



Results of archaeological surveillance in Tallinn during the reconstruction of Viru, Vana turu and Kuninga Streets in 2015–2016

New data about the fortifications of the Viru Gate

Ants Kraut

Muinasprojekt OÜ, Pikk 46, 10133 Tallinn, Estonia; ants.kraut@eesti.ee

Ragnar Nurk

Tallinna Linnaplaneerimise Amet, muinsuskaitse osakond (Tallinn City Government, Urban Planning Department, Division of Heritage Protection), Raekoja plats 12, 10146 Tallinn, Estonia

INTRODUCTION

From October 2015 to August 2016 Muinasprojekt OÜ carried out archaeological surveillance work in the heritage protection area of Old Tallinn in connection with reconstruction of water and sewage piping, electricity cables and also renewing the pavement of sideways and driveways to the same street level (Fig. 1). Surveillance work was carried out on the streets Viru, Vana turu and Kuninga. The work was conditioned by the intention of the Tallinn City Government to convert the area around Viru, Vana turu and Kuninga Streets into a pedestrian zone. The contours of the destroyed Viru Gates and other historic buildings were to be marked on the street pavement. The project was a continuation of earlier reconstruction of Harju Street into a pedestrian street (for the archaeological part of the work, see Russow *et al.* 2014, 16–17), all the mentioned streets were to form an uniform area where people can appreciate the history of the town and feel the former urban space by perceiving the marking of the historic town buildings.

Archaeological fieldwork concentrated on the documentation of the streets during ongoing earthworks – bringing the sidewalks and driveways to the same level and installing underground technical networks. Depending on the nature of the reconstruction work and current on-site requirements, archaeological studies were planned as watching briefs or excavations. The results presented in the current article do not aim to provide full scientific analysis of the area, but rather offer initial knowledge about the recent fieldwork. Earlier building archaeological and archaeological approaches of the area provided very useful information and support throughout archaeological fieldwork (Zobel 1980; 2014; Russow *et al.* 2017). The finds unearthed are stored in the archaeological research collection of Tallinn University (AI 7477). The general overview and description of the investigations is written by Ants Kraut, the analysis of the found structures presented by Ragnar Nurk.

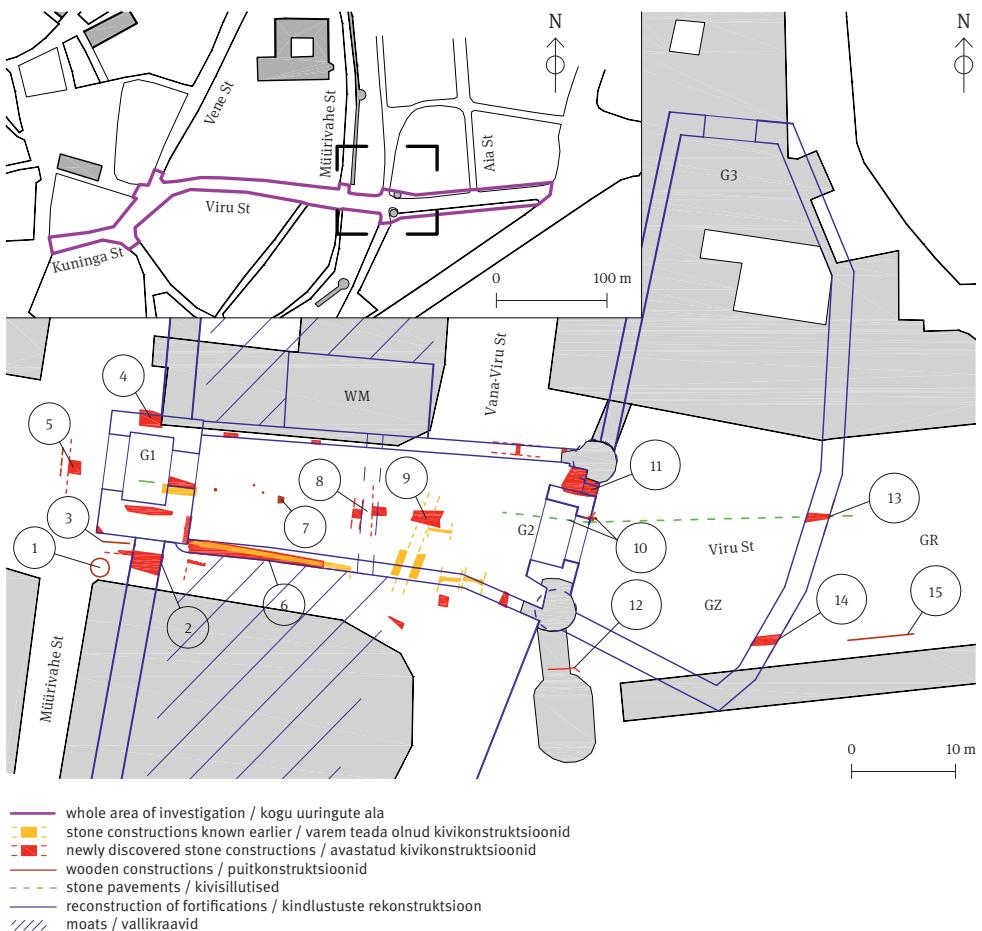


Fig. 1. Plan of the research area at Viru Street. Numbers 1–15 indicate the location of excavated sections.

Jn 1. *Viru tn uuringuala plaan. Numbritega 1–15 on tähistatud uuritud lõikude asukohad.*

Drawing / Joonis: Ragnar Nurk

METHODOLOGY AND WORK PROCESS

The special conditions set by heritage conservation requirements to reconstruction work (Pantelejev 2014) concentrated mainly on the level of the sidewalks and driveways, with the suggestion to mark the contours of historic buildings and on preserving other aspects of the historic appearance of the town on the present day pavement. From the standpoint of archaeology, surveillance was required, and in case preserved layers should appear, research was to be conducted. Special attention was to be paid on medieval and also modern period constructions (sewerage, wooden pipes for fresh water etc.), which were to be documented and preserved. Archaeological studies followed on-going reconstruction work, archaeologist conducted surveillance, photographed and documented the open layers. In case traces of past structures or archaeological finds were spotted, construction work was stopped as necessary for the duration of one day to a week. Supplementary technical workforce and experts were engaged as required. Trenches, apart from archaeological digs, were dug with the help of heavy earth-moving machinery and powerful earth absorbing equipment. Decisions

about unavoidable demolitions were made in consultation with heritage specialists of the Tallinn City Government. A considerable part of the research was conducted in quite extreme weather conditions, including winter period.

The present paper introduces the main results of the fieldwork, moving in the Old Town from inside to outside: from the crossing of Kuninga, Kullassepa and Harju Streets to the Viru Street ending at Viru Square / Pärnu Road. Since drawings are still in draft format and artefacts collected are not yet properly analysed, the following is a preliminary overview which can be specified after the completion of the report. Several measurements are approximate. The logistics of the reconstruction work (different pipelines at different heights, securing access for pedestrians and servicing personnel etc.) required that some sections were excavated several times or parts of the same constructions were seen one fragment after another and not together. The studied sections, objects and finds are designated with numbers on the plan (Fig. 1: 1–15).

In order to assist the reader to better understand the following overview, the authors feel it necessary to explain first the chronology of the studied fortifications as their main researcher Rein Zobel has formulated it (Zobel 1980; 2014; see also Fig. 2). The original Viru Gate, referred to as the main gate (Fig. 1: G1), in line with the town wall, and a water mill in front of it (Fig. 1: WM) were built in the mid-14th century. By the last quarter of the 14th century they were supplemented with the first barbican with side defence walls to connect the gates. Archaeological fieldwork did not trace remains of this barbican. The present barbican (Fig. 1: G2) was built in the mid-15th century, and the main gate saw a few additions to its construction. In the 1470s the presumed earlier outer defence wall was replaced by the so-called Great Zwinger (Fig. 1: GZ), which had a new gate at its northernmost end (Fig. 1: G3). The main gate was reconstructed into a five storied gate tower in the first years of the 16th century. In 1558 the zwinger was rebuilt into earthen fortification – the Great Roundel of the Viru Gate (Fig. 1: GR) –, which in turn was reinforced towards the end of the century. In the mid-17th century the roundel was rebuilt into the High Bastion of the Viru Gate, the barbican was closed and the passage was moved to Vana-Viru Street through a new gate in the rampart. In the second half of the 17th century a moat was built in front of the bastions, supported with earthen fortifications and associated walls, which in turn were replenished in the 18th century. Viru main gate was demolished in 1843 and passage through the barbican was restored in the year 1888, removing parts of earthen fortification located in front of it (Zobel 1993, 30–31).

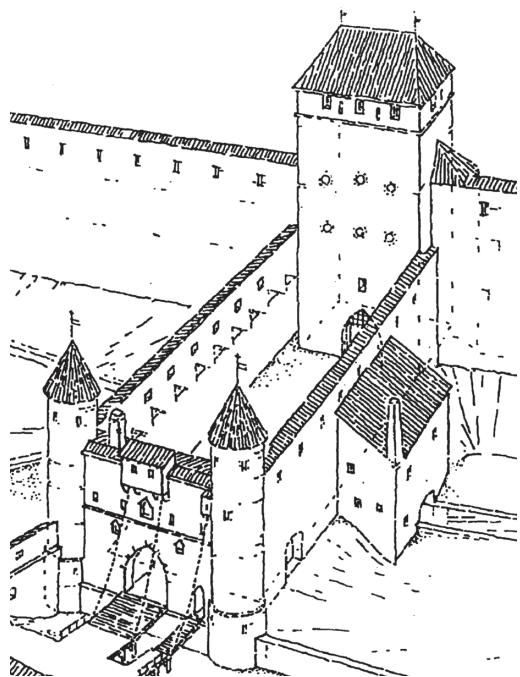


Fig. 2. Viru Gate: the main gate and barbican in the mid-15th century as suggested by Rein Zobel (2014, fig. 303).

Jn. 2. Viru peaa- ja eesvärav 15. sajandi keskpaiku Rein Zobeli (2014, jn 303) nägemuse järgi.

RESEARCH RESULTS

Inside the fortified town

Excavations on the Kuninga Street and Vana turg (Old Market) provided somewhat less information than in the area of fortifications but still some noteworthy discoveries were made. In the westernmost part of the research area small spots of intense black humus – however, without any remarkable finds – were documented. One of such places was in front of Kuninga St. 3, where *ca.* 1 m from the present street level an approximately 20–30 cm thick layer was found, on it some limestone slabs hinted possibly to some kind of construction, for example, a probable floor level or pavement (Fig. 3). In the southern part of the Vana turg, in front of Kuninga St. 1, 2 m from the present street level, a similar layer existed. In both of these spots the layer composed of natural sand that had been turned considerably darker due to the occupation layer which had covered it, but unfortunately was not preserved. It is remarkable that in between these two locations earlier remains of a fireplace have been found and documented, dated to prehistoric period, i.e. not later than the beginning of the 13th century (Talvar 2000).

On the north side of Kuninga Street, in front of Kullassepa 13 / Kuninga 8, the basement walls of the building and its protruding parts – the foundations of former kiosks – became visible. On the south side of the street the basement of the former building that had been hit in World War II and demolished in the 1950s was documented, presently located at Harju St. 1. The uncovered walls enabled to determine the exact location of the building and to finalise the marking of the location of historic buildings on the pavement, which had been started two years ago in the area of the Harju Street. The area of the Vana turg itself has been previously used for installation of various pipes and cables very intensively, mostly without archaeological investigations, although some research has taken place here in the 1970s (Deemant 1979). The present project concentrated mainly on refurbishing the pavement, together with the upper fill and rubbish layers immediately beneath it. New water pipes were installed mostly inside existing tubes with relatively modest digging work. No traces of occupation layer of archaeological value were discovered.

Along the Viru Street almost in its full length a power cable trench ran at the southern side of the street and water pipe trench at its northern side. The power cable trench reached 1 (occasionally 2) m and the water pipe 2 m in depth from the present street level. Power cables were installed in exactly the same location as earlier cables, water pipes immediately next to the old ones. That means historical constructions were already earlier more or less demolished. The occupation layer of archaeological interest, including structures, was better preserved in profiles and at the bottom of the trenches.

In the western part of Viru Street, between the streets Vana turg and Müürivahe, a variety of structures were studied despite of the numerous technical installations like 19th century limestone collectors (pipelines), 20th century concrete communication cable tunnels and a maze of gas and water pipes. This section enabled archaeologists to observe the connections of limestone pipelines to individual houses and to document the details of basement walls on the northern side of the street east of Vene Street. Only very sporadic traces of earlier settlement activities could be noted in the form of a black humus rich layer – however its dating remained unclear. On the southern side of the street, where cables were installed, on the level of the basements of existing buildings, only scarce traces of some earlier structures became visible, like remains of terrace-staircases etc.

Closer to Müürivahe Street, valuable data concerning the town's historical water supply system was obtained. The trench for a new water line revealed longer sections of water

pipe, made of timber beams and covered with planks that ran along Viru Street. Along Müürivahe Street 2.2 m from the street level a timber pipe with the diameter of 20 cm ran, also consisting of bottom and upper part, here wrapped into birch bark. The pipe was stratigraphically earlier than the wall also running along the street (referred to in more detail below). Another pipeline that was gouged out from round beams whose junctions were connected with iron collars was seen in the northern part of the street, west from Viru St. 11, running in the south-east direction. Probably part of the same pipeline was documented at the corner of Viru and Müürivahe Streets, next to the building at Müürivahe St. 38, at the inner side of the town wall (see below). This pipe reached to a timber water container measuring 1.8 m in diameter and preserved up to 1.1 m in height (Fig. 1: 1). The durable container made of 10 cm thick upright balks and bottom of the same material was lined from the outside with a 10–15 cm thick clay layer (clay insulation existed also around pipes). A timber water pipe with the diameter of 20 cm was connected to the container in its north-west corner. The southern part of the barrel remained in its original position. Apparently the barrel had been connected to the local water system via the pipe under the adjacent building. It was not possible to precisely date the elements of water system, yet so far pipes drilled from whole logs discovered in Tallinn have been dated to the Modern Period (e.g. from the 18th century onwards¹), although it cannot be excluded that the locations of pipes and wells may consistently originate from the Middle Ages.

Medieval Viru main gate and barbican

The area from the site of the Viru main gate up to the partly preserved barbican also provided an opportunity to study cable trenches dug in the southern side of the street and trenches dug for water pipelines in the central and northern side of the street. The overview of results starts from chronologically earlier parts of medieval fortifications, i.e. from inside to outside.

Remarkable results were obtained from the excavation at the crossing of the Viru and Müürivahe Streets. On the southern side of Viru Street, at the north-western corner of the building at Viru St. 24 / Müürivahe St. 38 a well preserved section of the **town wall** was excavated (Figs 1: 2; 4), which was erected 2 m below the present ground level (absolute altitude *ca.* 4.6 m). The inner side of the wall had earlier been damaged. The thickness of the preserved part was 2.5 m. On the inner side, under the town wall a small fragment of an earlier building



Fig. 3. Darkened natural sand layer in front of Kuninga St. 3.

Jn 3. Tumenenud looduslik liiv Kuninga tn 3 ees.
Photo / Foto: Ragnar Nurk

¹ Archaeological evidence from Mündi St. 4 (1999), Town Hall Square (1971), among a few other places. Pers. comm. Erki Russow. In 2015 also from Sauna St. 8 where 17th century stove tile fragments were collected from the trench backfill of one such pipe (pers. comm. Guido Toos, Agu EMS OÜ), but it is possible that the tiled stove built in the 17th century might have been demolished later in the 18th century (Russow *et al.* 2010, 252).



Fig. 4. Outer side of the town wall south of the main gate.
Jn 4. Linnamüüri vundamendi välisküljg peavärvast lõuna pool.
Photo / Foto: Ants Kraut

had been preserved under its foundation. This small section crossing the town wall had been built with extremely strong lime mortar. Its location in the immediate vicinity of the gate tower is very intriguing. Archaeological excavation established that the part of the town wall adjacent to the main gate was of later origin. This may well support Zobel's analysis of the historic measurements of the tower, according to which it was at the end of the Middle Ages enlarged southwards (Zobel 2014, figs 75 & 76) – expectedly also the part of the town wall was demolished and rebuilt. The conflux with the main gate tower was most probably destroyed during the installation of a collector in 1978 monitored by Jaan

Tamm (1978). On the outer side of the excavated foundation against the town wall, a massive layer of clay was deposited, at least a meter in thickness. This may have been the insulation of the mill pond that was part of the gate complex. According to Zobel's calculations (Zobel 2014, 100–101), the water level in the pond must have been higher than the surrounding ground level in order for the mill to function – so an adequate insulation was of great importance. Binder in the town wall foundation was also clay which is rather unusual in Tallinn (normally lime mortar). Still, the inner part of the foundation had partly collapsed (had been washed away). Here, unlike some parts of the town wall between the Viru and Karja gates (Russow *et al.* 2017, 51–80), a timber raft had not been built below the wall.

In the immediate vicinity of the inner side of the town wall **a floor-like section of timber planks** was revealed (Fig. 1: 3), only a bit higher than the level on which the town wall was erected. Its purpose and dating remained uncertain, but its location would have been perfect for a cellar or some kind of underground technical installation conveniently between the main gate tower and the town wall – belonging possibly to the modern period, from where most of such satellite constructions date.

Archaeological excavation provided important information that specified the precise location and state of preservation of the foundations of the **Viru main gate** (Fig. 1: 4). The foundations of its outer (eastern) wall have been fragmentarily documented already in 1958 and 1978 (Zobel 1960; Tamm 1978). At the outer side of the gate and in its northern, but also southern part foundation fragments of the gate were documented, which generally supported the information obtained from historical plans. An important contribution was the precise documentation of the location of the south-western corner of the foundation, which provided supplementary information about the location of the construction (Fig. 5) and basis for marking it on the present day pavement. The outer measurements of the tower were specified to be 11.8×8.8 m at the foundation level (Zobel reached to measurements 11.1×9.1 m for the first floor based on the analysis of historical drawings; Zobel 1993, 30). The thickness of the foundation of the outer wall of the tower was measured to be 2.5 m, it was erected more than 2 m below the present ground (absolute altitude *ca.* 4.3 m). According to historical plans the spot where it was documented could have been at the location of the gateway. If that is the case the outer wall of the tower had continuous foundation also under the gateway. On both sides

of the foundation there was the fill of clayey soil. In the presumable location of the inner side of the tower the number of modern pipes was so great that nothing except the above mentioned fragment of the south-western corner was preserved. Although the tower foundations had largely been demolished, the survived elements confirm that the gateway must have been located not symmetrically, but slightly northwards, as also indicated on historical measurement drawings. At the location of the gateway of the main gate tower a very small fragment of cobble-stone pavement was documented *ca.* 1 m below the present ground. Since it was laid directly on the clayey soil which filled the inside of the tower it could indicate the street level after its completion, expectedly in the mid-14th century.

Already out of the contours of the tower, inside the town, *ca.* 2 m from the inner side of the gate tower, a **limestone wall was discovered that ran along Müürivahе Street** (Figs 1: 5; 6); the preserved width of it was 1.1 m – the eastern side of the wall wore traces of demolition. Its exact nature needs further studies, but it may well belong to the fortification system, since it seems to be a bit too massive for a side-wall of the collector or something similar. The lowermost stones of the wall were bind with clay.

Most logically the barbican was later than the main gate tower. In that aspect once again the fact which was first documented already in 1978 was confirmed – that the southern **side wall of the barbican** (Fig. 1: 6) was secondary to the main gate tower (Fig. 7). Yet, the possible construction stages of the barbican have remained on hypothetical level. It had been established earlier by Zobel, based on the analysis of historical plans that the northern wall of the barbican ran straight (which found additional proof now), the southern wall, in contrary, had been broken outwards just before the barbican front side building. Based on this data Zobel assumed that an even earlier barbican had existed, which was shorter – reaching until the break point of the southern wall (Zobel 2014, fig. 257). Current excavation did not reveal any wall in the area of the supposed front side of the earlier barbican. Unfortunately in that zone there was a very dense network of underground communications by now and no scientific data was possible to detect. However, it was discovered that there was a barely noticeable fraction of a couple of degrees and a possible



Fig. 5. The south-western corner of the main gate tower foundation.

Jn 5. Peavärvatorni vundamendi edelanurk.

Photo / Foto: Ragnar Nurk



Fig. 6. Section of a lime stone wall and wooden water pipe at the crossing of Viru and Müürivahе Streets.

Jn 6. Paemüüri lõik ja puidust veetoru Viru ja Müürivahе tn ristmikul.

Photo / Foto: Ants Kraut



Fig. 7. The spot where barbican's S-wall (to the left) was built towards the main gate tower.

Jn 7. Eesvärava lõunamüüri kokkupuutekoht peaväravatorni välisseinaga.

Photo / Foto: Ragnar Nurk



Fig. 8. Wooden pavement on the fill of medieval moat.

Jn 8. Puitsillutis keskaegse vallikraavi täitekihil.

Photo / Foto: Ragnar Nurk

Zobel has seen some horizontal wooden details also less than a metre from the present ground. Although he interpreted these also as remains of the bridge, it seems more likely it was the next layer of pavement. A possible reason for raising the street level was the construction of the conduit leading from the mill pond to the watermill, the bottom parts of its side walls came to light (Figs 1: 8; 9), the clayey fill reached against the conduit walls.

joint in the south wall of the barbican also near the main gate tower (8 m from it), for some reason exactly in the same line with the western wall of the water mill located at the opposite side of the barbican. The question about the different building stages of the barbican remains open.

The occupation layer **in between the side walls of the barbican** contained constructions both from the period when here – more precisely in front of the town wall and the main gate tower – a moat still existed and from the period when it was already filled. The moat was filled after the construction of the watermill and barbican. A couple of metres on the outer side of the foundation of the main gate tower clay insulation with its upper surface declining outside (eastwards) was observable. In 1958 Zobel saw wooden stakes in clay, presumably meant to avoid washing clay away. Close to the gate tower he also had a chance to document well preserved remains of a wooden bridge (Zobel 2014, 82). Partly over the clay reached humus-containing layer which probably was the upper part of the moat fill – the bottom of the moat and natural soil was not reached in the trench with the depth of 2 m. On the surface of that presumable moat fill layer also slightly declining outwards, a fragment of **timber pavement or possibly a platform-like construction** was found ca. 1.7 m below the ground in front of the main gate. Several planks of this structure were preserved side by side crosswise to the street (abs. altitude 4.6–4.7 m), together with some vertical stakes nearby (Figs 1: 7; 8). Somewhat later the street level was raised with the new clayey fill layer, but the original height of the deposit remained unclear because pipeline trenches had destroyed all upper layers.

Its vault or other covering construction was not preserved, also the floor was not clearly distinguishable – maybe it was higher, being destroyed with the modern pipelines. The inner width of the channel had been almost 2 m (!).

Here an important question from historiography has to be addressed. Zobel has claimed in the case of all three gates on the southern side of the town that watermills existed first without barbicans, being located alone in front of the town wall. Zobel's hypothesis has already previously been questioned in the case of Karja Gate. On that place archaeological investigation clarified that the mill pond – which according to Zobel had to reach to the front of the mill to protect it – never actually had, and also the watermill appeared to be built against the barbican (Nurk 2014, 64–66). Here, at Viru Gate, the fact that the moat was filled before the water conduit was built also supports the most logical version that there first the barbican existed and then the watermill was built against it.

A modern period **limestone vaulted collector**, running along Vana-Viru Street, was also a noteworthy discovery (Fig. 1: 9), together with its stone well, both still in use today.

At the site of **the gateway of the barbican** archaeologists sought to determine the interconnections of the various pavements and constructions of the barbican's gate building (Fig. 1: 10), which two side-towers are still preserved. The various pavement layers were observable in the location of the gateway itself, but also several metres inside the barbican's walled area and in front of the gateway roughly until the zwinger wall (see below). The present stage of research suggests that the bottommost layer from split granite stones without any sand foundation was older than the foundation of the barbican. The next pavement was made of small fieldstones that rested upon a sand and brushwood layer. Its chronological relation with the barbican remained unclear. On top of this pavement two other layers existed in the gateway. The uppermost of them certainly dated from the modern period being stratigraphically later than the already mentioned zwinger wall in front of the gate. The general tendency was clear that earlier pavements were made of smaller and later pavements of bigger and bigger stones. The street level after the erection of the gate house was hinted at while digging near the northern tower of the barbican, where the foundation started to widen 1.1 m from the present ground level (at absolute altitude 5.16 m; Fig. 10). The third pavement (5.17–5.25 m) was virtually at the same level, made of relatively big fieldstones with the diameter up to 20–30 cm. Both the second pavement at ca. 4.75 m in its final form and the first at ca. 4.50 m probably belong to the period before the barbican. Unfortunately, due to the later disturbances stratigraphic relation with other medieval structures documented inside the



Fig. 9. Measuring of the conduit of the watermill in the barbican.

Jn 9. Vesiveski kanali mõõdistamine eesvärava alal.

Photo / Foto: Ragnar Nurk



Fig. 10. Wall section between the side towers of the barbican next to the N-tower.

Jn 10. Eesvärava külgtornide vaheline müürilöik põhjatorni kõrval.

Photo / Foto: Ragnar Nurk

earlier pavements documented in the gateway continued without interruption – thus the moat could have been only very shallow (up to 50 cm in depth possibly). Immediately outside the barbican wall remains of a wooden construction were found, but in the light of the previously mentioned circumstances it is questionable whether they could belong to the bridge.

As mentioned above, near the barbican's northern tower **the foundations of gate building** were opened (Fig. 1: 11). According to Zobel's interpretation of the 18th century measurement drawings (Zobel 2014, 208) a smaller, pedestrian gate or sally port should have existed here. The wall of the outer façade of the gate building was preserved in the height of 50 cm measured from the widening foundation mentioned above, but no traces of the gate could be identified.

The power cable trench ran through the passage of the neo-Gothic gate house located next to the southern side-tower of the barbican, annexed to the tower in the last decade of the 19th century. The foundations of that building were erected on an earlier wall (Fig. 1: 12), possibly belonging to 18th–19th cc buildings depicted on historical town plans.

The area of early modern period fortifications

In the area between the Viru barbican and Viru Square / Pärnu Road several artillery fortifications have existed from the second half of the 15th century until the second half of the 19th century: Great Zwinger, Great Roundel and The High Bastion of the Viru Gate in sequence.

The Great Zwinger is mentioned in historical records. Zobel has hypothetically identified it with the polygonal wall which is depicted on historical maps (Zobel 2014, 249–250). However, these maps date from the 17th–19th centuries, when the mentioned wall had a function to support the inner side of earthen fortification. Zobel has reconstructed the zwinger as a fortification consisting of a wall, erected on a higher bank of soil, and a moat in front of it. In the course of the present excavation a presumable zwinger wall was documented in two spots – in two sections with different directions.

The full cross-section was revealed in the profile of a water pipeline trench (Figs 1: 13; 11). The foundation trench for the zwinger wall was dug *ca.* 1 m inside earlier layers, 2 m from the present ground level. On both sides of the wall it was still possible to trace the lowermost pavement made of very small stone pieces which was documented inside the barbican's gateway (see above). There had been another pavement which was visible in the profile only as a stripe

barbican including the wooden pavement remains unclear.

Zobel's reconstruction of the barbican's gate building, its architecture and defence functions can be reviewed in the light of the 2016 excavations. Zobel assumed that there was a moat in front of the gate building and he assumed that its foundation continued also in the location of the gateway, thus forming the inner side of the moat (Zobel 2014, fig. 256). Fieldwork clearly disproved this supposition. Earlier pavements were preserved in the location of the gateway and foundations existed only at the sides of the gateway; also outside of the barbican no sign of the moat was found. Instead, at least two

earlier pavements documented in the gateway continued without interruption – thus the moat could have been only very shallow (up to 50 cm in depth possibly). Immediately outside the barbican wall remains of a wooden construction were found, but in the light of the previously mentioned circumstances it is questionable whether they could belong to the bridge.

As mentioned above, near the barbican's northern tower **the foundations of gate building** were opened (Fig. 1: 11). According to Zobel's interpretation of the 18th century measurement drawings (Zobel 2014, 208) a smaller, pedestrian gate or sally port should have existed here. The wall of the outer façade of the gate building was preserved in the height of 50 cm measured from the widening foundation mentioned above, but no traces of the gate could be identified.

The power cable trench ran through the passage of the neo-Gothic gate house located next to the southern side-tower of the barbican, annexed to the tower in the last decade of the 19th century. The foundations of that building were erected on an earlier wall (Fig. 1: 12), possibly belonging to 18th–19th cc buildings depicted on historical town plans.

The area of early modern period fortifications

In the area between the Viru barbican and Viru Square / Pärnu Road several artillery fortifications have existed from the second half of the 15th century until the second half of the 19th century: Great Zwinger, Great Roundel and The High Bastion of the Viru Gate in sequence.

The Great Zwinger is mentioned in historical records. Zobel has hypothetically identified it with the polygonal wall which is depicted on historical maps (Zobel 2014, 249–250). However, these maps date from the 17th–19th centuries, when the mentioned wall had a function to support the inner side of earthen fortification. Zobel has reconstructed the zwinger as a fortification consisting of a wall, erected on a higher bank of soil, and a moat in front of it. In the course of the present excavation a presumable zwinger wall was documented in two spots – in two sections with different directions.

The full cross-section was revealed in the profile of a water pipeline trench (Figs 1: 13; 11). The foundation trench for the zwinger wall was dug *ca.* 1 m inside earlier layers, 2 m from the present ground level. On both sides of the wall it was still possible to trace the lowermost pavement made of very small stone pieces which was documented inside the barbican's gateway (see above). There had been another pavement which was visible in the profile only as a stripe

of sand because stones had been removed for re-use when the zwinger wall was built and the ground level was raised on the inner side of it. No direct parallel for that pavement existed in the gateway of the barbican. The inner side of the wall foundation was laid neatly, with the outer side against the soil, slightly widening upwards – the reason of it remains unclear. On the inner side of the wall a stone foundation of some later annex was found together with the gateway's uppermost (here the third) pavement. In a long profile until Aia Street on the outer side of the wall humus-rich layer obviously belonging to the earlier period than the zwinger wall was observable. Towards Aia Street its upper surface had clear signs of digging. Just after digging that layer was covered with clayey soil which upper surface was clearly slanting eastward. It seems likely that the work described was in connection with the construction of earthen fortifications – maybe in connection with rebuilding the former zwinger into the **Great Roundel** in 1558, at the beginning of the Livonian War. No hint of possible moat in front of the zwinger wall was found.

Another section of the wall of the Great Zwinger was cleaned in the power cable trench (Fig. 1: 14). Also here it was the underground part of the structure which was preserved and for the wall it was dug in through the earlier occupation layer. Here that layer was humus-rich and contained some medieval finds, between that layer and later rubbish, ca. 70–80 cm from the present day surface, a **horizon of thin wooden planks** existed on the outer side of the wall (Figs 1: 15; 12). Both sides of the foundation were laid with care in that section of the zwinger wall. On the inner side of the structure the floor of the niche or embrasure was discovered, and a stone pavement made of relatively big stones. The latter was similar to the uppermost pavement seen in the previously described spot. The thickness of both wall fragments was almost exactly 2 m. A lot of limestone demolition debris was detected at the probable site of the zwinger's southern foundation, which led to the south tower of the barbican, but the wall itself was not preserved.

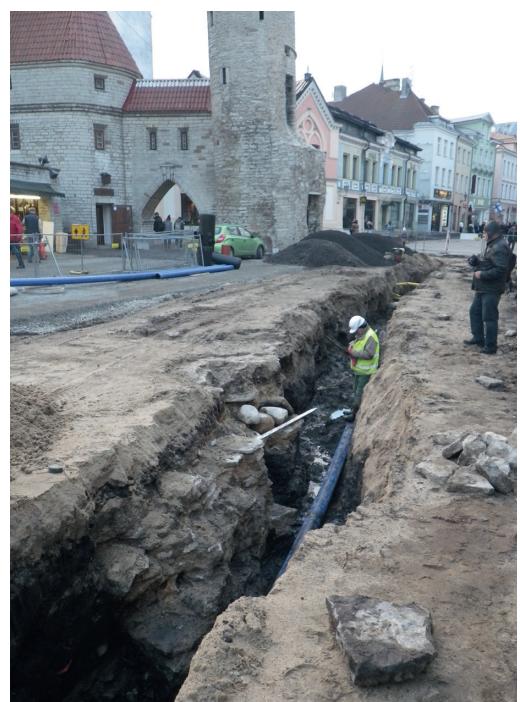


Fig. 11. Section of the wall in the E-side of the Great Zwinger.

Jn 11. Müürilöök Suure zwingeri idaküljel.

Photo / Foto: Ragnar Nurk



Fig. 12. Section of the pavement made of planks outside the zwinger wall.

Jn 12. Laudsillutise lõik zwingeri müürist väljaspool.

Photo / Foto: Ants Kraut

Approximately in line with the Aia Street scarp wall of the latest earthen fortification here, **the High Bastion of the Viru Gate** was documented on several occasions. Its location corresponded well with the historical fortress plans from the 17th–18th centuries. The wall was a typical modern period earthen fortification wall, with a slightly slanting outer surface towards the moat. The width of the wall which came into light just below the existing street level was 2.2 m. On the inner side of the wall counterforts were identified in three places, their width and depth were 1.3–1.5 m. Soil filling of the moat in front of the scarp wall consisted mostly of dark brownish humus-containing soil, which was partly covered with limestone debris. Surprisingly no traces of contrescarp wall which supported the outer edge of the moat were found. At the end of the street a cobblestone pavement was unearthed at the bottom of the power trench, which, located already outside the moat, may be connected with the outer defences of earthen fortifications.

In conclusion on the topic of fortifications it should be said that some hypotheses of Zobel are more likely than others. He has made a valuable contribution taking the maximum of his sources, historical and archaeological, available until the early 1990s. However, it is possible that some of his ideas may not find proof or disproof anymore because of large scale demolition which has taken place earlier without archaeological documenting. In the light of the current fieldwork it seems plausible that the main gate tower was enlarged towards the end of the Middle Ages, while the peculiarities of construction of the town wall here raise new questions concerning its constructional history in that particularly difficult area. Previously unknown wall fragments and a possible junction in the side wall of the barbican – all in the area surrounding the main gate tower wait further investigation and interpretation. There has been a moat in front of the main gate tower which was filled when the barbican was built. Also in case of this gate the barbican in its possibly unfinalized form seems to be earlier than the watermill located next to it. At a later stage probably no moat existed in front of the barbican's gate house. The existence of a small gate beside the bigger one is uncertain. In the final stage the ground level of the main gate and the barbican seems to have been only *ca.* 1 m below the present street level. The earliest stone and also wooden pavements, which were possible to reach remained approximately at the bottom level of the 2 m deep trench.

CONCLUSION

Ten months of archaeological surveillance during the reconstruction of Viru, Vana turu and Kuninga Streets provided valuable information about the area around one of the main streets in the Old Town of Tallinn with its medieval and later fortifications and constructions. The contractor faced various challenges in providing daily communication and access for local inhabitants, businesses and tourists in both summer and winter conditions, they also willingly cooperated with archaeologists in securing necessary conditions for surveillance and studies. As a result, valuable information was obtained from a 480 m long research area, from modern fortifications to foundations of medieval buildings. Unavoidable demolition was as discrete and minimal as possible. Earlier studies and historic plans were verified, their existence, locations and exact positions were specified. Modern excavation technology like powerful earth absorbing machinery assisted in making the required pits and cleaning the surface as necessary, where often manual digging proved to be difficult or impossible. The studied environment had largely been hopelessly destroyed by modern collectors and cable lines, still the studies managed to provide sufficient evidence that enabled to verify, reconstruct on plans and mark on present day street pavement the earlier layers of town history.

ACKNOWLEDGEMENTS

Andres Sildre was consulted for architectural history. Expert advice was provided by Tanel Moora, Villu Kadakas, Jaak Mäll, Erki Russow and Jüri Peets. Fieldwork was assisted by Guido Toos and Tarvi Toome. Valuable help in both fieldwork and assessing the finds was provided by Reet Maldre and Liina Maldre, drawings and measurements were done by and in cooperation with Tiina Sakermäa. The contribution of everyone involved is much appreciated by archaeologist, construction company and people interested in the early history of Tallinn.

REFERENCES

- Deemant, K. 1979.** Archäologische Ausgrabungen auf dem Tallinner Alten Markt. – TATÜ, 28, 4, 390–392.
- Nurk, R. 2014.** Täändusni Tallinna Karjavärvava ehitusloole. – Vana Tallinn XXV (XXIX). Tallinn, 57–73.
- Pantelejev, A. 2014.** Tallinn, Viru tänavale sõidu- ja kõnnitee ühte tasapinda viimise muinsuskaitse eritingimused. Tallinn. (*Manuscript in TLP*.)
- Russow, E., Kadakas, V. & Kaju, K. 2010.** Varauusaegne kultsõrmus Tallinnast. – Ilusad asjad. Tähelepanuväärsid leide Eesti arheoloogia-kogudest. Comp. and ed. by Ü. Tamla. *Muinasaja Teadus*, 21. Tallinn, 245–268.
- Russow, E., Haak, A. & Kadakas, U. 2014.** Archaeological fieldwork in 2013. – AVE, 2013, 9–32.
- Russow, E., Kadakas, V. & Bernotas, R. 2017.** 80 aastat hiljem. Tallinna linnamüüri kaguosaast 1930. aastate arheoloogiliste uuringute valguses – Järelevastamine. Kaur Altoole. Ed. by A. Randla. *Eesti Kunstiakadeemia toimetised*, 22. Tallinn, 51–80.
- Talvar, P. 2000.** Arheoloogiline järelvalve ja arheoloogilised kaevamised Kuninga tn. 1 loodekülgel. Tallinn. (*Manuscript in MA*.)
- Tamm, J. 1978.** Viru tänavale rajatava kollektori harulöigu kaevetööde järelvalve aruanne (1978. a. suvel). Tallinn. (*Manuscript in MA*.)
- Zobel, R. 1960.** Endise Viru väravatorni kohal piki Viru tänavat kaevatud tranšee profiil. Tallinn. (*Manuscript in MA*.)
- Zobel, R. 1980.** Tallinna keskaegsed kindlustused. Tallinn.
- Zobel, R. 1993.** Viru värav. – Tallinn. Ed. by V. Raam. Eesti Arhitektuur, 1. Tallinn, 30–31.
- Zobel, R. 2014.** Tallinn (Reval). Fortifications in the Middle Ages. Tallinn.

ARHEOOGILISE JÄRELEVALVE TULEMUSI TALLINNAS VIRU TÄNAVA, VANA TURU JA KUNINGA TÄNAVA REKONSTRUEERIMISTÖÖDEL 2015–2016 UUSI ANDMEID VIRU VÄRAVA KINDLUSTUSTEST

Ants Kraut ja Ragnar Nurk

Aastatel 2015–2016 teostati arheoloogilist järelevalvet Tallinnas Viru, Vana turu ja Kuninga tänavatel seoses kommunikatsioonitrasside uuendamisega ning könni- ja soidutee ühte tasapinda viimisega. Sõltuvalt tööde iseloomust teostati arheoloogilist jälgimist ja vajadusel väikesemahulisi kaevamisi ning dokumenteerimist. Uuringu olulisemad tulemused esitatakse artiklis lõikude kaupa Harju tänavast kuni Pärnu maantee (jn 1), keskendudes esmajoones Viru värava ümbruskonnale, kus välitööd pakkusid olulist lisu Rein Zobeli poolt varem välja pakutud rekonstruksioonikatsele (jn 2).

Kaevetööd Vanal turul puudutasid peamiselt varem läbikaevatud kihte kohatiste säilinud huumuselaikudega (jn 3) ja vundamentidega Kuninga tänaval. Tänava lõunaküljel puhastati välja ja markeeriti sõjas hävinud hoonete vundamendid.

Vana turu ja Müürivahe tn vahelisel tänavalõigu rohkete tehnorajatiste kõrval ja all võis tähdeldada varasemaid ehitusjärke. Müürivahe tänaval joonel kulgenud paemüüri olemus vajab selgitamist (jn 1: 5; 6) – see jääb väljapoole Viru peavärvatorni, kuid on siiski sellele väga lähehal. U 2 m sügavusel tänavapinnast kaevati välja puitrenne ja veetorusid, samuti vertikaalsetest prussidest koosnev kogumiskaev (jn 1: 1).

Kõige rohkem uut infot saadi keskaegsete linnakindlustuste kohta. Viru ja Müürivahe ristmikul tänaval lõunaservas kaevati välja linnamüüri vundamendi 1,7 m kõrgusena ja 2,5 m paksusena säilinud lõik (jn 1: 2; 4). Tuvestati, et peavärvatorniga külge osa müürist on hilisem, mis võiks kinnitada varasemat hüpoteesi peavärvava gabariitide suurendamisest keskaja lõpul. Linnamüüri välisküljel asunud meetripaksune savikicht oli ilmselt veskitiigi isolat-

siooniks. Puitparve, nagu Viru ja Karjavärvavate vahelises linnamüürilõigus, müürile alla polnud tehtud, mistöttu müüri sisemust oli osaliselt alt ära uhutud. Linnamüürist seespool tuli välja puitplankudest põrandalaadne lõik (jn 1: 3), mille otstarve ja dateering jäi ebaselgeks. Müür oli osaliselt rajatud mingi varasema kiviehitise konstruktsioonile suunaga piki Viru tänavat.

Viru peavärvava ida-, põhja- ja lõunaosas tuvastati värvavaga seotud vundamentide lõigud, mis üldjoontes kinnitasid ajaloolise plaanimatorjali põhjal teatud infot (jn 1: 4). Torni idapoolse ehk peafassaadi vundament oli 2,5 m paksune. Torni vundamendi edelanurga väljakaevamine andis täiendava ettekujutuse rajatise paiknemisest (jn 5). Torni põhiplaanilisteks gabariitideks saab lugeda 11,8 × 8,8 m. Leitud fragmendid osutavad, et värvavakäik oli mitte torni keskel, vaid rohkem põhjapoolses osas. Torni vundamentide vaheline ja neid ümbritsev ala oli tädetud saviga. Värvavatorni sisemuses u 1 m praegusest maapinnast allpool oli säilinud väike fragment sillutist, mis päri-neb arvatavasti vahetult torni valmimisjärgsest ajast. Kinnitust leidis varem tuvastatud asjaolu, et eesvärvava poole suunduv lõunapoolne külgkaitsemüür on torni suhtes sekundaarne (jn 7). Põhjapoolne külgmüür kulgeb sirgelt, lõunapoolsel täheldati lisaks seni teadaolevale murdekoohale värvavahoone läheduses veel üks raskemini märgatav vesiveski lääneseina joonel (jn 1: 6). Külgmüüririd olid mõlemad 1,2–1,3 m paksused. Zobeli oletatud varasemat eesvärvat leida ei õnnestunud. Eesvärvava alal peavärvavatorni ja veski vahelises lõigus leiti ka puitsillutise jäännuseid maapinnast ligi 2 m sügavusel (jn 1: 7; 8). Ilmselt ei kuulu need mitte sillale, vaid tegu on vallikraavi täitele loodud teega, mis rajati pärast eesvärvava esialgsel kujul ehitamist. Alles selle järel, koos järgmise täitmisega, ehitati eesvärvava kõrval paiknenud vesiveski pealevoolumanal (jn 1: 8; 9). Mainida tuleks ka piki Valli-Vana-Viru tänavate suunda kulgevat hilisemat, tänaveni kasutuses olevat võlvkollektorit (jn 1: 9).

Kaevati osaliselt lahti ja mõõdistati eesvärvava ja selle tornide vundamendid. Selgus, et värvavahoone vundamendiosa algab u 1,1 m sügavusel maapinnast, mis ilmselt osutab maapinnatasandile eesvärvava ehi-

tamise järel (jn 1: 11; 10). Ei leidnud kinnitust, nagu oleks eesvärvava ees kunagi olnud vallikraav või siis sai see olla maksimaalselt poole meetri sügavune. Viru eesvärvava kunagise värvavaava piirkonnas olid eriaegsed maapinnatasandid sillutiste näol väga hästi jälgitavad (jn 1: 10). Kaks neist sillutistest kuulusid aega enne eesvärvava ehitamist, üks päribes ilmselt sellega umbes samast ajast ja neljas kuulus uusaega. Varaseim sillutis meenutas prügitist, olles tehtud purustatud maakivitükkidest savikale ja kivisele või ka huumust sisaldavale täitele. Järgmissele, valdavalt väiksem poolsetest maakividest sillutisele eelnes liiv peenikestest hagudest vahekihiga. Kolmanda sillutise suhteliselt suured maakivid olid õhukesel liivapadjal. Uusaegne sillutis oli tehtud ühtlaselt suurtest maakividest paksule liivapadjale.

Viru eesvärvavast kuni Aia tänavani võis jälgida, kuidas ühelt poolt olid säilinud keskaegsed savikad, kuid huumust sisaldavad pinnasekihid, teisalt olid jälgitavad uusaegsete, suurtükkide perioodist päri-nevate kindlustustele elemendid ja nendega seotud pinnasetööd, sh nende piiril puitsillutis (jn 1: 12; 12). Kahes kohas oli võimalus uurida Viru värvava Suure zwingeri müüri, millest oli säilinud 2 m paksune vundamendiosa (jn 1: 13, 14; 11). Müüri ehitamisel oli sisse kaevatud eesvärvava-aegse sillutise pealt. Tänava lõunapoolses osas tuvastati müüri sisekülijel laskeava või niši põhi. Aia tänavaa pool oli varasemat kihti selgelt maha kaevatud ja toodud täiteks hulgaliiselt savikat pinnast kaldega linnast väljapoole. See tegevus võis olla seotud 16. sajandi keskpaiku zwingeri ümberkujundamisega Viru värvava Suureks ronedeeliks. Aia tänavaa joonel tuvastati 17.–18. sajandi Kõrge Viru värvava bastioni eskarpmüüri ülemine osa laiusega 2,2 m koos sisekülijele kontraforssidega.

Kümne kuu jooksul 480 meetri ulatuses tehtud arheoloogiline järelevalvetöö andis täiendavat infot Viru tänavaa piirkonna kesk- ja uusaegsetest kindlustustest ja teistest rajatistest. Vältimatuid lammatus-töid tehti kaalutletult ja väga piiratud mahus. Kaasaegsete kollektorite, kaablitunnelite poolt oluliselt rikutud keskkond andis siiski olulist teavet ajaloo-liste kihistuste uurimiseks ja nende tänavasillutisel markeerimiseks.