



# Archaeological investigations at Lossi Street 13, Tartu

Rünno Vissak

MTÜ AEG, Lutsu 16-26, 51006 Tartu, Estonia; rynno.vissak@gmail.com

From 25 April to 28 November 2023, archaeological excavations took place in Tartu at Lossi Street 13, in an area of 515 m<sup>2</sup>. The previous investigations conducted in 2022 on the same site were carried out to the depth required for construction and reached deposits from the 18th century, partially exposing the upper parts of the walls of buildings preserved in the ground. Initially, the deeper layers were planned to be preserved under the new building. However, due to project changes, most of the site needed to be fully explored in 2023, down to the natural ground.

## NATURAL RELIEF AND LOCATION

The study area is located on the sandy eastern slope of Toomemägi Hill, on the northern side of Lossi Street (Castle Street; Ger. *Schloss-Strasse*). During the Middle Ages, Lossi Street was the most important connection from the market square in front of the town hall to the bishop's castle and cathedral on Toomemägi. The location of the study area along the northern edge of the Lossi Street 13 property (Fig. 1) suggests that the façades of buildings in this area faced north towards *Dühmstrasse* (Est. Toome tänav), which led from St Mary's church to the cathedral. The excavated area contained the rear, courtyard-facing walls of the buildings. To the east of the site was a street extending westward from Lossi Street, named *Die Schülstrassen* on a 1697 city plan.

On the higher part of the slope, on the northern side of Lossi Street, there were only a few buildings even in the 19th century. The exact existence and location of buildings on the northern part of the plot in the 18th and 19th centuries are not recorded on city plans or in archival materials. Plans from the late 17th century (Fig. 2) show that the relief of the study area was complex, with U-shaped

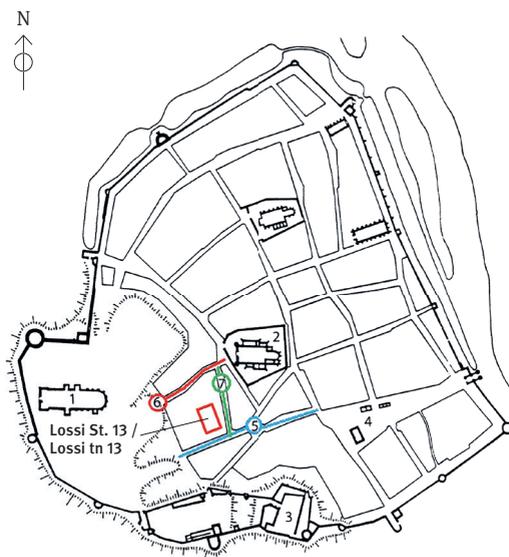


Fig. 1. Location of the cathedral (1), St Mary's Church (2), the bishop's castle (3), Town hall and market place (4) and the nearby streets Schloss-Strasse (5), *Dühmstrasse* (6) and *Schülstrasse* (7) near the investigated area.

Jn 1. Toomkiriku (1), Maarja kiriku (2), piiskopilinnuse (3), raekoja ja turuplatsi (4) ja piirnevate tänavate – Lossi (5), Toome (6) ja Kooli (7) paiknemine uuringuala ümbruses.

Map / Kaart: Rünno Vissak



Finds from the excavated area include a few pot sherds from the 12th–13th century, as well as a relatively small number of ceramic fragments and artefacts from the 13th–14th centuries. These were found in fill layers deposited in valleys or scattered in mixed layers across the excavation area alongside finds from the later centuries. No preserved prehistoric layer or an organic-rich cultural layer, containing a large amount of wood shavings, that would be typical to the 13th–14th-century town, were found. The absence of these layers suggests that during the prehistoric period and the 13th and 14th centuries, this area was not intensively used or built upon due to its very uneven relief.

### Building remains

The earliest excavated walls of the 14th century building were made of bricks resting on a fieldstone footing. Between the three walls a partially preserved mortar-cast floor (Fig. 3: Room A, walls a1–a3; Fig. 4) was unearthed. The eastern wall<sup>1</sup> of the room was destroyed due to the construction of a later room to the east (Room B). Under the southern wall of the later structure (wall b1), remnants of the footing stones of the demolished a1 wall were found extending eastward. Room A did not have a cellar, and its earlier wooden floor was likely higher than the later mortar floor. The northern wall of the room was partially covered by a later wall, revealing the interior face, with the room measuring approximately 3.5 × 4 metres.

The northern part of the western wall a2 was originally deeper than the southern wall. A parallel brick and partially fieldstone wall a4 to the west indicated a possible stairway to a cellar between them, although it could not be fully excavated due to a later-built overlapping higher subsequent foundation wall e2.

Adjacent to Room A to the east was Room B. This room also lacked a cellar. Wall b2, separating Rooms A and B, had a through-arch in its foundation, which was later walled up (Fig. 5). Room B had a similar mortar-cast floor as Room A. A test pit in the centre of the room, where the floor was not preserved, revealed a square floor brick with wear marks, possibly indicating a previous



Fig. 4. The earliest building, Room A, wall a1 and the partly preserved mortar floor. View from the north.

Jn 4. Varaseim ehitis Ruum A, müür a1 ja osaliselt säilinud mördist põrand. Vaade põhjast.

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Fig. 5. Wall b2, foundation with a walled up arch. View from the west.

Jn 5. Müür b2 kinni müüritud kaaravaga. Vaade läänest.

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<sup>1</sup> Following the traditional approach, cardinal points have been used when describing constructions, so 'north' is towards *Dühmstrasse* and 'south' towards Lossi Street. On Fig. 3, 'northern' wall may be situated in NNW or NW.

floor on a higher level. All four walls of Room B were exposed in the excavation site, with the northern wall partially visible. The internal dimensions of Room B were 4.25–4.3 metres east-west and 4.7 metres north-south.

The southeastern corner of the southern wall of Room B, just before the north-south wall b4/c2, showed a lower, brick-lined section with a mortar-finished surface, possibly for a vertical wooden door frame. An iron key was found in the rubble layer outside this section.

Room B was intersected by a later east-west wall d4, made mostly of fieldstones, and a north-south wall d5 extending north from the eastern end of d4. The top of wall d5 was leveled with a single course of mortar-bound bricks. The stones under the brick layer were packed with sandy rubble, and the lowest stones were on a collapse layer with larger brick fragments. Wall d5 was slightly offset to the west over an earlier wall that served as the western wall of the cellar (Room C).



**Fig. 6.** Room C; cellar walls c1 with a light shaft (on the left) and c2 with a wall niche and a door opening leading to the stairs. View from the east.

**Jn 6.** Ruum C; keldrimüürid c1 valgusšahtiga (vasakul) ja c2 seinarvaga, trepile viiva ukseavaga. Vaade idast.

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**Fig. 7.** Walls a1, b1 and b2, e1 and e2, d1. View from the south.

**Jn 7.** Müürid a1, b1 ja b2, e1 ja e2, d1. Vaade lõunast.

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Room C, to the east of Room B, had its southern wall partially excavated, with remnants of a light shaft and a window arch (wall c1), and a west wall (c2) adjoining Room B with an identifiable door opening (Fig. 6). A stairway leading down to the cellar from the north had remnants of stair treads and some residual rotten wood, indicating that brick steps had been covered with planks. A wall niche, symmetrical with the door opening, was found in the western wall. A part of the vault was preserved in the south-eastern corner of the stairwell. The east and north walls of Room C were located beyond the excavation area limits.

Later constructions included the east-west and north-south walls d1, d2 and d3; e1 and e2; f1 overlapping earlier walls. The eastern end of wall e1 was built against wall b2 and was adjusted to the subsided arch's northern part (Fig. 7). Walls e1 and e2 were removed after being documented photogrammetrically. Under the wall e2, at the base, two flat bricks (9 × 17 × 30 cm) were found, which suggests that the construction date would be the 17th century.

Since most of the previously described walls were to be preserved, the excavation area was extended by 7 metres to the south. During the subsequent excavations, stone and brick walls (g1; 2 and 3) of Room G were unearthed in the south-eastern part of the site. The walls belonged to the western part of the building; the western wall and part of

the northern wall were preserved to the level of the original ground-height of their construction period. The southern wall was partially destroyed. The thickness of walls was 65 cm. The front of the building probably faced *Schülstrasse* that was situated eastward.

The internal dimensions of Room G were 4.5 metres north-south and 4 metres from the western wall to the edge of the excavation plot. It was possible to identify the location of the doorway leading to the first floor in the northern wall, and the partially preserved basement-window opening with a light shaft in the western wall. The remains of a dismantled heat-storage hypocaust furnace were found in the basement adjacent to the northern wall of the building. Among the remains, in addition to charred stones (either bricks or field-stones), a tile belonging the heating system, with an opening for hot air from the heating channel, was discovered (Fig. 8, right).

No wooden, brick or mortar basement flooring was identified. Immediately outside the western wall of the building a stone pavement sloping westward, away from the building was found. A fragment of a 14th-century Venetian enamelled glass beaker (see below) was found in a fill layer associated with the construction trench directly adjacent to the outer side of the northern wall.



**Fig. 8.** Room G, walls g2 and 3; remains of a hypocaust stove, with an opening tile. View from the south.

**Jn 8.** Ruum G, müürid g2 ja 3, hüpokaustahju jäänused koos tellisest soojaavaga. Vaade lõunast.

Photo / Foto: Rünno Vissak

## Ovens

In the course of excavations the remnants of four ovens made of stones and bricks were discovered. The ovens were located outside the stone buildings, and it was not possible to identify traces of wooden or stone constructions near them. Two of the ovens were situated in the higher western part of the surveyed area (Fig. 3, oven 1 and 2). After the demolition of the earlier one (oven 1), on its rubble and slightly higher, another similar oven 2 was constructed. Ovens 4 and 5 were located on the eastern edge of the excavation plot, on the previously filled valley, and were partially outside the boundary of the excavation.

The construction of the ovens was similar in several ways. They were supported by predominantly stone foundations with lime mortar or packed with sand or rubble. Some of the upper fire-chamber bricks were also joined with lime mortar, but the bricks immediately on the floor and walls of the chamber were joined with clay.

The hearth of Oven 1 was oriented east-west, with the opening of the hearth facing east (Fig. 9). The measurements of the oven, taken from the lower stones, were 245 cm east-west and 206 cm north-south. The length of the hearth, measured from the interior walls, was 167 cm, and the width was 56 cm. The walls of the hearth remained intact up to the height of 54 cm from the bricks laid on the hearth floor, i.e. up to five brick courses. The bricks of the hearth measured 7.5–9 × 14–15.5 × 30–32 cm. In this case, as well as with the other ovens, there is a high possibility that the bricks used originated from the walls of some earlier buildings and were reused in the ovens.

The western part of Oven 1 was dug into a layer of natural sand surface. Sand was found between the larger bottom stones forming the foundation of the oven's construction. The



**Fig. 9.** A – Oven 1, opening of the hearth and the fire chamber floor. View from the east, B – Oven 1, the southern wall with three furnace flue openings. View from the north, C – Ovens 1 and 2. View from the east.

**Jn 9.** A – Ahi 1, kolde ava ja põhi. Vaade idast, B – Ahju 1 lõunasein kolme lõõriavaga. Vaade põhjast, C – Ahjud 1 ja 2. Vaade idast.

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opening of the hearth was set back by half a brick on the eastern side, suggesting a possibly closable hearth opening, although there were no traces of, for example, door hinges.

In front of the eastern side of Oven 1, there were many partially charred bricks and charred smaller- and medium-sized (10–20 cm in diameter) stones, along with debris of lime mortar. This was demolition rubble, upon which Oven 2 was later built.

The hearth of Oven 2 was also oriented east-west, with the opening facing east (Fig. 9C). The outer sides of the oven were partially destroyed on both the north and south sides, while the base of the hearth and its western and southern edges were better preserved. The measurements of the oven, taken from the surviving lower stones, were 150 cm east-west and 137 cm north-south. The length of the hearth, measured from the interior walls, was 107 cm, and the width was 60 cm. The measurements of the bricks in the hearth floor of Oven 2 were 9.5–10 × 15 × 31 cm and 10 × 14 × 30 cm. A post-medieval redware tripod with a yellowish-green glazed interior surface and a grooved exterior surface was found in the ash layer in front of the hearth mouth.

The hearth of Oven 4 was oriented north-south, with the opening of the hearth facing south. The measurements of the oven, taken from the lower stones within the excavation area, were (maximum) 213 cm east-west and 180 cm north-south. The length of the western wall in the upper two regular brick courses from north to south was 135 cm. The preserved height of the western wall of Oven 4 from the lower edge of the stones to the upper edge of the upper stones was 58–60 cm. The width of the fire chamber near the opening in the east-west direction was 40–52 cm, and the preserved height of the fire chamber walls measured up to 19 cm from the chamber floor. In the construction of Oven 4, it was evident that modifications to the structure may have occurred during its period

of use. Below the hearth bottom, smaller charred stones were visible, which could belong to an earlier structure, and larger stones with charred surfaces were found in the lower part of the oven's southern side (Fig. 10A). The measurements of the bricks in Oven 4 were 9–9.5 × 14–14.5 × 32 cm and 10–10.5 × 15–16 × 30–31 cm.

In the soil sample, taken next to the southern side of the oven, the grains of barley, some of which were partially germinated, were detected.<sup>2</sup> This may suggest that the construction was used as a malt kiln for malt drying.

The hearth of Oven 5 was oriented east-west, with the mouth of the hearth facing east. The measurements of the oven, taken from the lower stones within the excavation area, were 193 cm east-west and 210 cm north-south. The oven was built on a previously laid stone pavement sloping to the southeast (Fig. 10B, C). The height of the western wall of the oven (the southern part) was 60 to 68 cm. The western wall of the oven remained intact up to six brick courses. The thickness of the western wall was 57 cm. The measurements of the bricks in the hearth floor of Oven 5 were 8–8.5 × 13.5–15 × 31–31.5 cm.

Based on the stratigraphy of the layers in the eastern wall of the excavation, it appeared that Oven 4 was ruined earlier than Oven 5, as the layer formed by the collapse of Oven 4 was found below the layer formed by the collapse of Oven 5.

## Finds

Despite the fact that the layers excavated during the research were predominantly mixed, and a large amount of backfill layers had to be processed, more than 5000 finds were collected, among which some deserve separate mentioning. A good indicator of the extent of layer rearrangements and mixing were

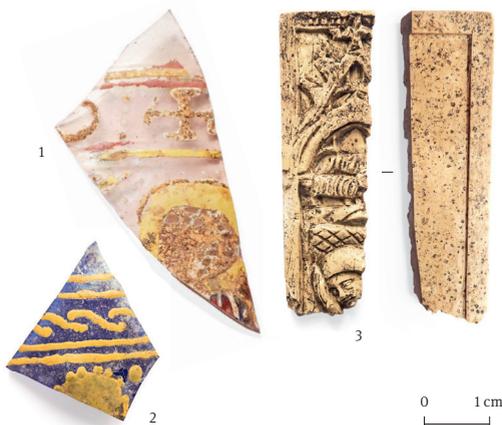


**Fig. 10.** A – The northern side of Oven 4. View from the north, B – Oven 5 on the cobblestone paving; sooty stones fallen into the hearth. A large stone on top of the western wall from a later period filling layer. View from the south, C – the walls and hearth floor of Oven 5. View from the south.

**Jn 10.** A – Ahju 4 põhjakülg. Vaade põhjast, B – Ahi 5 munakividest sillutisel; koldesse varisenud tahmunud kivid. Suur maakivi müüri peal hilisemast täielisest kihist. Vaade lõunast, C – Ahju 5 seinad ja kolde põhi. Vaade lõunast.

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<sup>2</sup> Identified by Kristiina Johanson (TÜ).



**Fig. 11.** Fragments of enamelled glass beakers (1–2) and of an ivory writing tablet with the Nativity scene (3).

**Jn 11.** Emailmaalingutega klaaspeekrite killud (1–2) ning Kristuse sünni stseeniga elevandiluust kirjutustahvlikese katke (3).

(TM A-297: 4004, 3401, 901.)

Photo / Foto: Rünno Vissak

the perforated bone strips, the remnants of the button manufacturing process, which were found in various layers and at different depths throughout the excavation area.

From the medieval glass finds, two fragments should be highlighted here. Next to the above mentioned ‘usual’ sherd of a Venetian glass beaker with a saint’s head (Fig. 11: 1), also a small fragment of a late 13th or early 14th century beaker made of blue glass was found (Fig. 11: 2).

From bone finds, also a fragment of a Gothic-style finely carved ivory writing tablet depicting the Nativity is noteworthy (Fig. 11: 3). Complete ivory miniatures with a similar motif are known, although usually representing not writing tablets, but religious panels.<sup>3</sup>

Among the finds dated to the period from the second half of the 15th century to the first half of the 16th century is a ballock dagger with an evenly tapered double-edge blade and a metal plate between the blade and the hilt drooped towards the blade (Fig. 12: 1). The wooden part of the hilt is not preserved. The blade is relatively short, only 16 cm, and the hilt is 10.5 cm long.



**Fig. 12.** A ballock dagger with a double-edge blade (1) and a brickware lid with carved fish and horse images on the upper side and master’s mark on the bottom side (2).

**Jn 12.** Kahepoolse teraga pistoda (1) ja ülemisel küljel kala ja hobuse kujutise ning allpool meistrimärgiga telliskivikeraamiline kaas (2).

(TM A-297: 4088, 921.)

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<sup>3</sup> See examples from the Victoria and Albert museum (<https://collections.vam.ac.uk/item/O106408/the-nativity-and-the-annunciation-panel-unknown>) and from the British Museum ([https://www.britishmuseum.org/collection/object/H\\_1856-0623-77](https://www.britishmuseum.org/collection/object/H_1856-0623-77)).

Some fragments of brickware lids were found. Among these finds the most notable is the 15th–16th century lid with a chip-carved fish and (probably) a horse image on the upper side and a master's mark on the bottom side (Fig. 12: 2a–b). The handle has been broken off. The rim is diagonal, the bottom side is not blackened and there are no traces of smoke or fire. The diameter of the lid is 14.5 cm. The fish and animal motif on the lid can be interpreted in favour of the version that such lids were used in food preparation and meant to cover tripod pots.

A dark brown glazed stove tile decorated with the city arms of Tartu originates from the second half of the 17th century. Some tiles that have the same decoration and a similar colour of the glaze have been found in Tartu earlier and have very likely been produced locally.

A wholly preserved white clay pipe was found in the cultural layer dated to the middle of the 17th century (Fig. 13). The slightly biconical bowl is 2.9 cm high, its diameter in the middle is 2.3 cm and the stem is relatively short, only 8.5 cm. On the bowl there is no mark on the base of the heel and no decoration elements on the rim of the bowl or on the stem. The surface of the pipe is not well polished. It can be classified as a cheaper class product.



Fig. 13. An unmarked white clay pipe with a biconical bowl.

Jn 13. Märgistusea kaksikoonilise kahaga savipiip. (TMA-297: 2673.)

Photo / Foto: Rünno Vissak

## CONCLUSION

The archaeological research carried out at Lossi Street 13 discovered the remains of walls and foundations of a buildings from the 14th to the 18th century on the slope of the Toomemägi Hill, which gives us a better understanding of the Medieval and Early Modern Period townscape.

The studied area lacked the cultural layer typical to the period of wooden buildings from the 13th–14th century. Only a few artefacts from that period were found. The excavations pointed out that the relief of the plot was complex, with valleys and ravines that later had been filled with cultural layers from earlier periods.

The remains of four ovens were discovered without any kind of the production waste near them. The ovens were probably used to bake bread or for drying malt. Grains of barley, some of which were partially germinated, were found next to Oven 4.

Most of the 14th–15th century finds were collected from mixed layers. Among them most notable are two sherds of enamelled glass beakers of Venetian origin and a fragment of an ivory writing tablet.

## REFERENCES

- SE/KrA/0406/28/008/010. Östersjöprovinserna. Dorpat (1697). (*Map in Krigsarkivet, the Military Archive of Sweden.*)

## ARHEOLOOGILISED UURINGUD TARTUS LOSSI TN 13

Rünno Vissak

Tartus Lossi tn 13 toimusid 25.04.–28.11.2023 arheoloogilised uuringud ühtekokku 515 m<sup>2</sup> suurusel alal (jn 1–2). Ala põhjaservas leiti 14. sajandi teisest poolest kuni 18. sajandini eksisteerinud hoonestuse tellistest ja maakividest müüre (jn 3–7); vanema puithoonestuse jälgi ning tavapärasest orgaanikarikast 13.–14. sajandi kultuurkihti alal ei tuvastatud. Avastati üksikuid muinasaja lõpu savinõude katkeid, kuid selle perioodi kihti oli vaid üksikutes lohkudes. Põhiosa kogutud leiuainesest pärineb 16.–18. sajandist ning varasemad leiud olid segatud ja tätelistes kihtides sageli kõrvuti hilisema perioodi esemetega. Uuritud kihid olid laiemal alal liivased ja rusused. Ala idaservas ja edelaosas oli erinevatel aegadel täidetud looduslikke vagumusi ja suuremaid lohkusid, sealseid täitekihid olid kohati tumedamad ja sisaldasid mulda.

Vanim uuritud hoonekonstruktsioon oli ruumi A müürid a1–a3 ning nende juurde kuuluvad hoone-müürid a4 ja a5. Hiljem oli ruumi A idasein ja lõunapoolse müüri idapoolne osa lammutatud ruumi B ehitamisega, osaliselt olid hilisema müüri b1 all säilinud varasema lõunamüüri taldmiku kivid. Ruumidel B ja A olid osaliselt säilinud sarnased tellisetükkidele valatud lubimördist põrandad. Ruumi B lääneseinas oli alusmüüris kergenduskaar, mis oli hilisemal kasutusperioodil kinni müüritud. Viimase üheks põhjuseks võis olla varasema põranda (tõenäoliselt laudpõrand) asendamise uue, madalamal paikneva põrandaga.

Ruumiga B külgnest idas kellerdatud ruum C, mis jäi vaid osaliselt uuringute alale. Ruumi B ja C esimese korruse vahel paiknevas seinas leiti ukseava koht. Keldrisse viiv trepp suundus ruumi põhja pool paiknevast hooneosast, mis jäi samuti uuritud alast välja-poolle. Trepikäigust keldriruumi viival ukseaval oli säilinud selle kohal paiknev kaar, trepikäigu lõunapoolne osad olid säilinud mõned ruumi laevõlvi tellised. Keldri lääneseinas oli lisaks ukseavale sarnaste mõõtudega seinanišš, lõunaseinas paiknes valgusšahhtiga aken.

Varasemate müüride alale olid hilisemal perioodil lisandunud müürid d, e ja f. Välja kaevatud müürid otsustati põhiosas säilitada ja kaeti liivaga ning seetõttu nihutati projekteeritud uue hoone keldriosa lõuna poole. Lisandunud lõunapoolsele uuringualal paljandusid ruumi G põhja- ja läänesein ning osaliselt säilinud lõunasein (jn 8). Hoone jätkus kaevandi servast ida poole. Tegemist oli soklikorruse ruumiga, kus paiknes kerishüpokaustahi. Ahi oli kuni alumise osani lammutatud. Esimesele korrusele viivast ukseavast olid põhjaseinas säilinud kõige alumised tellised. Hoone lääneseinas oli osaliselt säilinud akna valgusšahht.

Uuringute alal puhastati välja nelja kivist ja tellistest ahju alaosa ühes tulekambri tellispõhja ning osaliselt säilinud külgseintega (jn 9–10). Ahjude ümber ei tuvastatud ehituskonstruktsioonide jälgi, samuti ei leidunud vahetus läheduses ega ka laiemal alal tootmisjääke või muud, mis oleks ahjude otstarbega seostatav. Võimalik, et ahjud on seotud kas leibade küpsetamisega, nt kuivikute tegemisega või hoopis linnaste kuivatamisega. Ahju 4 juurest võetud mullaproovis leidis odrateri, millest osade puhul võis täheldada, et need olid tõenäoliselt idandatud. Leid toetab versiooni, et üks ahjude funktsioonidest võis olla linnaste kuivatamine.

Arvukast leiukogumist (5000 leidu) väärivad esiletõstmist kahe emailmaalinguga peekri killud 14. sajandist, millest üks oli sinisest klaasist (jn 11: 1–2). Jeesuse sünni teemalise kujutisega luust kirjutustahvli fragment pärineb tõenäoliselt 15. sajandist (jn 11: 3). Mainimist väärib ka 15.–16. sajandist pärinev pistoda ja tellisesavist lame kaas, mille ülemisel poolel on kala ja hobuse kujutis, alumisel poolele aga enne põletamist sisse lõigatud meistrimärk (jn 12: 1–2). Hilisema perioodi leidude hulgas on 17. sajandi keskpaigast pärinev terviklikult säilinud valgest savist piip (jn 13) ja Tartu linna vapi kujutisega tumeda pruunika glasuuriga ahjukahhel.