

18 Phase 6 Eastern gate building and Post medieval fortification 1600–1650 AD

18.1 Results

The types of features excavated dated to the Post medieval fortification include the new eastern gate building with associated roads and a larger part of the surrounding fortification (Tab. 41). Overall the phase mostly consists of large scale structures associated with defence and communication. The eastern gate and defence related features (bastion, curtain, moat, bridge, dam with a barrier tower and part of an interpreted sluice) were established at about the same time, as they would have functioned in tandem (Fig. 195). Since the new gate building was established in the same place as its predecessor using the same type of building material (stones/boulders) – it has been difficult and sometimes impossible to separate later additions from the 16th century building, due to lack of datable finds (mainly ceramics dated 1550–1650 AD) and applicable material for dendrochronological analysis.

The wooden poles in structure G-279 constitute a border between the foundations in the 17th century gate building and demolition material backfilled in the Late medieval moat in the context of the destruction of the same building in the mid 1600s. The overlap that clearly occurs between the construction phase of Østerport and the later deconstruction of the building on Figure 195 and 197 is due to the fact that the stones were measured as part of the same structure on site. The actual separation and grouping of the stones was made in conjunction with the report compilation creating a dividing line that approximately followed the edge of the Late medieval moat.

The large number of robber pits, etc. are incorporated in this time Phase 6 as part of the deconstruction of Østervold, the gate building and other stone structures in the mid 1650s. These activities will not be discussed further in this chapter, but it is obvious that the aim had been to reuse different types of building material for other purposes around the city (for more specific information see Appendix 9).

Group	Type of feature	Subarea	Basic interpretation
196879	Construction cut, stones and deposits	Phase 5A-1, 45A and 45B	Eastern gate building – 17 th century expansion
279	Posts	Phase 5A-1 and 45A	Bulwark
500914	Timbers	Station Box	Bulwark?
277	Barrel	Phase 45A	Barrel
500998	Imprint	Phase 45A	Barrel imprint
500960	Concentration of charcoal	Phase 45A	Fireplace?
3153	Pits	Phase 5A-1 and 45A	Pits and imprints inside the gate building
4091	Pits	Phase 5A-1, 5B-1, 45A and 45B	Robber pits
810	Cuts, fills and timbers	Station Box	Robber pit
837	Deposits	Station Box	Road surfaces
832	Deposits	Station Box	Road surfaces
835	Deposits	Station Box	Levelling layers
5030	Construction cut, stones and deposits	Station Box and Trench ZT162383	Bastion
503797	Construction cut, stones and deposits	Station Box	Curtain
503807	Timber	Station Box	Bulwark
503427	Construction cut, stones, timbers and deposits	Station Box	Different types of features
503802	Stone	Station Box	A single stone
4998	Construction cuts and deposits	Station Box and Trench	Moat

		ZT1196	
500892	Construction cut, stones, bricks and deposits	Station Box	Bridge
502973	Construction cut, foundation stones and deposits	Phase 5A-1, 45B and Station Box	Dam in the 16 th century moat
502974	Post and postholes	Phase 5A-1	Scaffolding
502975	Construction cut, foundation stones and deposits	Station Box	Barrier tower on the dam structure
446	Timbers	Phase 5B-1 and 5B-2	Temporary bridge
240090	Timbers and stones	Station Box	Revetment
6571	Cuts and fills	Station Box	Revetment
504241	Stones	Bitrappel	Revetment?
504240	Boulders	Ventilation Shaft	Demolition material from the outer gate building?
503381	Timbers	Station Box	Sluice
500891	Cuts, fills and timber	Station Box	Bulwark
500890	Cut and fill	Station Box	Pit

Tab. 41. Groups belonging to the new gate building and 17th century fortification at Kongens Nytorv.

18.1.1 Østerport – additions, activities and deconstruction

In connection with the new fortification in the early 17th century Østerport was renovated and expanded further to the east. The foundation for the new gate building included large parts of the Late medieval moat which was filled with boulders and stones to stabilize the subsurface east of the new building (Fig. 195).



Fig. 195. The new gate building with revetments, road surfaces and bulwark. The expansion and reinforcement of the gate eastwards includes parts of the Late medieval moat and runs on an estimated north-south line about 2 metres east of the well. The void among the foundation stones is caused by modern shoring on the building site.

The outline of the new building was orientated in a NE-SW linear cut, with moderate/straight sides and an irregular base. The length was approximately 11.0 m, width varied from 1.1 m to 2.9 m and the depth was around 1.0 m. The construction cut was not recorded in its full extent and the base was not exposed to the north (outside the excavation area). The upper part of the construction cut was documented while foundation SS22155 was still in place.

Part of the new foundation covering approximately 63 m² consisted of a dry stone structure of light and mid grey unfinished stones and boulders of different size together with fill and bonding material consisting of smaller stones, light whitish and yellowish grey/brown mortar and silty sand and clay (approximately 40% of the context). Further down the fill became more brown and organic with some inclusions of red brick fragments and charcoal (Fig. 196 and 197).



Fig. 196. New additions to the eastern gate building. Boulders and stones (SS103531) in the background and east of the well in the middle, facing NE. Photo: Museum of Copenhagen.

The stones and boulders consisted mainly of granite, flint nodules and limestones. The limestones were mainly found in the area close to stone structure (SS104314). Some of the stones had traces of mortar, representing reused material. The fill between the stones consisted of different types of CBM and rubble. Context (SS85806) was a mix of limestone blocks and red bricks situated on top of a stone boulder construction running at approximately 90 degrees to the city wall. Partial and full red bricks were included in this deposit along with worked and unworked limestones. Many of the bricks and stones were laid deliberately flat, probably to achieve a more stable structure. This deposit had been “placed” in position rather than dumped.



Fig. 197. Additions and foundation layers in front of the original gate building – boulders and fill of smaller stones together with bonding material, facing south. Photo: Museum of Copenhagen.

Context (SS87581) comprised 60-70% part red bricks with the remainder being white limestone and granite lumps. Stones SS88700 represented the lowest level of foundation rubble and were a mixture of part brick, worked limestone, squared blocks and some larger rounded stones. Limestone blocks were predominantly placed to the front while some were found randomly dispersed throughout. Red brick was mostly to the centre and at the back of the structure. Bigger boulders (SS22155) were placed to the east as a constructional fringe (Fig. 198).



Fig. 198. Row of larger boulders in SS22155, facing SW. To the left – part of dam structure (G-502973). Photo: Museum of Copenhagen.

The fills consisted mainly of brownish grey clay together with mixed rubble dumps of different colour, composition and compaction with varied inclusions of charcoal, medieval brick fragments (“munkesten” and rifled bricks), lime fragments, mortar, pebbles and stones. Clay had been worked as a mantle to hold the stone structure together and to avoid erosion into the moat.

No sedimentation or usage layers were recorded between the stones and natural substrate, but this lack of information is due to the excavation method (machining). Part of the structure was truncated by robber pits, wooden water pipes and modern truncations. Some of the stones were not measured due to time pressure and the number of courses is unknown.

Finds collected in connection with the foundation stones consist of ceramics (Late greyware; 1200–1400 AD and Late redware; 1500–1750 AD), so-called “munkesten”, a column or rib brick, a flint flake and bones (cattle and mammals unspecified).

An accumulation of larger stones and reclaimed medieval bricks (SS85806) was documented close to Østerport’s southern boundary and up against the city wall foundation. SC88669 consisted of a linear construction cut oriented in both NE-SW and NW-SE directions just to the south of the gate building and east of the former city wall (Fig. 199). It appeared to be “stepped” and became deeper towards the east, whereby kote 0 was reached and digging could not continue (instructions from the Metro Company). The measured width varied from 1.0 m to 2.5 m, depth to a maximum of 1.05 m. The break of the slope was both sharp (to the south) and moderate (to the west) and the base was flat (to the south) and sloping (to the west).



Fig 199. Bricks and stones (SD85806) placed in position behind larger stones and against the city wall foundations, facing NE. Photo: Museum of Copenhagen.

The function is somewhat unclear. The construction cut for the stone structure truncated part of the Late medieval rampart and is later than both the city wall and the dam structure to the east (see below). As a suggestion, it is therefore regarded as part of the general enhancement of the 17th century gate building similar to the extension to the east (see above).

Besides the well there was no clear evidence of indoor activities related to the new gate building presumably as a result of the later destruction and reuse of building materials. The foundation and levelling layers consisted of mixed mortar, CBM and clay including a brick pavement associated with the well (Fig. 200).



Fig. 200. Part of brick and limestone floor associated with the well, facing NE. Photo: Museum of Copenhagen.

18.1.2 Bulwark and the demolition of the gate building

As mentioned above part of a bulwark containing six wooden poles orientated in an E-W direction was exposed in the Late medieval moat when removing the upper stones and boulders in SG-227. Due to similarities in tool marks, stratigraphic relations and composition of species, the timbers have been interpreted as belonging to the same structure (G-279), together with two other nearby posts (G-500914). Two of the easternmost posts were later dendrochronologically dated to 1642–1652 AD (Tab. 42).

CATRAS No.	PD No.	Species	Years	Character (Sp) Sapwood (W) Wane (B) Bark	Dating	Tree felling (V) Winter (E) After	Remark	Min own age	Max own age
60075	24446	Oak	32	Sp 7, W	1652	S 1652	SW Sweden	50	70
60076	28330	Oak	55	No Sp	1642	1655±5	Denmark	70	100
60077	28331	Oak	44	Sp 8	1652	S 1652	Denmark	50	70
60174	136655	Oak	28	Sp 5	Undated	-		0	0
60175	135969	Oak	61	Close to Sp	Undated	-		80	120
60176	136415	Oak	37	No Sp	Undated	-		60	100
60177	135966	Oak	50	Sp 5	Undated	-		70	100

Tab. 42. Dendrochronological data and dates from timber structure G-279. From Linderson 2012.

With the exception of ST24441 all posts were covered by the stones and boulders in SG-227. The function is uncertain, but assuming two poles are missing (= not recorded on site or removed in the 17th century), the minimum length and width of the timber structure might have been 7.33 m respectively 2.85 m and based on the dendrochronological dates the feature likely represents an activity connected to the destruction of the gate building around 1650 – either representing some sort of bulwark or a temporary bridge, similar to bridge (G-446) excavated further to the south (see Chapter 18.1.6 below).

18.1.3 Roads and pathways along Østervold

Two surfaces recorded outside Østerport have been connected to the new fortification. Road surface or pathway (G-837) consisted of mixed bedding/foundation layers, surfaces of rubble, smaller and bigger stones, layers of large medieval brick fragments (“munkesten”) and granite cobbles, imprints and a dark brown sandy-silt usage layer (Fig. 201). The feature *could* be a continuation of the eastern parts of the older road surfaces in G-821 outside the eastern gate building (see Chapter 15.1.2), either represented by SS173067 or SS173460, but has been placed in this time phase (Phase 6) due to its spatial relationship with G-832 (see below).



Fig. 201. Road surface SS171977 with curb SS172085 in G-837, facing NW. Photo: Museum of Copenhagen.

Road surface (G-832) approximately followed the same NE alignment as G-837 and is probably part of the same road. It consisted of mixed bedding layers of bigger stones, cobbles and brick-, roof- and stove tile fragments. The paving was of high quality with edge-lain stones, where some of the stones were standing upright/on edge with the narrow side facing up. The northern and southern edges consisted of bigger stones, with smaller stones in between. Ceramics (Jydepots, Late light fireware, Late redware and stoneware) argue that the feature could be part of a pathway along the bastion in the early 17th century.

18.1.4 Bastion, curtain, bridge and moat

In the early 1600s a totally new fortification was designed using the latest principles, comprising a main rampart of earth with bastions at regular intervals and curtains to flank the terrain. A bridge was connected to the gate building, as well as a dam to regulate the water level in the moat.

18.1.4.1 Bastion

Parts of the 17th century bastion were investigated at two places – in a small trench in the NW part of Krinsen and in the main Station Box further to the south (Fig. 202 and 204).

In the first watching brief trench the construction cut subsequently was packed with field stones (granite boulders) in a clay loam and mortar/brick-rubble matrix. The cut probably been had obliterated to the north either by a second cut for a north modern bunker wall or disturbance associated with the bunker construction (SM162480; see Chapter 21.1.7). The southern margin of the cut was preserved and was consistent with a construction cut for a foundation trench. As the foundation trench/cut extended beneath the depth of the trench and beyond it to the north and south, most of the cut was not excavated and no details were available.



Fig. 202. The 17th century fortification in the NW part of Kongens Nytorv with parts of the moat and bastion line/foundation.

The foundation stones SS162617 consisted of a dry stone structure of at least two courses of mid grey granite boulders and stones, ranging from 0.20-0.60 m in dimension (Fig. 203).



Fig. 203. Foundation stones SS162617 with larger boulders SS162498 moved to establish a 2nd World War bunker in the background, facing NE. Seen in the section – bedding of flint cobbles and part of the concrete floor. Photo: Museum of Copenhagen.

The foundation wall was about 0.9 m thick. Some of the boulders had lime mortar adhering to them suggesting that the course that lay above had been cemented in place or alternatively the stones had been reused from other structures. However, the stones were packed in mortar/brick rubble rather than actually set in mortar. The lower course was packed with yellow brown clay instead of rubble. SD162776 and SD162795 consisted of very sandy mortar with 30-40% red brick fragments and stones used as a construction layer beneath SS162617, where the brick fragments showed reuse of CBM from an older structure.

The other and major part of the new fortification was investigated in connection with Østerport and north of the Royal Theatre (Fig. 204).



Fig. 204. Overview. The 17th century fortification including the new gate building, bastion, curtain, bridge, dam with barrier tower and moat.

Subgroups SG-813 and SG-503400 represent a corner of the 17th century bastion close to the city gate investigated both in a smaller Guide Wall trench in 2012 and during the subsequent works in 2014 where parts of the build up of turf had survived later levelling activities and truncations. The uppermost build-up (SD178067) consisted of firm, mid blackish brown turf with grey lines of multiple layers following the extension of the underlying foundation stones. This part of the construction with bands of turf material with more sandy clay washed out on top of each band could also be seen in a section to the west (Fig. 205). Each band was approximately 0.85 m wide and 0.10 m thick. The turfs were laid length-ways along the top of the NE-SW orientated stone structure SS177220. In cross section the turf strings were trapezoid, horizontally laid with the longest side at the base. The divided layers had been placed directly on a rubble layer (SD177493) representing part of the bastion's core.



Fig. 205. Peat layer (SD178067) seen in a modern central heating trench, facing east. The context consisted of several turf and sand layers sloping slightly towards the south and covering the core of the 17th century bastion here seen as orange and grey clay at the base. Photo: Museum of Copenhagen.

The main stone structure below (SG-503400) consisted of an L- or triangular shaped structure (7.7 x 4.4 m) constructed from at least two courses of large rounded, granite boulders running E-W and some large to medium size boulders running N-S, and a core filled with large and small stones (Fig. 206). The lack of stones in some parts of the structure was partly due to machining. Rubble infill between the stones and between the construction cut and boulders ST307052 and ST307645 consisted of smaller stones, red medieval bricks (“munkesten”) and brick fragments.



Fig. 206. Stone structure (SG-503400) with big boulders and packing of smaller stones, red bricks and brick fragments exposed in 2014, facing east. In front – part of wooden post (ST306864). Photo: Museum of Copenhagen.

Dry stone structure (SS177220) consisted of four courses of grey, cleaved boulders and rounded stones running in a NE-SW direction (Fig. 207). The lowermost stones in SD176814 were lying more south-east-south and these must be connected to the bridge foundation stones, excavated to the south (see bridge structure below). It is likely that a stone or two were mistakenly not surveyed in the area between these two structures, as it was believed that they were already recorded. Some of the stones were unworked, but others seemed cleft or roughly finished. It was noted that the structure was built from reused stones, since some stones had been worked and some had traces of mortar.



Fig. 207. Southern part of foundation stones SS177220 in the bastion and sealing clay layer SD176814, investigated in 2012, facing NE. Above are multiple layers of peat used as building material in the fortification. Photo: Museum of Copenhagen.

One of the stones had a mason's mark consisting of the letter H (Fig. 208). In this case the letter probably represents a worker or builder signing the completed work.



Fig. 208. Signature on one of the western boulders in SS177220, facing NW. Can this be related to Johan Henriksen paid 250 riksdaler “for det Stenhugger-Arbejde til Østerport” and mentioned in a piece work from 1608? (cf. Thorsen 1926:244). Photo: Museum of Copenhagen.

All stones were partially sealed by different types of material. Deposits SD306817 and SD306837 consisted of mixed, mottled and lensed clay/sand with inclusions of stones, CBM and mortar, together with fragments of red brick mixed with coarse yellow, loose mortar. A skim of bluish mottled clay represented possible redeposited natural. The construction cut was sub-rectangular, with steep sides, cut into redeposited layer SD308338 and could be followed to the edge of the 2012 Guide Wall trench.

Three vertical posts were documented in relation to the foundation stones: A single upright post (ST306864), 1.35 m long, had rounded corners and a diameter of 0.18 m. The post was eroded at the top and had a pointy end with adze marks, which were 0.35 m and 0.20 m in size. Context (ST310925) was a box heated, vertically set post, placed below the rest of the stone structure. The interpretation is, together with post ST306864, probably a construction marker for the stones. Timber ST177963 consisted of a vertical post and was first observed when removing the upper parts of SS177220. The posts were probably placed to support the stones or as part of a line during construction of the foundation. Finds collected in relation to the stones consist of ceramics (Late redware; 1500–1750 AD) and iron nails.

SS177220 was situated on the NW side of the moat. This leads to the suggestion that it represented either a reinforcement of the bank or perhaps the foundation of the flank of the 17th century bastion, where the peat layer

(SD178067) was part of the buildup. Foundation layer SD176814 also covered the foundation stones of bridge pillar SS176940, which means that these two structures were constructed at approximately the same time.

The continuation and the SE corner of the 17th century bastion was investigated c. 20 m to the west of the first recorded foundation stones represented by subgroup (SG-500887). Its outer edge was constructed from four courses of large rounded grey granite boulders and smaller stones forming an L-shape which was then backfilled with redeposited natural grey-yellow clay with some inclusions of CBM, mortar and pebbles (Fig. 209).



Fig. 209. Overview bastion line, facing NW taken from the former moat with dark and waterlogged sedimentation still on site. Photo: Museum of Copenhagen.

Construction cut (SC198471) was a linear cut into the natural substrate, running approximately 8.0 m N-S and E-W and continuing to the west for another 3.5 m, although originally most probably further in this direction, all the way to cut SC301042, which was the same cut registered at the west end of the bastion's foundation wall (Fig. 210). The cut had been opened from one side (east), after which big boulders were placed against the construction cut from the west. The part of the cut registered was relatively well defined, with moderate-straight sides, not too deep (approximately 0.3 m), just enough to give the boulders and stones a stable base.



Fig. 210. Bastion foundation stones SS193802 and construction cut SC198471 with smaller stones SS197574 in front used as backfill, facing NW. Photo: Museum of Copenhagen.

The different courses consisted of mid grey unfinished granite boulders and stones. Some stones had been formed to fit within the bigger structure and a large flat boulder had been placed at the corner of the foundation (Fig. 209). Context (SS197574) consisted of a row of stones in the construction cut and backfill, up to the row of big stones in foundation wall SS197445. SS198522 represented a deposit consisting of mainly stones and pebbles.

Deposits (SD195165 and SD195184) consisted of compact silt and sand of different colour with some inclusions of peat and CBM, which had been dumped up against the bastion stones SS193802 within moat cut SC190710 to the east. This probably formed part of the original construction phase of the bastion and moat, providing stability for SS193802, etc. on the exposed moat edge.

With one exception the internal core of the bastion consisted of redeposited firm light greenish grey sandy clay with inclusions of CBM (red brick fragments) and pebbles (Fig. 211).



Fig. 211. Section, facing SW showing the bastion's core with different types of internal fill of lensed brown clay, firm greenish grey sandy clay and brown deposit SD197413 with brick fragments at the base above the natural moraine. Photo: Museum of Copenhagen.

SD195337 constituted a large deposit of CBM, sand and mortar. Red bricks appeared mostly in broken pieces. Lime fragments and mortar were concentrated around the base of the bastion's southern face, but disappeared as the deposit extended towards the interface with usage layer SD194723. During further excavation the layer appeared to continue west and north. It was evenly distributed over a stone structure outside the bastion; SS195613, and continuously between the 1st and 2nd row of stones within the east-west wall at the base of the foundation.

Like the previous bastion line wooden posts were recorded among the stones. Timber (ST195526) consisted of a vertical, very soft post approximately 0.1 m in diameter and 0.7 m long with a tapered pointed base. ST195526 was situated to the west in one of the upper brick dump layers that filled the interior of the bastion. Post (ST197391), vertical and 0.65 m long, was set in the southern part of the inner side of the stone structure. The position of the posts by the edge of and within the internal fill, suggests that these were placed in order to mark the outline of the bastion during the building process (Fig. 212).



Fig. 212. Internal corner with vertical post (ST197391), facing south. Photo: Museum of Copenhagen.

A small posthole (SG-500889) was seen at the base of the cut for the bastion. It is presumed that this post was related to the construction of the bastion itself, but it must have been deconstructed soon after construction started since the posthole was not observed higher up in the basal fill. Finds from the internal core of the bastion consist of ceramics (Jydepot; 1550–1850 AD, Late redware; 1500–1575 AD and Earthenware), green glazed stove tile fragments (16th century) and a bone toy (further information missing).

SS195613 consisted of smaller stones and large boulders, laid in a rectangular shape of roughly 4.5 x 2.8 m, directly outside the main bastion line (Fig. 213).



Fig. 213. SS195613 in front of the main bastion line, facing NE. Photo: Museum of Copenhagen.

The stones were evenly deposited and covered by a brick layer (SD195337). On site the feature was first thought to be separate from the main bastion, perhaps acting as some kind of "helping" construction while building the fortification.

Cut (SC199558) represented two separate 0.3 m deep cuts for the lowest stones in SS195613 extending out from the south of the bastion. However, these stones extended beyond the cut on the southern side, lower down the slope of the moat. It may be that the stones higher up the slope needed to be cut into the slope (while the lower ones did not) to create a more level structure. The sides were straight and the base was flat. Finds among the stone in SS195613 consisted of clay pipes and animal bones.

During further documentation, brick deposit SD195337 on top of SD195613 appeared to extend partly over one of the lowermost layers of boulders within the bastion's wall SD197445, and therefore SD195613 should be seen as part of the same construction phase as the rest of the bastion – although a satisfactory explanation for this accumulation of stones has not been achieved.

18.1.4.2 Curtain

The foundation of the curtain consisted of two courses of boulders, stones and layers running in a N-S direction at a length of 16.5 m. The width varied, but was approximately 2.5 m (Fig. 214). The purpose of the structure was to severely limit the erosion of and to form a solid foundation for the rampart material and structures built on top of it, in the same way as the foundation stones incorporated in the construction of the bastion.



Fig. 214. North-south running curtain with construction cut, two courses of stones and boulders together with foundation layers. Part of the contemporary moat to the right.

The construction cut for the curtain was rectangular in plan with slightly curvy edges, concave sides and a flat base. It appeared to have been cut into natural moraine on the west side and through excavated moat material (natural clay and sand) on the east side. Context (SS305778) consisted of large rounded and randomly shaped naturally formed foundation boulders. The top course of stones had a rubble/stone mix behind the inner face of the stones (Fig. 215 and 216). The first course of foundation stones SS305955 consisted of a double row of similarly sized boulders as those in SS305778, but also with smaller stones and some CBM infill between the stones.



Fig. 215. Upper part of the 17th century curtain. Foundation stones SS305778 and rubble infill SD305863 with the inner construction cut to the left, facing north. Photo: Museum of Copenhagen.

The rubble infill and foundation layers (SD305863) were amalgamations of large stones up to 30 cm in diameter, smaller stones with small fractured pieces of CBM, but no identifiable bricks or half bats. The deposits were mixed with yellow/grey sand and natural clay – possibly consisting of removed natural moraine from the original construction cut.



Fig. 216. Investigating the 17th century fortification step by step. Part of the exposed curtain, facing north. In the middle – staff working on one of the bridge pillars. To the right – the excavated 17th century moat. Photo: Museum of Copenhagen.

18.1.4.3 Other features in relation with the bastion

Some investigated structures have been interpreted as part of the 17th century bastion, despite the fact that the features were exposed by machine (Watching Brief 2014) with unclear dating and stratigraphical relations.

Subgroup (SG-503795) consisted of five mid grey stones with a flat surface facing upwards (Fig. 217). The two separate rows of stones were situated in and covered by rubble fill and the stones might well not have been in situ, but could also have ended up in the rubble layer later. It should also be stressed that the area around the stones had been truncated by modern trenches such as concrete cable boxes and a central heating duct. The stones were approximately 1.0 m higher than the curtain, so the structure is not a continuation of this structure. Group (G-503427) consisted of a row of seven stones running in a NE-SW direction between the road surfaces to the north and the 17th century moat to the south. These were of different sizes and none of them were flattened on top. The shape and surface of the stones showed no signs of wear, suggesting that they were either related to earlier road(s) to hold back soil on top of the slope as a stabilizing structure, or were part of a limit to an unknown stone structure (part of the 16th century roundel? – see Fig. 152 and further discussion below).



Fig. 217. Stones with unclear purpose documented in association with the 17th century fortification. Be aware that the estimated edge of the moat is measured a little far to the north due to machining.

ST177435 consisted of a vertical timber partly exposed after removing a central heating pipe with modern backfill (2012). The post had a flat end and its middle section had been worked, with small axe marks around 0.10-0.20 m long (Fig. 218). Its depth was > 0.60 m. Interpretation is unclear, but it was probably part of a bulwark.



Fig. 218. Box hearted post (ST177435) in situ, facing SE. Photo: Museum of Copenhagen.

Timber ST310929 consisted of a worn upright and squared pine post placed directly up against another cylindrical and upright post ST310935 (Fig. 219). Context (SC310947) was the sub-circular construction cut made for the two posts with a total depth of 0.82 m. The function is unclear, but they could have been part of the 17th century bastion.



Fig. 219. Timber (ST310935) with a flat base. Photo: Museum of Copenhagen.

18.1.4.4 Moat – construction, usage and deconstruction

Parts of the 17th century moat were investigated at two locations at Kongens Nytorv (Fig. 220). Group (G-4998) consisted of a NE-SW and N-S running construction cut. Part of the moat recorded in the Transformer Station (2010) was later added to subgroup (SG-961). The exposed part of the moat could be followed for approximately 65.0 m with a width of between 21.0-23.4 m. The depth was at the most 2.1 m from the top of the construction cut to the middle of the base – though this could be something greater since the whole area was machined.

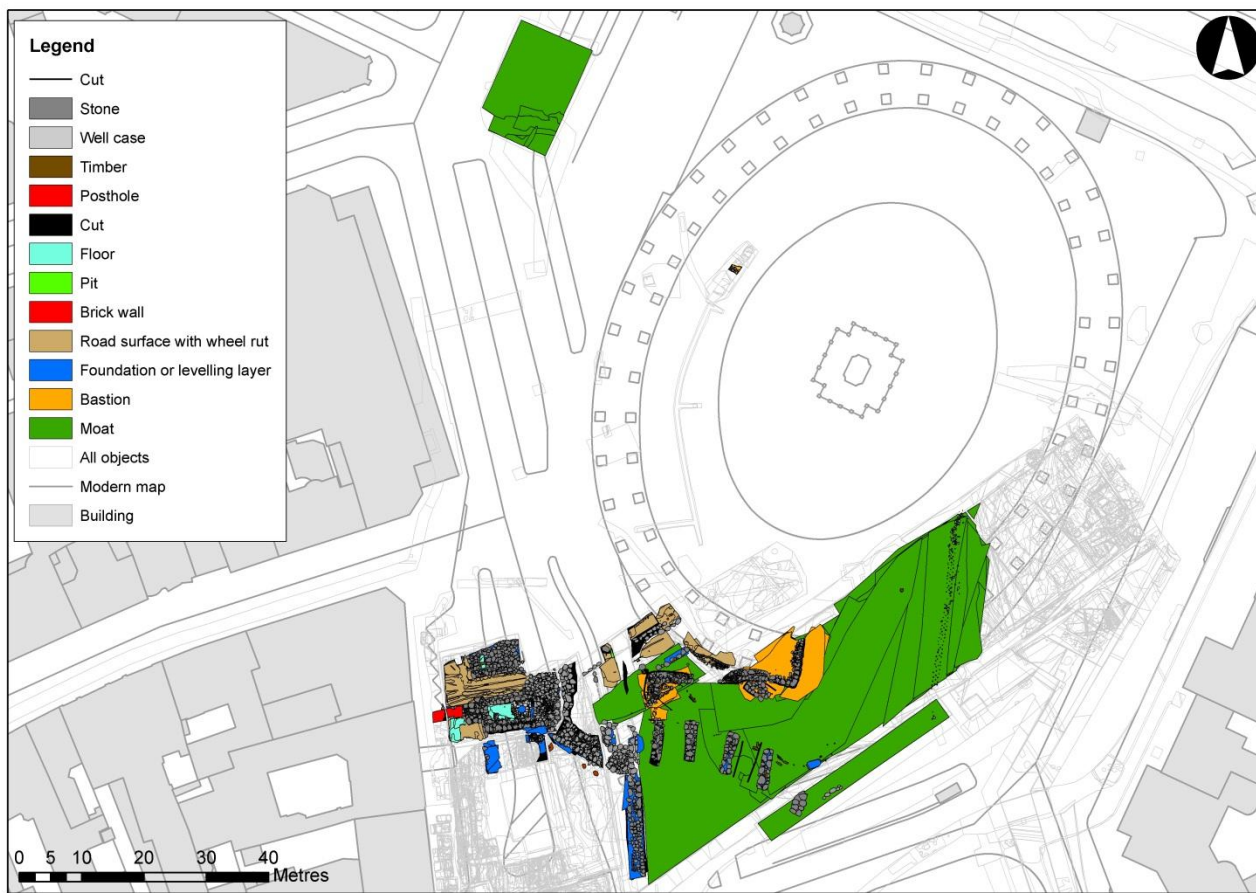


Fig. 220. Investigated parts of the 17th century moat around Krinsen.

The sides had an angle of 45 degrees and with a gradual break of the slope to the concave and flat base. At the eastern side of the moat a separate step was recorded close to the base (Fig. 221). It is uncertain whether this ledge was created as a pathway while building the fortification or should be seen as part of the defence system.



Fig. 221. Exposing and cleaning the eastern stepped side of the 17th century moat, facing south with the Royal Theatre in the background. Photo: Museum of Copenhagen.

In the middle of the moat a N-S oriented, rectangular construction cut was recorded at the base of the moat cut, into the natural substrate (Fig. 222). This was interpreted as a cunette (a trench dug in the moat to allow drainage, or as an extra obstacle for attackers). The width varied from 5.2-6.6 m with a depth of 0.15 m. The base was flat and the sides steep.



Fig. 222. Part of interpreted cunette in the 17th century moat, facing NE. Photo: Museum of Copenhagen.

The sedimentation in the moat varied in thickness from 0.1-0.5 m and consisted of lensed dark brown and black decomposed peat with lenses of white sand and different types of finds (Fig. 223). Some of the finds must be connected to the later deconstruction phase pressed into the underlying soft deposits, but overall this assumption does not affect the dating of the deconstruction phase to the mid 17th century.



Fig. 223. Trench cut showing darker alluvial sedimentation (SD192275) at the base of the moat, facing west. The white layer represents natural moraine and the post is part of timber structure (G-240090). Photo: Museum of Copenhagen.

In the mid 17th century the fortification was demolished and the moat filled up mainly from the curtain side (south and SW) (Fig. 224). The dumped material consisted of several deposits of different colour, composition and homogeneity. Some layers contained large amounts of urban, household waste (animal bones), decomposed, organic material (manure) and demolition material (CBM). No clear evidence of industrial activity can be seen within the dumped material, except for a significant number of leather off cuts and concentrations of horn at some places. However, the moat was excavated by watching brief only (machined), so the finds retrieval is far from being as detailed as that in a full excavation (e.g. compared with the moat and finds from other Metro investigations such as Rådhuspladsen).



Fig. 224. Excavation of the Transformer Station in 2010. Different dumps and moat backfills seen in section C50254, facing SW. Photo: Museum of Copenhagen.

Some of the deposits in the moat should be mentioned: SG-500893 consisted of demolition material from the bridge piers in G-500892 (Fig. 225). Some of these layers were interpreted as forming a ramp in order to access the bridge piers whilst the overlying deposits of masonry and demolition material derived from the deconstruction of the bridge piers together with urban waste.



Fig. 225. Building material from the former moat. Masonry (Dutch or English cross bond) from demolished bridge structure, from above. Photo: Museum of Copenhagen.

The various finds categories and osteological results will not be discussed here, except for certain more specific ones which can also be used for dating. For further finds specific information; see external reports and attached appendices (cf. Fig. 226).



Fig. 226. Wooden horse (FO200851) from 17th century moat backfill. Photo: Museum of Copenhagen.

A coin (FO500999) from one of the deposits represents a ¼ øre from Sweden; Kristina (1632–1654 AD) and (FO501004); a Frederik III, 1 søsling from 1651. FO501011 is a Wolf Lauer token (1612–1651 AD). Coin (FO501002) consists of a Christian IV, 1 skilling from 1621 AD, FO501009 is a Hans Krauswinckle token, probably from the 1580s and FO501012 is an Alexander Mang token, probably from around 1601 AD. The axe found in (SD190850) is a broad axe with asymmetrical bevelled edge (Melin 2014:12-13). Axes with an asymmetrical bevelled edge are sometimes called single bevel and/or side axes. Since these types of axes more correctly have one clear bevel and one less clear, the author prefers to call them asymmetrical. As the name side axe implies they are specialized tools to be used for hewing the sides of timbers, etc. to accomplice a smooth surface. The axe is made for a right handed craftsman who stands with his left leg close to the timber when hewing. The owner's initials (KI) can be seen on the blade (Fig. 227).



Fig. 227. Broad axe (FO501815) from the original sedimentations in the 17th century moat, after conservation. Photo: Museum of Copenhagen.

18.1.4.5 Bridge

The bridge in the moat consisted of five NNE-SSW orientated bridge pillars, slightly curving to the south (G-500892) (Fig. 228). The length and width of each were roughly equivalent (L: 6-7 m and W: 1.5-1.8 m), and the distance between the pillars was between 3.5 and 4.5 m.

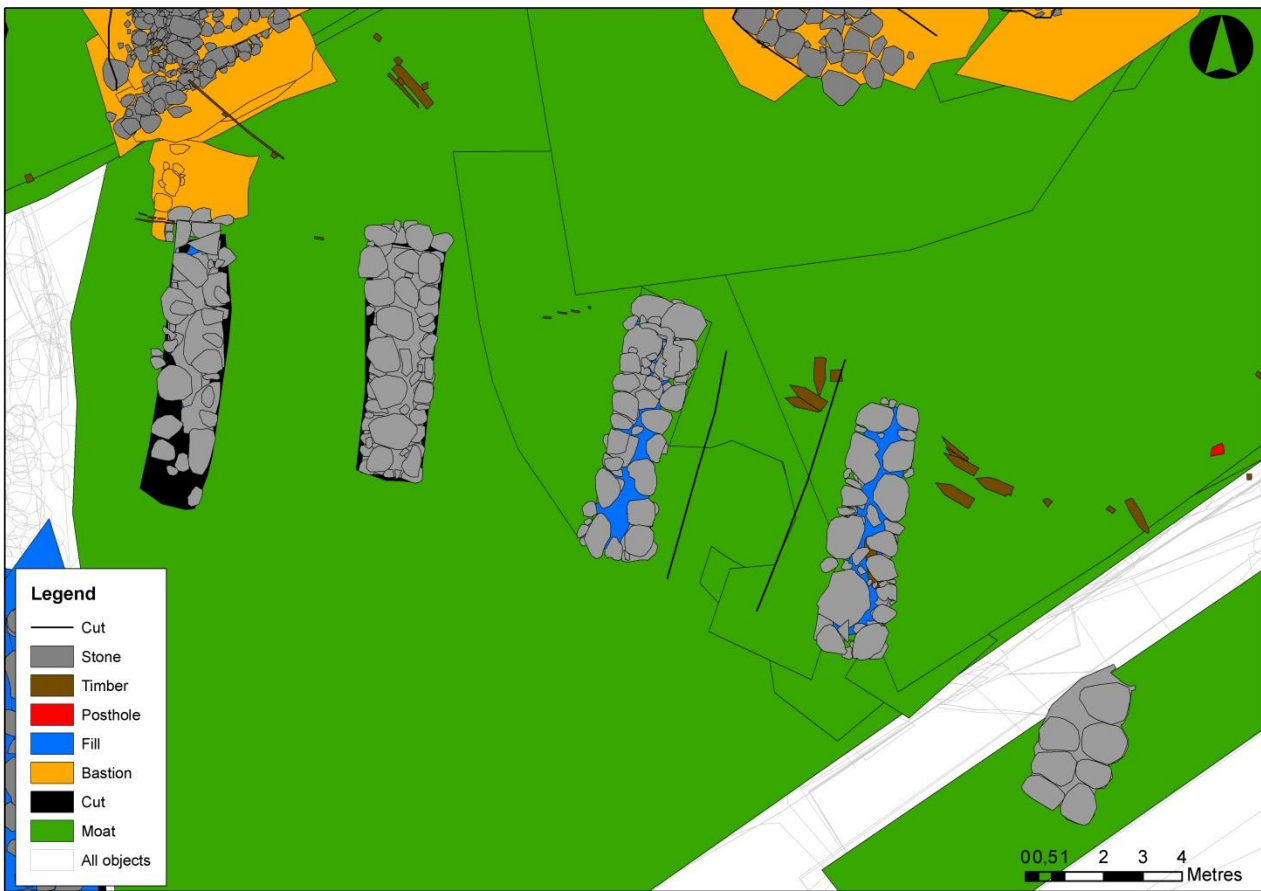


Fig. 228. Bridge pillars in the 17th century moat starting with pillar No. 1 to the left. Notice the weak curve between bridge pillars Nos. 1 and 2 and bridge pillars Nos. 3, 4 and 5, probably done for defence considerations. Compare with bridge in prospect Fig. 268, below.

Bridge pillar No. 1:

This pillar was documented in two stages in connection with a Guide Wall trench in 2012 and the Station Box in 2014.

The foundation consisted of two uneven courses of mid grey, unfinished boulders and medium size stones (Fig. 229). The structure was two stones wide and the gaps in between were filled with grey clay and yellow compact and coarse mortar, red brick material, red tiles and minor grey smooth stones of 10-20 cm. It appeared that the 1st stone layer (SS305540) was much longer north to south, so the stones had been placed so as to create a stepped foundation. The foundation stones/boulders all had a smooth surface on every side and had not been cut or shaped. The northern extent of the boulders was covered with blue clay related and belonging to the nearby bastion foundation (SD176814; see SG-813).



Fig. 229. Foundation stones SS176940 and ashlar stones SS175676 documented in part of the Guide Wall trench 2012, facing SE. In the middle – a test pit to investigate the depth of the stone structure. Photo: Museum of Copenhagen.

On top of the foundation two courses of well finished, rectangular, upright mid grey ashlar and regular blocks of different size were recorded (Fig. 230). The structure was faced externally and had a solid core of red brick fragments and with smaller stones, bricks and mortar in between. The bricks were probably reused, medieval “munkesten”.

The NW end of the first course was represented by a single stone and two red bricks mortared in position. Mortar on the top of the second course stone showed that the structure was previously at least three courses high. The joints of the stone and brick elements were rendered over to give a smooth finish. This was light grey, without inclusions, and very hard. The SW part of the structure was missing and probably was robbed out in the mid 17th century when the bridge went out of use.



Fig. 230. Continued investigations. Exposed bridge pillar No. 1 (2014) with ashlar stones SS304586 and cemented core of yellow-white mortar, facing SW. NW part not fully exposed due to Station Box limit. Photo: Museum of Copenhagen.

The upper part of the core consisted of strongly cemented yellow and white mortar and lime with inclusions of stones, bricks, charcoal, shell and possibly volcanic ash as a binder. The rest of the core consisted of bricks bonded with cemented mortar and placed in rows (Fig. 231). There was a structure in the placement of the bricks – yet the coursing was uneven and the main purpose had been to fill the gaps in a suitable way. Mortar was later poured into fill any remaining gaps/spaces. Furthermore it appeared that a significant amount of mortar had been poured on top of the 2nd row of foundation stones prior to placing the faced stones and bricks, probably to create an even platform and to hold the structure together. Like the ashlar stones, the south and SW corner was missing and had been probably robbed out.



Fig. 231. Exposed bridge pillar No. 1 with foundation, cemented brick and mortar core SS304681 together with ashlar stones, facing NE. Photo: Museum of Copenhagen.

The foundation had been placed in a rectangular construction cut SC305762 with convex/vertical sides and irregular base.

Bridge pillar No. 2:

The foundation in the second bridge pillar consisted of two to three rows of regular and uneven, mid grey, unfinished boulders and medium size stones. The gaps in between had been filled with smaller stones, red brick and mortar rubble. The northern part of the structure was a bit wider than the southern end (2.0 m and 1.4 m respectively). The foundation stones/boulders all had a smooth surface on every side and had not been cut or shaped.

Rectangular box and dry stone structure SS305500 consisted of a faced outer wall of upright, flat and rounded mid grey natural stones. Smaller stones had been placed in the gaps where the corner stones were a bit larger than rest of the stones in the structure. The bonding material consisted of smooth, yellow-grey cemented mortar.

Context (SS304186) consisted of well finished upright, rectangular light grey ashlar and regular blocks with a length from 0.5 m to 1.0 m (Fig. 232). The rectangular structure had a well laid outside face and a solid core of red brick fragments and smaller stones, bricks and mortar in between. The bricks were probably reused medieval bricks ("munkesten") as also seen in pillar No. 1. The joints of the stone and brick elements were rendered over to give a smooth finish. This was light grey, without inclusions, and very hard. The SW part was missing and probably had been robbed out (Fig. 233).



Fig. 232. Upper part of bridge pillar No. 2 represented by ashlars SS304186 and infill SS304582, facing SE. Photo: Museum of Copenhagen.



Fig. 233. Bridge pillar No. 2. Part of facing stone wall with ashlar stones SS304186 and rubble infill SS304582, facing north. Photo: Museum of Copenhagen.