



Figure 29 Pits Group 143 (left) and Group 144. From northwest.

A few meters to the east, three more pits, Groups 166, 167 and 170 belonging to the first activity phase were recorded. They were truncated by the same air raid shelter as Group 144, leaving what appears to be about half of their original extents preserved. The heavily truncated remains of a possible pit, Group 170, were identified on the eastern edge of the cut for the air-raid shelter. It survived as a 1,75 m x 0,75 m x 0,5 m deep cut into the natural clay. Its two fills were both rather sterile in nature, and apart from charcoal inclusions appeared very similar to the natural clay into which the pits were cut. No function for the pit was apparent. Stratigraphic placement below activity layer Group 437 places this pit in the oldest sub phase.

Pit Group 166 was the earliest in its sequence, and is overlain by activity layer Group 437, dated to the Early Medieval period. It was 1,3 x 0,65 m in plan and 0,7 m deep. The cut had steep straight sides and an evenly sloping base. The fills seemed only to be remains of backfills. No trace of original usage was seen, which perhaps suggests that the pit was kept clean. This, together with its regular shape could suggest it was a storage pit originally and reused as refuse pit. Finds include one piece of Baltic Ware, slag and animal bones. Based on stratigraphy and pottery, dating is suggested to the 12th century. About 1,5 m south of pit 166, parts of the base of another pit, Group 167, with similar shape and dimensions was registered. Not much was left of it, so its function remains unknown, but is likely to be similar to that of pit Group 166. A C14-analysis was however conducted on a rye seed from the fill of Group 167. It gave a date range to cal. AD 985 – 1165 (2 Sigma, LuS 10671, App. 37), likely AD 1015-1125 (cal. 2 Sigma by Calpal Online). The C14-date together with its placement in the stratigraphical sequence, places the pit as one of the earlier ones in this area. All in all, the first phase of activity in this particular area is likely to have been taking place in the first half of the 12th century. This is based on pottery dates, one C14-date and stratigraphic relationships to younger dated features.

A number of pits and one well were clearly later than the previously presented features, but still dated to the 12th century – perhaps mid-to late 12th century. Due to the very high degree of intercutting and modern

truncations, it has in one particular area been very difficult to fully reconstruct the order of archaeological events. A number of intercutting pits were identified, and stratigraphic relationships between them were suggested with some considerable uncertainty. A few of these intercutting features will be presented as being dated to the middle part of the early medieval period although all of them cannot have been functioning at the same time. The features in question are pit Groups 176, 169 and 174, and well Group 194, all located in Area 2B. The oldest of these is pit Group 176, heavily truncated but seemingly sub-circular, c. 1 m in diameter and with a preserved depth of 0,31 m. It was truncated by later pit Group 169 and also truncating an older pit, Group 175. The fills had inclusions of charcoal, burnt clay, bone and slag. Finds consisted of waste from household and iron working activities. In one of the fills there were a few pieces of furnace-lining. Other finds were animal bones, fish bones and slag. The pit had clay-lining in the bottom and on the lower parts of the sides. Part of the lining in the bottom was heat affected. Lining is unusual among these pits, so it is possible this pit has had a different function. Maybe it was used for storage of something that should be kept very clean. The slightly later pit Group 174, next to Group 176, was clay-lined also, suggesting a continuity of activity. Based on stratigraphic relationships to other features with C14-dates and dateable finds, this pit should probably be dated to the first half of the 12th century.

The next pit in the stratigraphic sequence was Group 169, slightly cutting the western edge of pit Group 176 (see Figure 28). About a quarter of the pit was preserved in plan, since it was cut by younger pit Group 174 (Figure 30) as well as the large air raid shelter. The part which remains indicates that the pit had been circular with a diameter of 1,5 m, steep sides and a flat base. The preserved depth was 0,3 m. Four fills were registered, with general household and production waste - slag, charcoal and burnt clay, as well as some High Medieval pottery. This pit is interpreted as the original cut of later recut pit Group 201 of high medieval date. The findings of high medieval pottery were probably due to the recut (Group 201) causing the finds in the upper fills mix. Both stratigraphy and an AMS-dating from a barley seed (cal. AD 1040 – 1265; 2 Sigma LuS 10672, App. 37) likely AD 1077-1215, (cal. by Calpal Online, 2 Sigma) show the pit to be early medieval. As many of the other pits, Group 169 is interpreted as a storage pit, with a secondary use as refuse pit.

Group 174 was, as mentioned above, cutting pit Group 169 (Figure 30). It was a quite large pit (1,45 x 1,2 x 0,48 m) containing six fills. The shape was sub-circular, with straight sides and flat base. Shape and dimensions indicates a primary function as storage pit. Also, the lower fills, with a thin lens of usage related deposit, and followed by a clay-lining, point to the pit being used for "clean" purposes and the need for creating a new phase of clean usage. The bottom layers had finds of household and production character, including many animal bones, and also fish bones. A mandible from goat suggests that goat was eaten. Lamb bones indicate the presence of refuse from a high status household. Cut off horn core from sheep points to a work shop nearby. Also, a fairly thick (0,1 m) deposit of "oily" material was recorded, filled with household and production finds. Slag among the finds can, as in many other pits, be considered as general evidence of the area being a metal workshop area. One piece of Early Redware was found. However, C14 analysis from a seed (indeterminate) gives a date for one of the lower, very "oily" refuse layers to cal. AD 1045-1275 (2 Sigma, LuS 10636, App. 37); likely AD 1130-1234 (cal. by Calpal Online).

Seen in relation to the stratigraphical situation, with many pits and one well intercutting each other heavily in this particular area, it is likely to date to c. mid-12th century. The pieces of Early Redware can probably be explained by the complicated stratigraphy and in some cases unclear borders of the different features.

Upper deposits did not contain many finds, and they were sloping towards the middle. That could be a sign of deliberate filling up of the pit and a need to even out the ground at this spot, probably because of the continuous use of the area.

Directly on top of this pit was another later pit, Group 178/145. But first, to the one side of the filled up pit 174, a well, Group 194, was also dug. The cut was circular at the top but square further down (Figure 30). It was quite large, 1,66 x 1,4 m in plan and with a depth of more than 2 m. The sides were steep and base flat. There were no signs of the well being used secondarily as a waste pit. Fifteen fills were recorded in the well. They did not contain a lot of dumped finds (except at the very top) which suggests it was kept clean and in use until it was decided to fill it up completely. From the well were amongst others a few sherds of Early Greyware and Baltic Ware, a piece of furnace waste, a bone skate and a comb fragment of a style that dates to the 11th -12th century. Also, some slag and animal bones were present, but not in very large quantities like in some other refilled cuts. Osteological analysis concluded that the material was from one or more households, and the presence of lamb indicates a high status household. The well is on the basis of finds and stratigraphy dated to the mid-12th century. To the west there was another well, Group 140, dated to the 13th century. Perhaps this well was the predecessor of that example.



Figure 30 Cuts for well Group 194 (left) and pit Groups 174 and 169 (on the photo not yet excavated) from area 2B. Seen from above, from south.

4 m to the south, in Area 2A, another well (Group 132) and a pit (Group 143) are placed in the same sub phase, mid-12th century. The well, Group 132, was much smaller than the above described well, Group 194. Its dimensions were 0,82 m in diameter and 1,65 m in depth. The well was sealed by the outer city gate foundation. The upper two fills of the well contained large amounts of daub and possible kiln lining, much like pit Group 143 next to it, which suggests that they were contemporary. Some slag material and Baltic Ware was also found. The lower fills were more sterile, the oldest being organic and waterlogged. Based on finds, placement and similarity in fill material with Group 143 the well is dated to the mid-12th century. The findings of daub and kiln lining indicate the deconstruction of buildings or workshops in the immediate area

at this time. Perhaps the well had been functioning together with the iron working activities which have left residue in Group 143.

Group 143 was a pit with considerable dimensions and complex stratigraphy (Figure 29). It had both been truncated by younger features and also by modern activity, leaving only a slice with a width of up to 1 m to be documented. Even so, it was possible to obtain quite a lot of information. The pit was large and of sub circular shape, 2,4 m in diameter and 3,15 m deep. A total of 18 fills and lenses were documented, showing very different character. The contents indicate that different activities have been taking place nearby at the time, of both household and production character. Most fills were not present all across the pit, but to one of the sides, like they had been tipped in. A few fills were spread all over, and towards the bottom part some fills were only present in the central parts of the pit. These also held a large quantity of baked clay with imprints as of wattle, of brownish or reddish colour, suggesting they were remains of a kiln built with wattle surround. If that kiln was build in the pit or beside is unclear. The finds material also contained a lot of slag and other iron working residue, together with animal bones, fish bones, pottery (Baltic Ware and Early Greyware), Cu alloy clippings and a quite large bone needle/pin. The animal bone analysis suggests most of the bones came from a household context.

The depth and shape of the feature could imply it was originally used as a well - in that case all the fills were secondary, but indicate what activities went on next to the well. Another alternative could be that the deep pit was used as a kiln for some time. The central placement of the baked clay might speak for a primary usage. There were however no signs of heating in the soil in the base of the pit. Based on stratigraphy the feature is dated broadly in the early medieval period, but since it was cutting the pit Group 144 it is placed in the second usage phase together with well Group 143 with similar fills.

A few meters to the west, a large pit, Group 183, with quite different attributes was situated. It was 1,6 x 1,05 x 0,9 m in size, had concave sides and base and was "bath tub-like" in shape. It cut through the activity surface Group 437 and thus belonged to a later phase than the pit Groups 170 and 166 right next to it. The pit contained 11 fills, and the lower ones where quite different in that they contained large amounts of fish bones, also very small ones, and that the fills were either sticky, organic or like one of them (SD 48997) "crunchy", as if it had been mineralised. Osteological analysis showed that all parts of the fish were present, making it unlikely that fish processing had been going on. No chemical analyses of the contents have yet been done, so the anomalies in the fill's character are yet to be explained. In all, 13 species of fish were present in the samples, and herring, gadids and eel were predominant. The preservation conditions were excellent, leaving also small pieces of bone to be seen. Also milipedes of a kind that eats decaying wood were present in large amounts. Other bones apart from fish were the usual household waste from eaten animals, and also cat, dog and rat. Presence of lamb once again indicates a high status household. Other finds were slag, daub and one piece of Early Greyware. A seed from indeterminate cereal in one of the lower fills was AMS-dated to 1045-1270 (2 Sigma LuS 10637, App. 37) calibrated it gives a likely date to AD 1154-1232 (2 Sigma using CalPal Online). Based on this, on stratigraphy and one pottery find, the dating suggestion is mid-to late 12th century. The function of the pit is still uncertain - the unusual nature of the lower fills does suggest something other than the ordinary storage pit, and so does the shape of the pit. Chemical analysis would hopefully shed more light upon this issue. So far the interpretation is that the pit may have functioned as a container for fish waiting to be used in the household, and later as a refuse pit, used largely for fish bones and other remains from meals.

A few pits in areas 2A and 2B have been placed in the end of the 12th or first half of the 13th century. This interpretation is based on a combination of finds, stratigraphy and spatial relationships, but should be seen merely as a suggestion of what could be a likely way of chronologically grouping the features. These younger pits are Groups 146 and 147 in Area 2A and Groups 145/178 in 2AB.

Groups 146 and 147 were placed at a distance of 2 m from each other (see Figure 28). They were both overlain by the late medieval outer moat or gate foundation and hence their preservation was affected by those ground works. Group 146 was circular with a diameter of 1,1 x 1,1 m. Its full extent is not known due to truncations of its upper part, so it could have been either a pit or a well. At least one of the four fills was organic in character and contained what looked like remains of a basket. This fill also contained wood pieces, some slag and a lot of domestic animal bones. Plum pits and cherry stones were observed when wet sieving. The pit or well has been backfilled with household waste, which is interpreted as there being domestic dwellings nearby. If a pit, the original function might have been storage or waste pit. Group 147 was a circular, quite large pit, c. 1,5 m in diameter and 0,65 m deep with straight sides and flat base. It contained three fills, the upper one with very fibrous material, possible wood or reed. Finds consisted of a whetstone and Late Greyware (in the upper fill which was disturbed) and household refuse type of animal bones.

A further 5 m to the east, cut by the metal shoring between areas 2A and 2B, was pit Group 145/178 with one part in each of the areas (see Figure 28). It was a quite large pit, 1,6 m in diameter. Its preserved depth was 0,4 m. The pit had truncated the older well Group 194. It had concave sides and a flat base and can be interpreted as a storage pit or a waste pit. Ten fills were recorded, containing finds of household and production waste such as slag, nails, Baltic Ware, Early Greyware and animal bones (amongst other harp seal). There were quite a lot of pottery sherds. The pottery clearly dated the pit to the early medieval period. Since the pit is the latest in its stratigraphical sequence, it should probably be dated to the end of the early medieval period. The fact that it still contains only early medieval pottery indicates the intensity of activities in the area during this time period.

In the other "island" of preserved archaeology in the northern parts of Areas 2A and 2B, the remains of three pits were documented. They were stratigraphically younger than the group of postholes found in the same area, interpreted as the remains of a building, Group 216 (see below), and presumably making up a later phase of use. These pits were Groups 157, 158 and 159. Pit Group 157 was a partially preserved feature placed close to building Group 216, and stratigraphically younger than this. It was interpreted as a pit on the basis of its shape. This is however far from certain. The cut was preserved with the dimensions 1,15 x 0,7 x 0,24 m and had irregular sides and base. It contained no finds, so dating is based on stratigraphic and spatial relationships to other features.

Pit Group 158 was placed less than half a meter north from pit Group 157. It seemed heavily truncated, and was itself cutting a posthole from building Group 216. It is difficult to say what type of feature it was. Seen in relation to other features in the area - the building Group 216, leveling layer, road and possible pits - it could be a small part of a pit. The feature contained two fills, with dumped material, including lots of charcoal, some animal bones and redeposited natural. No features were preserved over this one, which means that the backfills were possibly made in connection with the general backfilling of the area due to change of land use. Alternatively, all younger features have been truncated away. The fact that Group 158 itself seemed truncated indicates the latter.

Group 159 was again a partially preserved feature interpreted as a pit based on the shape and the relation to other features in the immediate area. It was situated 1 m southeast of pit Group 157 and was truncated by modern cuts. The cut of the pit was of regular shape and it was cut into leveling layers Group 160, as was pit Group 157. It contained five fills, with no finds. The bottom deposit could be from the usage phase, since it was sealed by a quite thick layer of redeposited natural. The features should be interpreted in relation to other features in the area - building Group 216, pits, leveling layers and the road Group 76. Based on stratigraphy, a few finds from some of these features, and C14 dates from the building, all of these features can be dated to the 12th century.

In the western part of Area 4, the base of a feature interpreted as a well, Group 389, was seen and surveyed while machine excavating the medieval moat fill (see Figure 12). It had been heavily cut by the moat and was spatially "in the way" of the earlier road Group 76 leading towards town. This could mean that the well was older than the road, or that it existed at the same time, which is less likely. The backfill of the well was very sterile in appearance and without finds. Due to excavation conditions, the well was not excavated. It is presumed to date to the early medieval period based on its stratigraphical and spatial placement.

Building remains

In this particular area there were a couple of postholes in association with a layer that appear on top of the southern shoulder of road Group 76. There were also some potential postholes to the south that could be associated with this structure, which is called Group 216 and includes the Subgroups 218 and 161. Postholes SC 45077 and SC 45089 were larger and deeper while SC 45552 and SC 45349 also looked the same, but smaller than the two other ones.

One possible interpretation could then be that the larger postholes represent a wall or main structure for a roofed building, while the other two represent supporting beams or perhaps a fence. All in all this could be the remains of a fence or a wall, which combined with the aforementioned postholes and deposits to the south, could represent a bigger structure (work shop with fence and pits?) appearing by the roadside after the road was established (see Figure 31). It is worth mentioning that it seems like the lower layers were building up prior to the posts, indicating some activity taking place before the establishing of a fence and/or building. Later, when the second phase of cobbled surface of the road was laid, all traces of a structure at this spot seem to be erased. AMS dates calibrated to 2 Sigma confidence levels from postholes gave the following results: cal. AD 1025 - 1210 AD (pig bone; 2 Sigma, LuS 11063); cal. AD 1040 - 1260 (pig bone; 2 Sigma, LuS 11064); and cal. AD 1040 - 1260 (sheep/goat bone; 2 Sigma, LuS 11065). Calibrated further (using Cal Pal Online) the dates narrow to a likely date range of early- to mid-12th century. Finds included Early Greyware, a bone skate (FB 203760), a glass bead (FU 45450), slag (also Cu-alloy slag FM 203449) and a large quantity of animal bones, incl. fish bones.

Even if the fragments of this building and/or or built structure is very fragmentary, it gives a lot of useful information. One important issue is the dating of the road, which since it is older than this structure, seems to go back to the time of the first activities in the area. Another issue is the presence of the buildings themselves - this shows that the area was not solely used as dumping grounds with refuse pits, but indicates much more diverse usage. Also, the placement along the road gives information on the physical

organization of the area and maybe type of activities connected to the road. And lastly, the presence of Cu alloy slag and a glass bead points to diversity of activity and groups of people present.



Figure 31 Postholes and deposit related to Group 216 seen together with road Group 76.

Road

Road Group 76 consisted of a series of deposits composed of a variety of materials. They comprised a feature with the character of a metallised surface, containing both iron working production waste (slag and similar material) and household waste (Figure 32). This metallised surface can be viewed as a road leading into the centre of the town. The group has been broadly dated and is believed to have been in use throughout most of the medieval time period, but finds material and C14 dates from postholes cutting through the road reveals that it has been used as early as there has been activity in the area. It then seems to be used during the rest of the medieval period, probably until the construction of an outer gate in the post-medieval period called for major re-arrangements of the entire area (for information on later periods of usage, see discussion of Phase 2).

At the lowest stratigraphic level the deposits were composed largely of sand and re-deposited natural. Overlying these deposits was a large even dump of slag and production waste material, most likely from iron working. At the highest stratigraphic level in this group were a series of deposits composed in general of mixed occupation material, but also containing production material. The road was preserved at a length of 16 m and a width of 7 m, but since the area was highly truncated this most likely represents only part of

it. The group contained different types of deposits and cut-like features which were remains from different parts of construction, usage and deconstruction of the road. Quite a lot of the deposits were leveling layers with the purpose to even out or repair the surface to enable continuous use of the road. It has a broad dating span. The direction of traffic on this surface has been shown to run in a southwest to northeast direction (wheel rut Subgroup 368) which would be consistent with a road leading in and out of the centre of the town, and from the High Middle Ages, in and out of the first Vesterport city gate. It is likely that Groups 376 and 213, to the southwest, are associated with the later phases of this group, most likely as a roadside ditch. The actual surface of the road is likely to have been truncated in antiquity.

Wheel rut Subgroup 368 can be viewed as a usage stage of this group. To the immediate south of the road, the building Group 216 was situated, and at the same time or slightly later, some pits which should be seen in relation to the location of the road. These features date to the 12th century.



Figure 32 Road Group 76 with wheel ruts Subgroup 368. Seen from northeast.

Surfaces

Group 243 represents the original surface upon which the first cultural deposits have been documented in the area by the road in Areas 2A, 2B and 3 (see Figure 31). The dating to the early medieval period refers to the topsoil's function as a surface. Two contexts have been recorded as original topsoil at this location. They were 0,1-0,3 m thick and consisted of light clayey sand. They show little evidence of cultural activity, but are more affected by roots and other natural processes. Leveling layers Group 160 have, probably during the early medieval period at the latest, been placed on top of Group 243 to prepare the area for usage, and the postholes for building Group 216 have been cut through the old topsoil. The proximity to the road Group 76 has affected the old topsoil with irregularities from stones being pressed down into the

soil. Three deposits, Group 160, were documented on top of the original topsoil. They were heavily truncated and difficult to interpret, but should be seen as leveling layers in relation to other features in this area - building Group 216, road Group 76 and pits, all from the early medieval period. The deposits produced no dateable finds, only a flint blade. One of the deposits had 1 cm wide stripes filled with cultural material such as charcoal, burnt clay and lime/chalk running east-west through the layer. These stripes seem to represent some kind of building activity close by, though what they represent is somewhat uncertain. The leveling represents the rearrangement of the area in between the phase of the building Group 216 and the younger pits Groups 157, 158 and 159.

In the central parts of Areas 2A and 2B there was one activity layer surviving among the layers of pits and wells. Group 437 was a deposit interpreted as an activity surface belonging to the second pit phase, mid-12th century. It was placed on top of pits, mainly Group 166. The extent of the layer was 1,55 m x 1,35 m and it was 0.35 m thick, consisting of mottled brown silt clay. It is likely that this material had been partially put there to even out the ground after the pits Group 166 and Group 170 had been taken out of use, and partially accumulated in situ due to continuous activity in the area. It is interpreted as an activity surface, and as such it can be seen as one of very few primary deposits in this area, where the survival of layers in between pits is rare. Finds include Early Greyware, a bone toy ("brumme") and other animal bones representing household waste.

Activities in the western part of Rådhuspladsen

The western part of Rådhuspladsen was, prior to the excavation, assessed as having low potential for finding preserved archaeological remains as it was outside the medieval town boundaries. Therefore the investigation of this part of the site was undertaken as a watching brief. The area turned out to be very much truncated by modern service trenches and air raid shelters from World War 2. However, some areas of undisturbed archaeological remains had survived, and showed that at least parts of this area had been intensely used in the early and high medieval time periods. The preserved features consisted of pits, wells, postholes and leveling layers, very much like further towards the central and eastern parts of Rådhuspladsen. The fragmentary status makes interpretations of the activities related to this area difficult, but there were some clear indication of functions, dating, and usage phases. However, a number of features, mostly pits, could not be dated. They have generally been placed in the high medieval phase (Phase 2) but they could well belong in Phase 1. The remains in this area should be seen in relation to the burial area c. 15 m to the north/northwest, which was in use at the same time, late 11th – early 12th century.

A very small area of c. 5 x 2 m in between an air raid shelter and modern service trenches yielded important information regarding the usage of this area (Figure 33). The deposits contained relatively large amount of iron working residue such as slag and hammer-scales. At the same time, lower quantities of household refuse were present. This might indicate, although the source material perhaps is too small, that this particular area was used mainly for workshops. Even if the area in question was very small, the stratigraphic relationships showed that there had been at least two usage phases during the early medieval period, and one in the high medieval period. A few metres from this small, intensely used area, one pit (Group 399) from the Early Middle Ages was found together with a few pits and a well dated to the high

medieval period. This pit distinguished itself through its very rich and diverse finds material; especially remarkable was that one of its fills contains six comb fragments of Viking age/early medieval types (FO 219355, FO 219361, FO 220700, FO 220701, FO 220702 and FO 220703). Also, the only sherd of the Viking age pottery type A4 found at Rådhuspladsen came from this pit.

Postholes - Groups 187, 189, 192 - Three partially preserved postholes situated next to each other represented the earliest activity at this precise location. The postholes can be dated to the early medieval period based on stratigraphic relationships. Posthole Group 192 was truncated by pit Group 191, and posthole Group 189 was cut by pit Group 188, both pits representing the second phase of usage in this part of the excavation area.

The postholes had similar dimensions in plan, c. 0,35 m x 0,3 m and were preserved with a depth up to 0,25 m. They all contained one backfill each, with no finds except for some animal bones. The postholes were placed in east-west direction with distances between the postholes of 0,3 and 1,3 m respectively. Since the area of preserved archaeology was so fragmentary, it is difficult to say if the postholes relate to each other as parts of a building or another built construction, but it is certainly possible. In the general area there was evidence of iron working as well as dwellings, it is therefore likely that the postholes were remains of a structure relating to either of these activities.

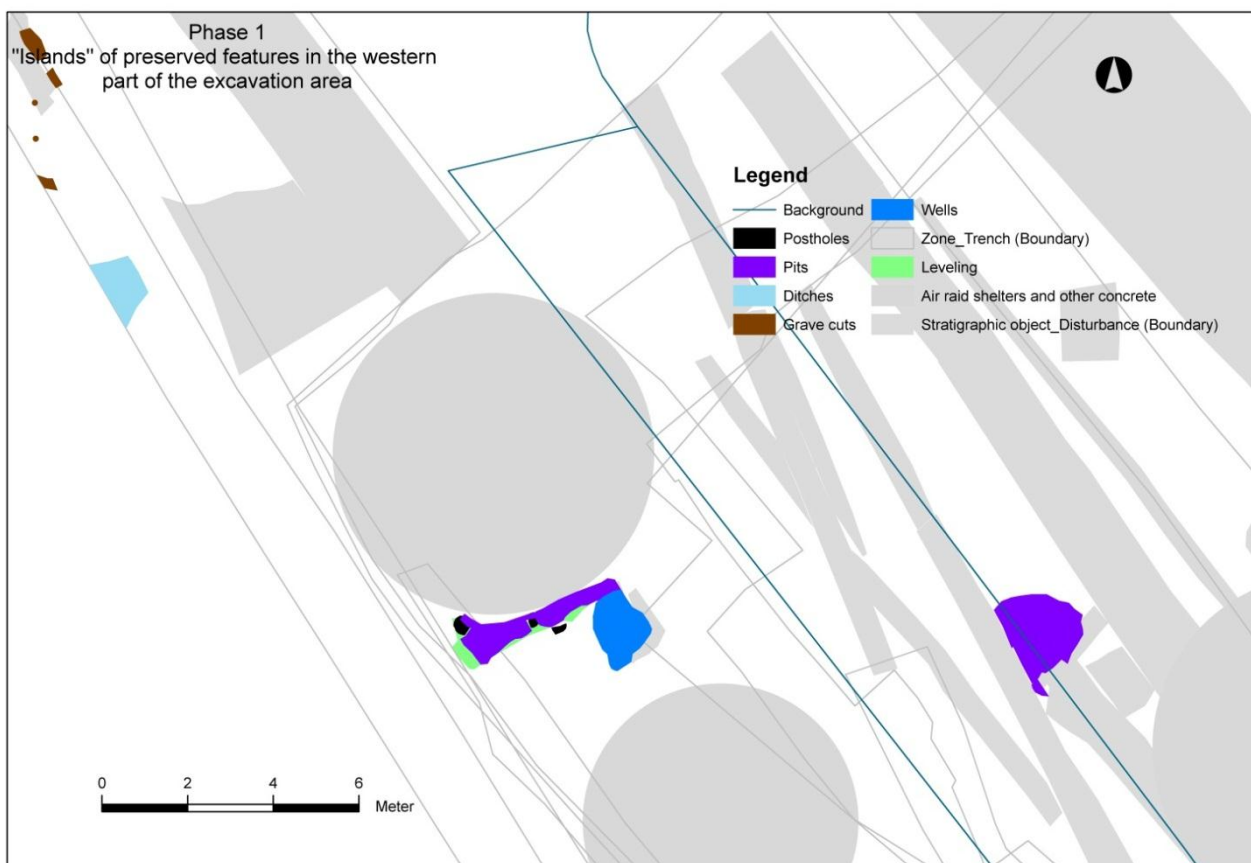


Figure 33 "Island" of partially preserved postholes and pits from the early medieval period in the western part of Rådhuspladsen. To the north, east and south modern truncations can be seen. In the upper left corner of the picture the burial area is seen.

Pits - Groups 188 and 191 - After the disuse of the structure connected to the postholes, two large pits were dug in the same place. They were both heavily truncated and their true extent, including their depth, is therefore unknown (see Figure 33). From the parts that were left, it was evident that both pits had been quite large. Group 188 was preserved to a size of 1,6 x 0,8 x 0,24 m. The sides of the pit were steep but irregular and the base of the pit was also irregular. Only one fill was recorded from the pit, it had a mottled character and should be seen as a backfill. The only finds were iron slag.

The pit Group 191 had a regular shape with concave, steep sides and a sloping base. The sides were undercut at the base. Dimensions of the preserved pit were 2,1 x 0,5 x 0,68 m and it contained eight fills. The basal fill was affected by some activity related to the pit - or nearby - with the colour of the clay shifting from yellow to blue and blackish and with lumps of oxidized clay present. Chemical analysis would be beneficial to explore function of the pit. This has not been done within the scope of this project. Other fills were mottled and of backfill character. Finds consisted of animal bones, slag, hammer scales and a buckle of high medieval type. Both pits are however dated to the early medieval period due to stratigraphic relationships and placement near other early medieval features. The buckle was found in one of the upper fills and maybe later activities in the area have affected these fills or alternatively the upper fills were of high medieval date.

A leveling deposit, Group 186, covering all the above described pits and postholes, marks the rearranging of the area. It was truncated to the north and south, so once again the full extent of the deposit is not known. The part which was left measured 3,86 m x 0,6 m x 0,1 m. The deposit was made up of mottled, dark grey sandy clay with inclusions of charcoal, slag, stones and burned clay, suggesting it was affected by earlier building structures or other activity. The group represents a new usage phase in this particular area, and a few more pits and a well were seen dug into the deposit (Group 179, 172 and later high medieval features). The deposit contained no datable finds, but due to stratigraphy and relationships to other features the group is dated to the 12th century.

Well Group 179 and pit Group 172 represented a second phase of activity. To the immediate east of the earlier pits and postholes, a cut feature was excavated. Half of the upper part was truncated by modern service trenches. The shape of the feature could still be seen and on the basis of shape and dimensions it was interpreted as a well. The well was 2,75 m deep and sub-circular in plan, 1,67 x 1,27 m. It was funnel shaped with the upper parts gently sloping, further down the sides were vertical (Figure 34).

The well had been cut through leveling layer Group 186 and therefore seems to belong to a second usage phase in this particular area. Eleven fills were recorded, all seemed to be from the disuse of the feature. No lining of the well was seen. Many of the fills contained slag, and the only piece of pottery was a rather large sherd of Baltic Ware of a later kind. The finds of slag are consistent in this small pocket of survived archaeology and could mean that a workshop was located here at one time. All in all, the suggested date for the well is c. AD 1200, based on pottery and stratigraphy.



Figure 34 Profile of well Group 179 with modern truncation all around it. Seen from east.

Also cut through the leveling layer Group 186 was a thin slice of a cut feature, just at the edge of one of the air raid shelters. The cut was preserved with the dimensions 2 x 0,12 x 0,35 m. The fill of the cut was overlain by dump (Group 171) containing high medieval pottery. It is possible that this group might not be a pit, but instead remains of construction work, relating to digging cuts for the air raid shelter just north of this feature. However, it is placed stratigraphically below Group 171 dated to the high medieval period. One fill was recorded, and it was noticed that it was different from most other fills in the area since it did not contain slag or other metal working residue. With all this taken into consideration, the feature is tentatively interpreted as a possible pit, contemporary with well Group 179.

About 8 m from well Group 179, parts of a large pit, Group 399, were documented. The pit was truncated on several sides, but was likely to have been circular or sub-circular in shape (Figure 35). It had the preserved dimensions of 2,5 m x 1,9 m x 1,05 m. The sides were steep but irregular and the base was irregular, with two depressions and a ridge between, almost as if there originally had been two cuts. Fills however showed no signs of separate cuts so if there had been they were backfilled at the same time. The pit contained ten fills, all of them interpreted as backfills. Backfilling seems to have been going on in different stages, with a layer of re-deposited natural separating phases of backfilling or usage. The lower fills had almost no finds material and consisted of lighter clay. Over these there was a thin deposit filled with charcoal (SD 138100) and on top of this charcoal deposit was a very finds-rich deposit (SD 137741), containing six bone combs of types dating to the 10th-11th century (Figure 36 a and b shows two of them), a bone pearl, a bone pin, a glass ring, Baltic Ware, one sherd of Viking Age A4 pottery, another sherd of typical Slavic type of Baltic Ware (see Figure 37), daub, nail, slag and large quantities of animal bones. This deposit had then been sealed with another layer of re-deposited natural, and the deposits over this “seal” were a bit different in character, containing a higher degree of slag and less household waste.



Figure 35 Pit Group 399 seen during excavation. Cut for high medieval well Group 393 seen to the right. Seen from above, from southeast.

The osteological analysis from this pit shows that the material came from one or more households, with a diverse menu including 16 species of fish as well as the usual domestic mammals. Also quite a large amount of cat bones were retrieved. Nothing in the bone material indicates workshop activity. The large quantities of bone objects from one of the fills have yet to be explained, but it seems to contain for these types of contexts, an unusual amount of personal objects, together with ordinary household waste. Based on the shape of the pit and the lack of material from a usage phase, it can be interpreted as originally being a clay extraction pit, secondarily being used for refuse of first household waste and later workshop waste.

14C dates from animal bones in two deposits in the lower half of the pit have given a slightly inconsistent result, with the deposit stratigraphically in the middle showing a clearly older date than the deposits above and below. The date range from the older of the two, SD 138100 is cal. AD 880 - 1020 (2 Sigma, LuS 11062, App. 37), likely AD 902-980 (cal. 2 Sigma by Calpal Online). From the overlying very finds rich deposit SD 137741 the date range were cal. AD 1020 - 1170 (2 Sigma, LuS 11060); likely AD 1043-1139 (cal. 2 Sigma by CalPal Online). Together with the finds of Viking Age pottery, the only piece at Rådhuspladsen, and Late Viking Age combs, the date of the backfilling of this pit can be put somewhere in the 11th century, making it perhaps the oldest features on the site.



Figure 36a and b Two of the six combs found in pit Group 399. Top: FO220696. Bottom: FO220703. Both date to late 10th-11th century (see App. 24). Photos: National Museum.



Figure 37 FO220736. Sherd of possible Slavic type of Baltic Ware (see Appendix 9). Photo: Jesper Langkilde.

The area was continuously used in the same manner into the high medieval period, shown by the pit Groups 153 and 190, but quite soon it seems to have been taken out of use, since no features were found dating to later periods. It is a possibility, that larger ground works, or “landscaping” has occurred in later historical periods, which could have removed possibly later features. If so, the features have not included any deeper cuts, since they would have been preserved. Considering the construction of the medieval fortification in the 14th century, it is also unlikely that extensive activities has taken place just outside the town borders, but minor suburban activities could have been expected.

The fragmentary remains from the early and high medieval periods should be seen in relation to similar features in Areas 1, 2A and 2B and 3, as well as the cemetery north of this small area. They seem to represent the same type of activities as further towards the east, closer to the centre of the city. This suggests that even if very few cultural layers showing indications of buildings were present this far to the west, they do exist in the small “pockets” of preserved remains. The different phases of activity also shows, that even if the amount of early medieval remains in the western part of Rådhuspladsen were considerably smaller than to the east, closer to the urban centre, some areas have been intensely used. This could be a sign of the area being strictly organized, with limited possibilities to expand outside a given area. The element of possible Viking age dates of pottery, combs and C14-analysis in this westernmost part of the excavation area, could indicate that a possible Viking age settlement could have been situated further towards the west or northwest. The cemetery in the northwestern corner of the area, with possible dates in the 11th century, and also suggesting a further extent towards the north and west, could support this theory.

The burial area

The burials were found in the northwest corner of the excavation area, just at the edge between HC Andersens Boulevard and the bus stop in the northern part of Rådhuspladsen (Figure 38). The area was excavated under watching brief conditions, but as soon as the graves were encountered, the watching brief was changed into an archaeological excavation. No prior knowledge of burials or other early medieval remains in this part of the excavation area existed before the watching brief started. This was in spite of the presence of numerous service trenches running through this area. It became obvious during the excavation that these earlier ground works had disturbed the graves and the other features in the area, leaving only a fraction of the early medieval remains that may once have existed. Graves were encountered up to the very limits of the excavation towards the north and west, strongly suggesting that the area of burials continued in these directions. Also, the northern part of the burial area showed a denser burial pattern, suggesting that the central parts of the cemetery were towards the north.

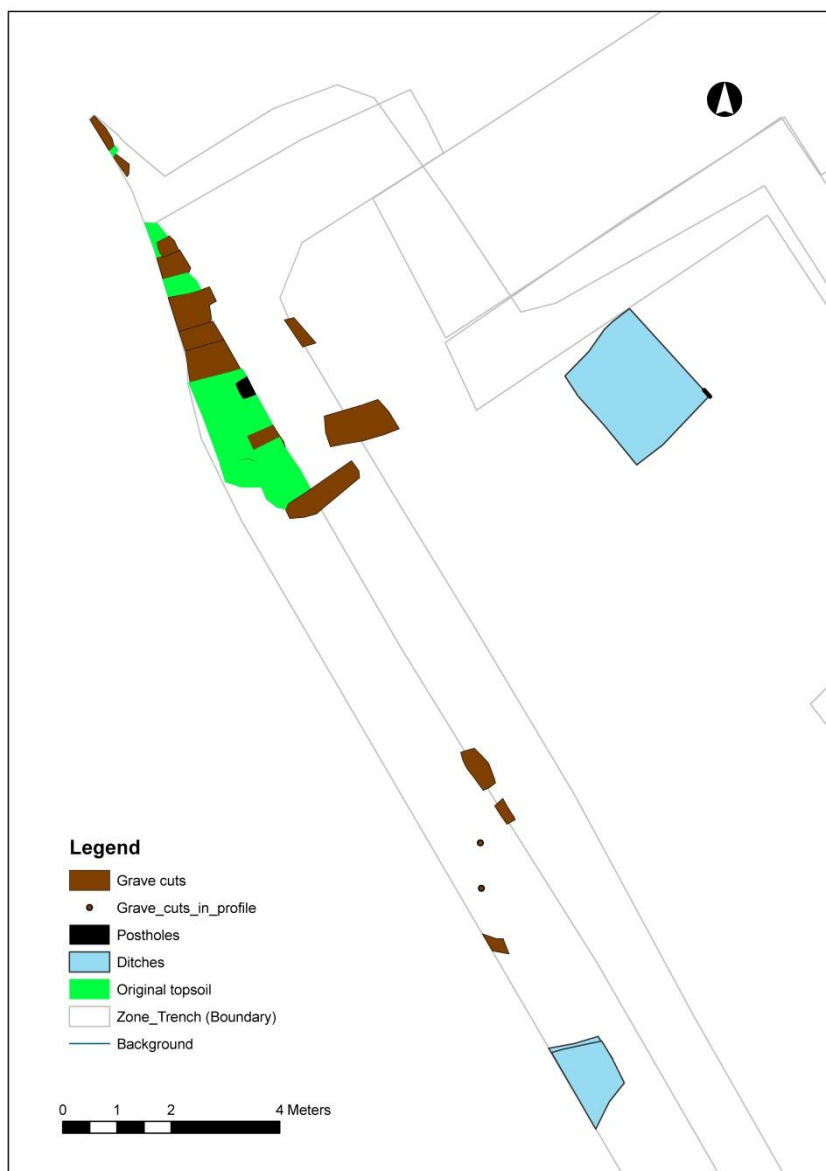


Figure 38 Features in the burial area.

The remains of a number of burials were found in a small area in the northwest corner of the excavation area. 17 graves were recorded. Ten of these had in situ skeletons, two had only disarticulated bones. Another two were interpreted as graves but with no bones in their fills. Three graves were only seen in the trench profile. In most graves there were also disarticulated bones in the grave fills. The osteological analysis showed that bones from at least 21 individuals were present in the material (Lynnerup 2011, App. 8).

The graves were encountered relatively close to present ground level, only c. 1 m below present street level. This could be an effect of the area being protected under the post-medieval rampart which according to written sources should have been placed in this area. It may also be due to previous construction work, with leveling and/or removing soil from the area. This could for instance have been done when turning this area into a square after the demolition of the fortifications in the late 1800's (Jørgensen 1990:79ff).

Even though the preservation conditions were poor, with only parts of the features left to document, at least two stratigraphical levels of burials could be identified. Also, details could be documented regarding the form of the graves. The cuts for the graves were almost all regular in shape, with straight sides and flat bases (Figure 39). Finds collected from this area, from the burial deposits as well as other features, consisted mainly of household type finds, such as pottery and animal bones. The pottery was mainly of Baltic Ware and Early Greyware. There was also some metal working residue, represented by slag and vitrified clay. These were mostly restricted to the southern part of the area. The top deposits in the graves, possibly the original ground level in the area, were also characterized by inclusions of charcoal. This could be a reflection of activities in the area, which will be further discussed in the end of this chapter.



Figure 39 Grave cuts post-excitation. Seen from southeast.

Seeing that the preservation conditions were quite poor, emphasis was put on scientific sampling, in order to try and get as much information as possible about dating, the contemporary surroundings, activities and character of the area during this time period. A basic osteological/anthropological analysis was undertaken of all the human bones, both the *in situ* skeletons and the disarticulated bones. (Lynnerup 2011, App. 8).

Also, it was seen as crucial to the interpretation of the burial ground and the wider discussion of its role in the area and in the contemporary settlement/town, to get as precise a dating as possible of the usage period of the burial area. For that reason 14C-dates were made of every individual found at the burial ground – both the *in situ* skeletons and the disarticulated bones which were assessed as representing different individuals. In total, this added up to 14C-dates from 21 individuals (most are seen in Table 11; see Appendix 37). All 14C-analyses from the *in situ* skeletons were later put through isotope analyses for reservoir effect. This is necessary because consumption of marine food effects the bones, making skeletons of individuals having consumed any degree of marine food provide 14C-analyses that result in

older dates than they should (reservoir effect; Philippsen 2014). This analysis was conducted at the Institute for Physics and Astronomy at Aarhus University and is attached as Appendix 38 in this report. The analysis after correction of reservoir effect for the individual samples shows a very similar date for all skeletons. The mean date for the skeletons can be set to cal. AD 1040-1126 (based on all LuS lab references of in situ skeletons; Kanstrup & Heinemeier 2013, Report 1071), although what this could mean for the usage phase of the burial ground is still to be assessed.

In addition to the 14C-dates of the skeletons, one was made of surviving coffin wood. That resulted in a much earlier date: cal. AD 775-889 (2 Sigma , KIA 44988). The wood species was however not determined, which means that the tree's potential own age must be taken into consideration. A number of sherds of Baltic Ware and Early Greyware were found in the grave fills.

A collective assessment of 14C-dates and finds can date the burials to the 11th-12th centuries, probably late 11th-early 12th century (Appendix 37 and 38; Kanstrup & Heinemeier 2013, Report 1071).

In addition to graves, two linear cuts interpreted as border ditches, a couple of postholes and remains of the early medieval ground surface/original topsoil were seen. The area represents a fragmentary, but in itself quite well preserved part of early medieval activities in the area.

Group	Name	14C-date, cal. 2 Sigma – <i>before isotope analysis</i>	Lab reference
117	Child grave with coffin	AD 948-1052	LuS 10402
72	Infant grave	AD 899-995	LuS 10405
29	Grave with skeleton and coffin	AD 982-1106	LuS 10397
35	Child grave with skeleton	AD 920-1018	LuS 10400
24	Grave with skeleton	AD 920-1018	LuS 10404
89	Grave with skeleton	AD 998-1118	LuS 10399
23	Grave with skeleton	AD 928-1024	LuS 10403
36	Grave with skeleton	AD 901-997	LuS 10406
68	Grave with skeleton	AD 906-1004	LuS 10398
13	Grave with skeleton	AD 1003-1121	LuS 10401
88	Grave with disarticulated bones	AD 991-1107	LuS 10463
127	Grave with disarticulated bones	AD 1006-1118	LuS 10464
40	Grave without bones		
44	Grave without bones		
122	Grave in profile		
123	Grave in profile		
124	Grave in profile		

Table 11 Features interpreted as graves with cal. 14C-dates. For Cal. 14C-dates the web accessed program CalPal Online has been used to get as precise dates as possible (<http://www.calpal-online.de/index.html>). Note, after calibration for 13C all dates have been corrected to a very similar date range, cal. AD 1040-1126 (see above).

Group 117 was a child's grave with skeleton and remains of a coffin (Figure 40). The grave was placed centrally in the burial area. It was truncated to the east by a modern trench, but almost the whole skeleton was preserved. The grave was also truncated from above by another grave (infant grave, Group 72). There were no other graves immediately next to this one. The grave was dug into original topsoil. The topsoil towards the northern part of the area contained a lot of charcoal, but this part was more sterile. The grave cut had straight sides and a flat base. The fill was mottled and had inclusions of charcoal and pebbles. One piece of prehistoric pottery of undefined type was found in the fill, together with animal bones and one piece of human bone, suggesting the presence of an older grave disturbed by this one. There were traces of a coffin, but almost completely decayed. The skeleton was fairly complete but very fragmented. Age was assessed based on appearance of teeth to be a 5 year old child.



Figure 40 Group 117, Child's grave with skeleton in situ (SB8025).

Cutting into grave Group 117 was another child's grave, Group 72 (Figure 41). The foot end of the grave was destroyed by a modern trench. One piece of Baltic Ware was found in the mottled grave fill. The skeleton belonged to a three year old child. The whole skeleton, except the feet, was present. The placement of this child's grave together with the one below of the 5-year old, could indicate this was a specific area for children.



Figure 41 Group 72 with skeleton SB7874.

Immediately east of grave Groups 72 and 117 another grave, Group 29, with skeleton and coffin remains, was situated (Figure 42). It was truncated to the east by the trench shoring. It was the only grave in its sequence, dug into natural but the fill showed similar features as the original topsoil in the area (Group 90). A large part of the grave was preserved, however the eastern part of the grave was cut off by a modern service trench, cutting off the part where the legs would have been. The fill contained small parts of charcoal and pebbles, which looked similar to the topsoil in the area, mixed with natural clay. This indicates that the burial soil was taken from the immediate area, and not brought in from elsewhere. No finds were collected from the grave fill. The grave contained a very decayed wooden coffin which still could be sampled for C14. The analysis gave a dating range of cal. AD 775-889 (2 Sigma, KIA 44988). Since the wood species was not possible to determine, it is possible that the wood could have been a couple of hundred years old when used for the coffin. The individual buried in this grave had been placed with one arm on either hip (arm position B), hands still on pelvis while arms had slid down to the sides. The skeleton was poorly preserved, but could be assessed to be from a man, 50-60 years old. The man's height was assessed to 179 cm. He had poor teeth but otherwise no diseases could be seen. The arm position B indicates that this was not one of the oldest graves. The skeleton's arms and hands position can be used as a dating instrument. Studies of Danish cemeteries have shown, that skeletons from the oldest burials were positioned with their arms along the sides (type A), followed date wise by lower arms and hands on hips (B), later placed over the stomach (C) and finally crossed over the chest (D) in the late medieval period (ref. Kieffer-Ohlsen). All skeletons from Rådhuspladsen with this part of the body preserved belonged to type A or B.



Figure 42 Group 29 with skeleton SB 6836.

In the northern corner of the area a child's grave with in situ skeleton, Group 35, was excavated (Figure 43). It was truncated to the east by a modern trench. The grave was cut into underlying grave (Group 36), disturbing it slightly. There were no other archaeological features above. About half of the grave was preserved and available for excavation. The cut had straight sides and a flat base and the fill was mottled and contained disarticulated human bones. The buried individual was a 15-18 year old sub-adult with no apparent diseases.



Figure 43 Group 35 with skeleton SB 8677.

Group 24, Grave with skeleton (Figure 44), was located in the central part of the area. This particular part of the burial area was the most densely used. The grave extended outside the excavation area towards the

west, and was also truncated to the east by a modern pipe trench. It was placed right next to another grave (Group 89), and both these graves were truncated by a later grave (Group 23). These graves were located c. 15 m north of the presumed border ditch which contained traces of iron-smithing (Group 22). They were dug into original topsoil. The topsoil shows the same character of charcoal inclusions as the upper fill of the border ditch, which could mean this whole area was affected by the same activities, possibly firing in connection with iron production (see Group 22 for discussion). Lower part of femur, complete fibula and tibia bones and some foot bones were preserved and analysed. Osteological analysis assessed the buried individual being an adult, probably female with a height of 170 cm. The fill contained specks of charcoal, burnt flint and heat-affected stones, as well as finds of pottery (Early Greyware) and animal bones, all pointing to the fill containing household waste and possibly also traces of iron smithing. A cranium was found on the left knee of the buried individual - probably from an older grave. Also, a large stone was placed at the feet of the individual. Both these attributes are known from other early medieval cemeteries, i.e. Sct Clemens cemetery nearby. Large bones from disturbed graves, or stones, were placed on top of or next to the individual being buried. One reason for this could be that the large bone was used as a marking of the new grave to protect it from being disturbed by the digging of new graves (Jark Jensen & Dahlström 2009).



Figure 44 Remains of Group 24, with lower legs of SB8039, disarticulated skull on one knee and large stone at its feet.

Also Group 89, grave with skeleton (Figure 45), was placed centrally within the burial area. It was heavily truncated - to the east by a modern trench, and from above by a cable trench. It also extended towards the west outside the excavation area, leaving only the middle part of the grave preserved. The grave was dug into original topsoil (Group 90). It was situated c. 15 m north of the presumed border ditch Group 22. The grave fill had inclusions of charcoal, much like the surrounding graves and the topsoil below. One piece of Baltic Ware was found in the fill. The parts of the skeleton which were accessible in the trench were from the mid-torso part to the knee/thigh area. The upper parts of the body which were possible to reach in the trench section towards the west were also excavated. The lower arms of the buried individual were placed on the pelvis, in B-position. The bones were badly preserved. Osteological analysis showed the buried

individual to be an adult male aged 50+. The teeth showed traces of bad dental health in childhood years, 2-5 years age. The person had also suffered from osteoarthritis in his spine.



Figure 45 Remains from the very truncated grave Group 89 with skeleton SB8053.

Group 23, grave with skeleton (Figure 46), was placed centrally in the burial area, truncating grave Groups 24 and 89. It was part of a cluster of five graves with stratigraphical relationships to one another (Groups 72, 117, 23, 24 and 89). The grave itself was truncated by modern trenches in the east and west. The fill of the grave was mottled and contained charcoal, burnt flint and bone, which suggests an earlier settlement use of the area. This can also be indicated by the find of a flint blade (undated). Also some disarticulated bones were found, perhaps deriving from the truncated graves beneath. The upper part of the skeleton was preserved, but fragmented. The buried individual was assessed a man of 50 years or older, with substantial wear on his teeth and also suffering from osteoarthritis.



Figure 46 Grave Group 23 with skeleton SB 7936.

Group 36, grave with skeleton (Figure 47), was slightly truncated from above by another grave (Group 35). In the east it was truncated by a modern trench, and in the west the grave extended outside the excavation area, only leaving the fibula and tibia bones to be documented. Osteological analysis could only determine that the individual was an adult. As with many of the other graves in the area, and indeed the topsoil, the fill of this grave was mottled with inclusions of charcoal, indicating contemporary non-burial related activity in the immediate surroundings. Finds consisted of disarticulated (likely human) bones and a piece of Baltic Ware.



Figure 47 Grave Group 36 with skeleton SB8708.

Group 68, grave with skeleton (Figure 48), was the most southern placed grave which was preserved in plan. It was truncated towards the south and west by later features. It was the only grave in its stratigraphic sequence. The grave was orientated slightly differently than most of the others - in a W/SW - E/NE direction (see Figure 38). Two child graves were also aligned in a similar direction (Groups 117 and 74). This could be a coincidence, but there could also be other explanations, for example a similar date. Due to truncations, the upper part of the grave and upper part of the skeleton was gone. The grave fill was more homogenous than many of the others, and contained no finds. The fill was heavily disturbed from above by the machine, leaving only fragments to document. The individual was placed with its arms on the pelvis - in B-position. On the basis of the merging of joints, the individual was assessed to be 17-19 years of age, and on the basis of size of bones to have been a man.



Figure 48 Group 68 with skeleton SB7881.

Group 13, grave with skeleton (Figure 49), was highly truncated, with the preserved part found between two linear modern trenches. It was placed east of the majority of the graves. It did not have any stratigraphic relation to other archaeological features. The grave fill was mottled, containing one sherd of Early Greyware and one sherd of Late Greyware. The latter was according to the archaeologist's description of the grave fill found in the interface towards a modern truncation. One piece of disarticulated human bone was also found (but not dated). The preserved parts of the skeleton (SB 7816) were fragments of the upper right side of the torso and right humerus, showing a body orientation E-W. The individual was assessed as being an adult.



Figure 49 Skeleton SB7816 in grave Group 13.

Groups 88 and 127 represent features interpreted as graves, but without in situ skeletons. Reasons for the skeletons absence would be a high degree of later truncations, leaving only a small part to be documented.

Only a length of 0,18 and 0,27 m of the graves were preserved in between truncations at the time of excavation. The features were interpreted as graves on the basis of their shape, placement and finds of disarticulated human bones in their fills. The disarticulated bones could either be from the individual once buried in the grave, or as seen in other graves, from already disturbed graves.

Grave Group 88 was placed in the southern part of the burial area, close to the presumed border ditch. In this part of the burial area, no original topsoil was preserved. This indicates that the area has been dug out/that soil had been removed from the area at some point after it had been used as cemetery. Group 127 was also placed in the southern part of the burial area, close to the ditch interpreted as the cemetery border (see below). Both graves were cut into the natural soil and truncated by either later archaeological features or modern service trenches. From Group 88 there were a humerus and a rib preserved. Both of these were from an adult. From Group 127 there were fragments of cranium, pelvis and sacrum. On the basis of size and character of pelvis and cranium the individual was probably an adult female. The fact that the bones from both graves seem to belong to one individual, it could be argued that they represent the individuals once buried in these graves.

There were two features, Group 40 and 44, which were interpreted as graves on the basis of their placement in the burial area and on the shape of the parts of the features which were to be seen. They were both placed in the northern edge of the burial area. Both graves extended towards the west outside the excavation area, and were truncated by modern trenches in the east, leaving only a very small section of c. 0,2 m of the features to be excavated (Figure 50). No skeletons or disarticulated human bones were observed in the features. They were both dug into the original topsoil (Group 90), and directly above there were modern fills. This could be an indication of the upper soil in this area being removed at some point. The fills were similar to others in the area: uniform in character but had inclusions of charcoal and stones. No finds were collected.



Figure 50 Grave cuts for Groups 40 (left) and 44 seen cut by the metal shoring.

In the southernmost part of the burial area, three graves, Groups 122, 123 and 124, were observed in the section towards the west. The features were interpreted as graves on the basis of their placement, of a few finds of human bones in the fills, and of their similarity to the other graves in the area. Group 123 was cutting Group 124 (Figure 51).



Figure 51 Section showing grave cuts for Groups 123 (right) and 124.

Group 124 had seven fills - the second oldest one contained human bones. The bones were left in situ and not collected. Group 122 contained a human bone which was C14-dated (cal. AD 986-1084; 2 Sigma , LuS 10456 – note - uncalibrated for reservoir effect). The fills of all the graves were generally mottled in character, with occasional inclusions of lime, charcoal and stones. A few animal bones were the only finds collected. These graves are the ones of the registered which were situated closest to the southern border of the cemetery. The fact that they are still preserved in three stratigraphical layers is noteworthy since it could suggest an intense usage of the cemetery.

Quite a large part of the cemetery had the original ground level preserved. Several of the grave cuts in the burial area cut through layers which were interpreted as original topsoil, Group 90. The extent of the topsoil which was measurable within the excavation area was c. 7,5 m in length and 1,35 m in width, with a depth of up to 0,3 m. The layers interpreted as topsoil were characterized by being mottled, with inclusions of charcoal and pebbles, sometimes chalk or lime. This is an indication of human activity contemporary or prior to the use of the area as a burial ground.

One pottery sherd of Early Redware type came from an upper fill which might have been transported from later deposits. Apart from the pottery sherd, animal bones and one rope fragment made of animal fibers were the only finds. The deposits belonging to the original topsoil were truncated by grave cuts and modern trenches. The topsoil also seemed to extend outside the excavation area towards the east, west and north. In the south it was completely destroyed by modern trenches. As the definition of topsoil would

imply, it was stratigraphically placed directly over natural soil, being the oldest deposit with traces of human usage in the area. As 'original' topsoil, it has no age as such, but in this case is presumed to be the ground surface in the early medieval period. Traces of human activities, mostly charcoal, is likely to be dated to this period. The inclusions of charcoal were also present in most grave fills, which suggests contemporary or older human use of the area apart from it functioning as a burial ground. The charcoal inclusions seem to fade in the northern part of the area. This might suggest a centre of charcoal producing activity in the south. Maybe the younger phase of the ditch interpreted as the southern border of the cemetery should be seen in this context (see discussion for Group 20).

Two seemingly linear features in the southern end of the burial area have been interpreted as parts of ditches, likely to have functioned as border ditches for the cemetery. Group 22 was the oldest of these. It was seen to c. 0,9 m in length, 0,9 m in width and 0,76 m in depth. It consisted of one cut and three deposits; the lowest of these was alluvial in character. Its attributes give the interpretation that it was a ditch, at one time filled with water. It was dug into natural soil, and was later cut by another ditch of the same type, Group 20.

The younger ditch, Group 20, was cut by modern services. The feature was only preserved in part, and is on the basis of its attributes interpreted as a ditch, once filled with water. It had several fills, the characters of which indicate several phases of use. There was also one activity layer connected to the ditch, but the exact contextual relationships and extent of this layer is uncertain. The activity layer seems to have extended outside the excavation area towards the west, and was possibly destroyed by younger cuts towards the east. In the activity layer there was a high degree of inclusions of charcoal, and also forge material, vitrified clay and Early Greyware (see Figure 52). Analysis of the vitrified clay shows it was fired at high temperatures (more than 1200^o, see discussion earlier in the Phase 1 chapter) and also contained fragments of iron slag. This can be seen as evidence of iron smelting/smithing (Borsson 2011, App. 6). Considerable inclusions of charcoal were also present in the original topsoil (Group 90) and in some of the grave fills towards the north, giving even more indications of there being a workshop close by, involved in iron production.



Figure 52 The ditches Group 20 (upper left) and 22 (lower right). They were both truncated in the north (to the right in picture). Seen towards west.

The ditches were situated south of the burials and north of the medieval road going through this area towards the centre of the town. The direction of the ditches was southwest to northeast, which makes them parallel to the road. It was also parallel to the graves, which were all aligned more or less in the same direction. The placement of the ditches between the graves and the road is an indication of a function as a border to the burial area. It could also have had drainage purposes. The many sherds of Early Greyware found in the different fills date the ditch to the early medieval period. A 14C-date from the youngest fill of Group 22 is in alignment with the isotope calibrated dates for the graves to c. 1040-1143. Cattle bone was used and resulted in a date range of cal. AD 1025 - 1210 (2 Sigma , LuS 11074, App. 37), likely AD 1051-1155 (cal. 2 Sigma by Calpal Online).

In the eastern part of the cemetery area there was a very truncated linear cut feature, Group 180, interpreted as a drainage ditch. Only 0,26 m in the bottom of the cut had survived, but with dimensions in plan of 3 m wide and 1,7 m in the length of the linear feature. The fills were uniform in character but did contain human bones from three individuals. These were 14C-dated and the dates fit the (for reservoir effect) uncalibrated 14C-dates from the graves. Deposit SD 9081 was dated to cal. AD 870 – 1035 (2 Sigma, LuS 10455, App. 37), likely AD 950 ± 46 (cal. 2 Sigma by Calpal Online) while SD 7996 had a younger date of cal. AD 985 – 1170 (2 Sigma , LuS 10459), likely AD 1080 ± 53 (cal. 2 Sigma by Calpal Online). The bones in the ditch are likely to be redeposited from earlier graves in the area.

In the burial area there were two smaller cuts which were interpreted as postholes, Groups 34 and 116. They were situated 8 m from each other on an east-western alignment, but it is not possible to say if they were related in any way. Both features were truncated by younger cuts, so their real extents are not known. One of the features, Group 116, was only seen in section. The dating is fairly uncertain, since no

finds were collected from the features and no 14C-analyses were made. They were cut into original topsoil and overlain by modern disturbances and a late medieval/early post-medieval ditch respectively. Taking into account the spatial relationships, which indicate a date contemporary with the use of the area as a cemetery, together with the stratigraphical circumstances, a date to the early medieval period seems reasonable. The function of the features could be connected to the burials. Since the cultural deposits in the area are highly truncated, the two possible postholes could have been functioning together with other, since removed postholes, as a part of a building or some other structure.

Overall conclusions for Phase 1, AD 1050 – 1250

Chronology and overall organization of the area

Through the observations made, it is possible to give a general account of how activities were organized, and how the area developed within the early medieval period. Four different sub-phases can be identified. The dates given for the sub-phases should be seen as approximate. The oldest date is set to c. AD 1050 on the basis of a collective assessment of AMS-dating, and the number of sub-phases relate to structural relationships of the features, dateable finds and stratigraphy. It should be noted, that it has not been possible within the time frame for this project, to go into great detail in the structural and finer chronological analysis. However, some information is clear enough to be identified at the excavation report stage.

Sub-phase 1a: mid 11th century to beginning of 12th century - first traces of settlement with a post-built house in Area 1 and evidence of some pits spread across the excavation area. The outer parts of a cemetery is seen in the north-western corner of the excavation area. Remains of activities are seen in the whole of the excavation area from this early stage. Craft in the form of iron-working and possibly comb-making and the making of other bone objects could have started already in the 11th century. Possibly also some version of the road leading into the town existed already at this point.

Sub-phase 1b: c. first half of 12th century - increased activity of settlement and production activity – mainly iron working. There is evidence of possibly two buildings, an increased number of pits and wells, roads, open spaces and in all, a higher level of infrastructural organization of the space. The backfills are indicative of a use of the area for occupation, iron working and possibly bone crafting. Rearranging of activities within small spaces suggests a degree of restriction of the space available. Increased iron-working in the area. The cemetery is taken out of use in the first half of the 12th century.

Sub-phase 1c: c. mid-to late 12th century - During the 1100's activity intensified even more with traces of a more substantial building, re-cutting of pits and also some changes in the infrastructure, pointing to a tighter organisation of the site – maybe to make more room for increased activity. Continued iron-working activity.

Sub-phase 1d: c. late 12th century to early 13th century – Towards the end of Phase 1 activities seem to decrease to a degree. There is evidence of one possible building in the eastern edge of the area. The decrease of preserved cultural layers from this time could be due to these levels of deposits being truncated away in later ground works at Rådhuspladsen, of which there has been a lot during the centuries. Fewer pits were dug – however their backfills can in many cases be dated to the time close to the beginning of the high medieval period. The backfills still indicate use of the area for dwelling and iron-working. Activities seem to diminish in the western parts of the excavation area. Although, the same type of occupation and production activities continued into the high medieval period.

The placement of different feature types provides information on the organization of the area excavated (Figure 53). Fragments of a road going southwest-northeast were seen early on, probably some version of the road existed for as long as there were activities in the area. It should be seen as the continuation of Vestergade, which still exists today, and which was the main town road during the medieval period. It seems as though all features were related to the alignment and placement of this road.

Buildings were registered in areas with preserved cultural layers – Area 1, 2B and the small watching brief trench in the south. Seen from the road, most pits and wells were placed behind the buildings or in direct relation to them. In some areas there was a high degree of intercutting of pits, which indicated they were related to some activity which could not be moved far away for some reason. Either that reason was that movement with the area was restricted on a higher organizational level, or that the activities related to the pits were stationary. Once again, it should be remembered that large truncations could influence the interpretation of the organization of features and activities, for instance, that the whole area in between the road and the pit area in the central parts of areas 2A and 2B now seems empty of features and that the pits occur at a certain distance from the road. Maybe there were buildings between the road and the pits, or maybe there were pits or other features, which have been destroyed by later activity.

The cemetery was restricted to the north of the road, with a possible border ditch in between. It is perhaps worth mentioning that there is a lack of plot borders in the form of ditches or other markings in the entire area. This could be due to preservation conditions, or perhaps the plots were marked in other ways. From the orientation of wheel ruts from medieval surfaces in Area 1 and in areas 2A, 2B and 4, information on movements in the overall area can be gained. The exact dates for the wheel ruts in Areas 2A, 2B and 4 is not known, but together with the ones in Area 1 they show an interesting and quite puzzling movement pattern. It seems that the tracks have a southwestern-northeastern alignment, but that it spreads out from the west into a more direct eastern orientation. It could be that it is several generations of roads which are seen at the same time, and in that case a gradual change of spatial organization might have occurred. It could also be, that parts of the area at one point was more open and not so densely settled, maybe functioning as a place for trade, for reloading of goods, or for stopping before going into the centre of town. It should be remembered, that the church and cemetery of Sct. Clemens was situated south of Vestergade and to the immediate northeast of Area 1, and that the organization of space and activities at Rådhuspladsen in Phase 1 and 2 in particular, must be seen in relation to the church and its cemetery.

It should be noted, that no outer limits for the early medieval activities seen at Rådhuspladsen can be established. Towards the northeast, the church and cemetery of St. Clemens were situated at this time, and towards the north the road leading into the central parts of town probably existed already at this time. How the area north of this road was used is not known, since it partly was placed outside of the excavation area and partly had been truncated by later archaeology and modern services. Towards the west and south the archaeological remains were however present all the way to the borders of the excavation.

The different specialist analyses have contributed with much information on the activities and environment in the area. Much more work can be done integrating these results with the archaeological interpretations, and they can also function as a guideline to where more analyses could be done in relation to further research in the early urbanization and life in Copenhagen. The results from the animal bone analyses and metallurgical analysis have already been touched upon. The environmental analysis also contributes with useful information on the type of area Rådhuspladsen was in the early medieval period. It shows that the area was not yet intensely settled, but probably had grazing areas in between units of settlement.



Figure 53 Plan showing a preliminary interpretation of general physical organization of the area around Rådhuspladsen in the 12th century.

As an overall summary of what the archaeological remains at Rådhuspladsen reveals about the area in the early medieval period, a few points could be put forward.

- Evidence points to the whole of the area being used from the late 11th century
- Activities were both occupation and production related
- The activities seem to be of permanent character, and not of seasonal character, although not very densely organized
- The mixing of household and production refuse, points to the activities being spatially closely connected
- The craft which has left most traces in the area was iron production and smithing, but there are traces of bone related craft as well. Iron working might have had a role in the early development of Copenhagen, as seen in other urban areas (Andersson 2015:287ff)
- The indication of more than one church in Copenhagen in the late 11th century points to there being several social groups or groups with different social affiliations present. This might indicate several power figures active in Copenhagen at this time
- In the 13th century there was a concentration of activity towards the east, closer to the medieval centre of the town. Should maybe be seen along with the abandonment of the cemetery before the mid-12th century
- The diversity of activities and the level of organization of the area are of urban character

Phase 2 Urban Consolidation – AD 1250 - 1350

The second recognised phase of activity at Rådhuspladsen corresponded approximately to the High medieval period (c. AD 1250 – 1350), and saw consolidation of the developing centre that became Copenhagen. Evidence was found for street layers and associated structures, domestic activity and surfaces; also pits, ditches, wells and other large cut features, and various horizontal layers relating to ground-levelling, dumping and other everyday activity. No evidence was found for defences in this area during this phase, though it is possible that it could have been removed by later activity, such as the expansion of the city moat. The features found at Rådhuspladsen add new knowledge to our understanding of Copenhagen during this period, adding to our knowledge of everyday life in the developing medieval town.

The high medieval remains seen at Rådhuspladsen were heavily impacted by later activities in the area – both archaeological (such as the moats and mill) and modern (service trenches, air-rid shelters etc.). Nonetheless a good deal of medieval evidence survived, enough to gain a good understanding of what was happening in the area at this time. The high medieval contexts themselves impacted on earlier archaeology too, intercutting and overlying the early medieval remains to a degree, and to an extent obscuring the picture we have of the earlier activity.

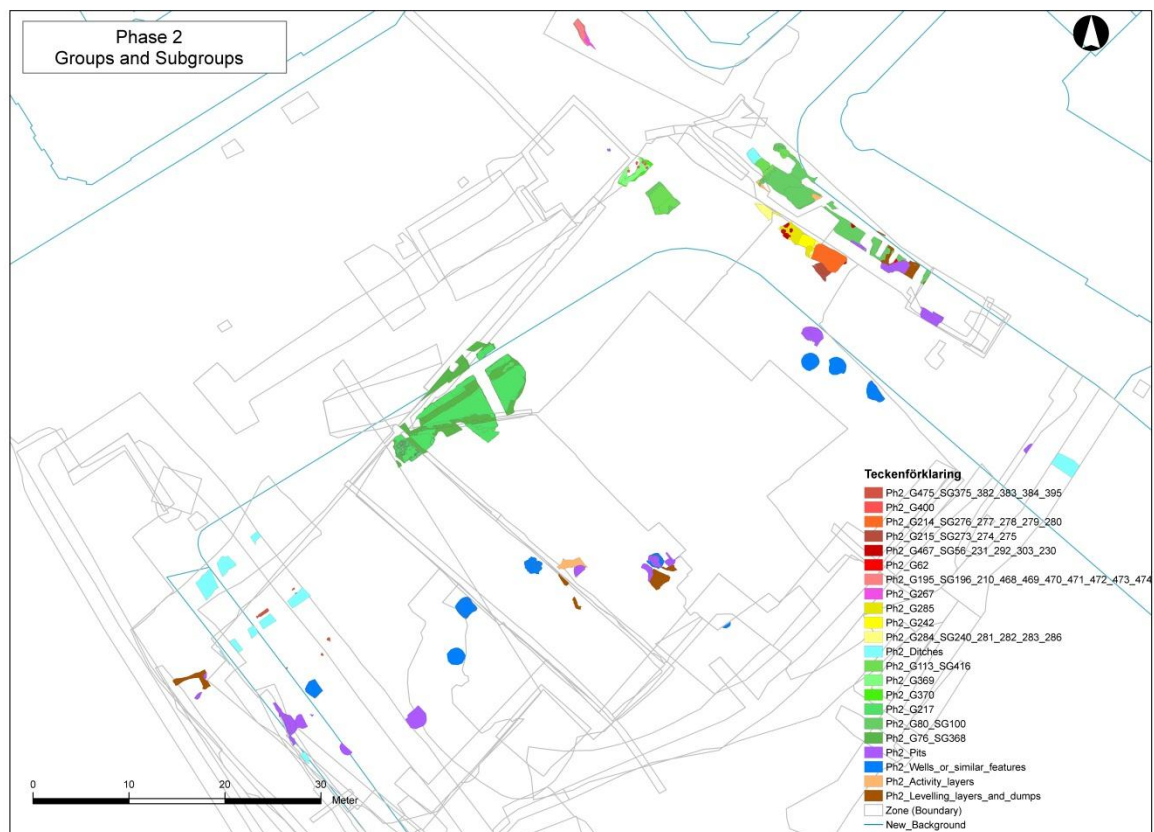


Figure 54 Groups and Subgroups in Phase 2

Overall then, Phase 2 saw a continuity and expansion of activity in the area, and the continued growth of the town. Some of the activity seen is essentially a continuation from Phase 1, but there are some changes, most notably the cemetery was no longer in use, so to a degree the land use had changed in this part of the town.

The presentation of the features and finds from this phase will be divided into the different feature types as outlined above, beginning with structural evidence, which will be discussed together under the heading 'Streets, Surfaces and Buildings'. Thereafter the remaining archaeological features will be discussed under the heading 'Other Urban Activity'.

Streets, Surfaces and Buildings

Introduction

By Phase 2 of the site (AD 1250 – 1350) a somewhat urban environment was already developing in this area, as seen in the discussion of Phase 1. The late 13th and early 14th century saw ongoing activity, and it would appear an expansion of the level of activity, to the point that the area was almost definitely 'urban' by the mid-14th century. This expansion of activity in the area saw an increase in evidence for streets, surfaces and buildings which will be outlined in the following section.

Streets

Group	Subgroups	Context types
76	368	Deposits (road surface), cuts (wheel ruts)
80	100	Deposits (road surface, road foundation layers)
113	416	Deposits (road surface, cobbles), construction cut. Deconstruction deposits
217		Deposits (road surface)
369		Deposits (road surface)
370		Deposits (road surface)

Table 12 Street related groups and subgroups

Located immediately southwest of the medieval moat, and apparently leading to/from it, were a series of deposits that have been interpreted as a road (Group 76, see Figure 54 above). These deposits were composed of a variety of materials, although most commonly industrial waste from iron working. At the lowest stratigraphic level the deposits were composed largely of sand and re-deposited natural. Overlying these deposits was a large, even dump of slag and industrial waste material, most likely residue from iron working. At the highest stratigraphic level in this group were a series of deposits composed in general of mixed occupation material, though one deposit was largely composed of slag and iron working material. In light of the slag-rich make-up of the surfaces, it is worth considering the presence, in later years at least, of many smithys in the Vestergade (Smedjegade) area, and furthermore, to consider the fact that it has been documented that the streets were paved and maintained (at least after the Middle Ages) by the landowners of the area (Wiene 2010).



Figure 55 Road surface Group 76 seen west of the moat, from west in Area 4

These deposits (Group 76) can be interpreted as an external road surface. The deepest two layers were most likely levelling layers, overlying natural but underlying the metallised surfaces. The remaining deposits were likely usage layers associated with the metallised surfaces referenced above, while one deposit, was probably a levelling layer for overlying Group 217 or a repair of the final surface in Group 76.

This metallised surface group can be viewed as a road leading towards the town, and present day/contemporary Vestergade (and toward the gate Group 111, but this is not likely to have been constructed when the road was first laid). Traffic on this surface ran in a southwest to northeast direction (seen in wheel-rut Group 368); this is consistent with a road leading to/from medieval Vestergade, and when the medieval gateway (Group 111) was constructed, it is

likely that this road or a version of it was still in use. Indeed the orientation and dating of this group suggest that it may have dictated where medieval Vesterport and the bridges over the moat would be placed. The outer part (at least) of this road appears to have gone out of use prior to the construction of the outer gate Group 75 (Phase 4). It is probable that groups 376 and 213 to the southwest were associated with this group, acting as a roadside ditch. The road Group 76 has also been discussed as part of Phase 1, and it is thought likely that the road surface was first laid during this time, but the usage deposits have produced artefactual material (for example Early Redware, Siegburg Ware) which points to its continued use in Phase 2, and even beyond.



The road was later resurfaced, still within the High Medieval or Late Medieval Period. These deposits (Group 217), consisted of one very substantial metallised surface layer and a number of deposits overlying it, most likely usage deposits, except for one which was likely to have been a repair of the metallised surface. This group probably represents a re-surfacing of the metallised surfaces within Group 76 as they became worn out and in need of repairs. Group 217 appeared to be separated from Group 76 stratigraphically by a structure (Group 216, see below). Group 217 contained material from a comparable date range to Group 76, suggesting a 13th to 15th century date for the functional period of the road (perhaps longer).

Figure 56 Close up of some of the wheel ruts in Group 217, seen from west, Area 2A

A number of wheel ruts were recorded (Subgroup 368) which can be viewed as a usage stage of the road surface groups. The majority of finds from deposits overlying this group indicate a date range of 11th to 15th century. It is likely that the surface was in use for a period within this range, perhaps mostly likely in the 13th to 15th century.

A series of deposits (Group 80) were recorded in Area 1 and the inner part (city end) of Area 4, overlying dumps of very compact industrial waste material, composed mostly of slag and other iron working refuse. The majority of the overlying deposits consisted of a mixture of sand, clay and industrial waste material. Some other deposits were more compact with a higher percentage of slag inclusions. These deposits were located just within the area of the medieval city gate (and were cut by it), and in the area to its southeast, which presumably lay within the town border at the time of its use, though we cannot be certain that the moat was in existence by this time. This group may well have been contemporary with the deposits in Group 76, and in fact may simply represent different parts of the same road.

The compact industrial material can be interpreted as a street surface. The mixed deposits probably related to an accumulation of material over these surface layers. The deposits with a higher percentage of slag inclusions may also relate to cultural accumulation but are more likely to be associated with repairs of the surfaces below. Group 80 appears to have been cut by inner gate Group 111, indicating that this group pre-dates the gate. It has been interpreted as a road leading into the city. Based on finds retrieved and stratigraphical position, a date of 13th to 14th century is probably most likely for this group. Consequently it belongs in Phase 2.

Forming a foundation for the street surface Group 80, were a series of levelling layers (Subgroup 100), covering approximately the same area. These layers produced a good deal of cultural material, including a range of high medieval pottery (Late Greyware and Early Redware), as well as millstone fragments, knife fragments and a large amount of animal bone (mainly domestic animals used for meat, also dog and horse). Based on the pottery assemblage, this group can be placed in Phase 2, and was the first recognizable high medieval horizon in Area 1. The material that made up these layers must have been sourced from local waste dumps. These layers marked a notable change of land-use, sealing the previous structural features and pits, to be replaced with a street surface.



Figure 57 Road surface Group 80 in Area 1, seen from northwest

Just to the northwest of the foundation cut for the gate (Group 111), a further series of surfaces and associated deposits were seen, surviving in a very localized area, just 1,7m away from Group 80. The first of these was Group 370, comprising of a small area of slag-surface, with an associated foundation layer and charcoal-rich usage layer. The charcoal-rich usage layer may point to more of an industrial function, associated with for example metal-working, but given the location and form of the surface, it

is perhaps more likely to be part of Group 80, separated by the foundation cut for the gate (Group 111).

A probable re-surfacing of Group 370 was also recognized, along with further usage layers (Group 369). This was located in the same area, but was stratigraphically later than G370. This was again, a slag-rich surface, and it seems that slag was commonly used to form street surfaces in medieval Copenhagen. This also shows that slag was widely available at this time, and is of course strong evidence for metal-working activities in the general area. This surface is also seen as possibly relating to Group 80, and as belonging in Phase 2, based on ceramic finds recovered and stratigraphic position.

A further road element (Group 113) was seen in Area 1 and in Area 4, in both cases post-dating the layers discussed above (Groups 80, 369 and 370), but pre-dating the medieval gate (Group 111). This road (Group 113) was by far the best built of the various street layers seen. It was comprised of several elements, including a construction cut and various foundation layers. Unlike the street layers described above, Group 113 had both a large stone kerb, and a well laid stone cobble surface, which was bound together with the use of a sandy deposit. In Area 1 the stones were closely fitted with little matrix material, and had a clear N-S trending ridge of larger cobbles which seemed to form a structural spine against which the other stones were set. A very long stone slab set perpendicular to this alignment formed the southern margin of this pavement. The stones were set into a fine homogeneous organic loam/humus. In Area 1 the surface survived in very good condition, while it was less intact in Area 4. Nonetheless it was deemed likely that it was the same construction.



Figure 58 Cobbled or paved surface Group 113, seen from northeast

The surface was truncated in several areas, and so it survived only in fragments. Nonetheless, based on what has survived, it can be suggested that it measured at least 3,14 m in width, and at least 12,3 m in length, though its original dimensions are likely to have been significantly greater. The surface seemed to follow the same general path as the earlier surfaces, running in an approximate SW to NE direction, towards present-day Vestergade. It is likely that it represents the last street surface to predate the medieval gate, and so may have been in use in the decades leading up to AD 1372. Two AMS C14 dates

were also retrieved from this group, and further back up a 14th century date. The first date (retrieved from an elderberry seed) was quite early; cal. AD 990–1155 (2 Sigma, LuS 10635), while the second date (retrieved from a Goosefoot seed) is presumed to be more reflective of the true age of the group - cal. AD 1215 – 1390 (2 Sigma, LuS 10658).

It can be seen then that the road or street running east-west to/from Copenhagen was established by at least the 13th century, if not before. It was clearly used a good deal, and repaired/replaced from time to time. The fact that it leads directly towards present day Vestergade, suggests that that street was already in existence from the high medieval period, and that in some areas at least, there is considerable continuity in street layout/placement, even up to today.

Other Surfaces

Group	Subgroups	Context types
242		Deposits (levelling layers, surface, deconstruction layers)
284	240, 281, 282, 283, 286	Deposits (levelling layers, road surfaces)
285		Deposits (road foundation)

Table 13 Surface related groups and subgroups

An area of surfaces or possible road layers was located in the north end of Area 3, close to Area 1 (see Figure 54 above). These surfaces (Group 284) comprised of a number of probably related subgroups (240, 281, 282, 283 and 286). Consisting of a rather uneven deposit of slag-rich soil, Subgroup 240 is likely to represent a street surface or perhaps more likely, a foundation deposit for a street surface. It underlay Subgroup 281, which comprised of a series of possible levelling layers of sand and clay, presumably used to create an even surface for the next surface, Subgroup 283. This consisted of a further deposit of slag-rich soil, and was very similar to Subgroup 240, but was stratigraphically later, and hence may have been a resurfacing or new surface. Subgroup 282 comprised of some localized organic deposits, and may represent usage of the various stages of road surface in Group 284. Finds and stratigraphy were consistent with a date in Phase 2, c. AD 1250 – 1350. A single posthole, Subgroup 286, was found at the same stratigraphic level in this area, and may relate to the use of these surfaces. In the absence of further evidence, it has been placed in Group 284.

A further road/surface (Group 242) was identified in the same part of Area 3, which consisted of a variety of different construction, usage and deconstruction elements, all of which were stratigraphically later than the layers discussed above. This surface was located to the southeast of the medieval gate. A levelling layer and paved area were laid down over a construction cut. Deposits were documented that were likely to have been related to usage of the surface and also its deconstruction. It was truncated to the southwest by a modern gas pipe.

This group can confidently be interpreted as a paved construction, probably part of a road or other open area. It appears to have been well constructed using bedding sand and well laid cobble stones. To the northwest of the surface there were a series of larger stones that probably formed the original north-western extent. To the southeast the surface appeared to have been truncated in antiquity, therefore the extent in this direction is unknown. There was no evidence for a continuation of this group to the northeast

in Area 1. The finds recovered from this group (Baltic Ware, Late Greyware, near-stoneware) suggest a broad date range from the 12th to 14th century. Based on stratigraphy, a range of 13th to 14th century is probably more accurate, and this group probably represents an upgrade/replacement of Group 284 discussed above.

The paved construction (Group 242) was overlaid by a mixture of industrial and household waste (Group 285). Group 285 has been interpreted as levelling layers, placed for the construction of a new surface, which did not survive. The group was heavily truncated from above, hence this interpretation is somewhat tenuous. Another possible interpretation is that this group is associated with the usage of Groups 242 and 286. A date within the 14th century is indicated by the finds material and stratigraphic position, and hence this group is placed in Phase 2.

Buildings

Group	Subgroups	Context types
62		Structure (posthole)
195	196, 210, 468, 469, 470, 471, 472, 473, 474	Deposits (floors, floor foundations, activity deposits), postholes, construction cut (oven) , fills, demolition deposit
214	276, 277, 278, 279, 280	Construction cut, postholes, deposits (floor, usage, deconstruction)
215	273, 274, 275	Construction cut, postholes, usage and deconstruction deposits
245		Pit (cut and fill)
247		Timber structure (stakes)
267		Deposits (floor and floor foundation)
400		Structure (postholes, stakeholes)
467	56, 231, 292, 303, 230	Postholes, deconstruction cut
475	375, 382, 383, 384, 395	Structure (postholes, slot trench)

Table 14 Building related groups and subgroups

A number of buildings and possible buildings of medieval and early medieval date were excavated at Rådhuspladsen, mainly defined by postholes and slot trenches. The precise shape and form of these possible structures, due to later activities, was in no case clear or certain. In some cases these structures overlay structural features of earlier date, showing a continuity of land-use, but making a clear interpretation of the structures difficult in some cases. The most substantial of these was Group 302, which was discussed in Phase 1. In the same general area as Group 302 in Area 1 and Area 3, a number of possible structural features were identified (Group 467), which for a combination of stratigraphic and find-related reasons, appear to post-date that group somewhat, and to belong in Phase 2.

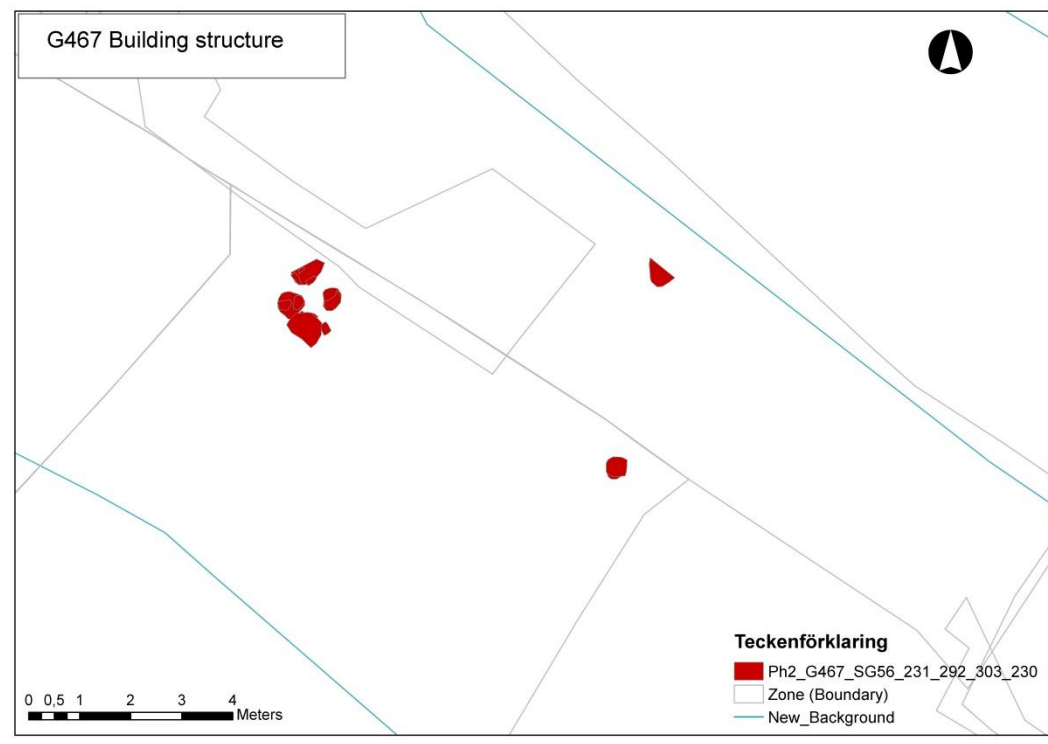


Figure 59 Plan of Group 467

Group 467 appears to have been a post-built structure, defined by a series of postholes (Subgroups 56, 231, 292, 303), while a deconstruction cut (Subgroup 230) appears to relate to the removal of some structural elements from Subgroup 231. It was largely located in Area 3, with one subgroup (Subgroup 56) located in Area 1. It is likely that Group 467 represents a final version of building G302 from Phase 1, a continuation of that structure into Phase 2. The form of the structure is rather unclear due to major truncations in the area, as well as the fact that it overlies and cuts through the earlier structure G302. Even its orientation is uncertain, though it is perhaps most likely to be southwest to northeast, while it would have measured at least 7 m x 6 m. Whether the building was domestic in nature, or had some other function is equally unclear.

The date range of Group 467 based on finds (sherds of Late Greyware) and stratigraphy is likely to be 13th to 14th century. As such, it is likely to have predated the medieval moat and bridge. This is also perhaps likely given that some at least of Group 467 would have been buried under the rampart that stood inside the moat, and the rampart is likely to have been constructed at about the same time as the medieval moat and bridge in AD 1371/2.

Following on from Group 467, another structure or structures was documented, again in the same area. This building or buildings has been described in two separate groups, Group 214 and Group 215, though it is likely that the two groups are related, and are in some way a part of the same building. Group 214 overlay Group 215. Group 215 consisted of a sub-rectangular cut with stepped base, becoming deeper to the southwest. This cut measured 2,4 m x 1,7 m, and was cut into the natural clay geology. It had a maximum depth of 0,75 m. At its southwest (deepest) end, the cut had been truncated, so it is unclear how

much further the stepped construction cut would have continued. It is considered probable that this group represents a sunken floored building or basement, though it is also a possibility that it represents some kind of clay extraction feature. Within the cut there was a posthole Subgroup 273, 'trample' Subgroup 274, associated with a construction stage, as well as deconstruction backfill Subgroup 275.



Figure 60 Building Group 215 post-excitation, seen from southwest

The posthole Subgroup 273 consisted of three postholes (diameters 0,45 m to 0,9 m, depth 0,22 m to 0,42 m), located at the deeper end of the stepped cut, and probably contemporary with it. Their precise function is unclear, but if Group 215 does represent a sunken floored building, then these postholes may represent structural supports. These were cut through the trample Subgroup 274, which took the form of three thin deposits overlying the base of the stepped cut. The trample, being thin and truncated by the postholes, may date to the time of construction. The trample and postholes were ultimately sealed by backfill Subgroup 275, which filled the entire construction (Group 215). The backfill consisted of four deposits of mostly mixed domestic waste, though some industrial type material was also found. One deposit consisted of baked clay, which appeared to have been dumped within the pit/sunken-floored building. This material could give some weight to the theory that the group in fact represents clay extraction, perhaps for the manufacture of bricks or tiles. Overall though, there is little evidence to support this theory, and the clay may equally represent fragments of furnace lining, or perhaps daub from the collapsed superstructure of the building.

Finds were scarce in Group 215, but the backfills produced some animal bone (cattle, sheep and dog), slag and burnt clay, and a single piece of Early Redware. The latter is the only tangible piece of dating evidence for the group, and as a result the group has been placed in Phase 2 (also based on stratigraphy).

A suggested interpretation for overlying Group 214 is also a sunken floored building, and it is in fact possible that these two groups share a contemporary usage phase, although Group 214 then continued in

use after Group 215 had been backfilled. If Groups 215 and 214 are wholly or partially contemporary, it may be that Group 215 is a lower 'basement' level of a larger sunken floored building.

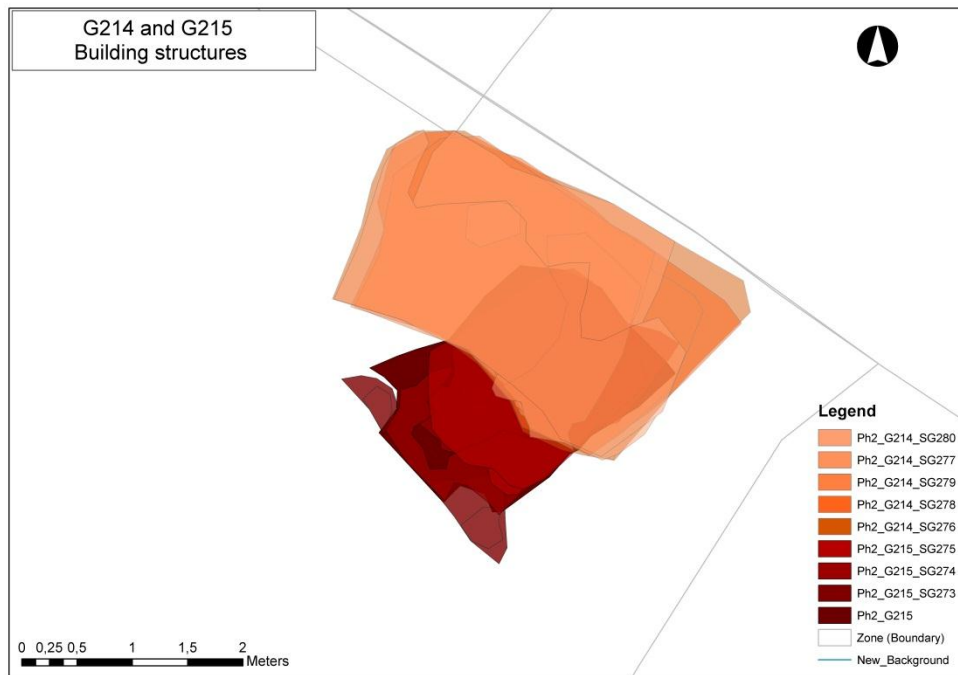


Figure 61 Building Groups 214 and 215

Group 214 consisted of two construction subgroups, 276 and 278, an activity subgroup, 279 and two deconstruction subgroups, 277 and 280. The construction stage consisted of a large sub-rectangular cut, postholes and a basic floor level. The usage stage comprised of organic silt deposits containing frequent fish bone, and the deconstruction stage comprised of a series of backfills and the demolition of a posthole.

The main construction cut (Subgroup 276) measured 3,5 m x 2,1 m (as it survived), and indicates a building of at least those dimensions (as it was clearly truncated). The construction cut, made into the natural clay geology, had a maximum depth of 0,7 m. The postholes (depth range 0,12 m to 0,45 m) were made into the base of the construction cut, and may represent structural supports. Subgroup 277 represents a later cut, seen as the demolition of posthole in Subgroup 276.

Placed across the base of the construction cut (Subgroup 276) were two deposits (Subgroup 278); a localised dump of clay and underlying that a deposit composed largely of slag and with a very compact nature. As with all of structure Group 214, it was truncated to the southwest by a modern gas pipe. Due to the compaction and consistency of the upper deposit, it was interpreted as a floor or surface, and hence these deposits are likely to have been placed soon after the construction cut was made for Subgroup 276.

The activity Subgroup 279 consisted of two deposits of organic silt with frequent fish bone. Preliminary analysis of the fish bone showed it to primarily consist of head fragments from herring (see Appendix 1 for more details), but in total 12 species of fish were identified, including eel, cod and plaice. Over 300 herring were counted from the sample analysed, with the true number being much higher than that. One of the contexts was in fact mainly composed of herring heads, and it is likely to have been a gradual accumulation

of fish processing waste. The quantity of fishbone was sufficient to be suggestive of a fishmonger or fish market (see Appendix 1, Enghoff). This subgroup was also truncated to the southwest by a modern gas pipe. This subgroup most likely represents a (main?) usage phase of activity associated with Group 214. It is unclear if this is related to the primary usage of Group 215 also, although this seems unlikely as this subgroup overlies deconstruction Subgroup 277. Other finds in this usage group consisted of animal bone (cattle, sheep, goat and pig) and ceramics (Early Redware), the latter suggesting a date in the 13th to 14th century.

The final series of deposits in Group 214 consisted of apparent backfill or abandonment layers (Subgroup 280), interpreted as deconstruction of the structure. The subgroup comprised of a series of dumps containing a mixture of industrial and domestic waste (see below) with some re-deposited natural. One deposit contained frequent fish bone. Many of the deposits had lenses of re-deposited natural and charcoal. This subgroup most likely represents a backfilling/silting up of Group 214. The mixed nature of the deposits indicates a secondary deposition probably from the immediate vicinity. The lensing within some of these deposits may suggest Group 214 was filled up gradually rather than in a single event, and therefore it might point to a gradual collapse of the upper structure of the building of which it was a part. Finds included pottery (Early Redware, Late Greyware and German stoneware), two bone combs (one fairly complete, two-sided with circle and dot decoration), a chape, an iron knife, nails, slag, rope fragments, and a range of animal bones (in order of frequency: cattle, pig, sheep/goat, dog, red deer, swan and grey seal).

Interpretation of these groups is difficult due to the truncation to the southwest and the irregular nature of the features. Nonetheless as discussed above, Groups 214 and 215 were most likely sunken floored buildings, or elements thereof, and they are quite likely related, or overlapping in use, at some point in Phase 2 of the site.

Located in watching brief Trench Z 112934, under present-day Vester Voldgade, a small area of archaeology was exposed measuring just 3,8 m x 1,7 m. The eastern side of the surviving archaeology had been truncated by modern services, while the western side was not exposed in this trench. Given the small area seen, it only allowed a glimpse of the archaeological features; nonetheless, it proved to be very interesting. The contexts excavated comprised mainly of a series of relatively thin horizontal layers, as well as some postholes and a further discreet oval feature. Together these have been interpreted as a building in the form of floor layers and postholes (Group 195), an associated oven (Subgroup 196), and a further possibly related posthole (Subgroup 210). The building (Group 195), was dated to the high medieval period, based on both finds material and AMS C14 dating. It had up to six separate phases of floor construction and usage, and these will be outlined in the following section under separate subgroups.

The deepest and therefore oldest floor layer (Subgroup 468) consisted of a foundation layer, a floor layer of silty clay and an associated overlying activity layer. The foundation layer was likely placed to form a level base for the floor above. It contained cultural material, including Late Greyware, proto-stoneware and Early Redware, a bone comb fragment, daub, and a good deal of domestic animal bone, including dog.

The finds material is itself suggestive of domestic and structural waste, suggestive of an earlier structure. The finds are high medieval in date. The floor layer produced a similar if smaller pottery assemblage, and

animal bone including domestic goose. The usage layer contained a good deal of domestic animal bone, a piece of Early Redware and a whetstone. An AMS C14 date of cal. AD 775 – 1020 (2 Sigma, LuS 11075) was retrieved from the activity/usage layer (taken from a dog bone), but unfortunately the date seemed to be considerably older than the layer in question, and it may be that the bone was disturbed from earlier activity, and intrusive in this subgroup.



Figure 62 Floor layers and oven, Group 195 and Subgroup 196

The second floor layer (Subgroup 469) consisted of a clay-sand foundation/floor layer and a single usage layer. The floor layer was largely sterile, but produced some fishbone and an iron chisel. The usage layer produced a single sherd of Late Greyware, and a typical range of animal bone including domestic hen. The foundation layer produced an AMS C14 date of cal. AD 1220 – 1395 (2 Sigma, LuS 10657), taken from a goosefoot seed, placing the layer firmly in the high medieval period, while a sample dated from the activity layer (LuS 10659) unfortunately proved to be unreliable, returning a modern date. As it is likely that no building would have been allowed to stand here after the construction of the moat, bridge and rampart in about AD 1372, and given the apparent longevity of the building, it seems likely that this second floor would have been established by about AD 1300 if not before.

The third floor (Subgroup 470) consisted of a floor layer of silty sand, which produced some fish bone and a single shard of glass, and two localised usage layers that produced some fishbone. One posthole (Subgroup 210) was identified that was probably associated with this floor level. However, as it was isolated, little can be offered by way of interpretation, other than it may suggest some kind of internal division within the structure (Group 195).

The fourth floor level (Subgroup 471) was somewhat more complex, as it was associated with a hearth or oven base (Subgroup 196). The floor itself consisted of a very sterile sandy clay deposit which contained some fish bones. It was cut by a single stakehole of unknown function. An overlying deposit of dark sandy clay appears to have been an activity layer, and produced a large amount of charred and waterlogged seeds

as well as fishbone. Cutting through this initial usage layer was the concave sub-circular construction cut for the probable oven (Subgroup 196). Macrofossil analysis of the contents of the oven showed a range of weed seeds, as well as *Chenopodium* (Goosefoot) and *Brassica/Synapis* (White Mustard), both of which may point to culinary usage (see Appendix 2). The base of the cut was filled with heat-affected sand, from which an AMS C14 date of cal. AD 1275 – 1405 (2 Sigma, LuS 10639) was retrieved from a weed seed (undefined species). Overlying this was a sterile clay deposit which seemed to form the lining of the oven base.



Figure 63 Oven base Subgroup 196, seen from east

This was in turn coated with a thin dark brown compact organic deposit, perhaps consisting of some kind of residue from the oven/hearth. A heavily corroded copper-alloy knife blade was recovered from the surface of this deposit, and some animal bone and charred cereal grains. Overlying this layer was a further deposit of sterile silty clay, which is thought to represent the upper part of the oven, perhaps collapsed or deliberately dismantled and filled into the oven base. No finds were recovered from this material. During the use phase of the oven, a further usage layer built up over the floor (Subgroup 471). This was a rather organic deposit, containing a good deal of woodchips and hazelnut shells, and may have been a deliberately laid layer of woodchips. It produced a possible coin, and a fragment of Early Redware, as well as some animal bones. The oven (Subgroup 196) was sealed by the sixth floor (Subgroup 473 – see below), and is likely to have continued to be used during the time that the fifth floor (Subgroup 472) was in use.

The fifth phase of floor (Subgroup 472) consisted of two clay floor deposits, which seemed to respect the oven. These produced little by way of finds, but some bird bones including a rook were identified (Appendix 1). Overlying the clay floor deposits was a thin activity layer consisting of sand with an organic content. It also contained a small amount of animal bones. This deposit was overlaid by the sixth floor layer (Subgroup 473).

The sixth (and last) floor layer (Subgroup 473) consisted of a compact sandy clay layer. It was approximately 0,5 m higher than the first floor layer (Subgroup 468). It appeared as though it may have been heat-

affected to some degree. This layer was mainly excavated by machine, and produced no finds. It was overlain by a dark sandy clay deposit, interpreted as relating to the demolition of the building (Subgroup 474). A single sherd of Early Redware was recovered from this layer, suggesting that it too was high medieval in date.

As outlined above, the building Group 195 appears to have been in use during the high medieval period, and it seems to have had new floors laid on a regular basis throughout its lifespan (no fewer than six phases identified). In each case it seems the floor was used for a time, with cultural material building up in situ, and then a new clean floor was laid over this. Due to the limited scale of the trench Z 112934, only a small area of archaeology was seen, and the full scale and structural form of Group 195 was not seen. It is also uncertain how long in total (or by phase) the floors were in use, though AMS C14 results do give us some idea, and along with finds suggest that the building is dated to Phase 2 of the site (1250-1350 AD). It seems likely that the building was domestic in nature, in which case Subgroup 196 may likely represent a domestic oven.

Sealed beneath building Group 195 were a pit (Group 245) and a possible fence structure, Group 247. The possible fence comprised of just two small wooden stakes, which were still partially preserved. These were in a roughly north-south orientation, and were located 0,65 m apart. It is likely that they are high medieval, based on stratigraphy. Documented as a fence, it is also possible that they related to the structures located stratigraphically above (G 195) or below (G 267), but as so little of this structure was seen, it is impossible to be sure.

Underneath fence Group 247 and cut by it, was a further floor, Group 267. This floor consisted of two deposits, the first of which was a fairly thick layer, laid mainly over natural clay. It is likely that it was laid as a ground-levelling/raising layer, to make a suitable platform for the next layer. This in turn consisted of a thin and very compact organic deposit, with a chocolatey consistency. It is possible that this deposit represents a wooden floor, compacted in situ under later deposits, and semi-decayed in this compacted form. The finds recovered from the lower layer included ceramics (Baltic ware, Late Greyware, Early Greyware and Early Redware), slag, iron nails, a flint blade, fishbones and animal bones (lots of pig and sheep/goat, cattle, dog bones – at least one juvenile and one adult, and domestic fowl including goose and rat). The upper deposit produced one sherd of Late Greyware, some slag, nails and animal bones (cattle, pig, hen and dog). The pottery assemblage, including several sherds of Baltic ware and Early Greyware as well as later material, suggests that this floor (Group 267) belongs to an earlier date than Group 195 above, and may date to about 1200 AD or soon after. The assemblage is suggestive of domestic activity, and points to this floor belonging to a house. As with Group 195 above however, due to the limited scale of the trench and modern truncations, it is difficult to be certain of the true form of this structure.

The macro-botanical evidence from Group 267 is quite interesting (see Appendix 2). It includes a large quantity of wild strawberry seeds, hazelnuts, and mustard as well as undefinable cereal grains. It also contained some henbane seeds, a poisonous weed in today's view, but one which was known for its psychoactive properties and painkilling abilities in medieval times and earlier. Sun Spurge – known as 'Madwoman's Milk' was also recovered; this plant is known to be highly poisonous, but with some medicinal properties also (for example the topical treatment of warts and eczema). Goosefoot – also a

weed – was found, but this can also be eaten (much like spinach) and can be used to make poultices for skin sores. It is also notable that wild strawberry has been used as a medicinal plant in the past, for preventing colds and curing diarrhoea. While many of these plants may simply be seen as weed species, it is worth consideration that their presence, in one deposit in a high medieval building, may imply that a person or persons with specialist knowledge of herbs and healing might have resided there. It is unclear if floor Group 267 should be seen as part of the same building as Group 195, or simply as a precursor to it; hence it has been placed in its own group.

An isolated posthole, Group 62 was located in Area 1, where it cut the levelling layer Group 102. It was stratigraphically later than the structure Group 467, and had no apparent connection to any other structure. Hence an interpretation is difficult, apart from pointing to ongoing activity in the general area. No dateable finds were recovered, but stratigraphy suggests that it was high medieval in date.

Located adjacent to the medieval gate to its northwest, a series of post and stake holes cutting the natural clay were recorded (Group 400). There was little structural coherence to this group. Most of the posts were clustered together in an area 1,7 m by 1,5 m although one lay slightly outside this cluster. The function of these posts is not clear, and it was initially thought that they might have related to the medieval gate in some way. A date range of 11th to 14th century was assumed in the field, based on finds of Baltic ware sherds (of possible Slavic form). However, an AMS C14 date of cal AD 1305-1445 (2 Sigma, LuS 10634) was recovered from a grain of barley (*hordeum sativum*). This date and stratigraphic relationships observed on site, suggest that this structure may have predated the construction phase of the medieval gate. It is possible that it may instead have had some connection to a slightly earlier wooden version of the gate. Based on C14 and stratigraphy this group has been placed in Phase 2, though there is a slight chance that it could belong in Phase 3.

Located in watching brief Z 77745 (west of the excavation Area 2), a possible structure of potentially high medieval date was excavated (Group 475). This group consisted of five subgroups comprising five postholes and a slot trench (Subgroups 375, 382, 383, 384 and 395). These features were generally quite shallow, between 0,08 m and 0,16 m deep, and the postholes were quite small. The possible slot-trench or fence line (Subgroup 382) was the most significant in scale, at c. 1,5 m in length. Recorded individually on site, these features appeared to have little significance. Taken together however, it can be suggested that they form a sub-rectangular structure, oriented northwest – southeast, and measuring 7 m x 5,5 m (see Figure 64). While it is not certain that these features are related, the size and shape of the possible structure is quite plausible. Unfortunately, none of the features in question produced any dateable finds material, and it is mainly based on location (an area with several high medieval features including an adjacent ditch) that Group 475 has been placed in Phase 2.



Figure 64 Building Group 475

Other Urban Activity

Introduction

As we have seen, by Phase 2 of the site (AD 1250 – 1350) a somewhat urban environment was already developing in this area, with street layers, surfaces and buildings documented. The late 13th and early 14th century saw a range of activity involving more dispersed activity (or activity which survives in a dispersed way), seen in the form of (for example) various layers, dumps, wells, ditches and pits. This activity will be outlined in the following section, and should be considered in association with the more structural evidence outlined in the previous section, with which it is probably associated.

Levelling layers and dumps

Group	Subgroups	Context types
65		Deposits (levelling)
102		Deposits (dumps/levelling)
106		Deposits (dumps/levelling)
151		Deposits (levelling)
171		Deposits (dumps/levelling)
184		Deposits (dumps/levelling)
219		Deposits (levelling)
226		Deposits (levelling)
236		Deposit (levelling)

Table 14 Levelling and dump related groups and subgroups

Scattered across the excavation area, a number of deposits of somewhat unclear function were documented, but which seemed to represent various acts of levelling out of areas, using cultural material taken from elsewhere. These have generally been classed as either levelling layers or simply as dumps.

They have generally been dated based on finds retrieved and stratigraphy. While they generally comprise of material in a secondary context, they are at least indicators of substantial medieval activity across the area.

Located across much of the southern part of Area 1, a widespread area of levelling was identified (Group 65), which sealed several of the earlier pits from Phase 1 and Phase 2. With a combined depth of no more than 0,2 to 0,25 m, it is thought that these deposits were laid down to fill up some of the earlier negative features, and to raise and level the general area. Given the find material (mainly Early Redware and Late Greyware) and stratigraphic position, these layers were probably laid down in the late 13th to mid-14th century. Where the material was brought from is unclear, but it could be suggested that it was from somewhere in the adjacent part of the town, and given the finds material (mainly ceramics and animal bone – cattle, sheep/goat, pig), it is likely to have had a domestic origin.

Located at the south-eastern end of Area 1, a series of dumps or levelling deposits (Groups 102 and 106) were documented in the vicinity of some of the larger pits in that area, Group 61 and Group 63 respectively. Unlike Group 65, these deposits were more localised, and in fact they seemed to have slid or partially silted into the adjacent pits. It is possible then that these deposits are more directly linked to the activity carried out around these pits, and finds of such items as slag and bone beads may indicate what some of these activities were. As well as the usual domestic animal bones, some horse bone was also found in these deposits. High medieval pottery (Early Redware, Late Greyware, Baltic ware and near-stoneware) were also recovered in small amounts, suggesting a date in the 13th or early 14th century for both groups. Group 106 predated and underlay the more widespread layers of Group 65, while Group 102 was stratigraphically earlier than Group 106.

Located in the east part of Area 2A, a number of localised levelling deposits were documented (Group 151). These deposits were heavily truncated, but seemed to overlie early to high-medieval pits in both cases. It was thought that these deposits were not fills of the pits however, but spread over the area after the pits were already filled in. No dateable finds were retrieved, and given the partial nature of the deposits, little more can be said of them. It is considered likely that they date to Phase 2, though this is not a certainty.

Located in Area Z 114012, a number of highly truncated deposits (Group 171) have been interpreted as representing dump/levelling. Given their incomplete nature, this interpretation is not certain. Only a few finds were recovered, of high medieval pottery, and it is mainly due to this that this group has been placed in Phase 2. Furthermore, these layers overlay a well (Group 179), which has been dated to the early medieval period (Phase 1). Some daub fragments and animal bones were also retrieved. Nothing further can be said of this group.

Located in Area 2B, and in the environs of some high medieval pits and wells, a further set of possible levelling or dump layers were identified (Group 184). These appeared to have been placed to seal the backfilled pits, or to level the area, perhaps as a result of the back-filled pits in the area subsiding over time. Many of the layers were quite sterile in nature, either of sand or clay, though most contained some animal bone at least (including a number of pieces of seal bone). Where ceramics were encountered it was in the form of Early Redware and stoneware. A notable quantity of worked flint pieces, including two transverse arrowheads, was identified during excavation; these must have been residual in the deposit, imported in to

this location accidentally. One of the deposits consisted of a tightly compacted layer of animal bone, up to 5cm in thickness. The animal bone was dominated by cattle bones, though all common domestic species were identified, as well as some bird and fish. The bones were held together in a conglomerate mass by dark brown silty clay. Part of a bone flute was identified during post-ex cleaning of the recovered bone. The bone layer suggests that a bone working or butchering area must have been placed nearby at some point, while the flint artefacts point to prehistoric activity in the area in the past.

Located in Trench Z 4498, a single deposit (Group 236) has been interpreted as a ground levelling layer. This deposit was only seen in profile, and was seen to overly the original topsoil. This deposit was a rather mottled layer containing charcoal, no finds were seen, and it is not certain that it belongs in Phase 2. The possibility exists that it relates to Group 78 in Area 1. If this were the case, then it might belong in Phase 1. Seen in watching brief Trench Z 3465, a series of four deposits (Group 219) were documented in section only, which have been interpreted as being possible levelling layers. Based on location mainly, and as the deposits were located just over natural geology, it is considered likely that they are high medieval in date. However, given a total lack of cultural material, it may in fact be that these deposits should be seen as belonging to the original topsoil layer discussed in Phase 1.

Located along the eastern edge of watching brief trench Z 3064, a series of three deposits (Group 226) were observed in profile, and have been tenuously interpreted as levelling layers of probable high medieval date. This interpretation is based on the horizontal nature of the layers, and dating-wise is based on location and stratigraphy (overlying layers of medieval date). The deposits were located just on the inside of where the medieval moat was placed, and so would have been sealed under the rampart from ca. AD 1370 onwards, hence it is thought likely that they may relate to pre-moat activities. Together, the three deposits were ca. 0,35 m in depth.



Figure 65 Levelling layers Group 226 seen in profile from northeast, overlying a possible iron-working feature

Activity Layers

Group	Subgroups	Context types
181		Deposits (activity layers)
436		Deposits (activity layers)
448		Deposit (activity layer)
466		Deposit (activity layer)

Table 15 Activity layer groups and subgroups

Located close to the northern corner of Area 4, a single deposit (Group 448) interpreted as an activity layer was documented, which had been truncated by the cut for the medieval gate foundation (Group 111). A silty clay deposit with inclusions of charcoal, it had a depth of up to 0,36 m and extended over an area of 3,67 m x 3,1 m, and sealed the posthole Group 400. Finds recovered from this layer included a whetstone, worked flint, slag, a buzz bone toy (brumme), ceramics, (Baltic ware, Late Greyware), nails and animal bone (cattle, horse, pig, sheep/goat, goose, hen, seal and fishbone). The presence of mostly Baltic ware and one piece of Late Greyware, may suggest that this layer belongs at the earlier part of Phase 2 (or potentially even the end of Phase 1). The cultural material seems to be reflective of general (probably domestic) activity in the general area.

Situated in Area 1, a series of deposits (Group 181) were documented which contained a good deal of cultural material. Finds included ceramics (Early Redware, Late Greyware, Siegburg stoneware), metal finds (copper and iron fragments), brick fragments and a good deal of animal bone (cattle, pig, sheep/goat, cat, and horse). These deposits seemed to line up with/about the road usage layers on top of road Group 113. Consequently it appears that these deposits co-existed and built up side by side. It seems likely that this group represents a yard area, where activity was ongoing adjacent to the road. As the deposits in Group 181 overlapped the stone kerb of road Group 113, it can be imagined that this activity was ongoing for some time, with the yard soil 'creeping' onto the road. It seems likely based on the evidence that during the time when road Group 113 and yard area Group 181 were in use, there was no longer a road surface extending southeast of the road into town, as had been the case in the previous phase, but instead possibly an open activity area.

Located at the west side of Area 2B, in an area with a high concentration of pits and/or wells, some deposits were identified (Group 436) which have been interpreted as activity layers, deposits that represent build up caused by ongoing human activity. These were located between various early medieval features (Groups 178, 194), and hence initially appeared to have been cut by pit Group 178, or to be contemporary with it. However, it can be seen from the finds recovered from Group 436, that it is of high medieval origin, and hence must have related to activity post-dating the pit (Group 178). These deposits then point to ongoing use of this area from Phase 1 into Phase 2, and suggest that the earlier features may have been consciously filled in and sealed over, changing the use of the area. It is not clear what the new function was, though finds of pottery sherds and animal bones may point to domestic activity. Massive truncations in the nearby area (caused by WW II air-raid shelters) may have removed the related activity, domestic or otherwise.

Located in a small watching brief trench (Z 82447) a deposit was encountered (Group 466) that may have related to some form of ongoing activity in the medieval period. The thick deposit was thought likely to be

a cultural accumulation, like 'garden soil', or perhaps a ground level raising dump. It was thought to be medieval in date, based on pottery finds. As it was only seen in a very small trench, little more can be said about this group.

Ditches

Group	Subgroups	Context types
37		Cut and fills (ditch)
74		Cut and fills (ditch)
150		Cut and fill (possible ditch)
213		Cut and fills (ditch)
376		Cut and fills (ditch)

Table 16 Ditch related groups and subgroups

In Area 1, a possible ditch or drainage related feature (Group 74) was documented immediately east of (and truncated by) the medieval gate. This was running in a SW-NE direction, parallel to the road that entered the town here, heading in the direction of Vestergade. The cut was truncated on three sides, so little can be said of its original dimensions, except that it appeared to have a depth of c. 0,35 m. Two possibilities exist regarding this cut. The first is that it represents a surviving element of a drainage feature connected to the early road that ran in to the town in this area. A second possibility is that it actually represents a version of the road itself, a depression worn into the underlying deposits by traffic. Either way, the feature is likely to be related to an early phase of the road to/from the west (Group 79 or 80). The primary fill consisted of silty clay, and contained many cobble-like stones. A whittle-tang knife and a possible brick fragment were recovered from this layer, as well as animal bone (horse and cattle). The secondary fill was also silty in nature, and produced nails, a brick fragment, iron and copper fragments, slag, flint and a sherd of Early Greyware pottery. Cattle and pig bones were also found. Based on stratigraphy and finds, Group 74 could possibly date to the early medieval period, however, the possible brick fragments suggest that it is more likely to be high medieval in date.

Located in watching brief Trench Z 3465, one ditch (Group 37) was documented, mainly recorded from the profile of a narrow trench. Group 37 consisted of a flat-based, vertical sided ditch, 1,2 m wide and 0,9 m deep, running in a northwest to southeast direction. 2,5 m of its length were seen within the watching brief trench. The fills of the ditch were mainly very sterile perhaps resulting from silting of the feature, though lenses of charcoal were observed which separated the fills into what might represent episodic silting events. No finds were recovered, and hence no dating material. This ditch may equally belong in Phase 1, but in the absence of clear evidence, it has been decided to place it in Phase 2.

Seen in a very small watching brief trench (Z 29583), a small element of an archaeological feature was seen, and interpreted as being a possible ditch (Group 150). The feature as exposed measured 0,84 m x 0,6 m, while its depth is unknown as the feature was not excavated. The fill was dark charcoal-rich silty clay, which, as it was not excavated, produced no finds material. Its dating is uncertain, but based on its proximity to several high medieval pits, it may also be high medieval in date. Its classification as a ditch is also far from certain, and it is equally possible that Group 150 in fact represents an element of a pit or other feature type.

A substantial part of a ditch was excavated in watching brief Trench Z 77745 (Group 376). This feature consisted of a linear cut and four deposits. The cut ran in a NE-SW direction, and had a preserved length of 9,64 m. The width of the cut varied between 1 m and 1,45 m, while the depth was generally c. 0,39 m. The shape of the sides varied between concave and irregular, and the base was flat. The feature was excavated as part of a watching brief and hence was sectioned in several places rather than being dug entirely contextually. The basal fills were clayey silts. They were less mottled and contained less cultural material than the upper fills which contained a good deal of slag and metal.

The feature was truncated in several areas by modern cables as well as by the cut for the demi-lune (Group 133) in its east end. The west end of the ditch extended out of the trench. It is possible that the feature related to a ditch-like feature (Group 157) in Area 2B, but as the features were some distance apart, this could not be confirmed. The function of the ditch is uncertain. There is no obvious evidence for it having been water-filled or that it had water running in it, but it could be a dry-ditch which silted up over time.



Figure 66 Ditch Group 376 post-excavation, seen from southwest

The upper fills suggest that the ditch was backfilled with material from surrounding areas when it went out of use. It could have been a boundary ditch, or perhaps more plausible is an interpretation as a road-side ditch. Though the road did not survive in this area, the various road layers seen in Areas 2 and 4 would probably have run parallel to and close beside this ditch, had they extended this far to the west in the same orientation. That the surfaces did not survive this far west, may relate to ground level changes in the past, with the surfaces being destroyed during ground-leveling works.

The ditch may have related to another ditch, running parallel with it further to the north (Group 213, see below) - both of these are aligned with the road layers (G76 and SG217) seen in Area 2A, 2B and 4 and they could have flanked it on either side. Finds recovered from the ditch fills included a great deal of slag as well as ceramics (Baltic ware, Late Greyware, Early

Redware, German stoneware), metal finds (a buckle, a decorated fitting, nails) and animal bone (cattle, pig, sheep/goat, goose). The sheer volume of slag suggests that metal-working activities having been going on somewhere close by, while the finds assemblage indicates a high medieval date for the ditch, and also that normal domestic activity has also been occurring nearby.

Situated in watching brief Trench Z 114012, and about 5 m northwest of ditch Group 376, was a relatively broad ditch (Group 213). The feature consisted of a cut and five deposits. It was excavated in stages, starting with the westernmost part and moving east. Approximately 50 % was excavated by hand and the rest by machine. Several modern disturbances truncated the feature in different areas, and the feature extended out of the trench to southwest and northeast. The cut was preserved to a length of 8,8 m; in the western end it was recorded as being 0,92 m deep, while it got shallower (and narrower) towards the east – with the easternmost part recorded as being just 0,06m deep. The cut was somewhat concave, though with a flat base. The feature was probably originally both deeper and wider all along its length, but the upper parts have possibly been truncated due to levelling of the area. The fills of the cut were all quite silty and organic and contained moderate numbers of finds - primarily slag and animal bones, but also quite a few iron objects (see below). The deposition process for all the fills was seen as naturally accumulated with dumped elements, and it was noted that the natural clay in the base of the cut in the western end had the appearance of having been water-affected.



Figure 67 Ditch Group 213 mid-excavation, seen from southwest

The feature has been interpreted as a ditch, which may or may not have been for drainage purposes - it could have been for draining a road surface that was placed higher and therefore not preserved (see discussion above). This ditch ran parallel to ditch Group 376 which was just 5 to 6 meters southeast of it in Trench ZT 77745. This could be an indication that these two ditches are part of the same overall feature, which is supported by the fact that the fills of both features were rich in slag. Furthermore, these ditches should probably be grouped with the road surfaces Group 76 and/or Group 217 with which they are aligning, even though there was no road surface preserved directly between the two ditches.



Figure 68 Rowel spur FO 203045 after conservation

Finds from the ditches included iron objects (nails, a possible ice cleat, a rowel spur, a whittle tang knife and a chisel), a copper alloy decorated plate, a musket ball, ceramics (Early Redware, German stoneware), leather scraps, leather shoe fragments, glass sherds, a roof tile fragment and animal bone (cattle, pig, sheep/goat, hen). The rowel spur was a particularly fine example of a long-necked spur, which is likely to date to AD 1400 or a little after (Appendix 28). This might tie in with the ditch having been in use into the 15th century, but it is nonetheless considered probable that the ditch was first dug in the high medieval period. An AMS C14 date was retrieved from the primary fill (from a buttercup seed), and returned a date of cal AD 1300-1440 (2 Sigma, LuS 10662). This combined with the finds suggests a likely date in the 14th/15th century for this ditch. Taken in conjunction with ditch Group 376, it is thought likely that the ditches were constructed in the high medieval period, and hence they have been placed in Phase 2. This is supported by the fact that Group 376 was cut by the demi-lune (Group 133), which is thought to date to shortly after AD 1500.

‘Wells’ or similar features

Group	Subgroups	Context types
140		Cut and fills (possible well)
208	154	Cut and fills (well), postholes
254		Cut and fills (well)
260		Cut and fills (possible well or pit)
269		Cut and fills (possible well or pit)
333		Cut and fills, timber structure (well)
371		Cut and fills (possible well)
393		Cut and fills (possible well)
449		Cut and fills (possible well)

Table 17 Well related groups and subgroups

Across the excavation area at Rådhuspladsen a number of wells and possible wells were excavated, both of early and high medieval date (in some cases it is difficult to know whether a well should be dated to Phase 1 or Phase 2). Whether all of the features described as wells were such, or rather some kind of specialized pits, is in some cases unclear. Nine such features have been placed in Phase 2.

Located in Area 2B, Group 208 was a rather deep probable well. It was sub-oval in plan, measuring 1,8 m x 1,5 m, and had a surviving depth of 3,2 m. It was cut into natural clay, and though steep sided it tapered slightly towards the base, with a diameter of just 0,63 m at the bottom. There was some evidence for possible postholes at the top (Group 154), perhaps for a lid. It is not certain that the posthole Group 154 is contemporary with the well however, it may have been truncated by it. Eight fist-sized stones were found at the bottom of the well, under an organic base fill that probably built up in situ during the wells use phase. Once excavated close to its base, the feature filled rapidly with water. The base fill contained some wooden staves, probably from a bucket, as well as slag and ceramics including Late Greyware and near-stoneware. Some animal bone was recovered, and also several bones from frogs, toads and newts which presumably lived in the well.

The remaining layers in the well probably represent a secondary use, as a place for dumping waste. These layers contained household waste, but also a quantity of slag. The sequence of the fills was generally a very organic, dark layer, often containing a lot of fish and animal bones, followed by a layer made up from yellow clay mottled with organic material. It is likely that the clay layers were meant to seal the decaying organic layers. Ceramic sherds from what may be the same vessel were found in several layers, which might suggest that the fills were dumped over a short period of time. Finds in these layers included ceramics (Early Redware, Late Greyware, Early Light-fired and near-stoneware), slag, wooden staves, wood fragments that might represent a lining of the well, an iron buckle, daub and domestic animal bones (sheep/goat, pig, cattle, goose, dog and cat), rat and toad bones.

In the upper part of the well a secondary cut seemed to have been made into the central part of the backfills. In the cut was an apparent clay lining, and over this a deposit that consisted mainly of fish bones. This may have been used as part of a fish production process, representing a third use of the well. Finds from these deposits included ceramics (Late Greyware, Early Redware, Early Light-fired – Rouen, and Baltic ware), a double-sided bone comb, daub and some animal bones (cattle, sheep/goat, pig and dog). Overlying the possible fish-processing pit were a number of backfills. Finds from these were broadly the same as from the layers below, but also included a whetstone fragment, bricks and another bone comb.

Overall the finds from the well can be dated to the 12th - 13th century, and consequently it is likely that the well was first dug, was used and backfilled within that timespan, even its re-use phase as a fish processing pit. Furthermore, its upper fill was cut by a pit (Group 209) from which an AMS C14 date was retrieved from a barley grain, of cal AD 1205 – 1380 (2 Sigma, LuS 10638) (1205 – 1300 being statistically most likely). Therefore well Group 208 belongs in Phase 2 of the site.

Located in Area 3, well Group 254 had been truncated by the cut for the moat and later the mill building, so its upper part did not survive. This feature consisted of a near perfectly circular, vertical-sided cut into the natural clay geology, with a range of fills. It had a diameter of 1,8 m, and survived to a depth of c. 1,9 m, with its base located at 1,34 m above present day sea level. Its deepest fill (0,2 m thick) was rather sterile, and contained some slag, a possible barrel hoop, a possible stone cannonball, and some pig and fish bones. The second fill (0,25 m thick) was very organic, and is thought to also date to the use phase of the feature. Finds from this deposit included a small complete wooden bucket, a bone needle, a piece of cord, nails, a flint blade, ceramics (Late Greyware) and animal bone (cattle, sheep/goat, pig and seal). The remaining fills

in the well alternated to a degree between sterile and organic, and may suggest a cyclical use or filling up of the feature. Finds from these layers included slag, nails, a buckle, a whetstone, ceramics (Early Greyware, Early Redware, Late Greyware and near-stoneware) and animal bone (cattle, pig, sheep/goat, dog and gull).

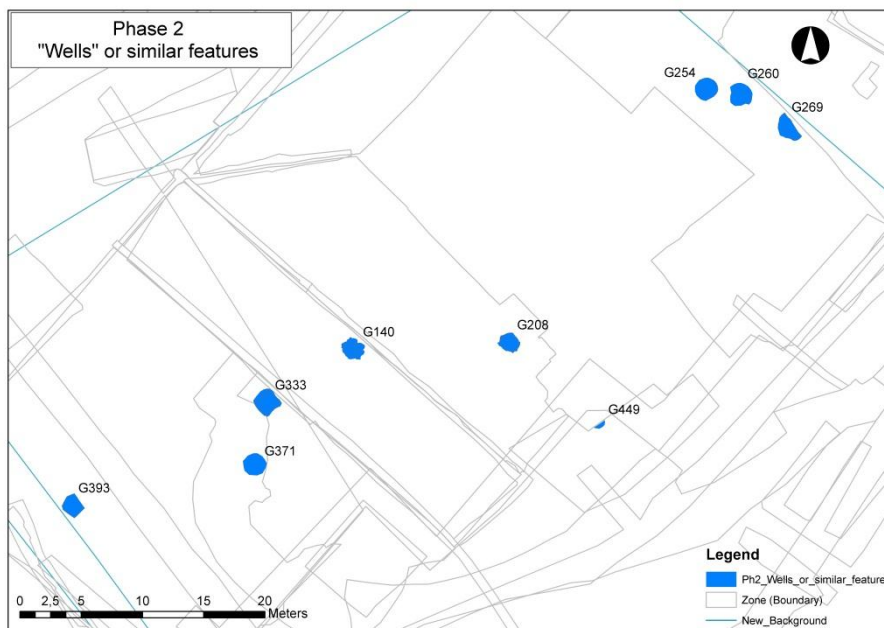


Figure 69 Location of wells and similar features across the site

Overall then, it is most likely (based on the finds assemblage) that this feature was dug sometime after AD 1200, and was in use for some time in the high medieval period. It is likely, given the presence of the moat/gate and rampart by c. AD 1372, that the feature was no longer in use by then, as it was both truncated partially by the moat, and probably sealed partially by the rampart. Prior to the full excavation of the well (Group 254), it was decided to take a core pollen sample from the feature, a procedure carried out by Anna Broström and Per Lagerås of Riksantikvarieämbetets UV-Syd (Appendix 3). The results of this work are interesting, and potentially warrant a reappraisal of the feature.

Two organic horizons were analysed from the core taken, and revealed almost identical results. A large amount of Sweet Gale and Hemp pollen stood out in particular. During the Middle Ages, Sweet Gale was mainly used for three things: beer brewing, dyeing wool and linen yellow, and the bark and shoots were used to tan leather (see Appendix 3). Hemp fiber was used for ropes and other textile utilities. Given the feature form, beer brewing is unlikely to have occurred here, but textile dyeing and leather tanning are both possibilities. In this regard it should also be mentioned that the deepest fills of the feature contained a notable quantity of bark, which is also used in the tanning process. Consequently this may be the most likely function of this 'well'. This may also call into question the function of some of the other features excavated on site that were initially thought to be wells, and might explain why there were so many of similar age. It is difficult to be certain because of the many truncations on site, but it could be tentatively suggested that the 'well' features occur in rows, and this is something that is seen in traditional tanneries of more recent date (See Figure 70 below). The alternating sterile and organic nature of the fills may point to repeated and/or seasonal use of the possible tanning pit. However, the 'row' of well-like features may

simply be the result of large truncations removing many more similar features, which would change our perception of the layout.



Figure 70 Modern day tanning pits in Morocco (www.morocco-desert.com)

Located just 0,9 m east of Group 254 was another possible well (Group 260). This feature had also been partially truncated by the mill construction cut, but part of it survived to something approaching its full original depth, which appears to have been at least 3,25 m, with the base located at 1,15 m above sea level. It had a diameter of 2,1 m. The basal fill (0,43 m thick) was a very wet and sterile silty sand. No cultural material was found within it, but a good deal of waterlogged wood fragments was noted.

The second fill was somewhat more organic, and also much thicker (1,36 m), perhaps suggesting that it was a deliberate backfill. Finds included slag and ceramics (Baltic ware and possible Late Greyware), waterlogged wood and seeds, and animal bone (mainly cattle, some sheep and pig). Subsequent backfills produced a stone floor-tile, ceramics (Early Redware), slag and animal bone (mainly cattle, and mainly skull fragments, also some sheep/goat, and fishbone). The presence of many cattle skull fragments in the backfills could be evidence for tanning-related activities in the vicinity, and hence this feature, while it may be a well, could like Group 254, have had a more complex function than simply that of supplying water. The limited amount of ceramics recovered again point to a probable high medieval date.



Figure 71 The base of well Group 260 seen in profile

Located 2,64 m southeast of Group 260, was a further possible well or well-like feature, Group 269. This had also been truncated slightly by the mill construction cut, and extended outside the excavation area to the east. Nonetheless it could be seen that it had a diameter of c. 2,1 m, and its depth (as it survived) was c. 3 m, with the base occurring at 1,38 m o.d. The fills in the well/pit again seemed to alternate between very organic layers and very sterile layers that may have silted up naturally. The deepest fill was rather sterile in nature, but contained some Late Greyware sherds, wood fragments, and some goosefoot and nettle seeds. The second fill contained some timbers, posts and planks, but these appeared to have been dumped in with the deposit. Some Early Redware was recovered from this layer also.

Subsequent fills alternated between sterile and organic, and finds recovered included ceramics (Early Redware, Late Greyware, near-stoneware, stoneware), slag and animal bone (cattle, sheep/goat, horse, dog, gull, and goose). Once again, the finds assemblage is consistent with a date in the 13th/14th century. While interpreted initially as a probable well, the evidence from well Group 254 may also throw this interpretation into doubt, and a function such as tanning or textile dyeing must be given consideration. Furthermore, the alternating nature of the fills between sterile and organic may point to cyclical use of the feature, as might occur with processes such as tanning.

Found in Area 2A, possible well Group 140 measured c. 1,77m in diameter, and had a surviving depth of c. 3 m, though it is likely that it had been truncated horizontally by the foundation cut for the outer gate, which it was located under. The sides of the cut were almost vertical, except near the top where they were somewhat irregular. The feature appears to have silted up initially, before having waste deposits dumped in it to fill it up. The primary silted layer (0,3 m thick) produced some fish bone, and macro-botanical analysis identified a knotweed seed, from which an AMS C14 date was retrieved of cal AD 1215 – 1390 AD (2 Sigma, LuS 10632) (AD 1215 – 1315 being the most likely range). As this is the layer most likely to represent silts which built up during usage of the well, it is likely that the well is 13th century in date.

The second layer in the well was c. 0,5 m thick, and was mainly comprised of sterile silty clay. This may have built up during, or in the years following, the wells use phase. Finds recovered from this layer included slag, bricks, barrel staves, bone comb fragments, ceramics (Early Greyware, Late Greyware, Early Redware), nails and animal bone (cattle, sheep/goat, seal, cod and domestic fowl). The subsequent fills are more likely to represent deliberate back-filling of the well, and included finds of ceramics (Baltic ware, Early Redware, near-stoneware), slag, burnt clay and animal bone (cattle, pig, sheep/goat, goose and newt). The top part of the well as excavated was filled with deposits of large stones. It is unclear if these were dumped in at the time the well went out of use, or whether they relate to the establishment of the outer gate foundation, and were placed in order to stabilise the wet and soft fills of the well. This latter scenario may be the more likely. Based on the C14 result and on the finds material, this probable well has been placed in Phase 2.



Figure 72 Boulders dumped into well Group 140

Located under (and truncated horizontally by) demi-lune Group 133 (Phase 4), a timber-lined or timber-framed well (Group 333) was found in Area 5, immediately west of the outer gate. This feature consisted of a cut, a timber structure, and two fills. The construction cut was approximately square in plan and measured (1,9 m x 1,82 m), with the sides being straight and almost vertical, but towards the base (below the lower levels of the timber lining) it was somewhat more rounded (1,56 x 1,48). At the approximate centre of the base, there was a small, circular depression, approx. 0,5 m in diameter and 0,2 m deep. The overall cut (as it survived) had a depth of 1,95m, though clearly it would have been deeper by at least a metre prior to being truncated by the demi-lune. The base of the well was located at c. 1,45 m above sea level.

Into the upper part of the cut a square timber frame or lining had been set. The lining consisted of three main elements: a lower timber frame, four corner posts and wall planks. The lower timber frame was made out of four identical planks (box heart cut with the dimensions 1,50 x 0,15 x 0,1 m) forming a square, 1,55 x 1,55m, placed at a depth of 1,2m from the surviving top of the well and joined on the corners by lap joints with mortises going through both planks. The mortises held the four posts in the corners (see below). The

frame supported the planks lining the walls of the well case and provided additional support for the corner posts.

The four corner posts (box heart cut with the largest dimensions 1,20 x 0,15 x 0,08 m) placed in each corner were joined to the lower plank frame by bare-faced tenons, through mortises on two of the frame planks. The SW corner post had partially collapsed into the cut but was still standing at a slight angle. The southeast corner post was broken off, probably in the backfilling process, and had taken parts of the upper planks of the south and east walls with it, collapsing into the cut. The wall planks consisted of three horizontal courses of planks on edge (box-halved cut with dimensions: 1,50 x 0,35 x 0,05 m), on each of the four wall faces. The planks were held in place by the corner posts.

The lower deposit was a 0,45 m thick layer of clayey silt, while the remaining deposit filled the rest of the well and consisted of mixed silts and clay with more cultural waste in it. The lower fill may well have built up in situ during the use-phase of the well, while the upper fill is more likely to have been dumped in when the well went out of use. This was the only well of its kind found on the Rådhuspladsen excavation, with an in situ timber frame/lining, and in fact there was very little evidence to suggest that any of the others had ever had any lining.



Figure 73 Timber-lined well Group 333

It is worth noting that the base of the plank frame was a little above the base of the cut, and at a level that corresponded with the occurrence of a geological layer of fine gravelly sand. The small centrally placed depression at the base of the cut could have ensured stable water-flow, or alternatively, it may represent where a bucket has been lowered to the base of the well repeatedly, perhaps in low water conditions so that it was lowered on to its side, and taking with it a small amount of base sediment on each such occasion – hence effectively slowly digging a small depression into the well base.

Finds recovered from the base fill of the well included fragments of Early Redware and Late Greyware, suggesting a date between 1200 AD and 1400 AD for the feature. Other finds included slag, iron nails,

fishbone and animal bone (sheep/goat, pig). The upper fill produced finds of a similar date, ceramics (Baltic ware, Early Redware jug fragments including a highly decorated piece that dates to between AD 1250 and 1350 (Late Greyware and stoneware), a bone toy (kastegris), flint blades, bricks, nails, slag, burnt clay, iron fittings, a fragment of a key and animal bone (lots of cattle, pig and sheep/goat, also hen, Eurasian wigeon and haddock). Macro-botanical analysis showed a wide range of weed seeds from this deposit, as well as a fig stone (Appendix 2). The timber structure of the well was sent for conservation, and when completed it may be possible to obtain a dendrochronological date.

Situated in watching brief Area 5 (Z 77745), well Group 371 was located stratigraphically under the demi-lune Group 133. This feature consisted of a cut which was approximately circular in plan, 1,9 – 2 m in diameter and c. 2,5 m deep (as it survived). The sides of the cut were steep and slightly concave. The bottom was also seen as concave. Only one fill was seen, though this may be partially due to the fact that this well was excavated (half-sectioned) with the use of a machine (mainly due to time constraints). The fill was very sterile and uniform in appearance however, and consisted of medium compact, uniform greyish-blue clay with some lenses of darker material. The fill contained occasional charcoal inclusions, and a few ceramics (proto-stoneware); animal bone and slag was also recovered.

Based on the shape and depth of the cut, this feature has been interpreted as a well, cut into the natural clay. The bottom of the well was 1,44 m above sea level. As we have seen above with well Group 254 however, these features may have had other more complex functions, such as tanning; activities which may not leave many traces. In the absence of any clear evidence however, Group 371 will be categorized as a well. It may have filled in naturally over time (due to erosion of the clay into which it was cut), or if a tanning pit, it may be that sterile clay was added after every use to keep the base clean for the next use. Given its stratigraphic relationship with the demi-lune (Group 133), and the presence of some high-medieval pottery, it is thought likely to date to between AD 1250 and AD 1350, and hence has been placed in Phase 2.

About 13,5 m WSW of well Group 371, also within watching brief Area 5, another probable well was identified, Group 393. This feature consisted of a cut and eight separate deposits. It was seen as square in plan with rounded corners, though the actual shape was almost impossible to see due to modern truncations. It is likely however that it was originally circular, like most of the probable wells seen on site. The upper layers were excavated by hand, but due to time pressure and safety concerns, the lower part was half-sectioned by machine. It had an overall (surviving) depth of c. 2,5 m, and its base was at 1,6 m O.D.

The sides of the cut were almost vertical. The basal fill was 0,26 m thick, and comprised of dark organic silt. The fills deposited over this were quite mixed, but most of them contained cultural material. The feature has been interpreted as a well, based on the shape and depth of the cut. As seen above with well Group 254 however, these features may have had other more complex functions, such as tanning; activities which may not leave many traces. The basal layer was probably deposited during the usage phase of the feature. The deposits above this probably derive from some erosion from the sides (the lenses and more coherent layers of clay) as well as from backfilling using cultural material, though again, this is dependent on whether or not the feature was actually a well.

This well truncated a pit (Group 399), placed just to the west, which has been dated to the Early Medieval Period. Finds from the base layer of the probable well were few, but included some Early Redware. Environmental analysis identified seeds of Goosefoot, and one of these was used to retrieve an AMS C14 date. This dated the base layer to cal. AD 1280-1485 (2 Sigma, LuS 10660), which, along with the ceramics may suggest a date for the fills of c. AD 1300– 1400. The remaining fills produced a good deal of cultural material, including ceramics (stoneware, Late Greyware, Baltic ware and a lot of Early Redware – including jug fragments), nails, slag, a flint blade, and a grinding stone/whetstone. Animal bone included cattle, pig, sheep/goat and also some red deer and grey seal. The evidence material suggests that there was significant activity going on in the nearby area, which was either contemporary with the feature, or post-dated it slightly.

One further possible high medieval well (Group 449) was documented on site. This was seen during a watching brief (Z 81681) that followed the main excavation, and the feature survived only partially, as it had been truncated by a large modern construction, and also by the post-medieval moat. Consequently, little can be said of its form or date with any certainty. Its surviving width was 1,1 m, and its documented depth was c. 4,5 m. It appeared to have had vertical sides, and was cut through the blue-grey clay natural geology. Its fills (two were observed) were dark and organic in appearance, with twigs surviving in the basal fill. No finds were retrieved, and consequently it is not certain that this is a high medieval feature. Based on its similarity to the other high medieval wells however, it has been interpreted as a probable further example.

Pits

Across the excavation area at Rådhuspladsen, several pits of high medieval or probable high medieval date were excavated with different possible functions, in Areas 1 to 3 and in some watching brief trenches. These will be discussed below by area.

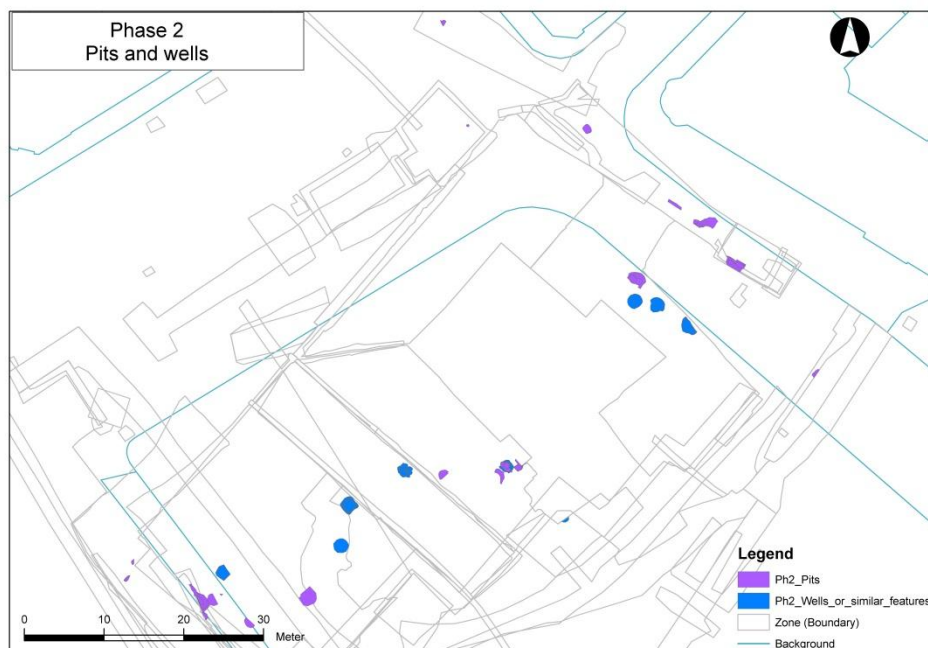


Figure 74 Pit and well related groups and subgroups

Group	Subgroups	Context types
32		Cut and fills (pit)
49		Cut and fills (pit)
60		Cut and fills (pit)
63		Cut and fills (pit)
66		Cut and fills (pit)
67		Cut and fills (pit)
112		Cut and fills (pit)

Table 18 Pit related groups and subgroups (Area 1)

At the southern end of Area 1, a number of pits of probable high medieval date were documented. One such pit was Group 32 (c. 1 m x 1 m x c. 1,2 m deep), which was cut into the natural clay geology. This feature was disturbed by a modern truncation to the east, and extended outside the excavation area to the west. It is likely to have been sub-rectangular originally. Its sides were vertical where they survived.

The deepest fills of the pit contained little by way of cultural material, mainly some animal bone (cattle, pig, sheep/goat, grey seal, cat and duck), some ceramics in small quantities (Early Greyware and Baltic ware) a whetstone, and some flint flakes and a scraper. Based on these first fill layers, it is possible that this pit in fact dates to Phase 1, pre-1250 A.D, but this is not certain. The upper fills produced ceramics (Baltic ware, Late Greyware, Early Redware), a whetstone, slag, and a lot of animal bone (cattle, pig, sheep/goat, goose, seal, cat, and fishbone). The appearance of Early Redware and Late Greyware in the upper fills only, may point to this pit having been in use for some time, overlapping Phase 1 and Phase 2. The purpose of the pit is somewhat unclear. It has been suggested that it may have functioned as a clay extraction pit, but given the size and depth of the feature, this is perhaps unlikely. It may be that its original function was as a storage pit, and ultimately it was used for the dumping of waste.

Pit Group 32 was stratigraphically earlier than adjacent pit Group 49, which truncated it slightly on its north-western side. Pit Group 49 comprised of a roughly circular pit, also cut by a modern truncation to the east, and extending outside the excavation area to the west. This pit measured 1,42 m in diameter, and had a depth of c. 0,3 m. It was cut into the natural clay geology, and had steep sides and a largely flat base. The primary fill, dark greenish silty clay, produced a number of finds including an iron knife, a horseshoe, some Late Greyware sherds, and animal bone (cattle, sheep/goat, pig, cat, cod, and goose). The horseshoe type is high medieval in date, and most likely dates to AD 1200– 1270 or a little after (see Appendix 28). Hence a 13th century date is likely for the pit. The remaining fills (probable backfills) produced only small quantities of material, including ceramics (Baltic ware, Early Greyware, Late Greyware), a whittle tang knife, a brick fragment, slag, nails, daub and animal bones (cattle, pig, sheep/goat, cat, cod and hare). The original function of the pit is uncertain, while it appears to have been ultimately used for the dumping of waste.

Located a few meters northwest of the pits discussed above, was a series of intercutting pits, Groups 60, 61, 63 and 66. The first of these (stratigraphically) was Group 61, and AMS C14 dating has shown it to be early medieval in date. Hence it is discussed as part of Phase 1. Approximately 1 m west of Group 61, pit Group 63 was encountered. This was a rather small pit, and was also heavily truncated, both by later pits and by modern truncations. The cut was sub-circular, and had almost vertical sides. The pit as it survived measured 0,75 m x 0,45 m and had a surviving depth of 1 m. Six separate fills were identified, and

comprised of quite mixed deposits, suggestive of a mixture of silting up of the pit and dumping of waste at times. Finds material included Early Greyware, slag, possible furnace lining, a corroded copper fragment and animal bone (cattle, sheep/goat, pig, cat and goose). The dating of this feature to Phase 2 is based on the likelihood that it post-dated levelling layer Group 100, but this is not for certain. Consequently, it is possible that this pit belongs in Phase 1, as the only ceramic find might suggest. Given its heavily truncated condition, and mixed finds material, its function is uncertain, but it is perhaps most likely to have functioned as a waste pit.

Truncating pit Group 63 along its eastern edge was a much larger and deeper pit, Group 60. This pit was also truncated to its southwestern edge by a modern truncation which had undercut the pit to a degree. It survived with surface dimensions of 1,98 m x 1,35 m and was 1,4 m deep. It was roughly oval or oblong in plan, and oriented southwest to northeast. The first deposits in the pit were quite sterile in nature, and appeared to relate to a period of silting up of the pit. The first potential usage layer produced a flint flake and a sherd of Late Greyware, as well as animal bone (horse, cattle, sheep/goat, pig, cat and goose). It is thought likely that the pit was initially used as a storage feature. Subsequent fills have been interpreted as relating to the backfilling of the pit, or perhaps its re-use as a waste pit.



Figure 75 Pit Group 60 seen from southwest, post-excitation

These fills were quite rich in cultural material, presumably originating nearby and relating to various activities, both domestic and industrial in nature. Finds from these deposits included slag and burnt clay suggestive of furnace waste, ceramics including many jug fragments (predominantly Late Greyware, also Early Redware, near-stoneware, Baltic ware and in the uppermost fill, stoneware), nails, daub, bone-working waste, copper-alloy fragments and much animal bone (cattle, sheep/goat, pig, goose and haddock). The assemblage is suggestive of general urban activities, and the ceramics point to a date between AD 1200 and 1400. An almost complete lack of Baltic ware might suggest that the pit dates from closer to AD 1300 or after. Pit Group 60 was in turn truncated by pit Group 66.

Pit Group 66 was a feature that had been severely impacted on three sides by modern truncations. It has been interpreted as a probable pit that had truncated earlier pit Group 60. Its surviving dimensions were 1,51 m x 0,55 m x 0,6 m deep. Finds recovered included Early Redware and unidentifiable animal bone, the pottery suggesting a high medieval date. Given the limited survival of the feature, no further interpretation is possible.

Located c. 2,7 m northwest of the four pits discussed above was a further possible high medieval pit, Group 67. This was rectangular in plan and measured 1,9 m x 0,36 m, and was 0,45 m deep. It had two discernible fills, the first quite sterile, and a second which was charcoal-rich and contained some cultural material including Early Redware, Late Greyware, and a range of animal bone (sheep/goat, cattle, horse). The finds assemblage would suggest a high medieval date for the feature. Pit Group 67 was truncated along its southwest side by a modern truncation, and given its straight sides and stepped profile, there is a slight possibility that it actually represents archaeological material that was previously disturbed in connection with the adjacent disturbance, but re-dumped without contamination. If it was a pit, it was very different in form to the other pits in the area. Given the limited survival of the feature, no further interpretation can be made beyond possible pit.

Located in the northwestern part of Area 1, a small pit (Group 112) was excavated adjacent to and cut by the medieval gate construction cut (Group 111). It was also truncated to the northeast and northwest by modern truncations, so only one of its true edges was seen. It measured 1,12 m x 0,88 m x 0,4 m deep as it survived, and had a base that sloped gently to the northwest. Its primary fill consisted of a charcoal-rich silty clay, which produced finds of daub, nails, possible tile fragments (roof), slag, ceramics (Baltic ware and early grey ware) and animal bone (cattle, sheep/goat, pig and bird). The secondary fills produced finds of daub, nails, a glass shard, a pointed iron tool, ceramics (Late Greyware, Early Redware), animal bone (cattle, sheep/goat, pig, seal, cat and goose). Bark and wood fragments were also noted, and ash and burnt bone fragments.

The finds are consistent with an early to high medieval date. Precisely what the function of this feature was, remains unclear. The finds are largely domestic in nature, suggesting household waste. However, the pit is placed in an unusual location, cutting the early and high medieval street surface. It remains a possibility that this heavily truncated feature was not actually a pit, but instead perhaps part of some kind of drainage feature. In the absence of further evidence, it has been classed as a pit, and based on finds and stratigraphy, placed in Phase 2. It predates the medieval gate foundation, which is thought to have been constructed in about 1372 AD.

Area 2

Group	Subgroups	Context types
170		Cut and fills (pit)
197		Cut and fills (pit)
201		Cut and fills (pit)
205		Cut and fills (pit)
206		Cut and fills (pit)
209		Cut and fills (pit/well)

Table 19 Pit related groups and subgroups (Area 2)

The heavily truncated remains of a possible pit (Group 170) were identified in Area 2 (B), on the eastern edge of the cut for the air-raid shelter. It survived as a 1,75 m x 0,75 m x 0,5 m deep cut into the natural clay geology. Its two fills were both rather sterile in nature, and apart from charcoal inclusions appeared very similar to the natural clay into which the pits were cut. No function for the pit was apparent, and the dating to Phase 2 is based largely on proximity to other features of a similar date.

Also located in Area 2 (B) was possible pit Group 197. This feature had been impacted by a number of modern truncations, and little of its original form could be established. It survived as a 0,59 m x 0,36 m x 0,58 m deep feature, which in turn cut earlier pit Group 206. Its fills were largely sterile in nature, but some fragments of bone were noted, as well as some flint including a possible knife. The feature has been placed in Phase 2 based on stratigraphy.

Pit Group 206 comprised of the truncated remains of a probable large pit. Its original dimensions measured at least 1,47 m x 0,94 m and 1,2 m deep, but as with many of the features in this part of the site, its true shape was not possible to ascertain due to the level of disturbance by modern activities. Its dark silty fill produced finds of slag and possible clay mould fragments and some fragments of animal bone (sheep/goat, pig). It may have been associated with metal-working activities based on the limited finds material. In the absence of dateable finds, it has been placed in Phase 2, based solely on stratigraphy.

Pit Group 205 was located in the same area as Group 206, and indeed was cut by it. This was a sub-rectangular pit, measuring 0,86 m x 0,62 m x 0,97 m deep. The sides of the pit were vertical, and it had a flat base. It was cut into the natural clay geology. It was truncated by later features (see above) on its northeast side.



Figure 76 Pit Group 205 seen from northwest

The primary fill of the pit was largely sterile apart from some charcoal flecks and some bone fragments, while the second (and main) fill comprised of very organic clay. This contained significant quantities of animal bone (cattle mainly), and a fragment of daub. Subsequent fills also produced much animal bone (cattle, sheep/goat, pig, gull and goose) and some nails. The function of this pit is somewhat unclear, but the heavily organic nature of its main fill, coupled with the finds of (mainly) animal bone, might suggest a waste pit of domestic origin, or perhaps more likely, a cess pit. With no dateable finds, the pit has been placed in Phase 2 based mainly on location and proximity to other pits and wells of high medieval date.

Located in the same cluster of pits as Groups 170, 197, 206 and 205 was a further high medieval pit, Group 209. This pit however, was placed directly over well Group

208, having been cut into its backfills. Why this was done, or if it was deliberate, is uncertain. It may simply have been easier to dig into loosely compacted backfilled material than into the hard clay natural. The pit was sub-circular, measuring 0,82 m x 0,64 m x 0,33 m deep, with a concave base. This was then lined with a sterile clay deposit, up to 0,1 m thick, which also gave the pit a flat base. The first fill over this lining was of similar clay to the lining, but large quantities of fishbone were apparent and more cultural material. The quantity of fishbone suggests that either fish waste was dumped here in large amounts, or perhaps more likely, that the pit was used to store fish, possibly as part of a production process. Near-stoneware, nails and daub were recovered from this layer, as well as animal bone (cattle, sheep/goat and pig) and grains of barley and of course the aforementioned fish bone (herring, eel, cod and haddock) (Appendix 1). The barley grains were used to retrieve an AMS C14 date, which placed the layer between cal AD 1205 and 1380 (2 Sigma, LuS 10638), with a greatest probability lying between AD 1205 and 1300.

The subsequent deposits in the pit were predominantly sterile in nature, and have been interpreted as backfills. Finds recovered from these included ceramics (near-stoneware, Early Redware and Late Greyware), daub, slag and worked flint, as well as animal bone (sheep/goat, cattle, pig, goose, horse and haddock). In conclusion, the pit is likely to have been in use in the 13th century, and was interpreted by the excavating archaeologist as having been used in connection with fish processing, though the fish bone analysis was considered inconclusive due to a lack of evidence, possibly as a result of insufficient sampling of the pit (Appendix 1).



Figure 77 Pit Group 209, cut into well Group 208. Seen from northeast

Located near the southeastern edge of Area 2A, a shallow semi-circular (truncated) pit (Group 201) was documented in an area of intense early medieval and high medieval activity. It truncated earlier pit Group 178 (early medieval) and was itself truncated horizontally by the cut for the demi-lune (Group 155). The pit measured 1,3 m x 0,9 m x 0,65 m deep. It also overlay early medieval pit Group 169, and it is a possibility that this pit should be seen as a recut of that earlier pit. The primary fill was sandy in nature, with a possibility of having been heat affected. It produced finds of slag and some near-stoneware, suggesting a high medieval date. The second fill contained traces of burnt clay, and produced finds that included a

fragment of a long-tooth bone comb, slag, nails and ceramics (near-stoneware and Early Redware). Animal bone was also retrieved, including pig, sheep/goat, cattle, goose and cat. The remaining fills alternated between sterile in nature and charcoal-rich, and further finds of Late Greyware, Early Redware, stoneware, slag and animal bone (including seal) were recovered. The pit may have functioned as a waste pit, though it is unclear if that was its original function. Based on the finds material, a high medieval date seems certain, and a connection with metal-working could be postulated.

Area 3

Group	Subgroups	Context types
246		Cut and fills (pit)
248		Cut and fills (pit)

Table 20 Pit related groups and subgroups (Area 3)

Located adjacent to and cut by, the mill construction cut in Area 3, a roughly circular shallow pit (Group 246) was documented. The cut measured 2,45 m x 1,65 m and had a depth of 0,35 m. The fills were largely sterile in nature, but produced some charcoal and bone fragments. No dateable finds were recovered, and no indication of original function. It has been placed in Phase 2, but apart from knowing it pre-dated the mill (c. 1600 AD), it is not certain that it is medieval in date. This pit was overlain or cut by pit Group 248. This pit (Group 248) was irregular in shape, measuring 1,12 m x 0,97 m x 0,28 m deep. It produced little by way of cultural material, but some slag was recovered, and some pig bone. It may have functioned as some kind of waste pit, perhaps associated with metal-working activities. Its dating is also quite uncertain, but as with Group 246 it was truncated by the mill construction cut and must date to pre-1600 AD. It has been placed in Phase 2 in the absence of further evidence.

Watching Briefs

Group	Subgroups	Context types
52		Cut and fills (pit)
53		Cut and fills (pit)
54		Cut and fills (pit)
130		Cut and fills (pit)
153		Cut and fills (pit)
190		Cut and fill (pit)
244		Cut and fills (pit)
245		Cut and fills (pit)
373		Cut and fills (pit)
381		Cut and fills (pit)
385		Cut and fills (pit)
386		Cut and fills (pit)
388		Cut and fills (pit)
397		Cut and fills (pit)

Table 21 Pit related groups and subgroups (watching briefs)

Situated in watch brief Trench Z 4498, a number of pits were identified. Pit Group 53 was only partially exposed in the trench, extending out to the southeast. It was sub-rectangular, measured 0,5 m x 0,35 m, and its depth is unknown as it was not excavated, due to the trench not being excavated deeper (preservation in situ being possible). It was cut into the natural clay geology, which in this area occurred

just 0,6 m below present street level. It had a dark charcoal-rich fill, from which a flint flake was recovered. The date and function of this feature are unknown, but based on location and stratigraphic position it has been placed in Phase 2. It truncated pit Group 52 to the southwest.

Pit group 52 was also only partly exposed in the trench, and measured c. 0,85 m x 0,36 m, depth unknown. It was cut into the natural clay geology, and truncated pit Group 53. This feature was exposed in plan, and was not excavated due to the trench not being excavated deeper (preservation in situ being possible). Hence little is known about this feature, and indeed it is dated to Phase 2 based on location and stratigraphic position only.

Located in watching brief Trench Z 77745, a truncated pit was documented (Group 373), which survived as a semi-circular feature (presumably circular originally). It measured 1,4 m x 0,7 m in plan, and had a recorded depth of 0,4 m. The sides were somewhat irregular, and the fills, which were quite mixed, produced finds of slag and daub/burnt clay. The irregularity of the sides and the base may suggest that the feature was a clay extraction pit. The fills seem deposited over a relatively short time – suggesting dumping of waste from nearby, both to fill the hole in the ground and to get rid of the waste. No dateable material was found, but the location of the pit and its proximity to other high medieval pits, and association with similar cultural material, makes a high medieval date likely, and hence the pit has been placed in Phase 2.

Located 4,5 m west of pit Group 373, was another pit (Group 386), which was also cut into the natural clay geology. Pit Group 386 consisted of a cut and four fills, with preserved dimensions of 1,07m (NNW-SSE), 0,43m (ENE-WSW) and a depth of 0,58m. The pit was not fully excavated, as it was placed just on the western edge of the watching brief area. If the pit was originally circular, then only about 25% was within the excavation area. The function of the pit is unclear. The three upper fills were interpreted as rapid backfills, and whether the bottom fill had anything to do with the usage of the pit is not certain. This contained a lot of charcoal, some slag and animal bone fragments (hen). A connection with a metal-working area is possible. There were no dateable finds, but the presence of slag in the primary fill could suggest that it was within the same date range as the other pits containing slag in the nearby area, which generally seemed to date to the high medieval period.

Located just 1,9 m north of pit Group 386 was another severely truncated probable pit, Group 397. This survived only as a narrow rectangular feature between truncations, and hence nothing can be said of its original shape. It had been cut into the natural clay geology, and had a length (as it survived) of 1,6 m and had a depth of 0,95 m. It was interpreted by the excavating archaeologist as a possible clay-extraction pit, but once again, the presence in the fills of slag and charcoal, may suggest a connection to nearby metal-working activities. No dateable artefactual material was recovered, and the feature has been placed in Phase 2 based on its proximity and similarity to other high medieval features in the nearby area.

Also in Area Z 77745, Group 381 consisted of a large pit and several fills, which truncated pit Groups 386 and 397, and hence post-dated them to some degree. The pit is thought to have been originally circular, but was highly truncated; by modern cables and by another pit, so that the only preserved edge of the pit was to the northeast, and this was very undercut, presumably by erosion. The preserved dimensions of the cut were 2,5 m (N-S) by 1,15 m (E-W). The depth was measured to 0,9 m. Due to time constraints at the

end of the excavation, the pit could not be excavated fully, and instead a 1,3 m x 0,4 m slot was excavated in its base. The upper fills contained quite a lot of slag material and some kiln/furnace lining, suggesting that there was metal working activity in the area. The character of the pit and its backfills seems very similar to the other pits in the area. While there were no dateable artefacts found in the pit's fills, the slag and metal/CU alloy finds in the fills, suggests that it belongs with the other pits in the area with remains of craft/iron working from the high medieval period.

Close to the pits above was a further truncated pit, Group 385. This consisted of a sub-circular cut and two fills. The pit measured c. 2,1 m (NE-SW) by 1,6 m (NW-SE), and it had a depth of c. 0,85m. It had partially truncated (and hence post-dated) pit Group 381. The sides and base of the pit were concave. There were some yellow clay patches in the lowest fill, probably derived from some edge collapse from the northern side. The fill above (dark grey clay) may have accumulated while the pit was open, and its sticky and soft nature may indicate some standing water. The upper fill contained waste material including slag and animal bone fragments (cattle) as well as daub or burnt clay, which suggests some metal-working related waste.

Stratigraphically it seem that this pit was one of the youngest in this area, but the fills, containing slag and similar waste suggest that it should be grouped along with the other pits in this area and Area 2A and 2B. A single sherd of Early Redware pottery was recovered in the upper fill of this pit, suggesting a high medieval date for the feature. Hence it has been placed in Phase 2.

The size and depth of the pit was similar to other pits in the area. There were no finds to indicate the original purpose. The upper fills did contain quite a lot of slag material and some kiln/furnace lining, but while this shows there was metal working activity in the area, it does not necessarily mean that the pit was directly associated with that activity (though it is possible). It may also simply have functioned as a waste pit, though it was not particularly rich in cultural material. There were no dateable artefacts found in this pit's fills; however, the slag and metal/CU alloy material (including a pin) may suggest that it was associated with the other pits nearby that produced remains of craft/iron working in the early or high medieval period.

One further pit of probable high medieval date (Group 388) was documented in watching brief Trench Z 77745, but located some 11 m east of the group of pits described above. Group 388 was a large pit, consisting of a cut and three fills. It was heavily truncated - the northern edge was cut away by the construction cut for a WW2 air raid shelter, an east-west cable trench ran through it, and a branch of this was truncating the southern part of the pit also. The pit seems to have been circular at the top originally, with a diameter of c. 2,4 m, and a depth of c. 1,3 m. The primary fill consisted mainly of light clayey sand, but lenses of darker, organic material were also seen. The middle fill was primarily dark sandy organic, mottled with a few smaller lumps of yellow clay. The upper fill was mottled and lensed, mainly black with smaller inclusions of grey/brown sandy material.

The interpretation of the original function of this pit is based on the shape and character of the cut. The depth, flat base and steep sides could indicate that it was originally a storage pit or similar, but the irregularity of the cut in the north side could indicate it originally being a clay extraction pit. The fills of the pit suggest that it was backfilled with both cultural and natural material - probably as a means of both backfilling and getting rid of debris. Some Baltic ware was apparently seen during excavation of this pit, but

was never registered. A very corroded CU alloy coin was found in the upper deposit, but it was not possible to identify its type. The dating of the feature therefore is based more on similarity to and proximity to other pits in the wider area. Based on this, the pit was probably dug, used and filled in the high medieval period. This interpretation is quite uncertain, however, and the possible Baltic ware find may suggest that an earlier date is a possibility.

In watching brief Trench Z 112934, two pits of possible high medieval date were seen, stratigraphically earlier than the building Group 195. The first of these (Group 244) was cut into the natural clay geology, and measured 0,59 m x 0,55 m x 0,2 m deep. Its silty fill produced just one find, a flint flake, and it is a possibility that the feature was in fact prehistoric in date. However, in the absence of solid dating evidence and given its proximity to other high medieval deposits, it has been placed in Phase 2. The second pit in Trench Z 112934 (Group 245) was stratigraphically later than Group 244, and indeed post-dated the primary floor layer (Group 267). The pit was not fully exposed, but measured 0,8 m x 0,3 m x 0,11 m deep as seen, and had vertical sides and an uneven base. Its fill consisted of pale sandy material, and produced finds of animal bone (cattle, sheep/goat and pig). In the absence of dateable material, it has been dated to the high medieval period based on stratigraphy. The scant finds material makes interpretation difficult, it may be that it functioned as a waste pit in association with floor Group 267.

Located in Trench Z 3064, a pit was documented in profile only, during the excavation by machine of a test-trench for the placement of steel shoring. The pit (Group 54) measured 1,54 m in width, and 0,36 m in depth – though the base was not seen. The sides were sloped gently at the top, and steeply closer to the base, in a sort of funnel-shape. The side of the cut was lined with a thin deposit of dark, charcoal-flecked sandy clay, and filled with a reddish sandy material, that seemed to contain slag-like material (this could not be sampled). Based on this and the shape of the feature, it is considered likely that Group 54 may represent an iron furnace or iron-working related feature, though as it was not excavated by hand it is difficult to be certain. No finds were seen, and consequently the feature could not be dated. However, based on its location and the likelihood that it would have been under the rampart from c. AD 1370, it is likely that it dates to no later than the 13th – 14th century. Hence it has been placed in Phase 2.

Located in watching brief Trench Z 29584, a heavily truncated pit (Group 130) was identified adjacent to the trench edge/shoring. Measuring 1,5 m x 0,5 m in plan (depth was not noted), this possible feature was largely backfilled with sterile clay, and slag and charcoal in large quantities formed the only cultural material contained within it. Given the truncated nature of the feature, little can be extrapolated of its original form and function, but the presence of much slag and charcoal may suggest a connection with iron-working activities. It has been placed in Phase 2 based largely on location and proximity to other high medieval features. No dateable artefacts were seen.

In Trench Z 114012 the fragmentary remains of a possible metal-working related pit (Group 153) were documented. This feature had been severely impacted by modern truncations (mainly air-raid shelters) and therefore it is impossible to discuss its original form. It survived as a 0,84 m x 0,35 m feature, with a depth of 0,9 m. It was cut into natural clay geology, and had a sloping edge where it survived. A large amount of slag and charcoal was found in the fills, as well as some burnt clay, and the feature may well have related to metalworking somehow. A copper-alloy and iron padlock (FO 203223) of medieval form was also recovered

in this pit, and has been conserved. Based on this, the feature is likely to be medieval in date. An iron key (FO 203865) and a hook-like tool (FO 203868) were also recovered from this pit.



Figure 78 Padlock FO 203223 from pit Group 153 (post-conservation)

Just 1,4 m northeast of pit Group 153, was another severely truncated possible pit, Group 190. This measured just 0,7 m x 0,3 m x 0,03 m deep. Charcoal stained sandy clay made up the fill, and this contained quite a lot of slag and forge material. Little can be established about the original form of this feature, but the inclusions of slag, combined with those in pit Group 153, suggest that this area was part of a metal-working area. No dateable finds were retrieved, but based on its proximity to Group 153, a high medieval date is probable.

Overall conclusions for Phase 2, AD 1250 – 1350

Phase 2 at Rådhuspladsen essentially saw a continuation and consolidation of the kinds of activity seen in Phase 1, with the exception of the burial area, which seems to have gone out of use prior to AD 1250. Apart from that, roads continued in use and were improved and resurfaced, structures continued to be built, and general activity is seen in the form of pits, wells, ditches and various levelling and dump deposits. The range of activities suggested by the material remains, suggests a proto-urban environment, though one which may still have been unenclosed. This is based on the lack of evidence for a boundary in this area; as stated at the outset, no remains whatsoever were found of defences in this area from this phase, though it is possible that such evidence could have been removed by later activity, such as the expansion of the city moat.

The features found at Rådhuspladsen add new knowledge to our understanding of Copenhagen during this period, adding to our knowledge of everyday life in the developing medieval town.

Phase 3 Urban consolidation and defence – AD 1350 - 1500

The third recognised phase of activity on Rådhuspladsen corresponded approximately to the late medieval period (between about AD 1350 – 1500), and saw considerable changes in the emerging town of Copenhagen. It could perhaps be best summed up as a time of crisis and recovery. It was also a time of continuity however, with the ongoing urbanization process seeing the consolidation of the location as a town of some considerable importance. The features found at Rådhuspladsen add considerably to our understanding of Copenhagen during this period, shedding light on aspects of the town's development that were previously unknown, and also adding to our knowledge of everyday life in the medieval town.

The late medieval remains seen at Rådhuspladsen were heavily impacted by later activities in the area – both archaeological (such as the post-medieval moat) and modern (service trenches, the underground toilet etc.), particularly the contexts closer to present ground level, while deeper contexts survived better. Nonetheless in some areas of the site some at least of the late medieval material survived, enough to piece together a good deal of what was happening in this area at this time. The late medieval contexts themselves impacted on earlier archaeology too, particularly in the case of the moat which surely truncated early medieval evidence.

We have seen in Phase 1 and Phase 2, that Copenhagen was emerging as an evolving urban space as early as the 11th century, and grew in significance with the construction of Absalon's Castle in a position where it would defend the town, and the presumed establishing of the town defences also. These were likely a moat and rampart or wall, as hinted at by references to the *Byens Planker* (town's planks) from as early as the 13th century (Nielsen 1872: 38). However, it must be stated that no evidence for this early defensive construction was seen during the excavation at Rådhuspladsen.

The types of features excavated that can be dated to the late medieval period include a moat, two bridges, the city gate, rampart, roads, and a small number of pits. Overall then this phase mostly consists of large scale structures indicative of defence and communication. The defence related structures (moat, gate and rampart) probably were established at about the same time, as they would have functioned in tandem. The first bridge probably dates to about the same time also, and we know this was constructed in about AD 1372 (see below), which may indicate a date of construction for the moat, gate and rampart also. The road surfaces are more difficult to date, but were certainly in use in the phase in question, though it is likely that some elements of the roads (Groups 76 and 80) were in existence already in Phase 2 or even Phase 1. The second bridge was likely an upgrade of the first necessitated by wear and tear of the original structure, and this rebuild we know to date to about AD 1438. Apart from a new bridge being built, it is likely that otherwise the main structures seen in Phase 3 continued in use throughout the phase with no significant alterations.

Overall then, Phase 3 saw the establishment of a significant urban defence in the Vesterport area, and quite likely around much of the late medieval city. The possible reasons for this – apart from general defensive needs – may relate to the sacking of Copenhagen Castle by the Hanseatic League in AD 1370, an event that would have necessitated a fortifying not only of the castle, but presumably of the town itself. These constructions then must have been organised centrally, perhaps by the king, or by the town administration.

They would have required significant planning and organisation of people, and a large expenditure of labour, time and money.

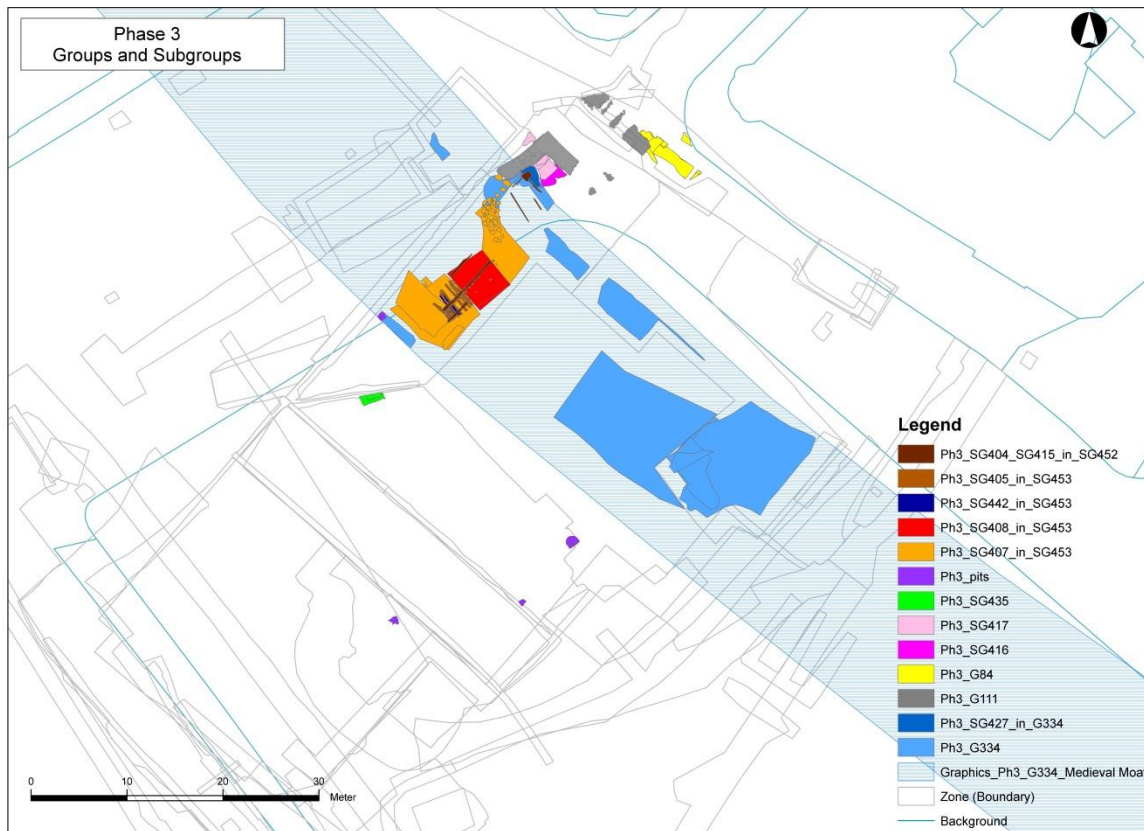


Figure 79 Plan of Phase 3 features

The moat as seen on site ran northwest to southeast across the area, and divided the excavation area into two parts, the 'inner city' side to the northeast, and the larger area to the southwest consequently being located outside the town proper. Few conclusively late medieval features were found in this external area, and indeed few enough within the town. This third phase (as stated above) was instead dominated by large-scale infrastructural projects, mainly related to defence and communication/transport.

The presentation of the features and finds from this phase will be divided into the different feature types as outlined above, beginning with the larger infrastructural type features, such as the moat, bridges and roads, which will be discussed together under the heading 'Borders and Communication'. Thereafter smaller features such as pits will be discussed under the heading 'General Late Medieval Activity'. It will be clear in some cases that a late medieval date is not always definite, but instead most likely.

Borders and Communication

Introduction

The eastern side of the excavation area at Rådhuspladsen ran more or less along the middle of Vester Voldgade, and as the name (*Western Rampart Street*) suggests, it is known that the city's former defences followed this line. It was no surprise then that moat layers and related contexts were encountered close to the eastern side of the excavation area, in Area 3 and Area 4 in particular, and also in watching brief area ZT 3064.

The Late Medieval City Moat

Group	Subgroups	Context types
334	427	Moat cut, silted fills, stake, secondary cut and fills

Table 22 Medieval moat related groups and subgroups

The late medieval city moat (Group 334) as seen during the excavation comprised of 7 cuts. In reality these cuts were all part of the same construction, seen in different parts of the excavation. This cut feature formed part of the city defences encircling Copenhagen.



Figure 80 The moat (Group 334) in Area 3 nearing completion, with primary fills still in situ. Seen from above, from northwest

The upper extent of the northeast edge of the moat was cut through by the construction cut for the mill building, so the true edge was truncated along the moats inner eastern edge for a significant distance. In fact it was only in Area 4 that the moats full width and depth were seen. Based on all available evidence it can be suggested that the late medieval moat (in the environs of the western gate) measured ca. 22 m in width, and had a depth of 6 m below the contemporary street level. During excavation 44 m of the moats length was seen, though of course this was just a small part of the whole feature, which presumably continued on to Nørreport to the north, and to the sea to the east-southeast. The sides of the moat were

quite steep, and climbing straight up the side unaided would have been almost impossible. The sides were cut into the natural clay, which in this area was extremely hard/compact yellow clay. Towards the base of the moat however, sandy layers were cut through, where the water-table was encountered. Here (based on what was seen during excavation) it seems likely that there were some problems with erosion, and this may explain the wooden platform (Subgroup 405) laid along the outer half of the moats base (see below).

A series of four deposits, based on their stratigraphic location and finds, are likely to have been primary/late medieval silted fills, as opposed to later backfills, hence they have been included within this Group. Only one produced finds however, and the few ceramics seen (Late Redware and Late Light Fired) were more suggestive of an early post-medieval date. It is possible however that this very waterlogged layer had had later material sink into it from above. Alternatively it could be that it belongs in a slightly later group. Further finds from this group included a horseshoe, a barrel lid, a whetstone, some nails and animal bones (including horse, dog, cattle, goose, goat and sheep/goat. None of the finds were diagnostic datewise. A number of samples were taken from the deposits for environmental information, and one c. 500 l sample for find retrieval. Flotation produced charcoal, burnt and waterlogged seeds, shells, lithics and animal bone. One sample produced significant amounts of weed seeds, particularly of *Brassica Nigra* (Black Mustard) and *Stellaria Media* (Chickweed). The former can be used for culinary purposes. The large quantities seen of these two species could indicate that the deposit in question formed in a relatively short period of time.

One wooden structure, an isolated stake located toward the southern end of Area 3, was also seen as relating to the medieval moat, based on its stratigraphic position. A cut and its fills (Subgroup 427) located along the moats inner edge has also been included, as it appears to represent an associated phase of deconstruction, perhaps related to the reconstruction of the first bridge. This subgroup produced just one dateable find, a single sherd of Early Redware, which is high medieval in date. As an isolated find however, it is not very useful for dating purposes.

Earlier elements of this group are likely to have been late medieval, potentially dating to about 1372 AD when the first wooden bridge was constructed (see below). It is of course possible that the construction cut predated the wooden bridge, but if so no clear evidence for this was seen. Based on the available information, we must assume it is most likely of late medieval date, probably including later alterations to its shape. Similarly with the deposits, it is difficult to be certain of their age, but they appear to be potentially primary, and to date to the late medieval period.

The finds assemblage was not that significant in scale, but it is notable that the pottery was both medieval and early post-medieval in date. It is also worth noting that the frequency of finds was considerably lower than in the moat backfill layers, which were very rich in general urban waste. The finds in this group were much more reflective of material casually lost in the open moat rather than deliberately dumped in bulk. This group is therefore easily separated from the post-medieval moat backfills (Group 200) for example, which were instead representative of a large scale and rapid filling up of the moat in the 1600s.

A cut into the natural clay and its fill (Subgroup 427) was located at the eastern edge of the city moat, just west of the medieval city gate. It consisted of a large irregular cut and its fill. This was composed of silty clay material but also of large granite stones. This cut feature most likely represented a destruction or

modification of an underlying timber structure (Subgroup 415, discussed below). Overall the evidence seems to suggest a deconstruction phase in preparation for the second phase of bridge. This Subgroup could also be seen as the latest phase of activity associated with the first phase of the moat (Group 334). A single find of a sherd of Early Redware suggested a date pre-1450. No soil samples were taken from this deposit.

Bridges

It was fortunate that the only section of the medieval moat within the excavation area that was preserved to its full depth and width was directly outside the former medieval western gate, making it likely that bridge remains would be encountered. Two phases of late medieval bridge were identified, as well as one late medieval/early post-medieval bridge. Collectively these were recorded as Group 451. This bridge would have been the original *vesterbro* (western bridge), which would later give Copenhagen’s western suburb its name.

The First Bridge

Group	Subgroups	Context types
451	452 (404, 415)	Wooden bridge elements

Table 23 First bridge related groups and subgroups

The oldest recognised bridge (Subgroup 452) appears to have been constructed entirely of timber, and has been dated by dendrochronology to AD 1371/2. No older timbers were found on site; hence we can suggest that this bridge represents a phase of construction that may also have included digging the moat for the first time in about AD 1372. If an older moat or bridge existed in this location, no traces were seen. This first bridge was found in two areas, on the eastern edge of the moat, just southwest of the medieval gate (Group 111), and spanning the moat base in a southwest to northeast direction. It was comprised primarily of timber structural elements.



Figure 81 Plan of bridge elements, Subgroups 404 and 415