and accents; viewing points, axes, fronts; zones of species formation; characteristic distances (qualitative thresholds) of the view opening of architectural monuments; slope faces, natural dominants, water surfaces, green spaces. The actual lack of a properly performed analysis and view disclosure scheme is the basis for ignoring the task of preserving the historical panorama of the central part of the city in the IAOP. The method of covering this section is fully presented in the works of the Kyiv scientist Ye. Vodzinsky, who perfectly developed this technique to the world level. The authors of the IAOP neglect the developments of this author and the requirements of building code B. 2.2-3:2012.

As part of the documentation of the historical and architectural reference plan, the authors developed a scheme "compositional and artistic assessment". The implementation of such a scheme is a requirement of the state standard (DSTU, 2016), which recommends treating it as a basic material for determining the boundaries of protected areas and their regimes in general for the city. But this scheme does not replace the requirements of the building code (paragraph 5.4. D) on the need to develop a scheme "Architectural and spatial composition of the historical centre of the locality".

Following the requirements of the building code, the following documents must be submitted: historical and modern urban planning dominants, architectural accents, architectural ensembles and complexes, main and subordinate planning and compositional axes and nodes, characteristic types of urban spaces (closed, open, disharmonious), slope faces, water surfaces. Highlighting the characteristic types of urban spaces is an important component of this section, as they are the key to establishing the visual climate of the historical core of the city. In foreign practice, to regulate this issue, a map of the so-called "Blue Lines" is being developed. It is a compositional and spatial regulator of the height of buildings of the historical core.

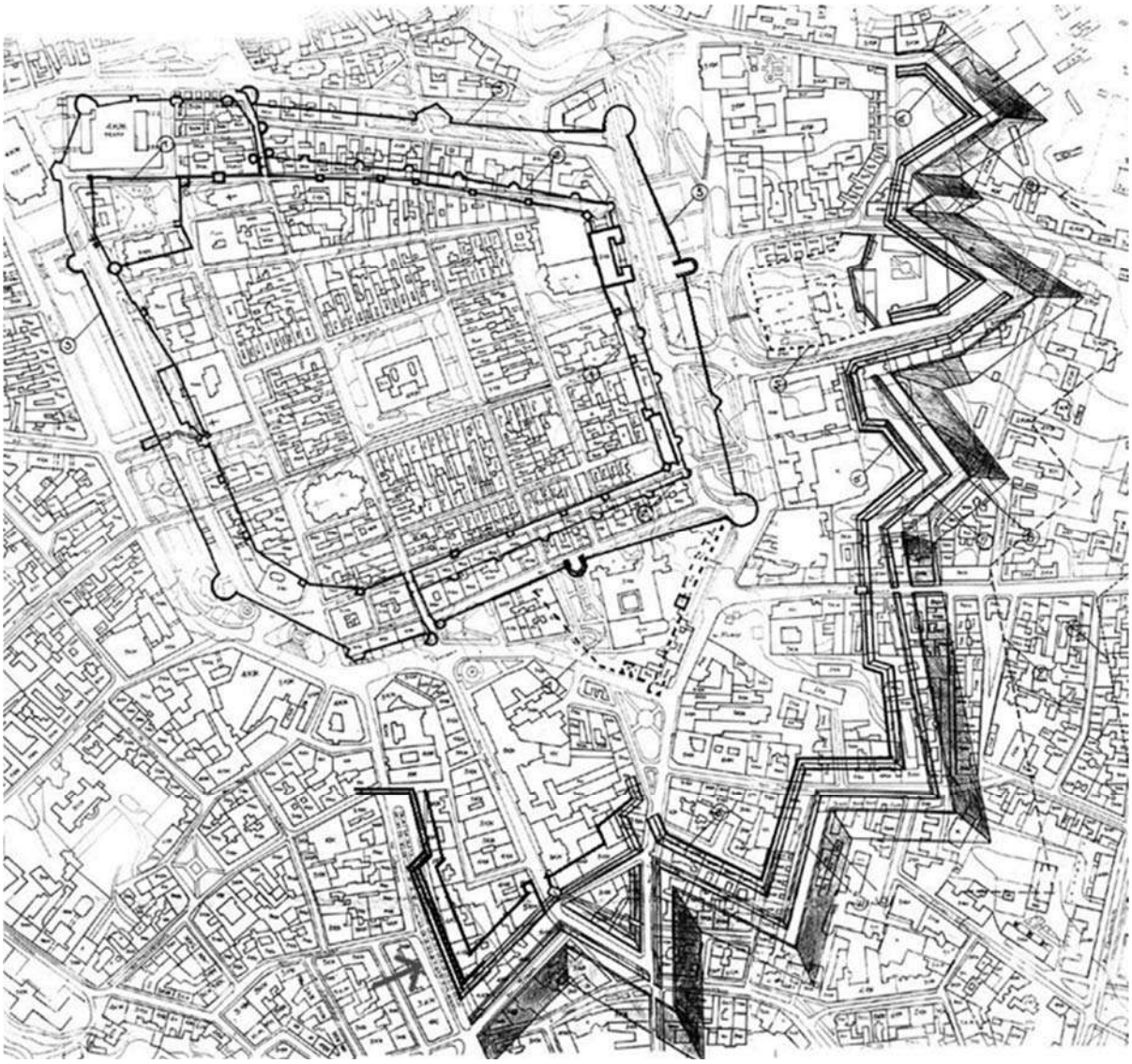

Fig. 14. Reconstruction of a fragment of the planning structure of the defence line of Ya. Behrens in 1682, performed on a modern topographic subsontium (Bevz M., Okonchenko I., 2000; Bevz M.,2021). The arrow indicates the direction of photographing the remains of the southwestern bastion (see Fig. 15), which was still preserved in a state of ruin at the end of the XIX century

Unfortunately, the IAOP material is very far from fully presenting this section. The conclusions to the section contain general phrases, but the unique architectural and spatial composition of the historical centre of Lviv, in the formation of which fortification complexes actively participated, remained undisclosed. The authors with general phrases did not reveal the unique architectural and urban planning compositional structure of the centre of Lviv (in the building code – Architectural and spatial composition of the historical centre of the locality) and in the end, they didn't outline how to preserve its uniqueness. But the city centre is a combination of natural components – the High Castle Mountain and the Svyatoyurska and Citadel Mountains (the latter with architectural dominants) with architectural and urban planning complexes – The Old Town (XIII–XIV centuries), the centre of the so-called New City of the XIV–XVII centuries with the preserved remains of fortifications, the ring system of squares and boulevards of the new city centre of the XIX century, complexes of residential and public development blocks, interspersed with more than 30 monastery complexes are placed horseshoe-shaped around the city centre and the boulevard ring, creating a special urban structure.

Fig. 15. Photo of the dismantling of the southwestern bastion of the Behrens line, the 1890s, photographer Marek Munz (Lviv, 2006). From the photo, it can be seen that the height of the bastion reached 11–12 m

In general, the section on archaeological sites is the most advanced in the IAOP documentation. But even here we can make comments on the accounting of historical objects of fortification and sacred architecture. In particular, it is proposed to register only one memo: "only one object is proposed for state registration – a mound on 7 Kamenyariv Str., on the territory of the rest – established zones of protection of the archaeological cultural layer with the appropriate mode of use" (IAOP, 2020). We doubt that this is a good strategy for lost sacred objects, on the site of which nothing can be built - the Church of the Holy Cross on Galytska square, with other objects one hundred per cent known and valuable – in particular, the foundations of the Church of St. Leonard, or the Church of the Epiphany of the Lord, St. Theodore of Tyrone Church, Armenian churches on Khmelnitsky St and St. John the Theologian Church under the High Castle, etc. All of these sites should be on the list of suggested sites for inclusion in newly discovered sites.

The remains of fortifications on the IAOP drawings are listed and indicated only by conventional icons, and not by the exact outline of their configuration, and a very approximate description of the territory they occupied. For example, No 32. "Traces of fortifications of the first half of the XVII century near the Regional Clinical Hospital and Diagnostic Center between streets Nekrasov and Pekarska. Fragment of the line of Bastion fortifications of F. Getkant". Traces of artificially formed relief of bastions (flanking elements) have been preserved. No 33. "Traces of fortifications of the first half of the XVII century near the Lviv National Medical University named after Danylo Halytsky between M. Nekrasov and K. Levitsky streets. Fragment of the line of Bastion fortifications of F. Getkant". That is, it will be impossible to really preserve these remnants of fortifications due to this interpretation in the IAOP.

Fig. 16. Project for the construction of a system of forts on the southern outskirts of Lviv in the area of Stryjska Street (1855 (Pinyazhko, 2013))

Conclusions

It is important for people of our generation to realize that Lviv has always been a well-fortified city since its foundation. It couldn't have been otherwise in medieval times. The very location of the city centre on the ground indicates that territory with good defence capabilities was chosen for it. Lviv, in comparison with other Ukrainian cities, had a very developed system of defensive lines, which represented the military architecture of all periods – from the XIII to the twentieth century. If it were possible to study, preserve and museify the remains of fortifications from each period of Lviv's history at least in fragments, the city would become a living textbook for studying the history of fortification architecture in Ukraine.

Unfortunately, there is very little detailed information about the strengthening of the city in the IAOP materials. Not only the first fortifications from princely times were ignored. Many remnants of defensive structures from the XIV to XIX centuries were not identified or included in the text and graphic part of the work. Failure to reflect objects of fortification architecture in the scientific and design documentation of the IAOP threatens to completely lose their remains in the near future.

Completely ignored in the materials of the IAOP fortification of the XIX century. Only the Citadel complex is represented. However, it should be noted that the Austrian authorities planned the construction of a large complex of external forts around the suburbs and on the suburbs themselves (Fig. 16). Some of them were built and for some time performed their defensive functions. Their balances should also be identified and offered for registration as newly discovered objects.

The development of buildings in the areas of former suburbs is not covered in detail in the analyzed documentation. But these are the areas that were filled in the past with very important defence facilities and functions. The nature of the development of blocks had a different form depending on the time of the site's appearance and its connections with fortifications. The sites themselves developed in leaps and bounds along with the movement of the lines of urban fortifications further from the city centre. The construction of a new, more modern line of fortifications and its extension made it possible to intensify development in areas that were previously outside the fortified territory. Lviv experienced six such major stages of urban transformation associated with the development and modernization of fortifications from the XIII to the XIX centuries. This relationship between the development of fortification systems and the architectural, spatial and planning structure is key to understanding the urban history of the city. Without a detailed reconstruction of the phases of construction of fortifications, it is impossible to correctly navigate the nature of changes in the architectural, compositional and planning structure of the city.

For example, after the removal of fortifications far beyond the central district of the city, active changes and intensification of the construction of residential and public development in the areas of the former suburbs, which were previously dominated by large monastic complexes and courtyards-palaces of the nobility and wealthy burghers. Neighbourhoods here began to change the nature of their urban planning structure, evolving from the form of a quarter with a palace and a garden-park on the suburbs (there were dozens of them in Lviv on the suburbs) to the form of a quarter densely built up during the XVIII-XIX centuries by ordinary buildings. Today, in the wilds of such neighbourhoods, if you carefully study them, you can find hidden relics of the original history of the city.

A network of neighbourhoods arranged in thick lace around the city centre also features coded individual pages of unique urban history. The historical and architectural reference plan of the city is just the scientific documentation that should reveal all the specific features of different – time urban planning formations-including the appearance and development of fortification lines, changes in the hydrography of the territory, changes in the planning network of streets, changes in the nature of the development of each quarter.

Fortifications were a particularly important element in the development of the urban structure in the past. Their complexes most influenced the planning structure of the city. Fortifications often dictated the development of the city in one direction or another. Therefore, the theoretical reconstruction of the stages of development of urban defence systems is the most important task for the historical and architectural reference plan.

From a scientific point of view, it looks like a very important task – preliminary determination of the full list of monuments of fortification cultural heritage from various urban planning stages of Lviv's development. Drawing up such a list has both historical, architectural, and monument protection significance. The next step should be to identify the list of objects on the historical plans and on the plan of the modern city would allow us to identify the exact places of their localization and develop proposals for their protection and inclusion in the State Register of immovable monuments of Ukraine. In the scientific interpretation of fortification objects, it is very important to consider them not alone, but as specific defensive complexes from a certain time of creation and as objects with individual defensive features and purpose, characterized only by their inherent architectural forms.

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ІСТОРИЧНІ ФОРТИФІКАЦІЇ В АРХІТЕКТУРНО-МІСТОБУДІВНІЙ СТРУКТУРІ ЛЬВОВА (НА МАРҐІНЕСАХ ДОКУМЕНТАЦІЇ "ІСТОРИКО-АРХІТЕКТУРНИЙ ОПОРНИЙ ПЛАН ЛЬВОВА")

Анотація. *Давні міські укріплення є одним із специфічних видів оборонної архітектури. Разом із будівлями замків, кварталів міської житлової забудови, монастирських комплексів та польових оборонних споруд вони формували особливий вид архітектурно-містобудівних об'єктів. Під час їх будівництва часто поєднувалося вміння як архітектора, будівельника, так і військового інженера. Не так багато об'єктів міської оборонної архітектури дійшло до нашого часу. Тому кожен збережений сьогодні фрагмент міських оборонних мурів, земляних фортифікацій, як правило, є цінним документом своєї епохи і потребує дбайливої охорони і збереження. Міські фортифікації (на відміну від укріплень замків чи фортець) були об'єктами першочергових ліквідацій у процесі розвитку міст. Їх збереглося в Україні справді дуже мало, тому їх збереження та вивчення є справою надзвичайної ваги. Львів є унікальним містом на карті України власне з погляду розвитку міських укріплень.*

Виконано аналіз відображення об'єктів та пам'яток оборонного будівництва в науково-проектній документації "Історико-архітектурний опорний план міста Львова". Висвітлено дані про етапи розвитку укріплень Львова. Особливу увагу звернено на залишки фортифікаційних споруд, які збереглися в археологічній формі. Їх виявлення, збереження та консервація і відзнакування є важливим завданням для сучасних містобудівних проектів. У роботі висловлено гіпотези про окремі досі неідентифіковані елементи фортифікаційних споруд XVII–XVIII століть. У висновках особливий наголос зроблено на необхідності проведення спеціального наукового дослідження з детальної реконструкції всіх етапів розвитку оборонних поясів довкола середмістя та передмість Львова.

Ключові слова*: фортифікації, Львів, XIII–IX ст., консервація, містобудівна документація.*