



## **RECENT STUDIES IN KURESSAARE BISHOP'S CASTLE**

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### **INTRODUCTION**

In spring 2010 OÜ Agu EMS started archaeological investigations on the territory of the Kuressaare bishop's castle. The work was initiated by the Saaremaa Museum in the framework of the current conservation-restoration activities (2010–2015). Archaeological excavations are carried out simultaneously with restoration works and the fieldwork has been planned to last for three years (2010–2012). The article introduces the results of the excavations of the first two years (2010–2011), directed by the archaeologists from OÜ Agu EMS Garel Püüa and Guido Toos, Villu Kadakas and Ragnar Nurk acting as consultants respectively on medieval and early modern fortifications.

### **HISTORY OF THE CASTLE**

In 1227 the last Estonian prehistoric region – Saaremaa – surrendered to the German crusaders. A small feudal state was formed of Läänemaa and the West-Estonian islands in the years 1228–1234: the Saare-Lääne (Germ. Oesel-Wiek) Bishopric. The bishop's residence was situated since 1234 in Lihula, since 1251 in Vana-Pärnu, since 1265 in Haapsalu and since the 14th century alternately in Haapsalu and Kuressaare. The first documented data about Kuressaare castle originates only from the 1380s (Aluve 1980, 27). Kuressaare remained the residence for the bishops of Saare-Lääne Bishopric until the beginning of the Livonian War (1558–1583). In 1559 Bishop Johannes V Münchhausen sold his property in Saaremaa and Kurland to the Danes. At the beginning of the 17th century as the cannons became more powerful, the medieval stronghold built of stone had to be built into a new type of defence fortification. The Danes modernized the defence systems of the castle. The work began in about 1600 and lasted till 1640 (Fig. 3). On the ground of Brömsebro peace treaty in 1645 Sweden took possession of Saaremaa. In 1710 the Swedish garrison surrendered to the Russian army. According to written sources the Danes, Swedes and Russians considerably improved and modernized the fortification system, but almost nothing is known about its medieval construction. Kuressaare castle lost its military importance and was excluded from the list of the fortifications of the Tsarist Russia in 1836. Today the castle houses Saaremaa Museum with permanent exhibitions about the history of Saaremaa.

The convent building of Kuressaare castle is the only medieval fortification in the Baltic States that has not undergone considerable destruction and due to that is an internationally important architectural monument. The main castle of Kuressaare, located on the southern coast of Saaremaa, is a convent house by its type, with a massive defence tower Sturvolt on the northern corner of its gate façade and the watchtower Tall Hermann on the eastern corner, barely salient from the wall line. The convent house of Kuressaare is a very regular cube-shaped building with four ranges and a central courtyard with galleries affording access to the basement and two main storeys. Tall Hermann is separated from the rest of the rooms by a shaft through all storeys, and the only entrance to the tower was over the drawbridge from the main floor of the castle. The main walls of the castle, i.e. the side walls of the convent house and the Tall Hermann, have been built of hewn dolomite blocks, while Sturvolt, unlike the rest of the building, has been built of plain quarry stones. The curtain wall of the first bailey has been situated about 10 m from the convent building, surrounded by a moat up to 20 m wide. Later the territory of the outer bailey was expanded and a new curtain wall was built, with flanking round towers (Figs 1–3). Kuressaare has been the only ‘concentric’ castle in Estonia (except Pärnu) and one of the very few proper water castles.

### **PREVIOUS RESEARCH AND FIELDWORK**

One of the first to investigate the bishop’s castle of Kuressaare was architect Karl Rudolf Hermann Seuberlich (1878–1938) who directed the restoration work in the castle, with short intervals, from 1905 until 1911. His observations were published in two articles (Seuberlich 1905; 1907) where he suggested that the construction of the castle may have started only after 1350, approximately simultaneously with the building of the Maasilinn (Germ. Soneburg) Order’s castle in north-east Saaremaa (Seuberlich 1905, 10).

Art historian Armin Tuulse (Neumann) (1907–1977) agreed with it in principle. He emphasised that the building of the convent house of Kuressaare could not have begun before the St George’s Night Uprising (1343–1345), suggesting that the construction began in 1345 and was finally completed in about 1400 (Tuulse 1942, 221). According to Tuulse’s scheme of development the Sturvolt tower was built first, while designing the whole castle. This is suggested by the binding stones left in the sides of the tower during the construction. Another art historian, Voldemar Vaga (1899–1999), mainly recapitulated in his brochure ‘Kuressaare linnus’ (Vaga 1957) Tuulse’s opinions. Art historian Villem Raam (1910–1996) connected the building of the convent house with the activities of the mastermasons of presumable Bohemian origin in Valjala and Kuressaare after St George’s Night (Raam 1978).

During extensive restoration works in the 1970s–1980s the leading architect Kalvi Aluve (1929–2009) also directed research of the castle. He has published a monograph, based on extensive fieldwork both below and above ground (Aluve 1980). Unlike Tuulse’s conception Aluve asserts that in the second half of the 13th century a *castellum* with a central watchtower of *bergfried* type (Tall Hermann) preceded the building of the convent house type known from the 14th century. In the 13th century the *castellum* was surrounded by a 20 m wide moat filled with sea water. Aluve presumed that the first

stage of construction of the convent building started in 1338 with the inauguration of the bishop Hermann von Osnabrücke and was interrupted by the St George's Night Uprising. During that period the foundations of the convent building and four storeys of the Sturvolt tower were built. The next stage of construction started after the suppression of the St George's Night in 1345 and ended in the third quarter of the same century (Aluve 1980, 52).

Advanced from the development scheme of Armin Tuulse and Villem Raam, building historians Boris Dubovik and Kaur Alttoa presented new observations in 1995. They suggest that the oldest core of the present main castle consists of the lower part of Sturvolt and the adjacent basement room on the south-western side. The designing of the convent building became a topic of the next stage of construction. Alttoa and Dubovik do not preclude in theory the existence of a *castellum* in Kuessaare in the 13th century, but they think it far more likely that, planning the main castle, a simple curtain wall was erected first to protect the area, and thus the interval between the building of the main castle and the curtain wall should not have been long (Alttoa & Dubovik 1995, 95). According to Kaur Alttoa the building of the larger outer bailey with round towers around the main castle started only in the 1430s (2007, 824).

Kalvi Aluve considered the expanding of the outer bailey and the construction of the new surrounding wall to be earlier. According to him the new mighty 625 m long surrounding wall with a two-storey wall-walk and about fifty loopholes was completed by the 1430s and was furnished with small flanking towers with the ground plan of three-quarter of a circle. Of these only the small eastern tower (Fig. 1: 10, excavation II) has survived to this day. Aluve supposed that the surrounding wall was heightened by approximately 2 m in the mid-15th century and the large towers for firearms were built, today represented by the south-eastern tower (Fig. 1: 11, excavation III), southern tower (Gunpowder Tower) and the ground floor of the northern tower (Cannon Tower). The third and last modernization of the surrounding wall in the third quarter of the 15th century is marked by the two upper storeys of the Cannon Tower (Aluve 1980, 53).

The only archaeological fieldwork hitherto carried out in the castle and fortification zone of Kuessaare took place in 1969–1974 (Fig. 2) under the leadership of architect Kalvi Aluve (see Aluve 1975). Only in 1971 and 1972 archaeologist Jüri Selirand was invited to direct the fieldwork (see Selirand 1972; 1973). Unfortunately the drawings by Kalvi Aluve are more like schematic sketches (the distances of prospects and discovered constructions from the convent house are missing, etc.) and it is even difficult to establish the precise location of the excavation plots. Therefore it is necessary to revise and expand several excavation plots of Kalvi Aluve in the course of the present investigations.

A couple of decades later, in 1993–1995 extensive diggings took place in connection with laying various communications on the territory of the bishop's castle of Kuessaare (Fig. 2). Archaeological monitoring was performed by archaeologist Tõnu Sepp, who recorded the north-eastern side of the first surrounding wall and various medieval and early-modern constructions (see Sepp 1996; 1997).

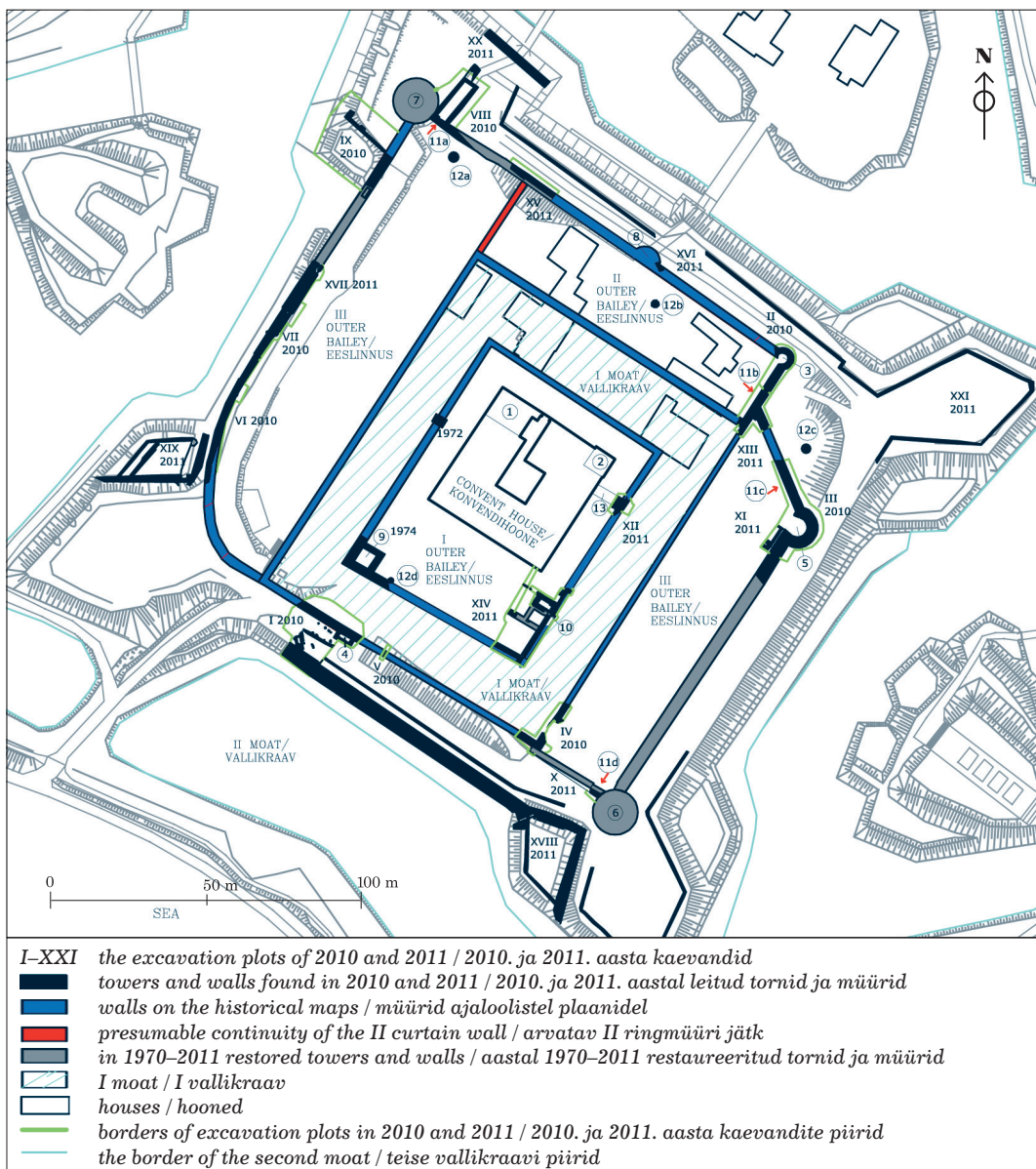


Fig. 1. Surrounding walls and different construction stages. Excavations of 2010 (I–IX) and excavations and monitoring areas of 2011 (X–XXI). 1 – tower Sturvolt, 2 – tower Tall Hermann, 3 – eastern tower, 4 – south-western tower, 5 – south-eastern tower, 6 – Gunpowder tower, 7 – Cannon tower, 8 – tower Kakelbroch, 9 – Wulff's tower, 10 – chute, 11 – gates, 12 – wells, 13 – bridge.

Jn 1. Ringmüürid ja erinevad ehitusetapid. 2010. aasta kaevandid (I–IX) ja 2011. aasta kaevandid ning arheoloogilise järelevalve piirkonnad (X–XXI). 1 – torn Sturvolt, 2 – torn Pikk Hermann, 3 – idatorn, 4 – edelatorn, 5 – kagutorn, 6 – Püssirohutorn, 7 – Suurtükitor, 8 – torn Kakelbroch, 9 – Wulffi torn, 10 – äravoolušaht, 11 – väravad, 12 – kaevud, 13 – sild.

Drawing / Joonis: Garel Püüa



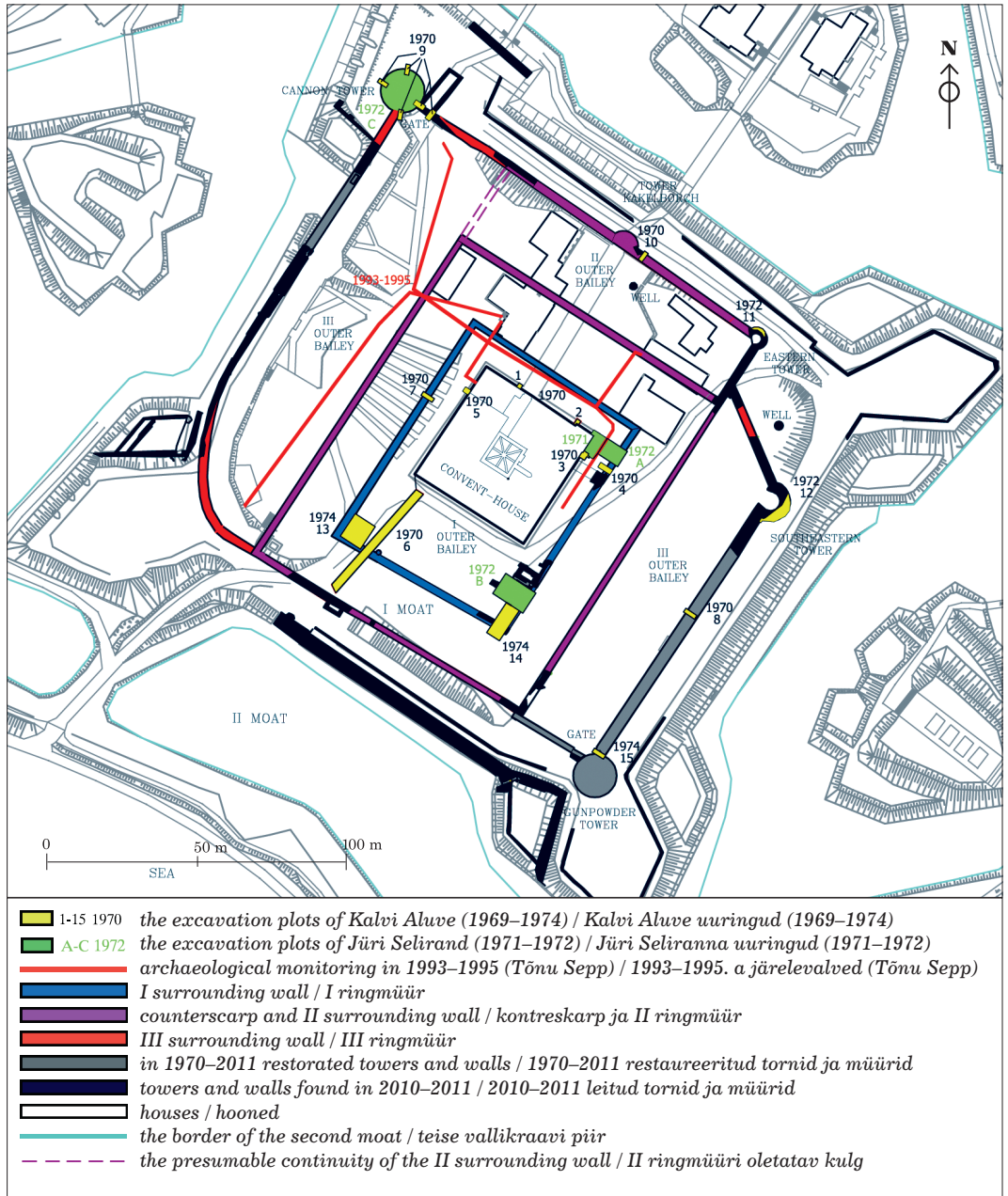


Fig. 2. Previous fieldwork. Excavations of the 1970s (1–15, A–C) and archaeological monitoring at digging trenches in 1993–1995.

Jn 2. Varasemad väliuuringud. 1970. aastate kaevandid (1–15, A–C) ja arheoloogiline järelevalve trasside rajamisel 1993–1995.

Drawing / Joonis: Garel Püüa

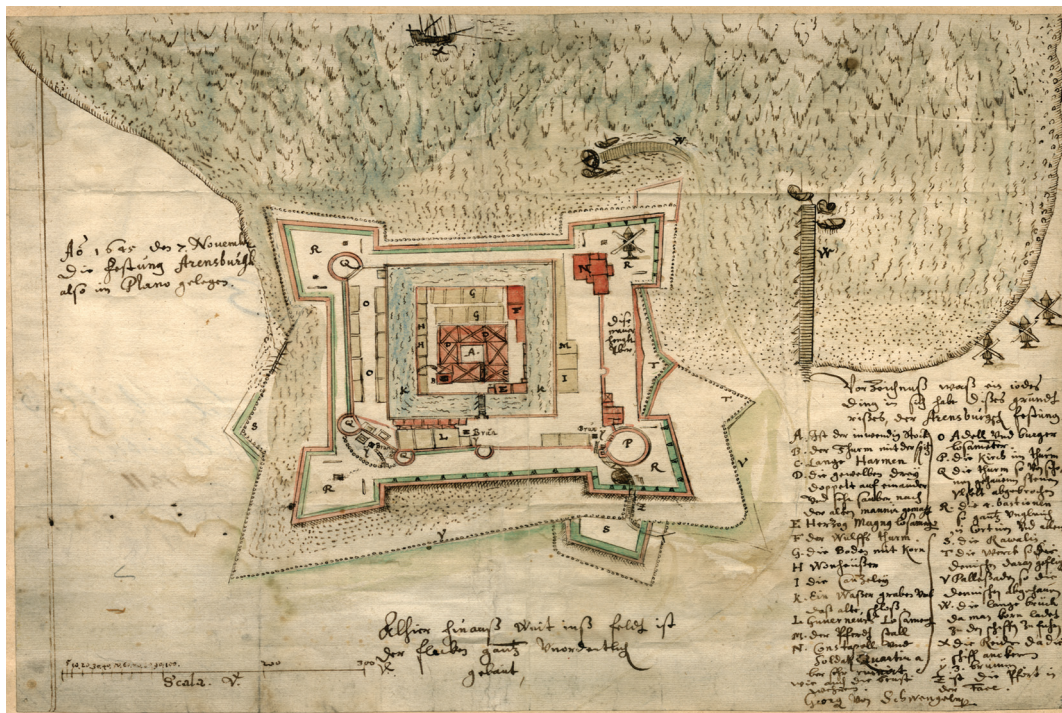


Fig. 3. Bishop's castle and fortifications of Kuressaare in 1645. The plan drawn by Georg Schwengeln is the earliest known drawing after the castle was taken over by the Swedes.

Jn 3. Kuressaare piiskopilinnus ja kindlustused 1645. aastal. Georg Schwengelni poolt koostatud plaan on teadaolevalt esimene joonis pärast Kuressaare linnuse ülevõtmist rootslaste poolt.

A. Ist der inwendig Stock – inner courtyard / lossi siseõu, B. De Thurm mit der Spitz – tower with a roof / katusega torn, C. Lange Harmen – Tall Hermann has been erroneously placed instead of Sturvolt / Pikk Hermann on ekslikult Sturvolti kohale paigutatud, D. Die gewelben drey doppelt auf einander und sehr sauber nach der alten mannir gemacht – old-fashioned three-storied vaulted building (convent house) / vanamoodne kolmekorruseline võlvitud hoone (konvendihoone), E. Hertsog Magnus Losament – living quarters of Duke Magnus / hertsog Magnuse eluruumid, F. Der Wolffs turm – Wolff's tower / Wolffi torn, G. Die Bodes mit Korn – granaries / viljasalved, H. Viehäuser – sheds / laudad, I. Die Canzeley – office / kantselei, K. Ein Wasser graben um das alte Schloss – ditch with water round the castle (first moat between two surrounding walls) / veekraav ümber lossi (esimene vallikraav kahe ringmüüri vahel), L. Guverneurs Losament – rooms for viceregent / asehalduri ruumid, M. Der Pferd stall – stable / hobusetall, N. Constapell und Soldat Quartir aber sehr ruinirt – lodgings of constable and mercenaries, dilapidated / konstaabli ja palgasõdurite korterid, väga amortiseerunud, O. Adell und Bürger Losamenter – living quarters for gentry and citizens / aadli ja kodanike eluruumid, P. Die Kirch in Thurm – church in an old artillery tower / kirik vanas suurtükitornis, Q. Die Thurm so und schonen gehauenn Stenen und solt abgebrochen – dilapidated tower, will be demolished / lagunev, lammutamisele määratud torn, R. Die 4 Bastionen so gantz ungleich 2 Cortin und allen – 4 very similar bastions and 2 curtains / 4 väga sarnast bastioni ja 2 kurtiini, S. Die Ravelin – ravelins / raveliinid, T. Die Werk so der denischen daran geffig – outer fortifications built by Danes / taanlaste ehitatud eelkindlustused, V. Pallessaaden – palisades / palissaadid, W. Die Lange Brücke da man Korn ladetr zu den Schiffen zu fuhr – long bridge for loading corn into ships / pikk sild vilja laevadele laadimiseks, X. Die Reide da die Schiff ancern – roads in Little Cauldron / reid Väikeses Katlas, Y. 3 Brunnen – 3 wells / 3 kaeru, Z. Ist die Pfort in der Taue – entrance hanging on ropes (drawbridge) in front of the castle gate / köitel rippuv pääsla (rippsild) linnusevärava ees.

(RKA 0406:28:002:002.)

### **CURRENT ARCHAEOLOGICAL FIELDWORK**

In two years (2010–2011) 14 larger and smaller excavations have been done on the territory of the bishop's castle. In the course of archaeological monitoring various structures have been documented in 7 areas, mainly in the area of the ring of bastions of the 17th–18th centuries (Fig. 1, excavations I–XXI) (Püüa 2011; 2012). About 2000 finds have been gathered from the excavations. In the course of the fieldwork three medieval towers<sup>1</sup> were brought to light from the ramparts of the ring of bastions of the 17th–18th centuries (excavations I–III). Although fieldwork will continue also in 2012 and the analysis of the material is not yet completed, it can be said that the concept of emergence and development of the castle of Kuressaare has considerably improved compared to the conclusions of Kalvi Aluve. During new excavations digging and recording methods based on Edward C. Harris's principles of stratigraphy (matrix etc.) have been applied. A total station was used for recording the key points of walls and excavation areas, as well as for levels which were manually put on a new survey plan in the AutoCAD program. Some of the walls, mainly the unearthed towers will be conserved and exposed, some walls which are preserved only underground will be marked on the courtyard surface.

The castle of Kuressaare is a water castle, which was erected right on the low coastal area. Natural ground on the sea side of the I outer bailey (Fig. 1, excavation XIV) is despite land uplift at most 140–150 cm above sea level even today. Therefore raising of the yard level has started right in the beginning of building activities. This process continued for centuries in connection with the expanding of the outer bailey.

### **I OUTER BAILEY – 13TH CENTURY CASTELLUM VERSUS DEFENCE WALL OF THE 14TH CENTURY**

Although several researchers have doubted the existence of a *castellum* with only a watchtower in Kuressaare in the 13th century (Alttoa & Dubovik 1995, 95), it has not been possible to verify it until now. In excavation XII of 2011 (Fig. 1, excavation XII) proof was found to the hypothesis that there had been a bridge from the south-eastern side of the convent building (beside Tall Hermann) extending to the first curtain wall at a distance of 10 m (Fig. 4). From the curtain wall it was possible in emergency to seek shelter in the main castle and probably block the doorway with the drawn bridge. It appeared that the support of the bridge salient from the inner side of the surrounding wall has been built at the same time with the wall – together with the supposed *castellum* of the 13th century. Obviously the builders of the supposed *castellum* could not have fixed the location of the bridge a hundred years earlier than the convent house was planned. Therefore it is more likely that the supposed *castellum* wall was only built at the same time with the main castle as a curtain wall of the original I outer bailey.

This opinion is also supported by the stratification, finds and various analyses of the excavation XIV dug in the southern corner of the I outer bailey (Fig. 1, excavation XIV). Excavation XIV was an extension to the excavation B of 1972 by Jüri Selirand (Fig. 2). It disclosed more extensively the formerly discovered building with two rooms, together with a dolomite gutter running through it, built secondarily

<sup>1</sup> Since the historical names of the towers are not known, we marked them, according to their location: south-western (plot I), eastern (plot II) and south-eastern tower (plot III). Two towers depicted on the 17th century plans were named eastern and south-eastern towers also in the writings of Kalvi Aluve.





Fig. 4. Support for drawbridge built in the first surrounding wall on the south-eastern side of the convent house (excavation III). Below left the tower of Tall Herman can be seen. Below in the middle the other support of the bridge, built together with the convent house, salient from its wall.

Jn 4. Esimese ringmüüri külge ehitatud tõstesilla alus konvendihoone kaguküljel (kaevand III). All vasakul on näha Pika Hermann'i torni. All foto keskel konvendihoonega koos ehitatud ja selle seinapinnast eenduv silla teine alustugi.

Photo / Foto: Garel Püüa

against the south-eastern side of the surrounding wall. The gutter probably took rainwater from the first outer bailey courtyard into the rectangular chute (80 × 145 cm) discovered in 2011 and built within the first curtain wall (Fig. 5). The bottom part of the chute was connected with the first moat by a short vaulted channel. Since the gutter had been built within the house, it is quite probable, that also a multi-seat lavatory had been positioned above it. The oldest finds recovered from the bottom of chute date from the second half of the 14th century and the beginning of the 15th century. While clearing the chute a supporting beam from the time of construction of the first curtain wall was discovered. The dendrochronological investigation performed at Tartu University established that the pine had been felled in 1352.<sup>2</sup> Therefore most likely the construction of the first curtain wall began simultaneously with the convent house, only after the St George's Night Uprising (1343), when the Livonian Order started to build the Maasilinn castle on eastern Saaremaa for the centre of the bailiwick.

<sup>2</sup> Determined by Alar Läänelaid (TÜ).





Fig. 5. Clearing of the medieval latrine chute (left) built inside the first surrounding wall (excavation XIV). On the right foundations of rooms of the first bailey and the dolomite gutter, which took sewage from the outer bailey through the latrine into the moat, can be seen.

Jn 5. *Esimise ringmüüri sisse ehitatud keskaegse reoveešahti (vasakul) tühjendamise (kaevand XIV). Paremal on näha I eeslinnuse ruumide vundamente ning dolomiitrenni, kust juhiti eeslinnuse hoovi sadevesi koos oletatava käimla reoveega šahti kaudu vallikraavi.*

Photo / Foto: Garel Püüa

### **A RARE DECORATED CROSSBOW BOLT**

A find deserving special attention came to light in the southern corner of the original (I) outer bailey (excavation XIV). It was a tanged crossbow bolt (Fig. 6), with a cross-shaped stamp impression on one side of its blade and a 2.8 cm long sleeve of ornamented bronze sheet surrounding its lower part. The stamp impression resembles a quadrangle, with ridges along the diagonals forming a cross. In Estonia no crossbow bolt with a stamp impression has been previously found, and they are relatively rare also elsewhere in Europe. The largest number of them is stored in the collection of medieval crossbow bolts in the town of Soest in Germany. There, among about 25 000 crossbow bolts nearly 100 stamped specimens can be found, marked with impressions of 13 different-shaped punches (pers. comm. Ain Mäesalu (TÜ)). Concerning decorations, the Kuressaare specimen could be compared, to some extent, with the so-called ornamented crossbow bolts, about 20 of which are known from various places and which are supposed to be manufactured in Bohemia. Their original meaning is indistinct,





Fig. 6. The decorated crossbow bolt-head found from the southern corner of the original outer bailey (excavation XIV).

Jn 6. Ristikujuulise templijäljendi ja pronksplekist ornameenteeritud hülsiga ammunooleots algse eeslinnuse lõunanurgast (kaevand XIV).

Photo / Foto: Garel Püüa



Fig. 7. Second surrounding wall, built on top of the counterscarp, together with the south-western tower annexed to it (excavation I). Left of the wall lies the I moat. In the background the Gunpowder Tower can be seen. View from north-west.

Jn 7. Kontreskarbile rajatud teine ringmüür koos sellele lisatud edelatorniga (kaevand I). Müürist vasakule jääb I vallikraav. Tagaplaanil on näha Püssirohutorni. Vaade loodest.

Photo / Foto: Garel Püüa



Fig. 8. The construction stage expanding the outer bailey towards north-east (town), starting from the eastern corner of the first moat (excavation XIII). In the 2nd half of the 15th c the surrounding wall was probably extended straight from the outer corner of the moat and the small eastern tower was built (under awning).

Jn 8. Esimese vallikraavi idanurgast lähtuv ehitusetapp eeslinnuse laiendamiseks kirda (linna) suunas (kaevand XIII). Vallikraavi välisnurgast liiguti arvatavalt 15. saj teisel poolel ringmüüri otsa edasi ning ehitati väike idatorn (varikatus all).

Photo / Foto: Garel Püüa

it has been supposed that they could have been insignia of the wardens of archers' guilds, or prizes of archers' contests. By shape and decoration the find from Kuressaare resembles most of all a specimen of this group located in Pécs, Hungary (Nickel 1968, 67, fig. 20). Provisionally, the crossbow bolt from Kuressaare can be dated to the second half of the 14th – first half of the 15th century (pers. comm. Ain Mäesalu (TÜ)). The interpretation of the find also supports idea about connections between Bohemia and Saaremaa (Raam 1978).

## **II CURTAIN WALL ON THE OUTER BANK OF THE FIRST MOAT**

Fieldwork of 2010–2011 has proved that the building of the big outer bailey with the new 625 m long curtain wall, supported with flanking towers did not take place in a single period, as has been supposed up to now. In summer 2010 a 2.4 m wide counterscarp construction of roughly hewn dolomite blocks (Fig. 1, excavations I, IV, V) was discovered at the south-western and south-eastern outer sides of the first moat, which had been finally filled up at the beginning of the 19th century. This counterscarp has been built higher later, while elevating the yard ground, and used as the second defence wall.

It differs from the curtain wall with round towers on the north-west, north-east and south-east sides of the castle. Since the south-western part of the curtain wall has never been archaeologically investigated and it has not preserved above the present-day ground level we had no information about it (except the historical plans and sections known from the mid-17th century). On the plans of the 17th and 18th centuries the convent house is surrounded by two curtain walls with the first moat between them (Fig. 3), i.e. the outer wall has served as the counterscarp. A little further a third curtain wall with flanking round towers stood, built probably in the second half of the 15th or the beginning of the 16th century. As far as we know the former researchers have paid no attention to the second curtain wall depicted on the plans. Only archaeologist Tõnu Sepp has ventured to regard the 1.8–2 m thick wall discovered in the course of archaeological monitoring at the outer bank of the first moat on the north-western and north-eastern sides of the convent house in 1993–1995 as a counterscarp (1997, 18–19).

On the seaward side of the second defence wall a small south-western tower was discovered (Fig. 1, excavation I). The existence of this tower was hitherto unknown. The measurements of the south-western tower discovered in the south-western early modern curtain rampart are approximately 2.7 (salience from the curtain wall) × 6 m. The thickness of the wall of the tower, built from dolomite blocks on the outside, is 99–107 cm and it rests upon the presumable foundation step of the curtain wall located on the south-western outer side of the first moat (Fig. 7). The tower is secondary to the curtain wall and there are no traces of loopholes in its preserved part. The overground part of the tower (with smoothly built walls), preserved to the height of 2.6 m in the south-eastern curtain, has a 160–180 cm high foundation beneath it (Fig. 8). The foundation built on two crossed beams and mainly on the soil, projects 12–22 cm from the walls of the tower on all sides. The dating of the south-western tower should be adjusted by the results of the analysis of the charcoal sample collected from the foundation. The potsherds found in the soil layer upon the mortar streak from the time of construction, observed at the step of the foundation of the tower, were dated to the 15th–16th centuries.





Fig. 9. View of the eastern tower cleared from the north-eastern curtain of the Kuressaare castle, and the surrounding wall demolished to the level of the courtyard ground (excavation II). On both sides of the perch loopholes can be seen, and above them a socket of a beam of an intermediate ceiling. View from south-west.

Jn 9. Vaade Kuressaare kindluse kirdekurtiunist välja puhastatud idatornile ja hoovipinnani lammutatud ringmüürile (kaevand II). Kahel pool möötelatti on näha laskeavasid ja nende kohal vahepõranda talapesa. Vaade edelast.

Photo / Foto: Garel Püüa

The tower was built before the deposition of these finds, but it is difficult to establish how much earlier.

In front of the south-western tower we came across a log palisade running through the whole excavation I in the north-west–south-east direction. To erect the palisade a ditch, 80 cm wide and 80–90 cm deep, had been dug in the soil. It had been filled up around the posts with granite and limestone. The diameter of the posts was 10–20 cm and they were placed at an average interval of *ca.* 20 cm. At about 50 cm from the castle side of the palisade a row of poles (diameter *ca.* 10 cm) was discovered. It is possible that these are remains of an additional (wooden?) barrier which had been between the relatively sparse posts and the row of poles, but no traces of it were discovered in the excavation. Deciding by the finds the palisade was not erected before the 15th century and it existed until the building of the south-western tower, since many post-holes were filled with stones and mortar from the period of the construction of the tower.





Fig. 10. View of the south-east tower with 3.4 m thick walls, preserved in the south-eastern curtain (excavation III) from the wall-walk of the convent house of Kuressaare. In the background the second moat and south-east ravelin.

Jn 10. Vaade Kuressaare konvendihoonde kaitsekäigult kagukurttiinis säilinud 3,4 m paksuste seintega kagutornile (kaevand III). Tagaplaanil teine vallikraav ja kaguraveliin.

Photo / Foto: Tõnu Sepp

The curtain wall II discovered in the excavation I has served first as a counterscarp and later as a defence wall reaching above the bank, which is a unique solution among Estonian defence constructions. Against its outer side even a defence tower has been built, which definitely belongs to the period before raising the 17th century curtain rampart, i.e. to the Middle Ages. It is incomprehensible how it was possible to tend and supply such curtain wall and tower when the moat filled with water expanded to the wall from inside. Anyway, such solution could not endure the pressure of the soil of the early modern curtain rampart mounted against the outer side of the II curtain wall in the post-medieval period and a long section of it on the south-western side has fallen into the first moat, apparently in the mid-17th century. Its remains have been later buried in the early modern curtain rampart.

The excavation IV of 2010 (Fig. 1, excavation IV) disclosed the southern corner of the II defence wall, where the walls formed virtually a right angle. The 2.4 m high dolomite counterscarp discovered in the southern corner of the first moat was pre-



Fig. 11. The three preserved gun ports of the ground floor of the south-east tower were of the key-hole shape, with diameters of 26–31 cm.

Jn 11. *Kagutorni kolm esimese korruse säilinud laskeava olid nn lukuaugukujuliste otstega ja 26–31 cm läbimõõduga.*

Photo / Foto: Garel Püüa

served at a height of 1.3 m above sea level, which evidently marks the altitude of onetime ground level. In the ground water running into the excavation the counterscarp could be observed to the depth of 1.8 m (absolute altitude -0.78 m a.s.l.). In later times a new defence wall had been built upon it, which was 1.4 m thick on the south-eastern side of the moat and 2 m thick on the south-western side of the moat. A new south-east-directed section of the curtain wall (III curtain wall) with the southern, or Gunpowder Tower (Fig. 1, excavation IV, X), had been annexed to the southern corner of the II curtain wall later, in the course of the expanding of the outer bailey.

## **II OUTER BAILEY – SECOND CURTAIN WALL WITH DEFENCE TOWERS**

In excavation XIII dug in 2011 in the eastern outer corner of the first moat (Fig. 1: 9, excavation XIII) it appeared that simultaneously with building the counterscarp higher and elevating the yard ground the outer bailey has been expanded towards north-east, i.e. towards the present town of Kuressaare along the line of the south-

eastern side of the II curtain wall. In the eastern corner of the new (II) outer bailey a defence tower had been built, which has also been marked on the plans/maps of the 17th–18th centuries (Fig. 3).

The ground plan of the corner tower, disclosed from the embankment of the north-eastern early modern curtain rampart resembles a three-fourth of a circle the outer perimeter of which has been formed by a circle with a diameter of 6.8 m (Figs 1, 9). The inner perimeter of the tower has been determined by a circle with a diameter of 3.7 m, shifted inwards from the centre of the outer perimeter by 25 cm. The thickness of the wall of the eastern tower is 168–181 cm and most likely it has been a two-storied (both defence floors) flanking tower, open on the castle side. Lime mortar has been used at the building, and rows of granite stones of irregular shape alternate with levelling layers of limestone. The tower has been built integral with the II curtain wall.

The eastern tower has been founded upon limestone rubble at an absolute altitude of about 0.5 m and it is preserved to the height of about 9 m. In the north-western side of the tower a narrow vertical loophole is preserved of the mostly collapsed upper floor. Its mouth, with the original width of about 17 cm, has been widened later by chopping

off the sides of the aperture (width 45 cm). Apparently the tower has had three loopholes on the upper floor, likewise on the lower, well preserved defence floor. On the lower floor two similar loopholes were cleared. These were roughly plastered on the inside, like the whole tower inside and outside. The loopholes have been finished with a lintel and flanks of dolomite. The ends of each loophole (20 × 80 cm) have been walled up later. Of the third, south-eastern loophole of the lower floor only one side was preserved. Since a beam, meant to support a gun had been walled into a side of one of the loopholes already during the construction of the tower, it seems that the tower was built during the period of transition to firearms.

The preserved floor of the ground floor is paved with limestone slabs of irregular size and it was about 2.5 m below the wooden intermediate ceiling. Here we cannot confirm the opinion of Kalvi Aluve (1980, 36) that the tower originally had a roof platform, because the board traces cleared from the wall mortar, located closely side by side, do not give an unequivocal impression of a watertight floor construction.

Finds dating from the 15th century and the beginning of the 16th century were recovered from the presumable occupation layer of the lower floor of the eastern tower. Besides pottery the finds included two silver coins: a *pfennig* of the Bishop of Tartu Bartholomäus Sawijerwe (1441–1459), and a *pfennig* of Tallinn (Livonian Order, 1471–1483).<sup>3</sup> On the basis of preliminary study of find material and their context, it can be said that dating the eastern tower to the 1430s, as supposed by Aluve cannot be excluded, but the middle or 3rd quarter of the 15th century is probably more substantiated.

On the north-eastern side of the II outer bailey, approximately 45 m towards north-west of the eastern tower, another defence tower has been located (*Kakelborch* on the plan of 1641) (Fig. 3). Of this medieval tower, demolished by the Swedes in 1676 while building the new (today's) main entrance, only the join of the tower and the surrounding wall is preserved in the north-eastern curtain (Fig. 1, excavation XVI). One would assume that a third defence tower was built in the presumable northern corner of the II outer bailey, but in excavation XV of 2011 (Fig. 1, excavation XV) no traces of it could be discovered.

### **III OUTER BAILEY – THIRD CURTAIN WALL WITH ARTILLERY TOWERS**

The first expanding of the outer bailey towards north-east (II outer bailey) took place, on the basis of finds, in the second half of the 15th century. Only after that, most likely in the first half of the 16th century new sections of curtain wall (III) were built around the south-eastern and apparently also the north-western sides (III outer bailey), where fieldwork will begin in 2012.

With the building of the III curtain wall, the strong artillery towers were built at the south-eastern, north and south corners. Two gates were built, guarded by the Cannon Tower (north corner) and the Gunpowder Tower (south corner) (Fig. 1, excavations IV, X). Two gates were also located in the sections of the curtain walls between the eastern and south-eastern towers (Fig. 1).

The north-eastern side of the II curtain wall together with the eastern tower, as well as the seaward side, persisted on their former place during the period of the III curtain wall. Although the fieldwork continues we may assume even now, relying upon the historical plans and information obtained from the excavations, that the convent

<sup>3</sup> All coins found during the excavations were identified by Mauri Kiudsoo (AI).



house was surrounded by three walls during the end of the Middle Ages, whereas while building the III curtain wall sections of the II wall were also preserved and partly exploited. The lower part of the II curtain wall persisted till the modern times probably at its whole perimeter as the supporting wall of the outer bank of the inner moat. At the present stage of the investigations nothing definite can be said about absolute dating of the II curtain wall, and the results of the analyses of the collected timber and charcoal samples have not arrived yet from the laboratory.

The Cannon Tower at the northern corner and the Gunpowder Tower at the southern corner of the third curtain wall have been restored now, but the south-eastern tower was only briefly investigated in 1972 (Fig. 2). This tower, disclosed from the south-eastern early modern curtain rampart in the course of current investigations and conservation, has also a ground plan of nearly three-quarters of a circle, with the outer side shaped by a circle with a diameter of 13 m (Figs 1, 10). The inner perimeter of the tower has been determined by a circle with a diameter of 6.3 m, shifted inwards from the centre of the outer perimeter by 10 cm. The south-eastern tower was evidently a flanking tower with two defence storeys, open on the castle side. The thickness of its wall was 337–350 cm and it was built mainly from granite stones of varying size. In levelling layers smaller granite stones as well as limestone pieces have been used.

The outer surface of the tower had survived in the south-eastern early modern curtain rampart immediately beneath the sod layer (absolute altitude 8.6 m), but the upper 110–130 cm high part of the inner surface (above the line of large granite stones) have been evidently repaired later with abundant lime mortar and stone rubble (Fig. 10). The interior of the tower has been sooted and stones damaged by fire. In the upper part of the south-eastern tower no traces of loopholes, intermediate ceiling or its supporting constructions could be discovered.

On the ground floor of the south-eastern tower three vertical narrow loopholes can be observed, with varying width (115–196 cm). All loopholes (height 180–207 cm) are topped with an arch and plastered on the inside, like the whole tower. The mouths of the loopholes have been finished with hewn limestone slabs in the shape of keyholes (diameter 26–31 cm, Fig. 11). In the lower part of each loophole a horizontal beam has been walled as a support for a harquebuse, and the sides have been finished with large and quite neatly hewn dolomite blocks.

The south-eastern tower is burnt inside, and the southern loophole is also damaged, probably by some explosion that took place there. Both sides of the loophole have collapsed. On the bottom of the same loophole a Tallinn *schilling* minted in 1470s was found. A *pfennig* of the Bishop of Tartu Johannes II Bertkow (1473–1485), approximately from the same period was found from under the collapse debris of the tower.

The explosion and the burning of the south-eastern tower could be connected with the events of the Kalmar war that broke out between Denmark and Sweden in 1611 – the Swedish troops looted on Saaremaa for four months, besieged the Kuressaare castle and burnt down the suburb (Arens 1997). It is possible that the tower remained in ruins for some time, but already after the inspection that took place at the end of 1612, the reparation and lathing of the Piper tower<sup>4</sup> and other towers has been mentioned (Aluve 1982).

<sup>4</sup> Piper tower is the presumable historical name of the south-eastern tower.



The bottom of the south-eastern tower was filled with an almost 2 m thick rubble layer. It consisted mainly of large granite stones and was probably formed when the damaged first floor of the tower was partly demolished. While clearing the foundation of the tower a *schilling* of the Swedish queen Kristina was found in the wreckage layer, minted in the state mint of Riga in 1651, which could mark the rebuilding started in the south-eastern tower, and the building of a new floor of limestone slabs (at the level of the bottom of the loopholes). An *öre* of Karl XI minted in Stockholm in 1671 and a *schilling* of Karl X Gustav (1654–1660) were also found in the rubble layer. No traces of the original floor of the tower were discovered, but the floor level could be surmised at the transition of the even masonry of the walls to the irregular salient edge of the foundation at the absolute altitude of 2.9 m.

Although it cannot be excluded that the south-eastern tower with the outer wall of the III outer bailey has been erected already in the 15th century as supposed by Aluve, it has not been confirmed by the find material got from the tower and the earliest occupation layer next to the tower. The only finds from the 15th century are the two coins (1470s–1480s), mentioned above, but the rest of the material can probably be connected with the beginning of the 16th century at earliest. Relying upon historical plans and finds the south-eastern and eastern towers were open and evidently used for some purpose until the beginning of the 19th century, when they were finally buried in rampart fortifications.

### **SUMMARY**

Although fieldwork will continue also in 2012 and the analysis of the material is not completed yet, it can be said that the concept of the emergence and development of the castle of Kuressaare has considerably improved compared to the conclusions of the main previous researcher Kalvi Aluve.

Although several researchers have doubted the existence of a *castellum* with only a watchtower in the 13th century, it has not been possible to verify it until now. Recent excavations have found proof to the hypothesis that there had been a bridge connecting the 3rd floor of the south-eastern range of the convent building (beside Tall Hermann) and the wall-walk of first curtain wall, enabling direct communication in case the first ward was lost to the enemy forces. The support of the bridge, salient from the inner side of the curtain wall, has been built together with the curtain wall. Accordingly, the first curtain wall was rather built at the same period with the main castle and was meant to defend the original (I) outer bailey. It is most likely that the construction of the first curtain wall, together with the convent house began only after the St George's Night Uprising in the mid-14th century.

Present fieldwork also proved that the expanding of the larger outer bailey and the construction of the new curtain wall with flanking towers did not take place in a single period as has been supposed up to now. The first expanding of the outer bailey (II) took place, on the basis of finds, probably in the middle of the 15th century or in the second half of the 15th century. Only after that, in the late 15th century or possibly only in the first half of the 16th century the outer bailey (III) was expanded on two sides – north-west and south-east. Together with a new curtain wall a mighty south-east tower (diameter 13 m and thickness of the wall 3.5 m), southern tower, which

today is called the Gunpowder Tower (diameter 14.5 m, thickness of the wall at least 3 m), and northern, or the Cannon Tower were built. In the southern and northern corners of the outer bailey (III), guarded by the towers, gates were built. Two gates were also located in the sections of the curtain walls between the eastern and south-eastern towers.

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## REFERENCES

- Aluve, K. 1975.** Aruanne Kuressaare linnuse ja vallide arhitektuuri-ajaloolistest uurimistest 1969–1974. a. Tallinn. (*Manuscript in MA.*)
- Aluve, K. 1980.** Kuressaare linnus. Arhitektuuri-ajalooline uurimus. Tallinn.
- Aluve, K. 1982.** Arhivaale Kuressaare linnuse kohta aastaist 1573–1612. – Ehitus ja Arhitektuur nr. 2. Tallinn, 19–23.
- Altoa, K. 2007.** Saaremaa keskaegsed linnused. – Saaremaa 2. Ajalugu. Majandus. Kultuur. Ed. by Kärt Jänes-Kapp, Enn Randma, Malle Soosaar. Tallinn, 821–826.
- Altoa, K. & Dubovik, B. 1995.** Veel kord Kuressaare linnusest. – *Ars Estoniae medii aevi grates Villem Raam viro doctissimo et expertissimo*. Ed. by Kaur Altoa. Rapla, 87–100.
- Arens, I. 1997.** Kalmari sõda Eestis 1611–1613. – Saaremaa Muuseum. Kaheaastaraamat 1995–1996. Kuressaare, 4–17.
- Nickel, H. 1968.** Ceremonial Arrowheads from Bohemia. – *Metropolitan Museum Journal*, Vol. 1. 61–93.
- Püüa, G. 2011.** Arheoloogilised uuringud ja järelevalve Kuressaare kindluse territooriumil 2010. aastal. Kuressaare. (*Manuscript in MA.*)
- Püüa, G. 2012.** Arheoloogilised uuringud ja järelevalve Kuressaare kindluse territooriumil 2011. aastal. Kuressaare. (*Manuscript in MA.*)
- Raam, V. 1978.** Valjala kiriku koorilõpmiku ajalisest määrangust ja Kuressaare piiskoplinnuse meisterkonnast. – *Töid kunstiteaduse ja -kriitika alalt*, 2. Tallinn, 233–263.
- RKA 0406:28:002:002.** Ao 1645 den 7 Nouembre die festung Arensburg also in Plano gelegen. 1645. (*Map in RKA.*)
- Selirand, J. 1972.** Aruanne arheoloogilistest väljakaevamistest Kuressaare piiskoplinnuses 1971. aastal. Tallinn. (*Manuscript in AI.*)
- Selirand, J. 1973.** Aruanne arheoloogilistest väljakaevamistest Kuressaare piiskoplinnuses 1972. aastal. Tallinn. (*Manuscript in AI.*)
- Sepp, T. 1996.** Kuressaare lossi trasside arheoloogiline järelevalve 1993. a. – 1995. a. Kuressaare. (*Manuscript in MA.*)
- Sepp, T. 1997.** Uusi andmeid Kuressaare linnuse vanemast ehitusloost. – Saaremaa Muuseum. Kaheaastaraamat 1995–1996. Kuressaare, 18–26.
- Seuberlich, H. 1905.** Das bischöfliche Schloss zu Arensburg. – *Sitzungsberichte der Gesellschaft für Geschichte und Altertumskunde der Ostseeprovinzen Russlands*. Riga, 9–16.
- Seuberlich, H. 1907.** Das Schloss zu Arensburg. *Jahrbuch für bildende Kunst in der Ostseeprovinzen*, I. Riga, 85–92.
- Tuulse, A. 1942.** Die Burgen in Estland und Lettland. *Õpetatud Eesti Seltsi Toimetused*, XXXIII. Dorpat, 211–221.
- Vaga, V. 1957.** Kuressaare linnus. Tallinn.

## ARHEOLOOGILISED UURINGUD JA JÄRELEVALVE KURESSAARE KINDLUSE TERRITOORIUMIL

Garel Püüa, Villu Kadakas, Guido Toos ja Ragnar Nurk

2010. a kevadel alustas OÜ Agu EMS konserveerimis-restaureerimistöde (2010–2015) raames arheoloogiliste uuringutega Kuressaare kindluse territooriumil. Jätkuvate välitööde eesmärk on hankida arheoloogiliste meetoditega teaduslikku informatsiooni Kuressaare linnuse rajamise aja, ehitusliku kujunemise, kultuurkihi, hoovisillutiste jms kohta ning viia eri aegadel leitud ehituskonstruksioonid kokku ühtsele digitaalsele alusplaanile. Kaevamistel kogutud uue informatsiooni ning leidude baasil on plaanis koostada linnuse ajalugu käsitlev püsinäituse osa. Kahe aastaga (2010–2011) on linnuse territooriumile rajatud 14 kaevandit ning järelevalve korras fikseeritud erinevaid ehituskonstruksioone 7 piirkonnas (jn 1). Kaevamiste käigus on kogutud ligikaudu 2000 esemeleidu.

Kuressaare linnuse näol on tegu omapärase vesilinnusega, mis ehitati otse madalale rannaalale. Looduslik maapind eeslinnuse merepoolisel küljel (jn 1, kaevand XIV) ulatub maksimaalselt 140–150 cm üle merepinna, mistõttu on maakerget arvestades selge, et hoovipinda on kohe tõstma hakatud. See protsess on seoses eeslinnuse laiendamisega kestnud sajandeid. Kuigi mitmed uurijad peavad 13. saj vahitorniga kastell-linnuse olemasolu küsitavaks, puudusid selle kontrollimiseks tänaseni võimalused. 2011. a kaevandis XII (jn 1: 4) leidis kinnitust hüpoteesi, et konvendihoone kaguküljelt (Pika Hermann kõrvalt) viis tõstesild esimesele ringmüürile, kust oli võimalik hädaolukorras pealinnusesse varjuda. Selgus, et ringmüüri sisepinnast eenduv silla alustugi on laotud koos nn 13. saj kastelliga. Ilmselt ei saanud oletatava 13. saj kastelli ehitajad paika panna 14. saj konvendihoone tõstesilla asukohta, kui konvendihoone rajamist veel plaaniski ei olnud. Järelikult on esimene ringmüür pigem ehitatud koos pealinnusega ning mõeldud algse I eeslinnuse kaitseks ning 13. saj kastelli pole olnudki. Seda arvamust kinnitab ka eeslinnuse lõunanurka rajatud kaevandi XIV stratigraafia, leiumaterjal ja loodusteaduslikud analüüsid, sh ringmüüri rajamise aegne tugipalk (puu langetamine on dendrokronoloogiliselt dateeritud 1352. a). Tõenäoliselt algaski nii konvendihoone kui ka ringmüüri ehitus alles pärast Jüriöö ülestõusu.

Huvitava esemeleiuna väärib eraldi mainimist eeslinnuse lõunanurgast (kaevand V) leitud rootsuga ammu-nooleots (jn 6). Nooleotsa leheosa ühele küljele on lõdud ristikujuline templijäljend ning tema alaosa ümbritseb 2,8 cm pikkune pronksplekist ornamenteeritud hülss. Eestist pole varem ühtegi templijäljendiga ammu-nooleotsa leitud ja mujalgi Euroopas on need suhteliselt haruldased. Kaunistuste osas võib Kuressaare ammu-nooleotsa võrrelda nn ornamenteeritud ammu-nooleotstega, milleid on maailmas teada u 20 eksemplari. Oma põhikujult ja kaunistustelt sarnaneb nooleots eelkõige Böömimaal tehtud ammu-nooleotstega ning on valmistatud arvatavalt 14. saj teisel poolel või 15. saj alguses. Teadaolevalt ainus sarnase kaheksatahulise kaelaosa ja kaunistustega ammu-nooleots asub Ungaris Pécs'i linnas. Vaadeldav leid viitab Böömimaa ja Saaremaa omaaegsetele sidemetele, millele on konvendihoone ehitusloo osas varem tähelepanu juhtinud Villem Raam.

2010.–2011. a arheoloogilised välitööd näitasid (jn 1, kaevandid I, IV, V, XIII), et eeslinnuse laiendamise ja uue flankeerivate tornidega ringmüüri rajamine ei toimunud ühekorraga, nagu siiani arvati. 19. saj alguses kinni aetud esimese vallikraavi edela- ja kagupoolselt välisküljelt leiti 2,4 m laiune dolomiitplokkidest laotud kontreskarp, mida on hiljem seoses maapinna tõstmisega kõrgemaks ehitatud ning teise kaitsemüürina kasutatud. Esimese ja teise ringmüüri vahel loksus ligi 20 m laiune vallikraav. Uue kaitsemüüri merepoolsele küljelt avastati väike edelatorn (jn 1, kaevand I), mille kohta seni andmed puudusid. Edela-kurtiini muldest leitud ristkülikukujulise põhiplaaniga edelatorni gabariitideks on ligikaudu 2,7 (eenduvus ringmüürist) × 6 m. Dolomiitplokkidest laotud välispinnaga torni sein paksuseks on 99–107 cm ning ta toetub esimese vallikraavi edela poolsele välimisele küljel asuva ringmüüri arvatavale vundamendiastmele (jn 7). Torn on ringmüüri suhtes sekundaarne ja tema säilinud osas laskeavadest märke pole. Tänapäevani ligi 2,6 m kõrgusel edelakurtiinis säilinud torni maapealsel (siledalt laotud müüripinnaga) osal on all 160–180 cm kõrgune vundament (jn 8). Edelatorni peaks täpsemalt dateerida aitama vundamendist kogutud söeproov, kuid leiumaterjali järgi on tegu 15.–16. saj kaitseehitistega.

Kaevandiga IV (jn 1) avati II kaitsemüüri lõunanurk. Esimese vallikraavi lõunanurgast leitud 2,4 m laiune dolomiitplokkidest kontreskarp oli säilinud kuni 1,3 m üle merepinna, mis markeerib ilmselt kunagise maapinna kõrgust. Kontreskarp oli kaevandisse tunginud pinnavees jälgitav kuni 1,8 m sügavuseni (absoluutkõrgus -0,78 m). Hiljem oli talle peale ehitatud uus kaitsemüür, mille laiuseks vallikraavi kaguküljel 1,4 m ja edelaküljel 2 m. II ringmüüri lõunanurgaga oli järgmise ehitusetapi käigus liidetud uus kagusaunaline ringmüüriolük (III ringmüür) koos lõuna- ehk Püssirohtorniga (jn 1).

Esimese vallikraavi idapoolsesse välisnurka rajatud kaevandis XIII (jn 1: 8) selgus, et üheaegselt kontreskarbi kõrgendamise ja eeslinnust II ringmüüri kagukülje joonelt kirdesse ehk Kuressaare linna suunas laiendatud. Uue (II) eeslinnuse idanurka oli rajatud kaitsetorn, mida on kujutatud ka 17.–18. saj plaanidel (jn 3). Kirdekurtiini muldest välja puhastatud idatorn on kolmveerandringi kujulise põhiplaaniga nurgatorn (jn 1: 9), mille läbimõõduks on 6,8 m. Idatorni sisemine läbimõõt on 3,7 m ja sein paksuseks 168–181 cm. Tõenäoliselt oli tegu kahekorruselise (mõlemad kaitsekorrused), flankeeriva, linnuse poolt avatud torniga, mis on ehitatud koos II ringmüüri.

Idatorn on vundeeritud paerähale absoluutkõrgusel ligikaudu 0,5 m ning säilinud ligi 9 m kõrgusena. Torni loodeküljel on säilinud teise korruse kitsa vertikaalse suudmega laskeava, mille suuet (algne laius ligikaudu 17 cm) on hiljem ava servade maharaiumise teel laiendatud (laius 45 cm). Ilmselt oli tornil ülimalisel korrusel kokku kolm laskeava nagu ka alumisel kaitsekorrusel. Esimesel korrusel tuvastati kaks sarnast laskeava, mis on kaetud dolomiitsillustega. Mõlema laskeava otsad (mõõtmed 20 × 80 cm) on hiljem kinni müüritud. Kolmandast, kagupoolsest, alumise korruse laskeavast oli säilinud vaid üks külg. Kuna ühe laskeava külge oli juba torni ehitamise ajal müüritud relva toetamiseks mõeldud pruss, tundub, et torni rajamine toimus juba üleminekul tulirelvadele kasutamisele.

Esimene eeslinnuse laiendamine kirde suunas (II eeslinnus) toimus leidude põhjal 15. saj keskpaigas või teisel poolel. Alles seejärel, tõenäoliselt 15. saj viimasel veerandil või 16. saj esimesel poolel, on uue ringmüüri (III) ümbritsetud linnuse kagu- ning ilmselt ka loodekyl (III eeslinnus). Eeslinnuse viimase laiendamise käigus ehitati selle kagu-, lõuna- ja põhjanurkadesse võimsad suurtükitorid ning Suurtükitorni (põhjanurgas) ja Püssirohutorni (lõunanurgas) kaitsva külje alla rajati kaks värvat (jn 1, kaevandid X, VIII).

Kolmanda ringmüüri põhjanurgas asuv Suurtükitorin ning lõunanurgas asuv Püssirohutorn on tänaseks restaureeritud, kuid kagutorni uuriti vähesel määral vaid 1972. a (jn 2). Käimasolevate uuringute ja konserveerimistöde käigus kagukurtiini välja puhastatud kagutorn on samuti kolmveerandringile läheneva põhiplaaniga nurgatorn, mille väliseks diameetriks on 13 m ning sisemiseks diameetriks 6,3 m (jn 1: 11). Kagutorni näol on ilmselt tegu kahe kaitsekorrusega, flankeeriva, linnuse poolt avatud torniga. Sein paksuseks on 337–350 cm. Torni välispind oli kagukurtiinis säilinud praktiliselt otse mättakihi all (absoluutkõrgus 8,6 m), kuid sisepinna ülaosa viimased 110–130 cm on ilmselt hiljem rohke lubimõrdi ja kiviklibuga parandatud (jn 9). Torni sisemus oli põlengust tahmunud ning kivid tules kannatada saanud. Kagutorni ülaosas ei ilmnenud puhastamisel mingeid märke laskeavadest, vahepõrandast või selle tugikonstruktsioonidest. Kagutorni esimesel korrusel asub kolm kitsa vertikaalse suudmega, kuid erineva laiusega (115–196 cm) laskeava. Kõik laskeavad (kõrgus 180–207 cm) on kaetud kaarsillusega ning seest krohvitud. Laskeavade suudmed on vormistatud tahutud dolomiitplaatidest nn lukuaukukujuliste avadena, mille läbimõõduks 26–31 cm (jn 11). Laskeavade külgeintesse on juba torni ehitamisel müüritud tulirelva toetamiseks mõeldud põikpalgid. Ühe laskeava põhjast leiti 1470. aastatel vermitud Tallinna killing, mis võiks viidata torni valmimisajale. Torni vundamendilt leiti puhastamisel ka Tartu piiskopi Johannes II Bertkow (1473–1485) penn, mis kuulub samasse perioodi. Kagutorni põlemist võiks seostada 1611. a Taani ja Rootsi vahel puhkenud Kalmari sõja sündmustega Saaremaal, mil Rootsi väed neli kuud saart rüüstasid, Kuressaare linnust piirasid ja eeslinna maha põletasid. Ajaloolistele plaanidele ja leiumaterjalile tuginedes olid kagu- ja idatorn avatud ning ilmselt mingil otstarbel kasutuses kuni 19. saj alguseni, mil nad lõplikult muldkindlustustesse maeti.