

Features of the fortifications of the Bilsk settlement of the 7th and 4th centuries BC

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Planning and Building of Territories of the Poltava District and Implementing the Architectural Control

Abstract: The article deals with the defensive system of the Bilsk settlement of the 7th and 4th centuries BC. The peculiarities of the formation and development of the fortifications of the Western, Eastern, Kuzemyn and the Great Bilsk hillforts are investigated.

Keywords: fortifications, the Bilsk hillfort, settlement, rampart, moat, line of defense, construction period.

Formulation of the problem

Cultural heritage is a way of gaining knowledge and values. It is important to preserve cultural resources to ensure sustainability of a culture and natural environment.

The Bilsk settlement is the historical and cultural preserve with the historical heritage that needs to be properly used as a sender of values of national and international significance and the culture in general.

Today, the remains of the Bilsk hillfort are in a state of archaeological research. Complex system of the defensive fortifications has not been yet the subject of a research as an architectural object, although the problem of synergistic, architectural, archaeological, historical and historical researches is evident.

Analysis of recent researches

The Bilsk settlement is situated on the territory of the modern Poltava region in Ukraine between the Vorskla and Sukha Grun rivers. It is a unique landmark of the Scythian age of the early Iron Age. The length of the remains of the defensive structures is about 34 km.

The issue of studying Scythian fortification structures attracted the attention of archaeologists, historians and military. The Bilsk hillfort existed between the 7th and 3rd century BC and was a major political, trade, artisan and cultural center which is identified with the city of Gelon mentioned by Herodotus.

Herodotus mentions the city of Scythia describing the “country of Budins” that “Budins are a large and numerous tribe, all of them very light-eyed and red, in their region a wooden city is built, the name of this city is Gelon. The length of the wall on each side is 30 stades, it is high and they have wooden houses and temples, and there are temples of Hellenistic gods, decorated in Hellenic wooden statues, altars and naves. Are the Hellenes who left the harbor and settled at the Budins, and they speak the language in part Scythian, partly Hellenic” (Herodotus, 440 BC). The text of Herodotus about Budins and Gelons is not clear and based on various sources according to B.A. Shramko [Shramko 1987: p.18–19]. The name of “Budins” covers not only one tribe but also a large alliance of tribes living in a vast territory. This explains why Budins were confused with Gelons (a group of Iranian-speaking tribes in the south of Eastern Europe).

In the middle of the 17th century the Bilsk settlement was mapped by the French cartographer and military engineer G. de Boplan (1648).

The first solid data on the defensive structures of the Bilsk settlement was provided by the Ukrainian ethnographer A.F. Shafonsky in 1786 [Shafonsky 1951: p. 653–656]. He made measurements of the fortified structures and found the tips of arrows and spears on the territory of the Western fortification.

Later in the 18th century archaeologist O. Bobrinsky (1897, p. 125) conducted special archaeological exploration in the territory of the settlement. The scientist provided a detailed description of the appearance of the Western fortification and published a schematic plan of the structures where squares were marked. O. Bobrinsky mentions the ramparts of the Big Bilsk hillfort. But he refers only the Western hillfort as the Bilsk fortification.

V. Lyaskoronsky [Lyaskoronsky 1907: p. 158–198] published the schematic plans of the settlement in 1907. However, he mistakenly identified the ramparts of the Big Bilsk settlement with a part of the Zmiyiv ramparts (11th – 12th centuries).

Later archaeologist V. Gorodtsov carried out the first archaeological excavations on the site in 1906. V. Gorodtsov found that the Bilsk hillfort is a complex rampart which consists of three fortifications united by the ramparts of the Big Bilsk hillfort.

The greatest contribution to the study of the settlement belongs to an outstanding scientist B.A. Shramko. Thousands of square meters of the unique settlement have been excavated under the guidance of B.A. Shramko for almost 40 years. Many domestic, religious and burial objects of the ancient city were discovered and studied. The stages of the settlement development were traced during these explorations. B.A. Shramko came to the conclusion that the Bilsk fortified settlement is the remnants of the city of Gelon. Gelon is the capital of the association of the tribes of the Vorskla of the Scythian age. This statement was defended by the scientist throughout his life [Shramko 1987].

The explorations were started by an expedition under the direction of I.B. Shramko in 1987.

In 1992–2006 a joint Ukrainian-German expedition headed by V. Murzin, E.V. Chernenko, S.V. Mahortikh and R. Roll had been exploring the site. Expedition participants managed to study a considerable number of burial mounds within the district of the complex as well as areas in the tracts of the Lisovi Kut and Tsarina Mohyla.

The purpose of the article

Bilsk settlement is undoubtedly of historical, scientific, cultural and tourist value. However, architectural studies of the settlement are practically absent despite of the great interest in archeological and historical studies of the Bilsk hillfort. But from the architectural point of view, the remains of the fortifications are of interest. There is a need for museumification and conservation of the explored sites of the settlement and a search for opportunities for universal accessibility to the site. It indicates the relevance of the topic and determines the direction of researches in scientific and practical aspects.

Main material

The Bilsk hillfort is located in the center of the East European forest steppe in the Kotelev district of the Poltava region in Ukraine. The old rampart and the local burial mounds are clearly visible today.

The Bilsk settlement is located on a high plateau between the Vorskla River and Sukha Grun rivers (Fig.1). The settlement emerged in the second half of the 8th to the beginning of the 7th century BC [Shramko, Buynov 2012]. A large artisanal, commercial, administrative and also an important strategic center of the forest-steppe Scythia [Kulatova, Shramko 2012: p. 9–20] emerged at the intersection of several important land and river trade routes in Bilsk settlement [Shramko 1987: p. 121–126].



Fig. 1. Location of the Bilsk settlement

V.M. Hrytsiuk [Hrytsiuk 2007: p. 169–174] believed that a need for the construction of the fortification structures did not arise immediately. About for two centuries locals did not feel the need to surround a part of the developed territory with ramparts. It was an early period of the settlement development.

Military danger was caused by nomadic raids. The main purpose of the last was a quick raid to seize property and captives. For settled farmers it was important to prevent sudden attacks and to enable the population to hide preventing the enemy from penetrating into the territory [Shramko, 1987, p. 24–25].

The appearance of the settlements began to change in the middle of the third quarter of the 6th century BC. During this period a new settlement (Eastern) was appeared in four and a half kilometers east on the edge of the high plateau of the right bank of the Vorskla River. The most strategically important territories in the west and east of the plateau were protected with separate earth ramparts and moats with constructed wooden walls on them. Western and eastern fortifications had been developing parallelly with one another from the mid-6th to mid-5th century [Shramko 2010].

V.M. Hrytsiuk [Hrytsiuk 2007: p. 169–174] considered that a choice for a location of the Bilsk settlement was extremely successful in strategic and tactical terms. Bilsk's ramparts allow you to scan all approaches to the territory. The eastern side of the Bilsk fortifications is built on the high peaks of the Vorskla River at an altitude of about 100 m above the river level. Here the ramparts were driven by a lift of about 600–700 m at an angle of 15–20 degrees. The western and northern sides are planned with successful use of natural obstacles. Numerous old lakes, waterlogged plots as well as floodplain forests served as great obstacles.

The plan of the Bilsk hillfort has complex configuration reminiscent of a quadrangle. The fortifications of the Bilsk settlement are a complex that consists of the Eastern, Western and Kuzemyn fortifications united by the ramparts of the Great Bilsk settlement.

V.M. Hrytsiuk believed that the Great Bilsk settlement was designed for the circular defense. The Eastern and Western fortifications were also built for this purpose. The Kuzemyn fortification (length of the ramparts is 898 m) is located on a high and well protected plateau occupying a steep hill descending to the very coast of the Vorskla River. The fortification was a suburb area. It was intended to serve the needs of a river port [Hrytsiuk 2007: p. 169–174].

In general, the ancient settlements of the Scythian time had a rather complicated system of fortifications. Wooden structures transformed them into real fortresses.

Eastern fortification.

The eastern fortification of the Bilsk settlement has an advantageous natural location on the edge of a coastal plateau. It has good viewing position of floodplains. It made it possible to see signal signs or an approaching enemy from afar. The length of the defensive line is 3870 m.

The current rampart of the Eastern fortification consists of the remains of the dugout structures of several construction periods: two main and one remedial. A wall was constructed on an unoccupied site. A non-wide groove was dug along the outer edge of the settlement with a depth of 120 cm. The groove had a width of 20 cm in the lower part and 40–45 cm in the upper part. Lower parts of vertical logs with a diameter of 15–25 cm were fixed in it. The logs were the basis for the outer wooden wall of the fortification structure (Fig. 2, 3, 4).

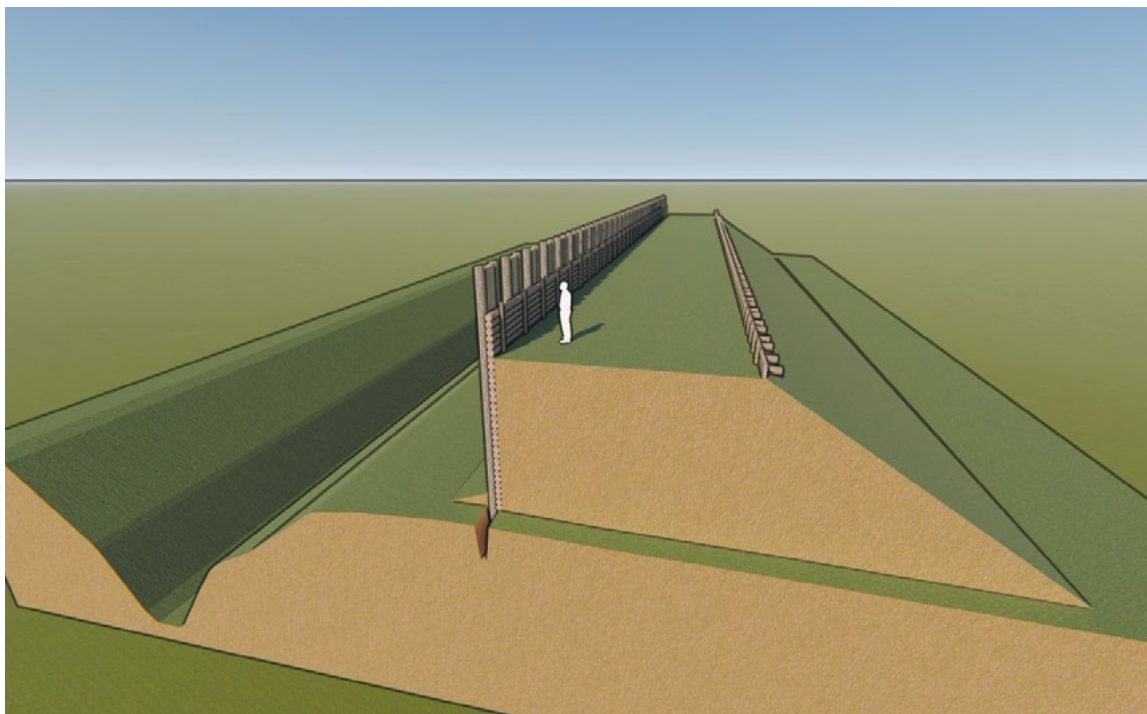


Fig. 2. Reconstruction of the Eastern fortification of Bielsk settlement

Vertical logs were not a solid wall. They were placed with intervals up to 1 m. These logs were installed in different building periods. The wall made of horizontal logs and an earth-clad rampart was leaning on the inside of the vertically-mounted logs.

Wooden screws were fixed up in the upper part of the embankment to provide the stiffness of the structure. That was made to fixate the upper ends of the vertical logs. The same ties fixed columns that were attached on the inside of the rampart. The width of the rampart was 7.2 m. Buildings of the first construction period were destroyed as a result of fire.



Fig. 3. Reconstruction of the Eastern fortification of Bielsk settlement

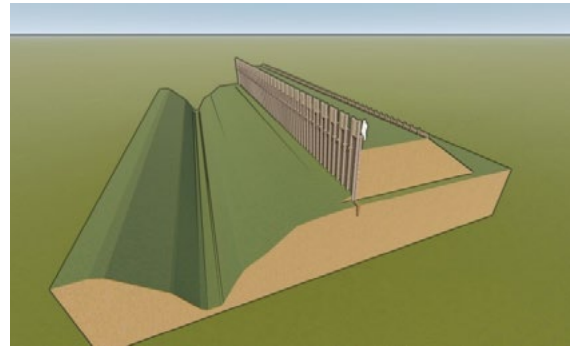


Fig. 4. Reconstruction of the Eastern fortification of Bielsk settlement

The original wall was restored with an additional embankment after the remedial period of construction. As a result, the width of the embankment's base reached 15.4 m.

The main construction period is characterized by the strengthening of defensive structures while maintaining the overall design scheme. The rampart's height increased to 4.8 m from the base. The embankment's width reached 18.2 m. According to the assumption of Shramko [Shramko 1987: pp. 25–28], the wall of the rampart reached a height of at least 7 m. Soil for filling up the rampart was taken from the outer part of the settlement.

The moat that was dug in front of the fortification wall had a trapezoidal shape with a width of 5.4 m in the upper part and 1.1 m at the bottom. The flat bottom facilitated movements of forces invisible for enemy.

There were three entrances to the Eastern fortification: the northern, western and southern.

The Eastern fortification is located on the edge of a plateau covering the area of three protruding capes which are bounded by very steep hill of the right bank of the Vorskla River. The hill height is about 50 m from the base. But the defensive structure could still be taken over by the enemy. Therefore, the rampart and the moat of the Eastern fortification have circular shape. Thus, they protect the settlement not only from the most vulnerable sides but also from the river [Shramko 1973: p. 84].

The line of defense was created taking into account the shape of the relief, the slope of its hills, the depths of ravines and the possible access to the sources of water.

Western fortification

The Western fortification of the Bielsk hillfort is located on the edge of the coastal plateau of the left bank of the Sukha Grun River. It appeared during the pre-Scythian period from the late 8th to the early 7th century BC.

The 3270 m long rampart covers the whole settlement. It is a circular defensive structure.

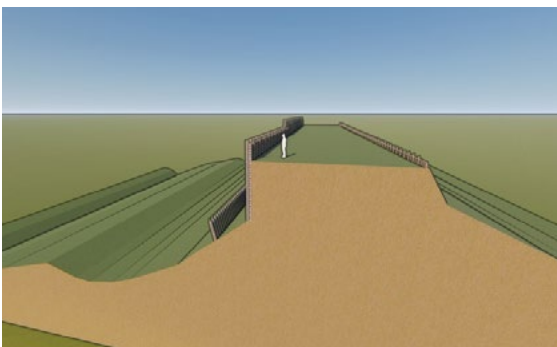


Fig. 5. Reconstruction of the Western fortification of Bielsk settlement

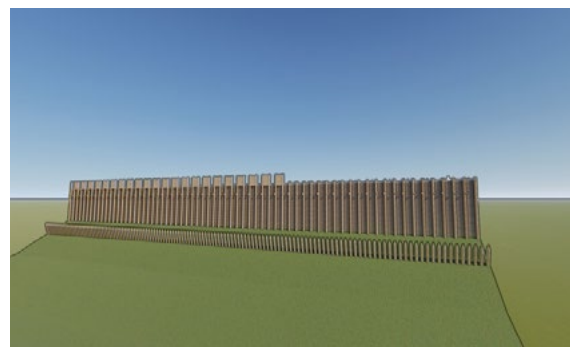


Fig. 6. Reconstruction of the Western fortification of Bielsk settlement

The defensive structures of the Western fortification are quite different compared with the Eastern fortification. Firstly, the ramparts are higher, and secondly, there are large pits and squares along the perimeter. The exits of the last are directed inside the settlement. There are narrow low embankments in front of the most of these structures (Fig. 5, 6).

The dimensions of the rampart of the Western fortification vary from place to place. Its current height is from 5 to 8 m. The width of the base is from 22 to 32 m. The depth of the moat was 6 m in the first construction period. The width of the moat in the upper part is 24 m and 5 m at the bottom. The bottom is flat. Obviously the great width and depth of the moat did not allow the enemy to quickly fill it with earth or brushwood to get closer to the wall during a siege.

The Western fortification was built in several stages. A wooden wall had been constructed before the construction of the main fortification. It was temporarily protecting the population. Pillars with a diameter of 20–30 cm were placed at the bottom of a groove with an interval of 15–18 cm at a depth of 95 cm. The width of the groove was 65 cm and its depth was 32 cm.

The rampart of the first construction period was built at a distance of 2.3–2.5 m from the protective wooden wall. The height of the rampart is 1.4 m, the width of the base is about 7 m. The upper rampart area was horizontal. There was a gentle descent on the inner side. The moat has a trapezoidal shape with a flat bottom and a depth of about 1.7 m.

In the second building period the fortification was restored and reinforced taking into account possible attacks and burning of the wall. The height reached 3.6 m with a width of the base 11.6 m. The rampart covered the groove and the remains of the original wall of the wooden fortification.

The top area of the rampart was flat. It ended up with a 1.2 m high ledge from the inside. The moat of the trapezoidal form had a depth of 1.9 m from the base of the rampart. It was located higher than the rampart of the first construction period. A row of fortification pillars was placed at the bottom of a new moat at a depth of 50 cm. The logs' diameter was about 12 cm.

The first and second construction periods are dated to the 7th century BC.

The third construction period dated to the first half of the 6th century BC. The rampart was increased to 4.4 m at a width of the base of 18 m. The embankment consisted of layers of clay and black earth. The moat was partially cut partially covered with new layers. The new moat of a trapezoidal shape had a depth of 2.7 m with a width of about 7.5 m in the upper part.

The fourth construction period dated to the second half of the 6th century BC. The current height of the rampart is 4.8 m. Its upper part has strongly shifted and hence its total height is unknown during the fourth construction period. The previous moat was used as the main moat at the defensive wall. In addition, another moat in the shape of triangle was dug at a distance of 6 m from another with a depth of 1.8 m and a width at the upper part of about 9 m [Shramko 1987: p. 28–31].

Kuzemyn fortification

The Kuzemyn fortification is significantly different from the East and the West fortifications. It has a small size of 15.4 hectares. It is located on a hill and has an exit facing the river. The total length of the ramparts is 898 m.

Defensive structures of the fortifications are attached to the already existing rampart of the Great Bilsk settlement. They descend down to the river where a pier probably was located. By the assumption of B.A. Shramko [Shramko 1987: p.31–32] the fortifications of the Kuzemyn settlement were built in the late 5th century BC. The fortifications served as a kind of cover of the pier and trading warehouses on the banks of the Vorskla River.

Fortifications of the Great Bilsk settlement

The defensive system of the Great Bilsk settlement was completed after the construction of the Western and the Eastern fortifications. The length of the Great Bilsk's ramparts is 25 995 m not counting the ramparts of separate fortifications.

The defensive structures of the Great Bilsk settlement were constructed in three stages and in some places in four stages.

The rampart had a height of 2.4 m with a base width of about 8.5 m and consisted of earth and clay during the first construction period. The rampart was strengthened with a wooden wall. The rampart was built in the early 7th century BC by the assumption of B.A. Shramko [Shramko 1987: p. 32–36]. From the north-western side of the Great Bilsk settlement the rampart overlapped the mouth of a large ravine which had a creek at the bottom. Thus, a dam was formed. A small pond was behind the dam. This pond could be used as a supply of water in a case of a siege.

In the second construction period the height of the rampart reached 4.3 m and the width of the base was about 16 m. The wooden wall of the first construction period was repaired and, in addition, a new wall was erected above.

In the third construction period the rampart's height was 5.4 m with a width of the base of about 23 m. The rampart's top was shifted eastward. The wooden wall was burnt. A new one was built instead of it.

In the fourth construction period the size of the rampart was significantly increased. But the exact size is unknown because the defensive structures were destroyed and ramparts were deformed after the cessation of the hillfort.

The moat that had a width of about 6.5 m in the upper part was dipped from the bottom of the rampart by 9.5 m. The bottom was flat with a width of at least 2.5 m. Gradually it was filled with soil. It was cleaned several times retaining its former profile but not reaching the initial depth.

The territory of the Great Bilsk settlement was inhabited but not so densely as the Western and the Eastern fortifications [Shramko 1987: p. 32–36].

Favorable geographical conditions and advantageous urban location at the intersection of important land and waterways of that time contributed to the formation and rapid development of the Bilsk settlement. It was probably an important point of transit trade.

The Bilsk hillfort was a strategically important center among the forest-steppe settlements of the Scythian times. Therefore a well thought out system of protective structures was needed. The prevention of sudden assaults of nomads was the main requirement for such structures. A successful selection of the location of the settlement is evidenced by further development of the settlement which still exists within the fortification of the Great Bilsk settlement.

Conclusion.

Architectural, functional, planning features of the construction of the Bilsk hillfort, its three-dimensional and engineering solutions as well as the preconditions of its formation have been established. Further researches need rational museumification of the remains of the fortified structures as well as a search for possible forms of representation of a cultural heritage as a mediator of cultural values.

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