RESCUE EXCAVATION IN THE SITE "TIMIȘOARA – SQUARE 700". CITY BUSINESS CENTRE, BUILDING D

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I. Introduction

The notification SC Modatim Business Facility SA (no. 594 / 21.03.2011) brought to the knowledge of the Timișoara Banat Museum the fact that within the perimeter of the future City Business Centre, building D (10 Brediceanu Street), during the construction works (construction permit no. 865 / 05.05.2009), there were revealed brick structures belonging to the fort bulwark system of the 18th century.

Consequently, The Banat Museum carried out rescue excavations in view of obtaining the archaeological discharge certificate for the buildable perimeter. The rescue excavations were conducted between April –June 2011.

II. Historical background of the region

The 18th century fortification of Timișoara was built in a period of tie between 1732–1765/1790. The fortification system was of bulwark type (stellate plan), the inside town surface having 53 ha. Together with the exterior spaces, where civil constructions were forbidden (glacis), the fort bulwark of Timișoara laid on a 138 ha surface. From the point of view of dimensions, the fort bulwark of Timișoara represents one of the largest fortifications of this type on the present territory of Romania.

The fortification system of the town was formed of three closures of burnt brick walls, constructed at different stages (Pl. I). Between the three star-shaped enclosures there were 3 m deep ditches which, in case, could be filled with water

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from the Bega River. The Habsburg authorities dug a new main course of the Bega River, which became a natural obstacle in front of the walls, towards east, south and west, the third defensive ditch having been connected to the Bega canal.

This huge military construction was largely demolished between 1892–1910[1] (or 1914[2]). A few fragments of the interior wall enclosure have been preserved in Popa Șapcă Street, in the Mărăști Square, the Botanical gardens and in the Timișoara Square 700.

The urban design of the second half of the 20th century has continued to affect the monument. The remains of the Timișoara fort bulwark are mentioned on the List of Historical Monuments of 2010 (TM-I-s-A-06050; TM-II-a-A-06103; TM-II-m-A-06103.01; TM-II-m-A-06103.02; TM-II-m-A-06103.03).

III. Description of the site condition

Excavations reached – 4m to the present level of the soil, according to the project. In the area affected by the mechanic excavation works, two fragments of the brick foundations belonging to the last row of fortification of the fort bulwark were uncovered.

In the western part of the perimeter revealed by the construction works, there was identified the burnt brick structure of the counterscarp which had marked the beginning of the esplanade and the scarp of counterguard I, which used to protect counterguard VII and bastion VII ("Eugene of Savoy").

A) Counterscarp:

The foundation of the counterscarp has been partly preserved. The length of the brick structure uncovered by the archaeological excavations was of 33.52 m, and the preserved height was of 1.30–1.50 m. At its base, the brick structure of the counterscarp got widened to 1.70 m. Orientation of the fragment of counterscarp was NW–SE.

In the exterior side of the counterscarp, six counter-forts with trapezoidal plan, perpendicularly displayed on the wall (Pl. II/1) were discovered. The dimensions of the uncovered counter-forts were: length of sides – 1.25–1.43 m, length of short base – 1.06–1.20 m, length of long base – 1.10–1.30 m. The preserved height was between 1.30 m and 1.50 m.

The exterior wall (counterscarp) and the afferent buttresses were built of burnt bricks, joined with high quality mortar. Bricks generally have standard dimensions (32 × 16 × 8 cm), with a good quality burning process.

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[1] Buruleanu, Medeleț 2004, 20; Ilieșiu mentions that "military authorities give permission for the gates of the city to be demolished to the ground, in 1891" (Ilieșiu 2003, 59).

[2] Munteanu, Munteanu 2002, 190–191.

The brick structure of the counterscarp was built on massive wooden beams and the base width was approximately of 1.50 m. The inside part (towards the esplanade), the brick structure was vertical while the east side (which marked the beginning of the third defensive ditch of the fort) started from 0.50 m, the wall being slightly inclined, complying with the construction principles of bulwark fortifications. The base of the elevation had a width of approximately 1.35–1.40 m, the inferior part of the brick foundation, vertical, being differentiated from the inclined elevation with a 10–12 cm wide border (PL. II/2).

In order to study the construction system of the fortification wall, the structure was disassembled down to the base, on the entire preserved length. It was revealed a wooden structure supporting the brick foot of the fort wall. The construction appears like a network made of longitudinal beams and sleepers, placed perpendicularly, at equal distances (Pl. II/3).

The longitudinal *beams* from beneath the brick base of the wall were placed in parallels, by two, forming pairs, on the whole length of the wall. The distance between the parallel beams was of 1.20m.

The longitudinal beams did not have a standard length. However, when they were placed in pairs and at the base of the foundation, they were grouped by equal lengths. The equal dimension indicates the fact that their length was adjusted on site. The studied pairs of beams had different lengths, respectively 5.90 m, 6.70 m, 7.50 m and 7.90 m. The other dimensions of the longitudinal beams are constant, respectively width – 0.24 m and thickness – 0.22 m.

Every pair of beams had both ends cut out on 30cm in length and 10 cm in thickness to get bound with the next pair of beams, which had the same section type, but the other way round. (Pl. II/1). There were found no additional fixation elements, such as nails, cramps or other metal pieces. In the spot where the sleepers were to be fixed, the superior part of the beams was cut out in a rectangular or trapezoidal shape.

The sleepers represent another important element of the construction. They were placed perpendicularly on the longitudinal beams, at a standard distance of 0.70 cm between them. The sleepers had a length of 1.60–1.65 m, the width between 0.22–0.24 m and the thickness approx. 0.18 m.

The ends of the sleepers were cut out at their inferior bottom on a length of 0.20–0.22 m, and thickness of 0.08–0.10 m. The sleepers were fixed in the spaces cut out in the longitudinal beams by pressing, with no other fixing elements (nails, cramps) (Pl. III/2).

From the binding between longitudinal beams and sleepers results an interior rectangular space, size 1.20 × 0.70. Inside this space – standard for the whole wall – there were mounted the two first rows of bricks of the foot of the wall (Pl. IV).

The brick foot is such constructed that it should integrate into the wooden structure and provide better resistance to the wall.

The hollow space resulted from the joint of longitudinal beams and sleepers was filled with a layer of bricks, placed on the edge, on their length, directly to the ground. This layer of bricks fills both the rectangular space between the rectangular beams and sleepers (1.20 × 0.70 m), and the space beneath the sleepers, forming a "carpet" along the base of the wall (Pl. IV).

A deviation from the rule was observed between beams no. 11–12, and respectively 12–13, where the bricks were placed on the edge, but on their height and not on their length, probably because of some bed in the ground, which needed to be rectified.

To provide greater rigidity and tightness to this base layer of bricks, thin brick "splinters" were used. They were hammered along the beams to the inside, and around some wooden pillars, vertically mounted, which support the wooden structure of the brick wall.

Above this last layer of bricks, there is another one integrated to the matrix imposed by the wooden structure; this layer is made of bricks, both whole bricks and fragments joint with mortar, laid horizontally (Pl. V/1). From this layer upwards follows the superposition of the next layers of bricks, which have no connection to the wooden structure.

A particular construction element is represented by plating the exterior side of the longitudinal beams with pieces of bricks and mortar, probably for reasons of protecting the wood from bad weather, mainly humidity.

The *pillars* are another important component of the wooden structure, supporting both the longitudinal beams and the sleepers. The pillars, hammered vertically, placed in three rows beneath the wooden base of the wall, on its entire length (Pl. V/2). The pillars were necessary to provide stability to the wooden structure and the brick wall on the swampy land the fortification was built on.

In most of cases, the pillars were trunks (circular in section), but a small number of pillars also showed marks of processing, their section being rectangular. All trunks had their bottom ends chopped with an axe, and hammered into the muddy soil. When grating, no sign of foundation was found. Depending on the mounting spot, there were distinguished two types of pillars: long and short.

Under both longitudinal beams, long, massive pillars, with length of 2.30–2.90 m and diameter of 0.19–0.26 m. were hammered. More rarely, appear also rectangular pillars with length of 1.97–2.14 m and sides between 0.16–0.24 m. The top end of the pillars from beneath the longitudinal beams is visible on a height of maximum 0.10 m.

Between these two lateral rows of long pillars, from beneath the longitudinal beams, there is one row of central pillars, shorter ones (Pl. VI/1). Most of them

have circular section, with the following dimensions: length – 1.22–1.36 m; diameter – 0.16–0.18 m. There were also found rectangular shorter pillars, hammered both in between the sleepers (half-distance) and beneath the sleepers, where they had been hammered before the sleepers were mounted.

Sometimes, two pillars were found in areas with more instable soil.

At the pillars hammered between the sleepers, their upper end is visible on a height of 0.20 m, through the brick layer at the base of the foundation. The pillars beneath the sleepers had their upper part visible on less height, of at most 0.10m from the ground, as much as the space beneath the sleepers allowed.

Counter-forts of the counterscarp brick structure

On the western side of the counterscarp wall there were revealed six counter-forts. They present a trapezoidal plan, the large base endorsed to the exterior of the fortification, built at a distance of 4.50m one from the other (Pl. VI/2).

In order to make possible the study of the wooden structure of the counter-forts, the masonry had to be disassembled.

It was revealed that the counter-forts wooden structure has a trapezoidal plan, the same as the masonry it supports, being built of four elements: small base, intermediary sleeper and the two long sides. The big base, endorsed to the wall, consists of the longitudinal beams at the base of the fortification.

The dimensions of the wooden pieces are as: small base – at the end of the trapeze: length: 1.00–1.05 m, width: 0.24; thickness: 0.18 m.

This short beam had both ends cut out at the bottom, on a length of approximately 0.20 – 0.25 m and a thickness of 0.10 m, in order to be pressed into the cracks cut into the long sides it superposed. (Pl. VII/1)

The intermediary sleeper has the following dimensions: length: 1.20 m; width: 0.22 m; thickness: 0.18 m. It has the ends sectioned at the same dimensions as the short beam at the end, in order to be pressed into the cracks cut into the long sides it superposes.

The long sides of the trapezoidal structure have the following characteristics: length: 2.14–2.16 m; width: 0.21–0.22; thickness: 0.21–0.22 m. These beams had their ends endorsed to the wooden structure of the wood, sectioned in the bottom end on a length of 0.35–0.38 m and thickness of 0.10 m. The ends thus processed were placed on the longitudinal beams at the base of the brick wall. From the joint between beams, a trapezoidal space results, where are placed the first brick layers of the wall which forms the foot of the fortification.

The construction of this type of foot differs from the one used in the structure of the wall's counterscarp by several elements.

Thus, at four of the six counter-forts that were studied, the first layer of bricks does not show an ordered display. They were laid directly on the ground, in flat position, whole bricks and fragments, with uneven spaces between them. Not being jointed with mortar, some of the bricks glided from their initial position and sank into the swampy soil.

The exception is represented by two counter-forts (no. 5 and 6), whose last layer in the brick structure looks more neat, with bricks laid on the edge, no spaces between them. Above this first layer there is another one, which respects the interior space provided by the trapezoidal wooden structure. These bricks are in flat position, most of them wholes, jointed with mortar.

Fragments of bricks are laid flat under the short beam and beneath its binding with longitudinal beams.

Another major construction difference between the wooden structure of the counterscarp wood and that of the counter-fort is lack of vertical pillars, both beneath the beams and in the trapezoidal space between them, located under the brick foot of the counter-forts.

Archaeological material

In the filling behind the defence wall, and in the ditch in front of it, there were found no artefacts specific to the age when this military construction was built or belonging to any other historical era.

B) Counterguard I (scarp)

The foundation of the counterscarp has been partly preserved. The length of the brick structure uncovered by the archaeological excavations was of 13.33 m, and the preserved height of approx. 1.20 m. At its base, the brick structure of the counterscarp got widened to 1.54 m. The preserved height varies according to the previous disassembling between 1.90 m and 2.60 m. Orientation of the fragment of counterscarp was NW-SE.

In profile, the wall of the scarp is vertical to the interior and slightly inclined to the exterior (towards the defence ditch).

The same as for the scarp, the inclined elevation of the wall is delimited by the vertical brick foundation by a border of approximately 0.20 cm, the bricks are laid perpendicularly onto the axis of the wall. The height of the vertical base of the counterguard I was of 0.80 m.

Inside the counterguard I, there were revealed two counter-forts with trapezoidal plan, placed perpendicularly onto the wall (Pl. VII/2).

The dimensions of the uncovered counter-forts were: length of sides – 1.56–1.61 m, length of short base–1.00–1.30 m, length of long base – 1.35–1.40. The preserved height was between 1.20 and 1.80 m.

Counterguard I (scarp and adjacent counter-forts) were made of burnt bricks, jointed together with good quality mortar. The bricks have the following dimensions: (length × width × thickness): 32 cm × 16 cm × 8 cm.

In order to study the construction system of the fortification wall, the structure was disassembled down to the base, on the entire preserved length. It was revealed a wooden structure supporting the brick foot of the fort wall (Pl. VIII). The construction appears like a network made of longitudinal beams and sleepers placed perpendicularly at equal distance. Essentially, the construction of Counterguard I is identical to that of the counterscarp.

The longitudinal *beams* from beneath the brick base of the wall were placed in parallels, by two, forming pairs, on the whole length of the wall, like in the counterscarps. The clearance – distance – between the parallel beams was of 1.20 m.

In the fragment of the studied wall, there was found a pair of beams, connected at both ends. They had the following dimensions: length: 6.70 m; width: 0.30 m thickness: 0.22 m. The pair of beams studied had both ends cut out on a length of 0.30 m and 0.10 m in thickness to provide binding to the next pair of beams, which had the same type of section but the other way round.

There were found no additional fixation elements, such as nails, cramps or other metal pieces. In the top end of the longitudinal beams, there were cracks chopped on the width of the sleepers in order to fix them, their depth being up to 8 cm.

The sleepers represent another important element of the construction. They were placed perpendicularly on the longitudinal beams, at a standard distance of 0.70 cm between them. Sleepers' dimensions: length: 1.60–1.65 m; width: 0.25 – 0.30 m; thickness: 0.16–0.20 m.

The ends of the sleepers were cut out at their inferior bottom on a length of 0.20–0.22 m and thickness of 0.08–0.10 m. The sleepers were fixed in the spaces cut out in the longitudinal beams by pressing, with no additional fixing elements.

From the binding between longitudinal beams and sleepers results an interior rectangular space, size 1.20 × 0.70. Inside this space – standard for the whole wall- there were mounted the two first rows of bricks of the foot of the wall. The brick foot is such constructed that it should integrate into the wooden structure and provide better resistance to the wall.

In the 11 wooden rectangular spaces at the base of the construction, the first layer of bricks was laid directly on the ground. The bricks were fixed with a lot of high quality mortar which ensures a very good adherence. This first layer of bricks fills both the rectangular space between the rectangular beams and sleepers and the space beneath the sleepers, forming a "carpet" along the base of the wall.

Regarding the display of the bricks, it is not unitary in all the 11 spaces in the structure. Thus, in seven of the rectangular spaces the bricks are laid on the edge, on their length; in two cases, on the edge, on their height and in other two cases there was a combination of displays, some of the bricks were laid on the edge, on the length and others were laid on their height. This uneven display of bricks could be explained as a technical solution to the rectification of some bumps in the ground, in order to provide flatness of the foundation. The same as for the wall of the counterscarp, in order to provide greater rigidity and tightness to this base layer of bricks, thin brick "splinters" were used. They were hammered along the beams, to the inside, and around some wooden pillars, vertically mounted, which support the wooden structure of the brick wall.

The second layer of bricks, wholes or fragments, was displayed in flat position, being integrated to the matrix imposed by the wooden structure. From this layer upwards follows the superposition of the next layers of bricks of the proper foundation of the counterscarp wall of counterguard I.

The *pillars* supporting the wooden structure of counterguard I had been hammered on three parallel rows, on the whole length of the wall. The pillars were necessary to provide stability to the wooden structure on the swampy soil where the fortification was built. The pillars had circular section (trunks) or rectangular section (processed trunks), with sharp processed tips.

Beneath both longitudinal beams there were found circular section pillars, with a length between 1.22–1.36 m and thickness between 0.16–0.18 m. The row of central pillars was formed of both of round section pillars and rectangular section pillars. These central pillars had been hammered between the sleepers (approximately at half of the distance between them), as well as between beneath the sleepers, before they were mounted.

Unlike circular section pillars, the rectangular section pillars were bigger, respectively length: 1.60 m and sides: 0.20–0.22 m. The upper part of the pillars hammered between the sleepers is visible at a height of 0.10 m through the brick bed at the base of the foundation, while the pillars hammered beneath the longitudinal beams are placed with their upper parts at the level of the swampy ground.

What makes the difference between the construction system of the exterior wall of counterguard I and the counterscarp is a row of massive rectangular section pillars, displayed outside the substructure but as well exteriorly to the brick structure (Pl. VIII, IX/1). These massive pillars, sides of 24 × 24 cm and length of approximately 2.5–3 m, seem to flank the exterior limit of the brick structure. The clearance between the seven pillars that were revealed is between 1.20–1.59 m.

Counter-forts

On the eastern side of the scarp wall there were revealed two counter-forts, heavily affected by previous dismantling. They present a trapezoidal plan, the large base endorsed to the inner side of the wall. The distance between the two counter-forts is 4.5 m.

In order to make possible the study of the wooden structure of the counter-forts, the masonry had to be disassembled. The wooden substructure presents the same trapezoidal plan as the masonry that supports it, being built of four elements: small base, intermediary sleeper and the two long sides (Pl. IX/2). The large base of the counter-fort consists of a longitudinal beam of the wall that forms the scarp of counterguard I.

The dimensions of the beams are the following: small base – at the end of the trapeze: length: 1.00 m, width: 0.22 m; thickness: 0.18 m.

This short beam had both ends cut out at the bottom, on a length of approximately 0.20 – 0.25 m and thickness of 0.10 m, in order to be pressed into the spaces cut into the long sides it superposed. (Pl. IX/2)

The dimensions of the wooden pieces are as such: small base – at the end of the trapeze: length: 1.00–1.05 m, width: 0.24; thickness: 0.18 m.

The intermediary sleeper has the following dimensions: length: 1.20 m; width: 0.22 m; thickness: 0.18 m. It has the ends sectioned at the same dimensions as the short beam at the end, in order to be pressed into the cracks cut into the long sides it superposes.

The beams that form the lateral sides of the counter-fort have the following dimensions: length 2.10 m; width: 0.22 m; thickness: 0.18 m. These beams had their ends endorsed to the wooden substructure of the wall, sectioned at their lower part on a length of 0.38 cm and thickness of 0.10 m. The cut out ends bind with the longitudinal beams of the brick wall.

Above the trapezoidal space, formed by the joint of the beams in the wooden substructure, there were fixed the first layers of bricks which were forming the foot of the counter-fort.

The base layer was placed directly on the yellow clay and is formed of bricks, displayed on their edge, on their length, joint with mortar. As the wooden structure at the base of the counter-fort is mounted directly on the living soil, just 0.20m higher than the wooden structure at the base of the scarp wall, the last layer of bricks displayed on their edges fill in the whole space height inside the trapezoidal structure.

The wooden pillars are another important component of counter-forts structure, providing stability to the beams and the brick base. With a circular section, with diameters between 0.20–0.28 m and length of 1.30 m, these pillars had been hammered both beneath the beams that were forming the long sides

of the trapezoidal structure and in the central area, on both sides of the intermediary sleeper, where their ends pierce the bed of bricks at the base.

Archaeological material

In the filling of the defence ditch in front of the scarp wall, there were found ceramic and glass fragments, metal objects and animal bones.

The ceramic fragments are remains of wheeled pottery, with reddish brown and yellowish slip, some of them decorated with strips of incised lines. There were also found fragments of enamelled, green pottery, as well as ceramic tile dishes with floral ornaments.

The entire ceramics discovered in the filling can be dated back to the 18^{th}–19^{th} centuries.

The glass fragments discovered come from different types of recipients-mugs, glasses – belonging to the mentioned historical age.

The category of metal objects consists of iron holdfasts and cramps, heavily oxidised.

The bone material comes from domestic animals of various sizes – cattle, pigs, sheep and goats.

C) The well

On finishing the western profile of the excavated profile for the building's foundation (Pl. X/1), the wooden structure of a rectangular well was revealed. In order to fully study it, an opening cassette was made in order to make possible the next stage, that of emptying the well shaft of its filling. The integral research of the well allowed a general outlook on the materials used and its construction system.

The well had a rectangular shape with equal sides of 1.15 m, the preserved height being of 1.10m. The construction system consists of joining the beams ends by simple or double cut out (Pl. X/2). From the well wooden structure there were preserved, on each side, nine thick wooden boards, on the upper part above the last layer of boards and in the corners, the stones used to fix the wooden structure had been preserved. The beams used in the structure of the well are processed from different types of wood, without being completely trimmed at the outside, mainly those laid at the well's base.

Archaeological research offered information about the construction of the well. The construction was assembled on the south side where the space between the walls of the pit and the wooden structure was larger.

After the pit had been dug into the yellow clay, stones used as foundation for the wooden structure's corners (Pl. XI/1) were displayed. The whole wooden

structure formed by joining the boards was built upon four pairs of small size hubs (Pl. XI/1) and the corners of the well had been reinforced with some stones fixed in the exterior of the construction. At the base, wooden structure was reinforced by doubling it outside, on all sides, with hubs split on their length, most of them untrimmed, still wearing their bark (Pl. XI/2).

These support hubs were of different lengths, ranging between 0.30 m and 1.15 m, the latter dimension refers to the structural beams they were doubling. The shorter hubs were placed in extension of each other, parallel to the beams at the base of the fountain. The hubs flanking from the outside the row of base beams had a hollow space carved into them for a better fixation of the beams. There were also found cases where the reinforcement was made not only with split hubs but also discarded beams were used. Thus, at the base of the northern side, a trimmed beam with a length of 1.10 m was displayed as exterior doubling. On the southern side, a split trunk of 1.10 m in length shows marks of having been processed in order to be used as a beam, but they had abandoned the idea and finally the trunk was used as a reinforcement hub.

Internal stratigraphy of the archaeological complex

In order to study the construction system and the filling inside the well with the afferent archaeological material, they proceeded to gradually dismantle the wooden beams structure on its eastern side (Pl. XII).

Several layers of filling were found, nine in number, marked from A to I, starting with the upper edge of the well.

Level A. In the upper part, the wooden structure consists of trimmed beams. On the northern side, the structure is taller than on the southern side and in the south-east corner, above the joint of beams, two stones of reduced dimensions were placed. The collected archaeological material consists of ceramic fragments, iron nails, mortar balls, animal bones and a fragment from a glass bracelet.

Level B. Made of brownish, clay filling, it contains archaeological material consisting of ceramic fragments of which some are remains of enamelled dishes, fragments of bricks and stones, animal bones.

Level C. Made of a black colour, clayey filling, it contains archaeological material consisting of ceramic fragments and animal bones. In this layer, on the southern side of the well, a leather shoe sole which stills preserves traces of seams was found (Pl. XIV/1).

At the base of level C was discovered the upper end of a board detached from the edge of the well. (Pl. XIII). In the same spot, there was also found an agglomeration of highly fragile tree branches. When taking out the filling, it

was seen that both the thick trimmed board, cut out for joining and the branch pierce the next levels D, E and F. It is necessary to mention that on the bottom end of the branch there were marks showing that it had been cut off from a tree. The way in which these two pieces, the board and the tree branch got into the pit – they might have fallen into or gave been thrown into, difficult to specify, but the time was definitely somewhere in the first stage of dismantling the well.

The next levels – D, E, F and G – less consistent with regard to thickness go down in a steep slope from the northern wall to the southern wall of the well. The archaeological inventory is poorer and consists of ceramic fragments and animal bones. Only at level F there were found metallic pieces – nails, under the bottom end of the beam that had fallen into the well.

Level H had a brownish colour, rich in organic matter. There were found thin brushwood and lots of leaves, mainly in the south-east corner of the well. The leaves are relatively well preserved, the colours being ferruginous and light green. At the same level there were found small sized ceramic fragments.

Level I is the lowest filling layer, being in contact to the living soil of the foundation pit. The archaeological inventory consists of ceramic fragments, animal bones but also a bed of leaves.

In the eastern side, on the bottom of the foundation pit, there were found two horizontal beams that had been used to the construction of the base of the well. These beams with a diameter of 10–12 cm had been covered by the last levels, respectively H and I.

The board fallen off the northern wall of the well was 0.46 m in length and its correspondence on the south side was of 0.26 m.

The entire wooden structure was packed and stored at the Timișoara Banat Museum in order to be preserved and rebuilt for the next permanent exhibition.

Archaeological material

The archaeological material discovered at level 6 in the well area consists of ceramic fragments from small sized dishes and of a fragment from a ceramic pipe decorated with inclined ribs.

At level 7, in the well area, there were found ceramic fragments shells, a mortar fragment, a piece of bronze wire with a twisted end, as well as various fragment of corroded metal.

As it results from the present presentation, in the filling of the well there were found ceramic fragments, metal objects and animal bones. The ceramic fragments come from wheeled pottery with brownish, yellow and dark grey slips, some of them presenting a decoration of incised parallel lines. There were also discovered fragments of green, enamelled dishes. All these ceramic fragments, as well as the fragment of pipe can be dated to the 18th century.

The fragment of bracelet is made of colour glass and belongs to the same historical age.

The group of metal objects – wholes and fragments – consists of nails, twisted wire fragments and fragments of oxidised metal.

The bones come from domestic animals of different sizes – cattle, pigs, sheep and goats and from poultry.

As far as the dating of the chronological limits between which the well had been used is concerned, it is more difficult to specify the moment when it construction had started. Based on the archaeological material found inside it – mainly ceramic – the well had been in function in the first half of the 18th century, its beginnings can be placed before 1716, the year Timișoara had been conquered by the Habsburg Empire. The well was serving an area outside the western fortifications of the Turkish city, rich in private lands – mainly gardens.

The causes that led to the well to be dismantled cannot be established. A plausible hypothesis could be the explanation that it had been abandoned and reused as a waste dump after the third row of fort bulwark had been built (respectively the scarp of counterguard I). The moment can be placed in the second half of the 18th century (1765 or 1790)[3].

IV. Stratigraphy of the archaeological site

Consequently to the demolition works at the end of the 19th and the beginning of the 20th centuries, the last preserved part of the city's esplanade soon got invaded by civil constructions. This urban activity was completed with the construction of the Moda Tim factory, its foundations having largely affected the remains of the foundation of the fort bulwark.

Thus, only a few relevant profiles could be found and they have been documented both graphically and with photos. (Pl. XIV/2, Pl. XV/1–2).

The deposit levels were documented with the Munsell Catalogue (Annexes 1–3). The situation plans were elaborated with the aid of the total station, doubling the information content by the graphical documentation.

V. Conclusions

As a result of having located the fort fragments and having compared to available plans and maps of the time, we can state that the remains discovered in the above mentioned perimeter were part of the exterior belt walls situated on the western side of the city of Timișoara.

The results achieved bring further information to the data offered by other preventive archaeological excavations that have been made in recent years

[3] Opriș 2007, 83; Capotescu 2008, 163.

within the perimeter of the city of Timişoara, respectively a more accurate positioning in the field of the defensive system itinerary built in the 18th century.

Furthermore, this archaeological research has revealed for the first time the wooden structure of the walls' foundations which used to form the defensive system of modern Timişoara. Together with the data related to the construction system of the wooden structure, there were recorded as well data regarding the wood processing procedures.

The wooden well, most likely dated to the beginning of the 18th century, also represents a first for the archaeological studies in the region of Banat.

Based on the archaeological research carried out at the work station Square 700 (objective "City Business Centre D"), between April–June 2011, we acknowledged the presence of the archaeological site , having been identified as the *extra muros* district of Medieval Timişoara (Palanca Mare), superposed by counterguard I and counterscarp of the fort bulwark of 18th century Timişoara.

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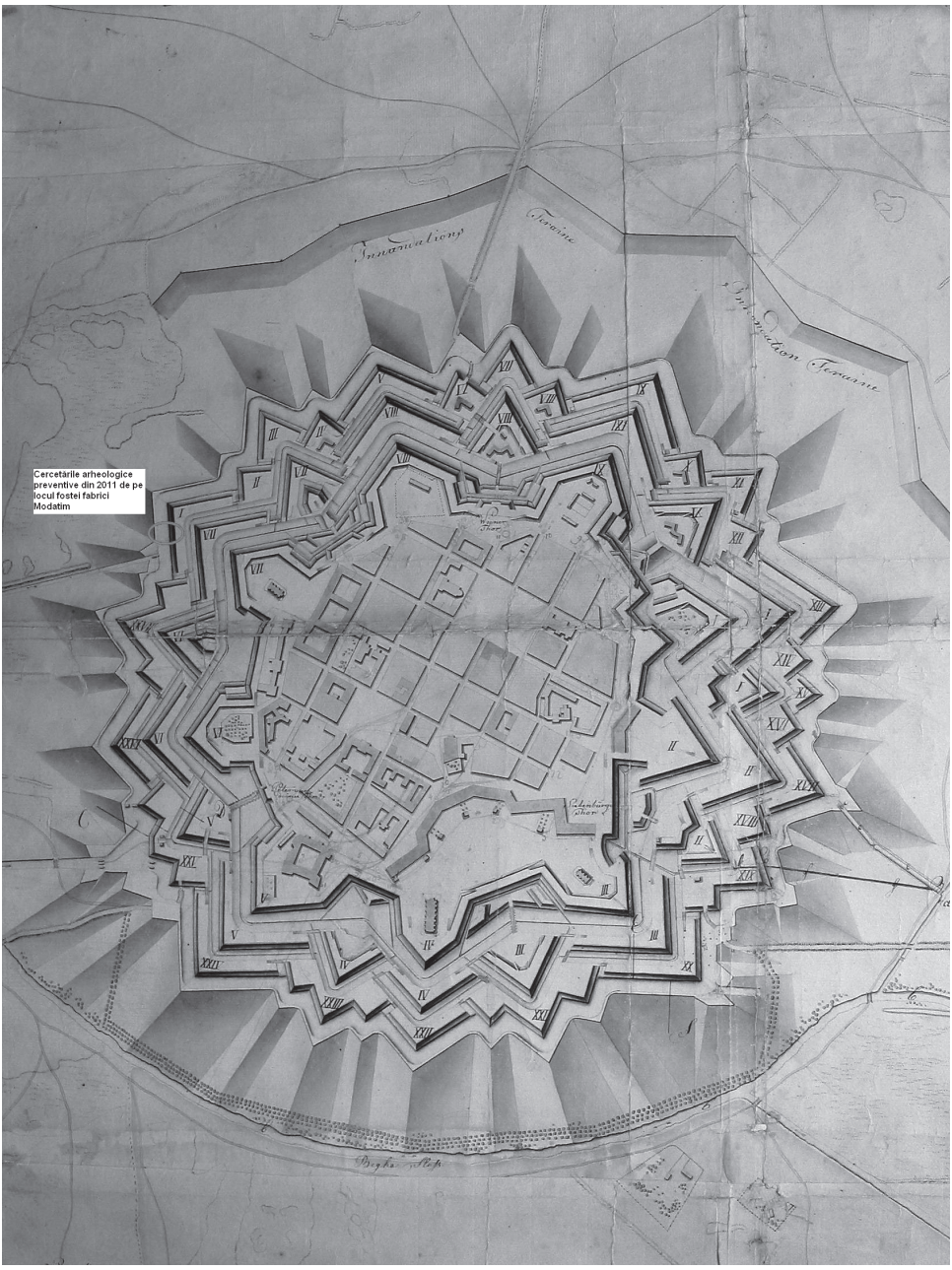
CERCETĂRILE ARHEOLOGICE PREVENTIVE DIN "TIMIŞOARA-PIAŢA 700", OBIECTIVUL "CITY BUSINESS CENTER", CLĂDIRE D

Rezumat

Sistemul de fortificaţie a fost format dintr-un zid de incintă cu nouă bastioane, prevăzut cu un şanţ de apărare, acestuia adăugându-se două centuri de fortificaţii, fiecare cu câte un şant de apărare.

Ca urmare a construirii clădirii D din complexul comercial City Business Center, s-au cercetat fundaţiile zidurilor de cărămidă care au cămăşuit segmentul fortificaţiei cunoscut pe planurile militare ca fiind escarpa contragardei I şi contraescarpa ce a marcat începerea glacis-ului. Atât zidul escarpei contragardei I, cât şi contraescarpa au fost construite pe o substructură de lemn formată din piloni masivi de stejar (cu diametrul cuprins între 0,16 şi 0,26 m), deasupra cărora au fost aşezate grupuri de câte două bârne longitudinale (lonjeroane), lungi de până la 7,90 m. Lonjeroanele, dispuse la aproximativ 1,20 m una faţă de alta, au fost fixate cu bârne transversale (antretoaze), late de 1,60–1,65 m. Deasupra substructurii de lemn a fost ridicat zidul de cărămidă care, în cazul contragardei I, a constituit cămăşuirea emplectonului de lut bătut şi pământ din interiorul anvelopei fortificaţiei bastionare a Timişoarei.

Sistemul de construire a zidurilor de cărămidă a fost unul şablonizat. Contraforturile au avut substructură de lemn, dispunerea lonjeroanelor formând un trapez legat cu ajutorul unor antretoaze. Dispunerea în cruce a cărămizilor a permis legarea acestor contraforturi de zidurile de cămăşuire. În spatele zidului contraescarpei a fost descoperită o fântână de lemn, care a aparţinut locuirii postmedievale din afara cetăţii Timişoara, respectiv suburbiei extravilane Palanca Mare. Fântâna a fost de formă rectangulară, cu laturile de 1,15 m, structura de lemn păstrată având o adâncime de 1,10 m. Umplutura a fost formată din fragmente ceramice de sec. XVII–XVIII, cuie de fier fragmente dintr-o brăţară de sticlă etc.



Pl. I. Harta fortificației bastionare a Timișoarei (1808). / *Map of Timișoara fort bulwark (1808).*

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Pl. II. 1 – Fundația contraescarpei contragardei I; 2 – Profil prin fundația contraescarpei contragardei I; 3 – Substructura de lemn a contraescarpei. / *1 – The counterscarp foundation of counterguard I; 2 – Profile through the counterscarp foundation of counterguard I; 3 – The counterscarp wooden substructure.*

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Pl. III. 1. Sistemul de îmbinare a lonjeroanelor contraescarpei; 2. Decupajul pentru fixarea uneia dintre antretoazele contraescarpei. / *1. The system of the counterscarp longitudinal beams joining; 2. Cutting out for fixing one of the counterscarp sleepers.*

Pl. IV. Spațiul obținut prin îmbinarea antretoazelor cu lonjeroanele, umplut cu cărămidă. / *The resulted space after the longitudinal beams and sleepers joining was filled with bricks.*

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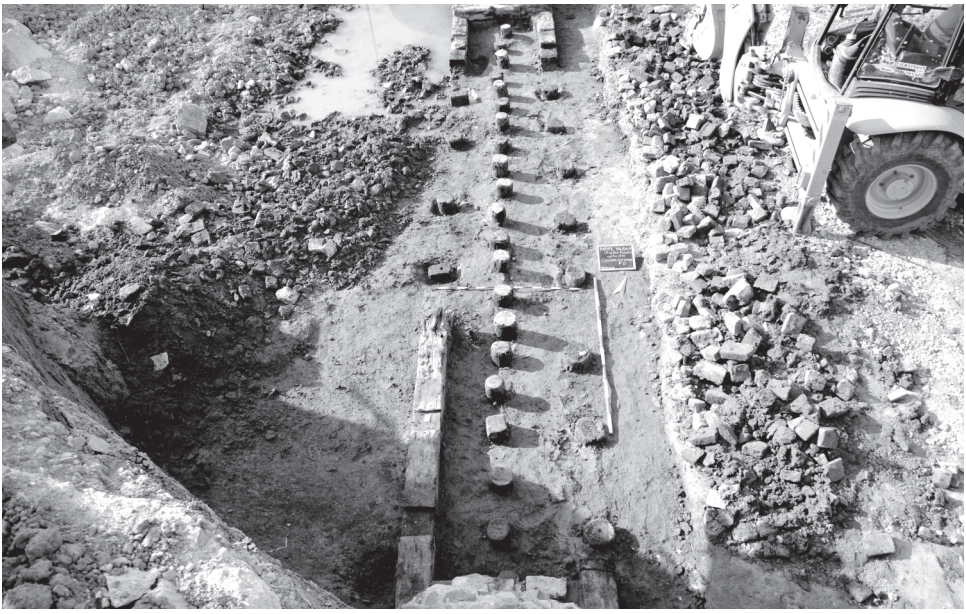

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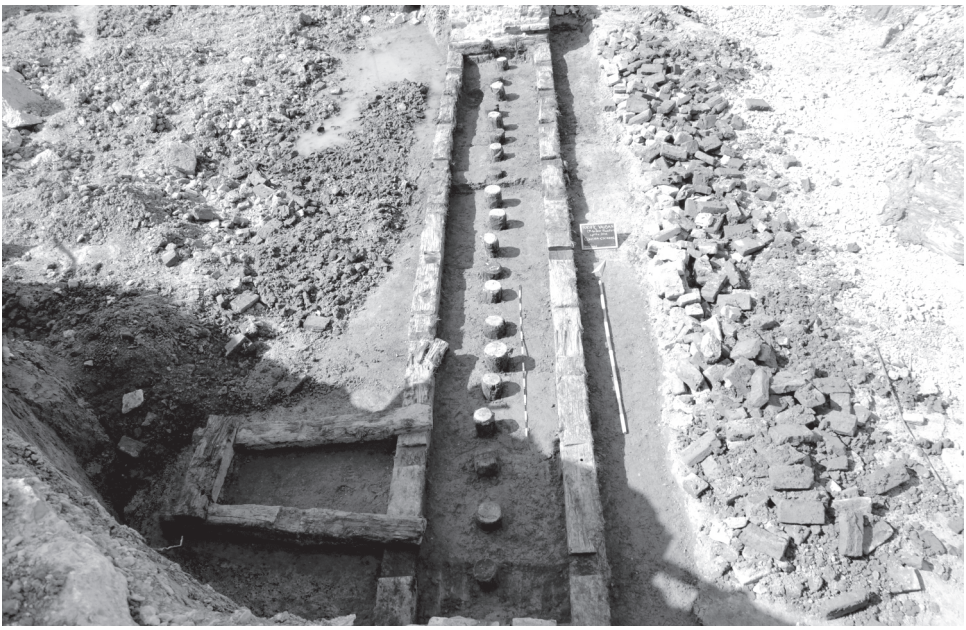
Pl. V. 1. Profil prin fundația contraescarpei, dispusă pe substructura de lemn; 2. Piloții de susținere a substructurii de lemn a contraescarpei. / *1. Profile through the counterscarp foundation on the wooden substructure; 2. The pillars to support the wooden substructure of the counterscarp.*



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Pl. VI. 1. Lonjeroanele substructurii de lemn a contraescarpei; 2. Contraforturile de la contraescarpa contragardei I. / *1. The longitudinal beams of the counterscarp wooden substructure; 2. The counter-forts of the counterscarp of counterguard I.*

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Pl. VII. 1. Detaliu cu îmbinarea antretoazei cu lonjeroanele contraescarpei; 2. Fundația de cărămidă a zidului de escarpă a contragardei I. / *1. Detail on the counterscarp longitudinal beams and sleepers joining; 2. The brick foundation of the scarp wall of counterguard I.*

Pl. VIII. Substructura de lemn a zidului de escarpă a contragardei I. / *The wooden substructure of the scarp wall of counterguard I.*

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Pl. IX. 1. Pilonii masivi de fixare a substructurii de lemn a zidului de escarpă a contragardei I; 2. Contrafortul zidului de escarpă a contragardei I. / *1. The massive pillars to fix the wooden substructure of the scarp wall of counterguard I; 2. The counter-fort of the scarp wall of counterguard I.*

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Pl. X. 1. Fântâna din lemn aparținând perioadei otomane; 2. Detaliu cu sistemul de îmbinare a pereților din lemn. / *1. The wooden well belonging to the Ottoman time; 2. Detail on the wooden walls joining.*

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Pl. XI. 1. Baza fântânii de lemn; 2. Pereții dublați pe lateral, la baza fântânii. / *1. The base of the wooden well; 2. Outside laterally doubled walls, at the well base.*

Pl. XII. Stratigrafia umpluturii fântânii. / *Stratigraphy of the well inside filling.*

Pl. XIII. Detaliu cu bârna căzută din peretele fântânii. / *Detail on the detached board from the edge of the well.*

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Pl. XIV. 1. Talpa unei încălțăminte din piele descoperite în umplutura fântânii (lentila C); 2. Profil prin șanțul de apărare (la vest de contragarda I). / *1. The leather shoe sole that was found in the well filling (lens C); 2. Profile through the defence ditch (west of counterguard I).*

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Pl. XV. 1. Profilul șanțului de apărare a contragardei I și nivelurile de amenajare a *glacis*-ului; 2. Profilul vestic al perimetrului cerctat arheologic (în *glacis*). / *1. Profile of the defence ditch of counterguard I and the glacis fitting out levels; 2. The western profile of the archaeologically investigated perimeter (in glacis).*