

The late 17th to early 19th Century harbour (Phase 4)

Introduction

Phase 4 of the Gammel Strand excavation began with a large re-structuring of the harbour side in the 1690s. This process started with land reclamation south of the Phase 3 water front, closely followed by the construction of a new bulwark and land ties. This process was completed with the levelling of the area. The land ties and bulwarks comprised of large timber structures interlinked with each other and built from oak, pine and spruce timbers. This re-structuring of the harbour side was undertaken as a response to new requirements of the harbour administration as well as the need for more storage facilities and space in connection with the harbour. The material used for the land reclamation and levelling consisted primarily of household waste, which appeared to have been collected from streets and open areas in the city, where garbage would have built up fast, due to the large amounts of foodstuffs and commodities being consumed within Copenhagen. In the 1750s the bulwark was replaced by a new bulwark and the land ties were supplemented and partly replaced by new sets of land ties.

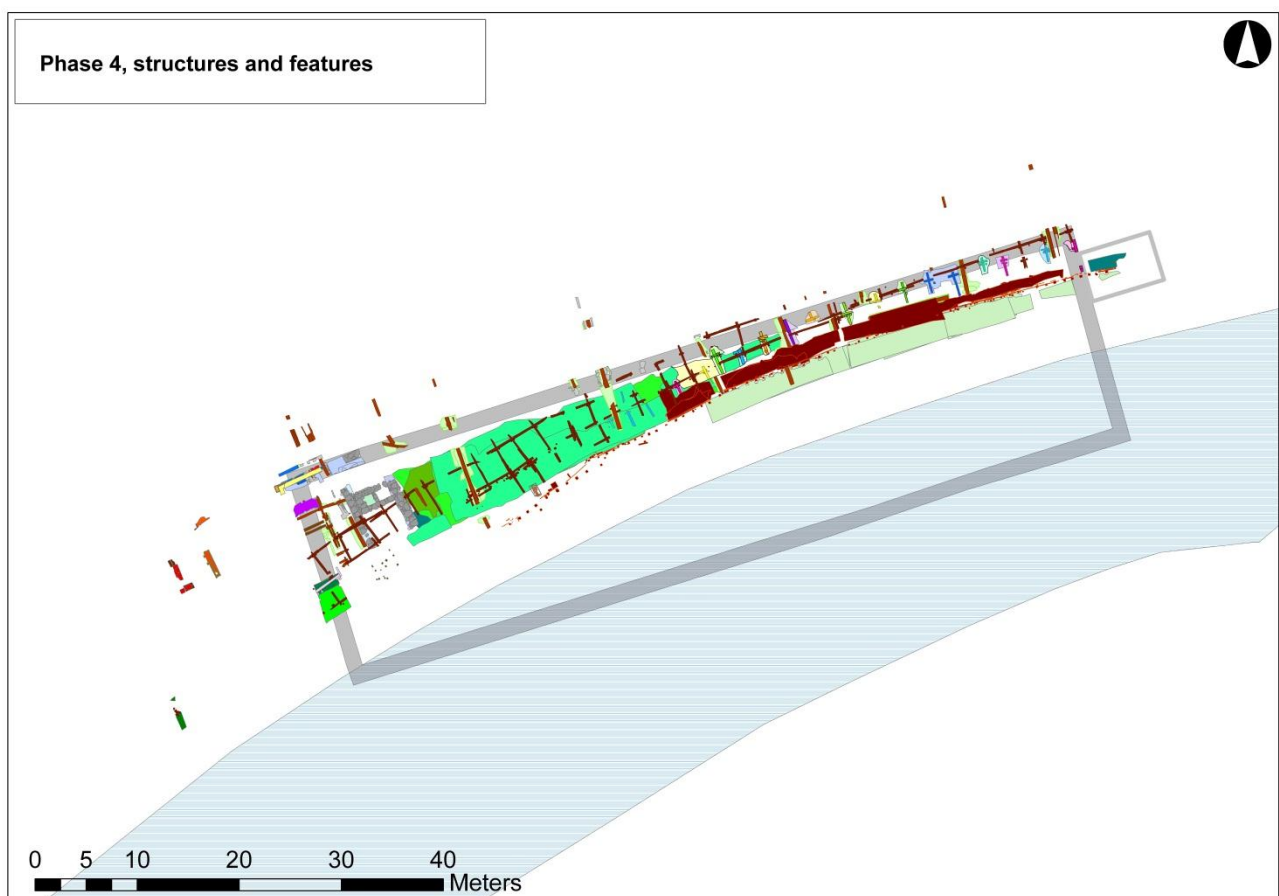


Fig. 80 Plan of structures and features relating to Phase 4

The land reclamation

Deposits interpreted as land reclamation layers were found on the south side of the former, Phase 2/3 waterfront and/or partly covering the top of this. The former waterfront (Phase 3) consisted in the west end of a bulwark with storm posts and in the central and eastern end of the excavation area by the stone quay wall and the associated bulwark, which were built already in Phase 2. The Phase 4 land reclamation layers excavated during in the Guide Wall and Main Excavation covered an area measuring 52.2 m (ENE-WSW) by 7.1 m (NNW-SSE), but when adding the area excavated west of the station box area in a narrow trench in 2012, the shear size of the land reclamation is better seen.



Fig. 81 Child's leather shoe, FO213534, retrieved from land reclamation layer, SD52177, G601. Phase 4. Museum of Copenhagen

The land reclamation appears in general to have been undertaken in close connection with the construction of the timber land ties (see below). This was most clearly seen in group G601 which comprised both land reclamation and land tie structures. However, to facilitate the land reclamation an outer/water side boundary must have been present for the purpose of keeping the soil in place so it would not float away during the construction of the new harbour. Such preliminary structures, which could be named land reclamation fences or boxes, were not seen on Gammel Strand during Phase 4. It is not clear what the reason for this absence would have been, but it is possible that the land reclamation bulwark would have been placed in the same line as – or rather been identical to – the early parts of the bulwark recorded as SG604/SG606 and SG712.



Fig. 82 Stove tile, FO213821, collected from land reclamation layer, SD37744, G620. Phase 4. Museum of Copenhagen

On the water side of the former harbourfront, the land reclamation layers would have been deposited directly on top of the layers related to usage of the former harbour and in most instances it is very difficult to differ between these types of depositions, as both the usage/activity layers of the former harbour phase and many of the land reclamation layers consisted of waste material, possibly deriving from house holds both nearby and further away around the city.



Fig. 83 Bone needle, FO218157, retrieved from land reclamation layer SD32429, G598, Phase 4. Museum of Copenhagen



In general the land reclamation appears to have occurred from the land side of the harbour, which is evident from the depositions partly overlying the former harbourfront and sloping downwards from there and towards the south.

Fig. 84 Double-sided bone comb, FO213512 found in land reclamation layer SD52177, G601. Phase 4. Museum of Copenhagen

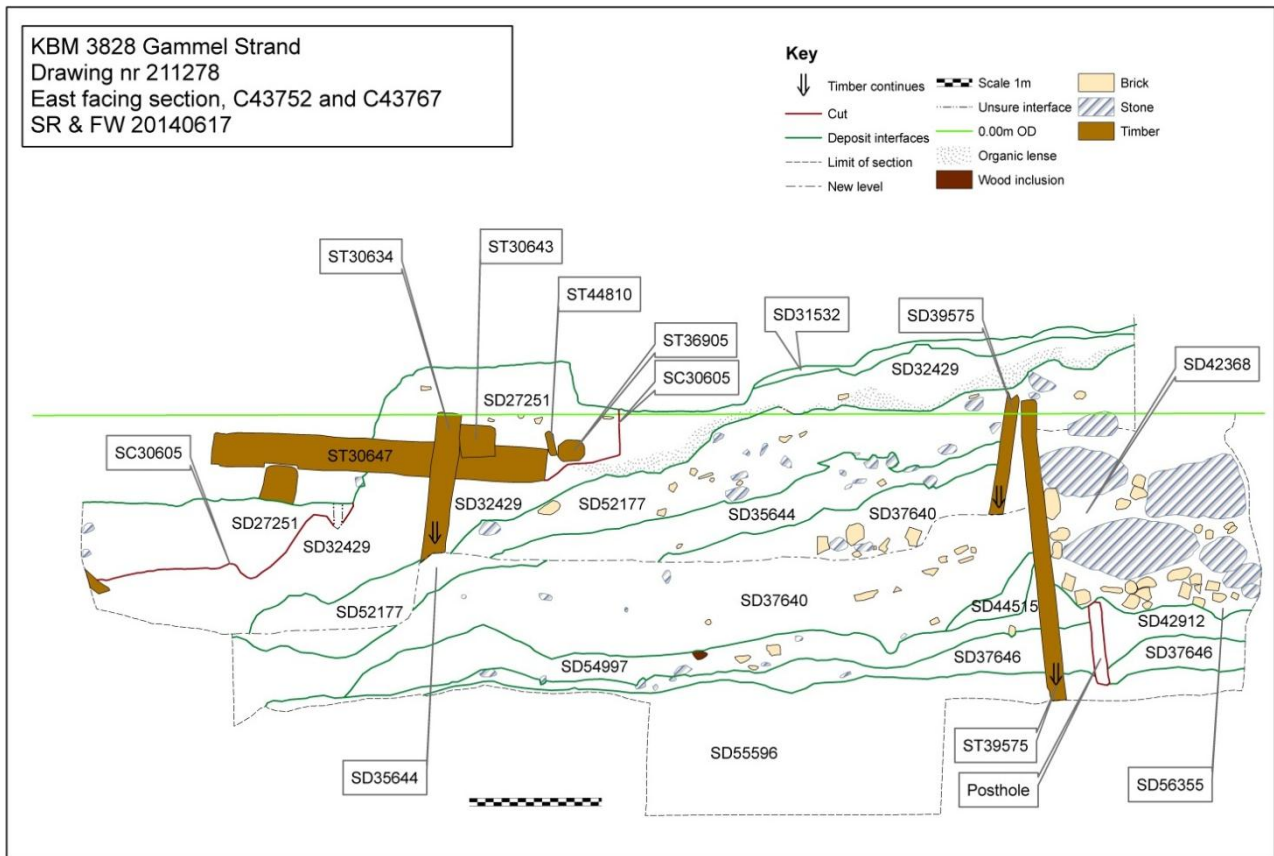


Fig. 85 Digitized drawing 211278 of east facing section, C43752 and C43767



Fig. 86 Neck fragment from a green carafe with handle FO214814, found in land reclamation layer, SD52177, G601, Phase 4. Photo: G. Haggrén.

The material used for the land reclamation contained vast amounts of artefacts, which in most instances appear to be linked to household waste, e.g. broken pottery and glass. This was supported by the results from the macro-botanical analysis and the analysis of the zoological material. Taking into consideration, the very large amounts of waste used within a relatively short time to fill up the harbour as land reclamation, around 1690, it seem probable, that the waste would have come from a wider area of the city, and thus not the Gammel Strand area alone. A very similar situation was found recently at the Rådhuspladsen excavation, where waste from the city had been used to fill up the former moat, around 1670. Such 'time capsules' reflecting the inhabitants of Copenhagen over time, will be further touched upon in the "Life on the Border" chapter below.



Fig. 87 Sherds from an opaque white glass tankard with dark violet threads, FO214669 collected from land reclamation layer, SD32429, G598, Phase 4. Photo: G. Haggrén

Land ties

The land ties of Phase 4 were constructed in two different phases split as Phase 4A and Phase 4B land ties. The Phase 4A land ties were constructed as a part of a larger re-organisation of the harbourfront, changing the layout of the coastline from the earlier phases (Phases 2 and 3). The land ties should be seen in close connection with the land reclamation layers, as the construction of the land ties and the claiming of land were largely one process. The purpose of the land ties was to keep the bulwark in place. However, in no instances a connection is seen between the Phase 4A land ties and the parts of the early Phase 4 bulwark, (SG712, related to G626 Bulwark – see below). This was probably due to the structures being truncated by first the construction/repair cut for the later parts of the bulwark (SG713) and later by other large construction cuts. Thus, even though the land ties and the bulwarks were parts of the same overall structure, they are kept apart in the following. To some of the Phase 4A land ties, repairs are seen as replacements and/or additions of parts of the existing land tie structures.

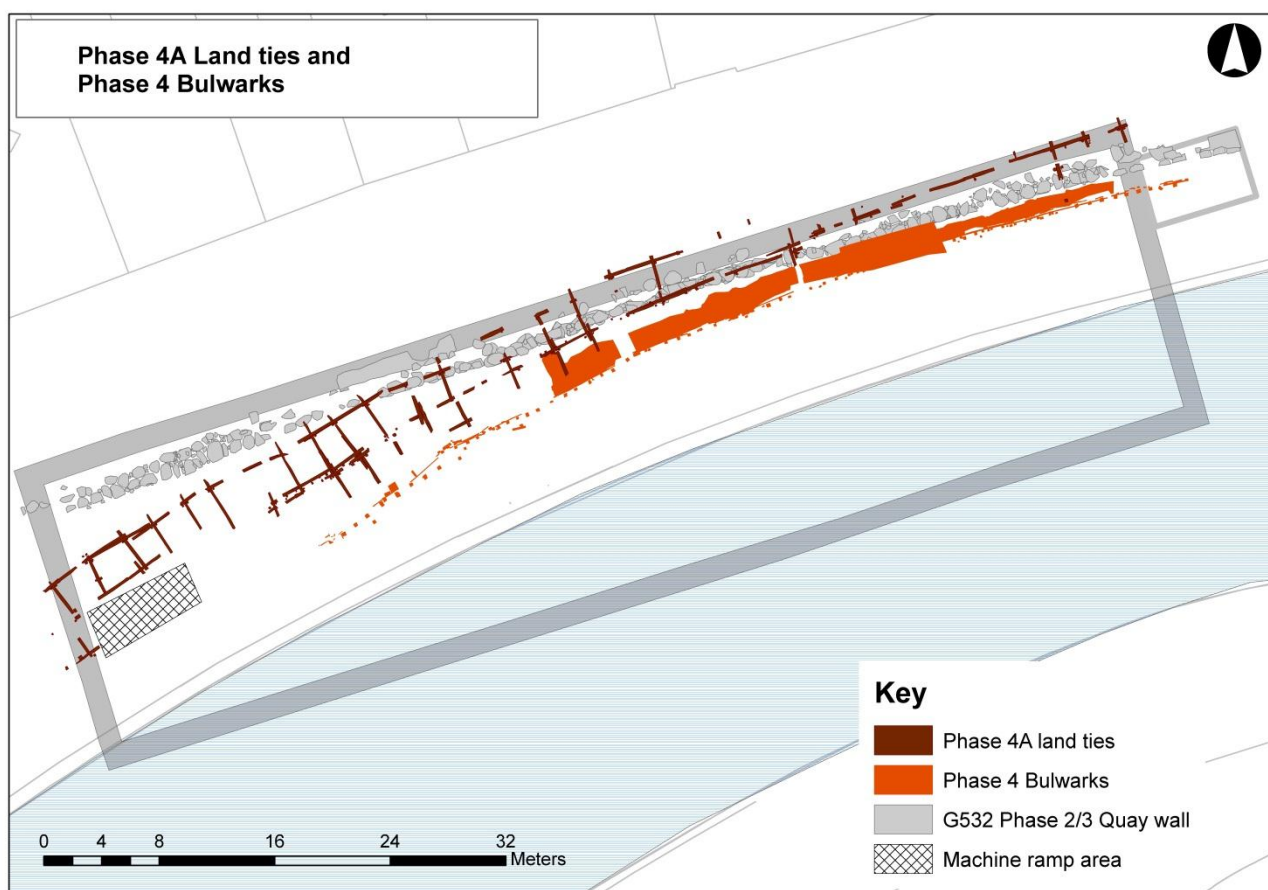


Fig. 88 Plan of Phase 4A Land ties and Phase 4 bulwarks

The Phase 4B land ties can be seen as a series of reinforcements of the Phase 4A land ties, though some are to be seen as actual replacements, possibly also changing the layout of the coast line slightly. The construction style of the Phase 4B land ties differs from that of the Phase 4A land ties, indicating also a functional difference of the two land tie construction phases. It seems plausible that the Phase 4B land ties have been directly related to the bulwarks found, though the physical links between them have been truncated all along the bulwark.

In the following the Phase 4A and the Phase 4B land ties will be described as two different overall groups or construction sequences. The descriptions comprise observations on what seems to have been the general building sequence of the land ties (as seen when later truncations do not distort the structures), and some exceptions to this rule, as some land ties are structured differently.

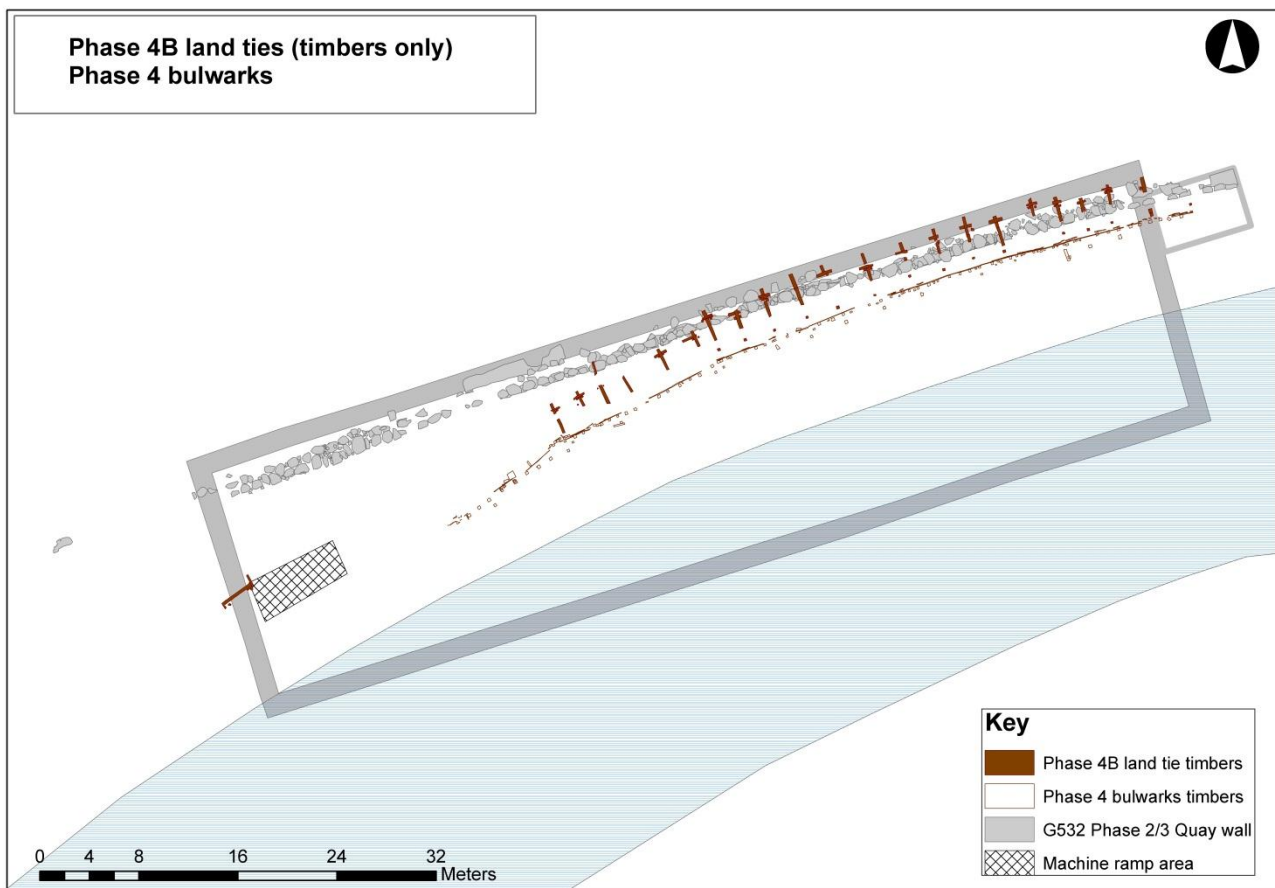


Fig. 89 Plan of 4b land ties and bulwarks

Bulwarks

When dealing with the bulwark structures, the biggest challenge was the continuous reuse and incorporation of timber built structures into later structures as well as the problems of observing the stratigraphical relationships between driven in posts and planks and the deposits into which they were driven.

The westernmost, exposed part of the Phase 4 bulwark was only partly excavated during the 2014 Main Excavation and was grouped as SG604, while the easternmost parts were documented in more detail and originally grouped as G626. Likewise the storm posts grouped as SG606 and SG595 were probably parts of the same overall storm post structure in the western and eastern end, respectively. Late in the post-excavation process G626 was split into an earlier and a later construction phase, defined as sub-groups SG712 and SG713 respectively. The division into an earlier and a later building phase was based primarily on the later part being relatively well-preserved and evenly structured, while the earlier parts seem to have survived as single posts in between the later ones. Stratigraphical observations were not documented for all timber elements and other construction parts, but in the instances they were, the stratigraphy supports the division. Likewise, a series of dendrochronological samples from selected posts and other bulwark elements were analysed and supported the division, though far from all posts are dated.



The exposed eastern part of the Phase 4 harbourfront consisted of an almost invisible first building phase, (SG712, including post holes from deconstructed posts, SG637), which had been almost entirely replaced by the later bulwark (SG713). A number of repairs of the later bulwark was defined and sub-grouped individually.

Fig. 90 Gold ring, FO208936, from backfill in bulwark construction cut, SD53452, SG713, Phase 4. Museum of Copenhagen

The eastern part of the bulwark consisted of more than one construction phase. The earliest phase (SG712) was almost invisible and comprised a group (SG637) of deconstructed posts, seen as post holes against the soil at the base of the harbour along with a number of bulwark posts. The later construction phase (SG713), differed, and instead comprised a large construction/repair cut, 50 evenly dispersed bulwark posts as well as horizontal and vertical planking on the north side of the bulwark posts.

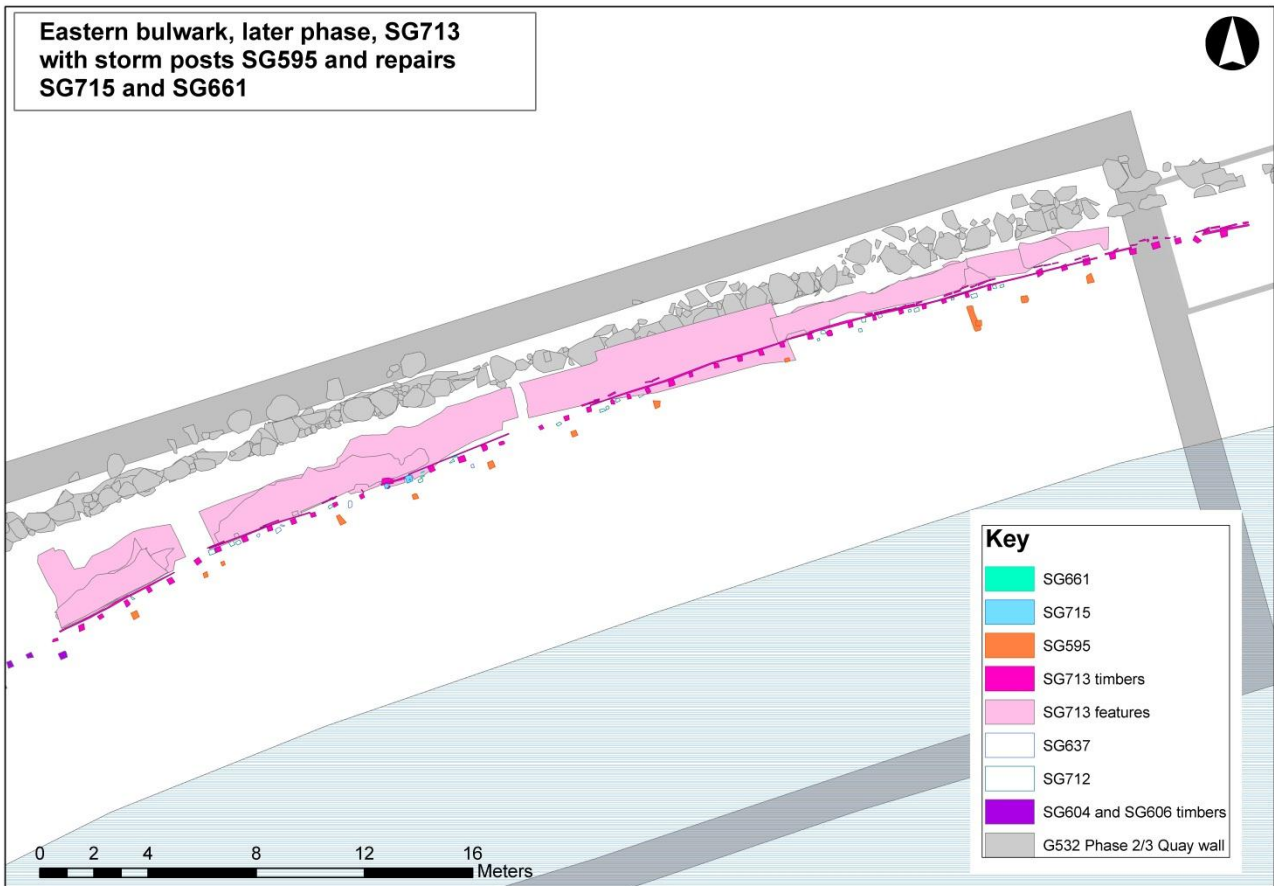


Fig. 91 The eastern part of Phase 4 bulwark



Fig. 92 Parts of Phase 4 bulwark, G626, partly exposed. Storm posts (G595) are seen as slanting towards the bulwark posts. Later structures related to Fiskegangen (G583, Phase 5) with peg holes on top. Looking WSW. C03_20140425_9863



Fig. 93 The easternmost section of bulwark SG713, excavated in the Stairway trench/ZT22798. Looking NNE.
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Livewell

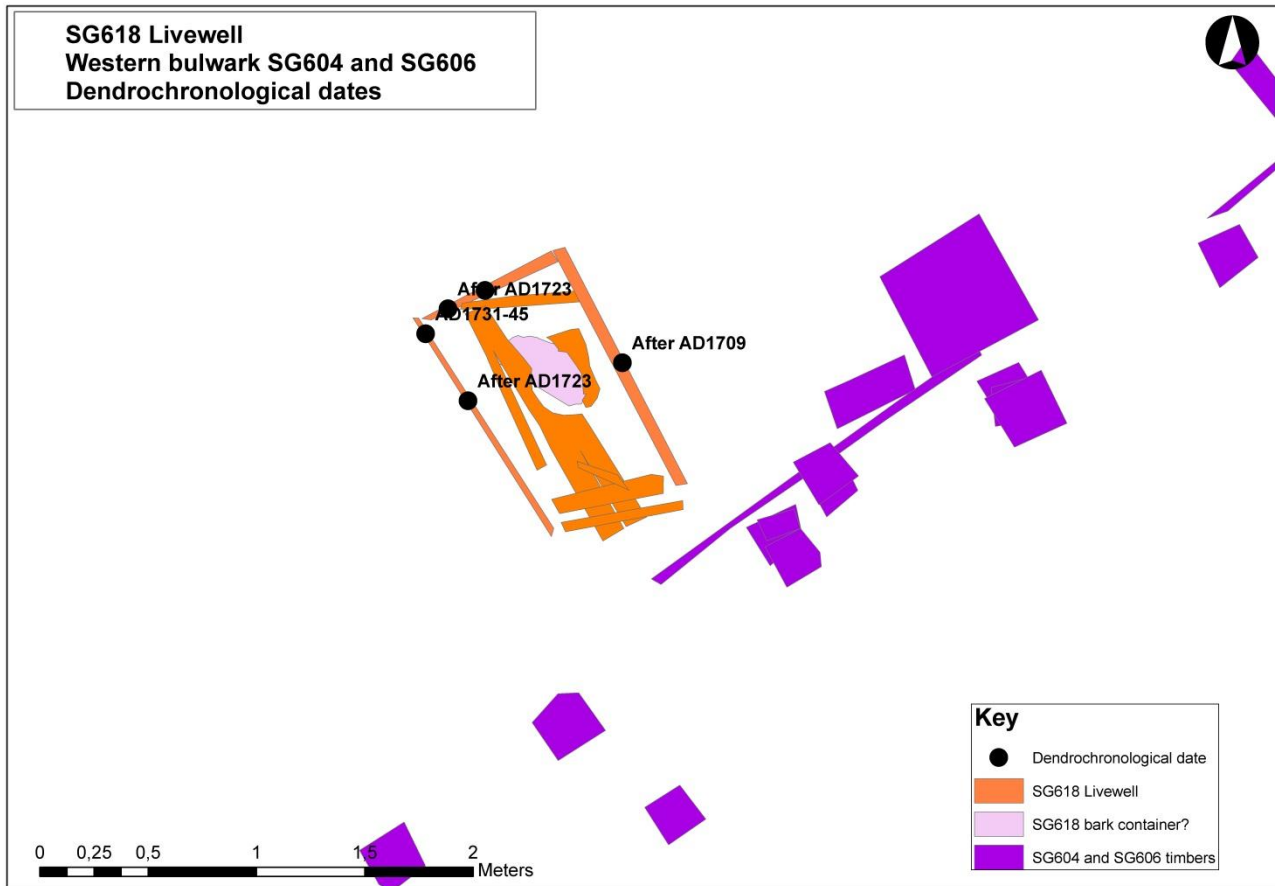


Fig. 94 Plan of livewell (SG618)



A timber structure (SG618) was interpreted as a partly deconstructed livewell for storing fish. Though the construction sequence was not very clear, it seems probable that the box was built into the north side of the Phase 4 bulwark, when this was changed in the middle of the 18th Century. The structure was preserved below the water level and only the south side of the structure was equipped with holes for the water to pass through, supporting the interpretation that this was a “built-in” structure. The bark or wood container excavated at the base of the structure may have been a bucket or barrel used to hoist fish in or out of the livewell, using the circular hole in the lid or roof of the structure.

Fig. 95 Livewell (SG618) seen towards NNW. Loose timber parts placed next to the box.

Levelling layers

The differences between deposits interpreted as levelling and land reclamation are in some cases minimal. However, levelling is defined as deposits created on already reclaimed land to increase the level before construction of buildings or open spaces or to even out a surface after a construction work or similar.

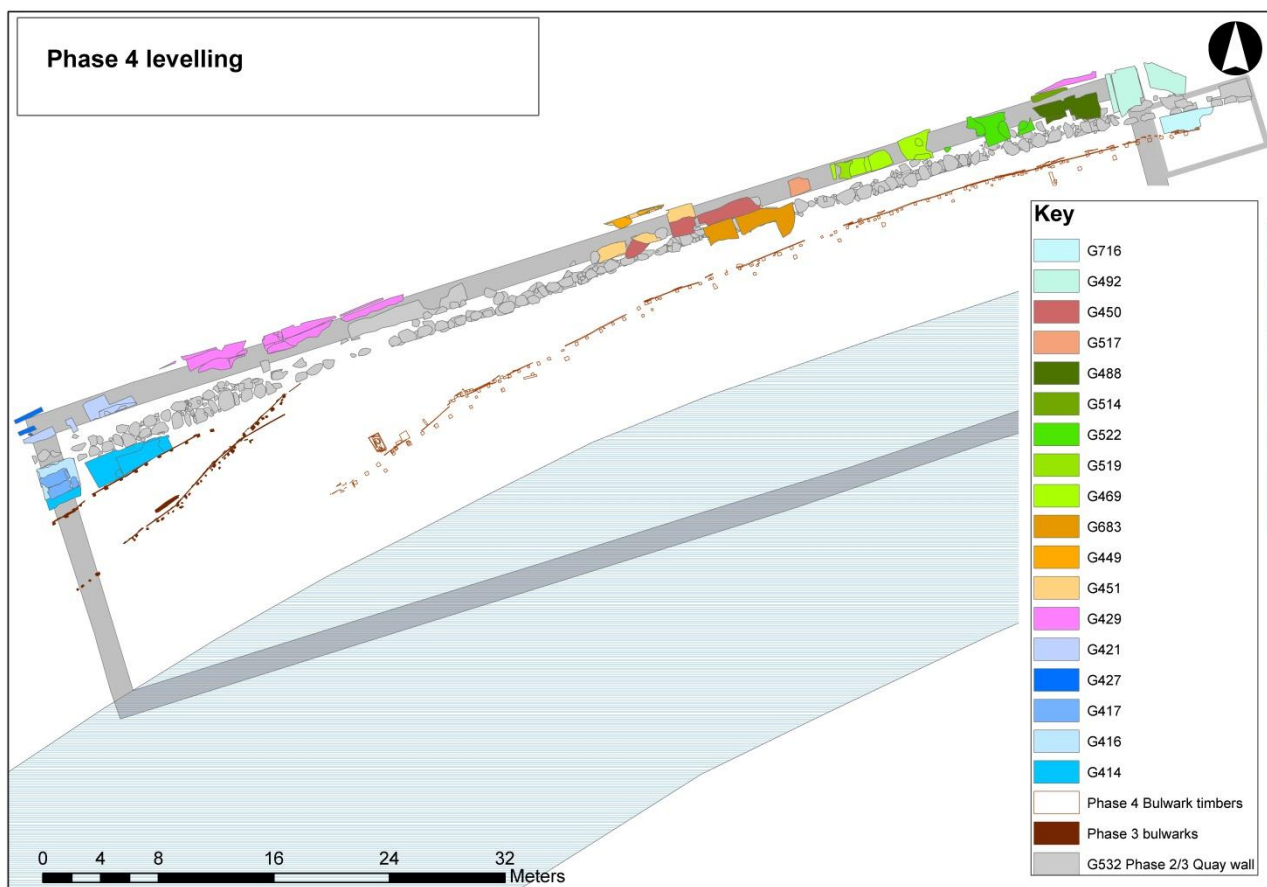


Fig. 96 Plan of all Phase 4 levelling groups (excluding G527 and G506 as these were placed further west)

The majority of the groups consisting of levelling layers were excavated during the 2012 Guide Wall excavation and only two groups interpreted as Phase 4 levelling were excavated during the 2014 Main Excavation. The large number of groups related to Phase 4 levelling is explained by the methodology used for the grouping of contexts during the Guide Wall excavations. As these excavations were undertaken in a number of smaller trenches within set periods of time (usually resulting in trenches having to be closed before new were opened), the contexts were grouped only within the single trenches and hardly ever across trench limits. Thus, contexts which may originally have been part of the same deposition or line of events have not been grouped together, if they were found in different trenches.

The groups interpreted as levelling comprised a wide variety of deposits. Most deposits were recorded as consisting mainly of sand with varying elements of silts and clay. Others consisted of building debris, including large proportions of rubble and mortar, while a few deposits seemed to be more local dumps of e.g. oyster shells or materials with a high organic content. The finds materials from both the sand rich and the more organic deposits indicate that the material used for the levelling was collected from areas where



Fig. 97 Pasglas, FO214250, collected from levelling layer, SD55839, G414, Phase 4. Photo G. Haggrén

household waste was dumped *en masse*. The finds were dominated by ceramics, clay pipes and glass and a large collection of animal bones.

From the zoological analysis of the animal bones from two of the levelling groups (G414 and G429) it was concluded that the analysed deposits in both groups represented what is considered normal household debris but also including elements of higher status households. The macro-botanical analysis of deposits from the same two groups supported some of the results made from the archaeological observations and the zoological analysis.

From G414 the macro fossils from two deposits consisted mainly of plants from dry or fresh meadows as well as a series of grown plants in combination with fragments of charcoal and un-charred wood. This could well correspond to areas of open spaces in the city, where weeds and meadow plants would have grown, while household waste built up as a result of the ill-functional, though highly regulated garbage disposal system in the late 17th Century.

Usage of the harbour

The usage of the harbour was seen both in the building activities located near the harbourfront (see below), but also in terms of garbage and activity traces dumped into the water in front of the bulwark as well as dredging activities affecting these dumped deposits.



Fig. 98 Plan of Phase 4 usage layers

During the post-excavation process two large groups have been interpreted as linked to the usage of the harbour. Contexts related to these two groups (G698 and SG630) were excavated at the eastern end of the excavation trench, where also the Phase 4 bulwark was best preserved (see above). Some areas south of the Phase 4 bulwark were excavated by machine only, and the usage deposits were not extended into these areas, even though they were probably present. At the western end on the excavation area, the Phase 4 bulwark was not identified (as it would have been located beyond the southern limits of the excavation), and thus the usage layers related to this, could not be excavated.



Fig. 99 Copper alloy jetton, FO212549, found in SD54707, G698. Coat of arms with three French lilies. "HANS WEIDINGER RECH P". Museum of Copenhagen

At the western end on the excavation area, the Phase 4 bulwark was not identified (as it would have been located beyond the southern limits of the excavation), and thus the usage layers related to this, could not be excavated.



Fig. 100 Westerwald mug, produced ca. 1600-1650, FO 217847, retrieved from SD37142, G698. Museum of Copenhagen

England and even China, along with pottery produced in Denmark – so-called slip-ware from Bornholm and a few sherds of faience from the Store Kongensgade factory in Copenhagen as well as the more frequently found *jydepotter*.



Fig. 102 Sherd of Copenhagen faience, produced at the Store Kongensgade factory, FO214966, collected from usage layer SD36034, SG630, Phase 4. Museum of Copenhagen

The first group (G698) comprised of deposits that were probably formed naturally, but had been affected by dredging through the 17th and 18th Century, in which process artefacts had made their way into the otherwise rather sterile soil. The contexts related to the above placed group (SG630) were formed during this period as well as being affected by dredging.

Among the finds from the upper usage layers (SG630) were large amounts of ceramics, including imported wares from Germany, the Netherlands,



Fig. 101 Sherds of Chinese porcelain, probably a parrot figure, FO217707, retrieved from SD35259, SG630, Phase 4. Museum of Copenhagen

Finds of clay pipes and fragments of these were likewise numerous and may reflect the smoking habits of the people living, working and spending time and money in the vicinity of Gammel Strand.



Fig. 103 Well preserved clay pipe, FO213418 found in usage layer, SD36034, SG630, Phase 4. The small maker's mark (depicting a milk maid and a coat of arms) on the pipe reveals that it was produced in Gouda in the Netherlands in the period 1730 to 1750. Museum of Copenhagen

Denmark, whose pipes were used for smoking in the area around Gammel Strand and eventually ended among the trash and waste in the harbour, in front of the Phase 4 bulwarks.

From maker's marks on the clay pipes as well as certain typological traits, it is often possible to determine where the pipes were produced – and even when. Most of the clay pipes found at Gammel Strand are from the Netherlands, but there were also pipe makers in England, Scotland and even in

Fig. 104 Maker's mark on the heel of a clay pipe, FO215265, collected from usage layer SD35259, SG630, Phase 4. The mark is known as Lion in the Dutch Garden and the coat of arms of Gouda is stamped on the side, showing it was made in Gouda, probably between 1740 and 1760. Museum of Copenhagen



Fig. 105 All these pipes are from the same context, SD35240 from SG630, and they are all Dutch. The date of the pipes from left to right: 1: 1640-1660. 2: 1670-1690. 3: 1720-1740. 4: 1730-1750. 5: 1780-1800. Museum of Copenhagen



Fig. 106 Clay pipe produced in Stubbekøbing, Denmark, probably in the middle of the 18th Century, FO213225, retrieved from usage layer, SD35240, SG630, Phase 4. Museum of Copenhagen



Similar to ceramics and clay pipes, glass were both imported and produced in Denmark (which in this period also included present-day Norway). Most of the glass retrieved from deposits related to Phase 4 was bottle glass and window glass, but a wide selection of table glass was also seen. The glass fragments found in the usage layers in front of the Phase 4 bulwark may be seen as representing the activities and waste from the immediate surroundings of Gammel Strand.

Fig. 107 Fragment from a pedestal bowl with blobbed and feathered decoration, FO214796 found in usage layer SD36034, SG630, Phase 4. This glass bowl was probably produced in France or Venice. Photo: G. Haggrén



Fig. 108 Fragment of pearl goblet, FO214226 found in usage layer, SD34718, SG630, Phase 4. Photo G. Haggrén.

Buildings on Gammel Strand

There were two discernible structures excavated in the Guide Wall and Main Excavation trenches, which lay in the northwest corner of the excavations. Both buildings had been subject to periods of rebuilding or alteration, and between them demonstrated various methods of construction ranging from fully laid masonry walls to timber pile foundations. The easternmost building was a NNW-SSE oriented structure (G707), identified as probably being the Bargemen's Guild house (*'Pramlaugets hus'*). To the west of this and abutting it was a building of poorer quality construction (G537), which was identified as probably being one of the buildings delineating the 'Vragerbro'. This structure may initially have been a yard to the west of the Guild house building which was enclosed by a wall to the north, which at a later stage was further enclosed by the addition of a southern wall and the partial rebuilding of the northern wall to create a small structure (see G537 below). A third building (G539) was uncovered in the Oil Container trench in 2010. It may have been either a separate structure or the western part of building G537.

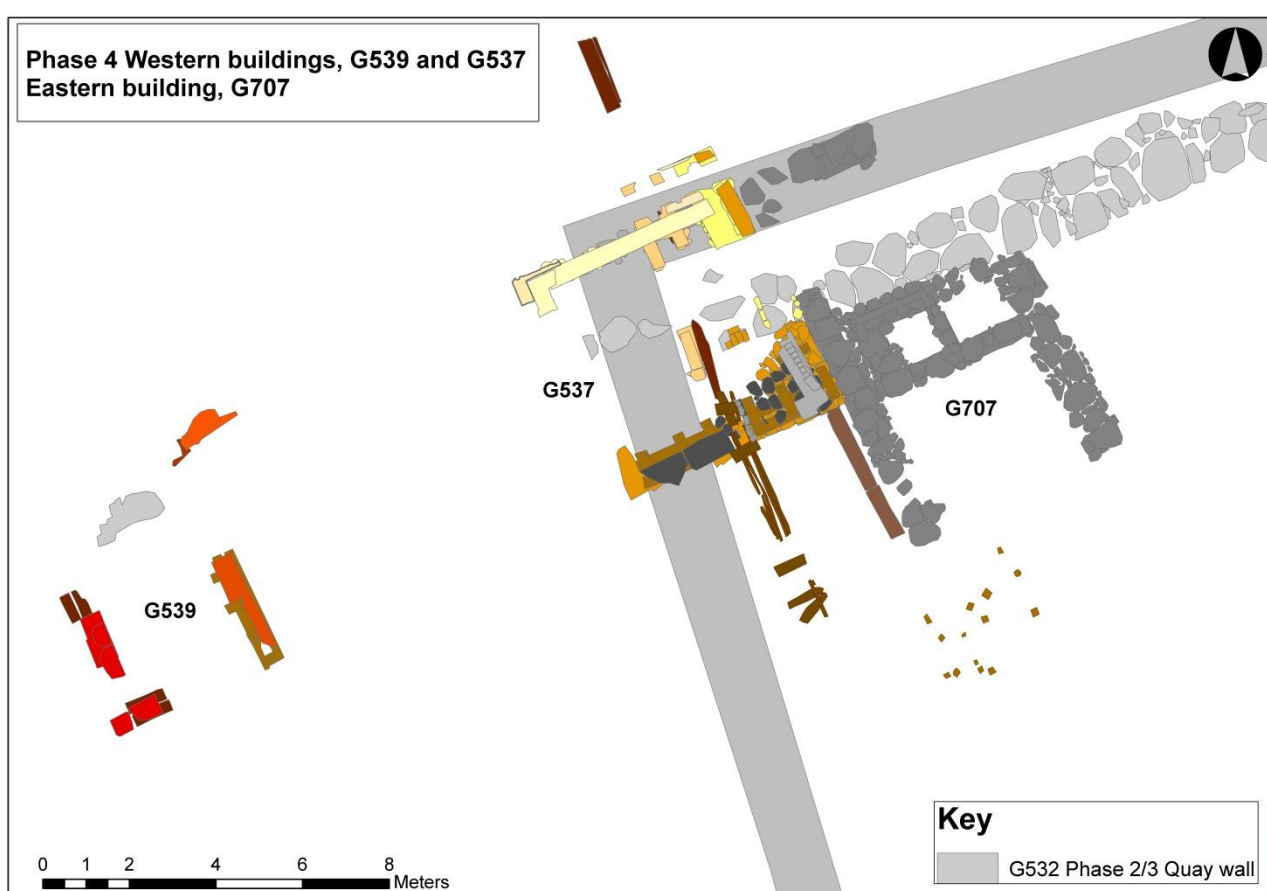


Fig. 109 Plan of building structures in the western end of the excavation area

The probable Bargemen's Guild house (*'Pramlaugets hus'*)

The first building to be constructed within this area of Gammel Strand was a brick walled structure with stone foundations aligned NNW-SSW, which would have orientated its southern wall parallel with the alignment of Phase 4 of the harbour. The overall dimensions of the structure were 9.45 m NNW-SSE by 5.35 m ENE-WSW, with an interior width of 3.98 m. The walls survived to a total height of 0.62 m at 0.42 m OD. The southern wall of the building was missing, so the total dimensions of the structure are unknown,

however the inventories of the building undertaken in 1811 and 1822 stated its relative dimensions as two bays wide by five long. By extrapolating from the known width of the remains, the internal length of the structure would appear to be approximately 10 m, and the external dimension of approximately 11.6 m.

Each exterior wall had a foundation of large, sub-rounded and sub-angular granite boulders which were set into a construction cut. The eastern and northern walls, respectively, contained mixed construction backfill over the boulders to stabilise them, with broken red pan tiles placed along the side of the cut as packing infill. The brick structure situated centrally within the external walls of the building was interpreted as the base for a chimney, which had undergone alterations or repairs during its lifetime.



Fig. 110 The robbed out remains of a building (G707), with the remains of the chimney base to the center of the picture, and the remains of a wall belonging to the probable Vragerbro building (G537) to the left. Looking NE. C03_20140226_8277

'Vragerbro' building?

The building to the west of the probable Bargemen's Guild house ('*Pramlaugets hus*'/G707) has been identified as probably the buildings limiting the *Vragerbro*; an area where goods underwent quality control. Due to the differences in construction methods, materials and discernible phases, this structure appeared to have undergone three distinct phases of construction and subsequent alteration. This began with the construction of a northern wall, oriented northeast-southwest, which overlay two perpendicular brick culverts (SG223 and SG423). It was followed by the construction of another wall on the same alignment further south with a drain (SG708, a continuation of SG223), integral to the structure, and the partial deconstruction of one of the walls and a new wall, built above. The final phase consisted of a series of small buttresses to support the northern part of the building.

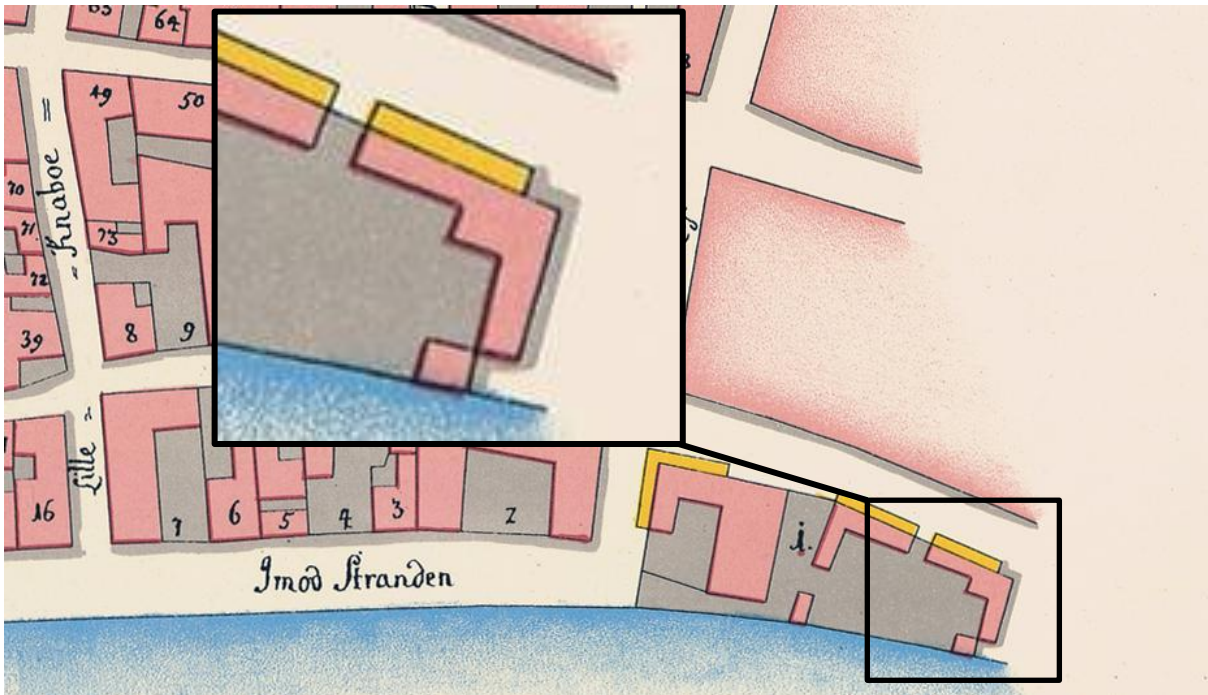


Fig. 111 Detail from Gedde's 1757 'Snarens kvarter' map showing the layout of the buildings in the area. The structure in the corner between the north-south and east-west buildings can easily be seen. Copenhagen City Archives

It would appear from Gedde's 1757 'Snarens kvarter' map that a structure existed at that time in the northeast corner created by the north-south and east-west buildings in the area. However, there was no mention of the *Vragerbro* on this map, just the *Vejerhus* and *Pramlaugets hus*. In the *Københavnske Jævnførelsesregistre* (Copenhagen plot correspondence registers), the *Vragerbro* is not mentioned in 1756, but seem to be present in both 1689 (in Snarens Kvarter, plot nr. 1) and 1806 (in Strand Kvarter, plot nr.

57). The dendrochronology dates retrieved from the foundation timbers post date the map thereby indicating that this structure was re-built.



Fig. 112 Timber foundation in the Main Excavation. Looking south. C02_20140507_9194 (cropped)

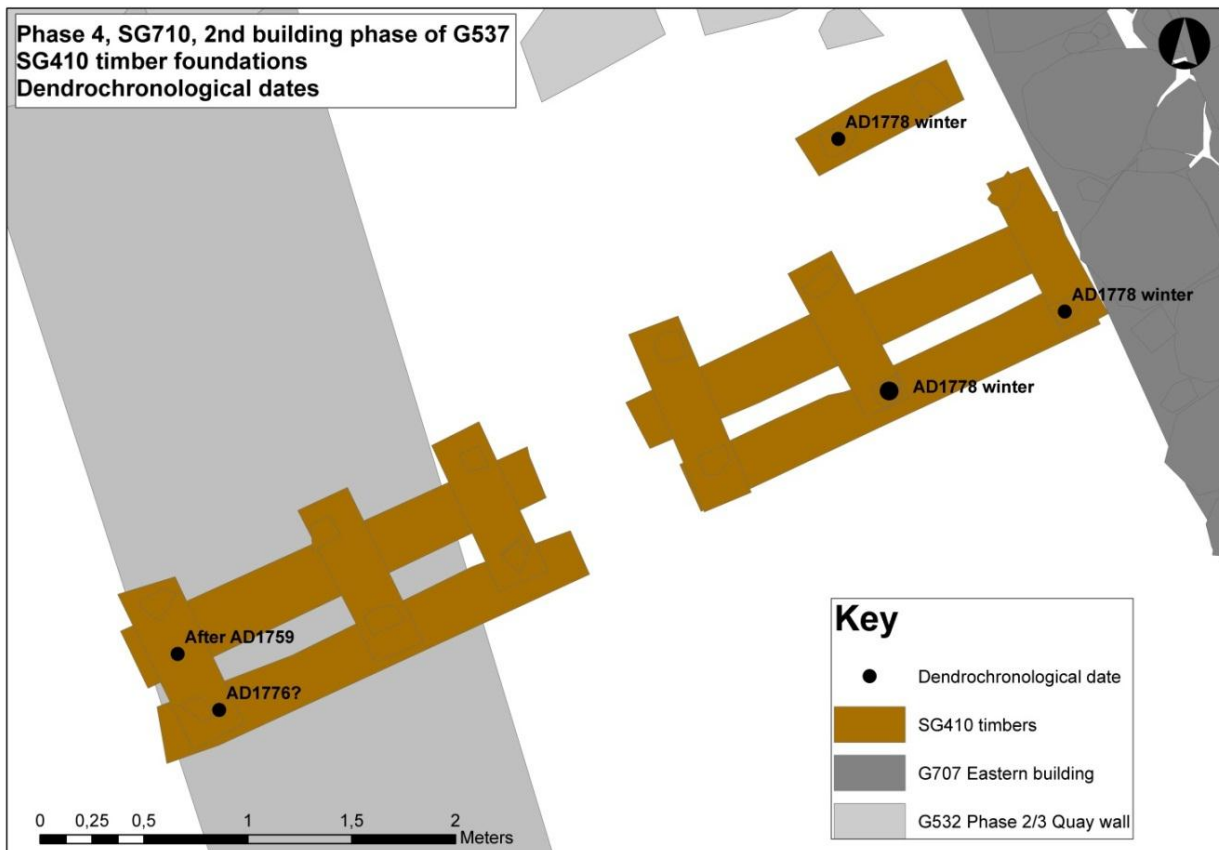


Fig. 113 Plan of parts of the possible Vragerbros building (G537). Timber groups relating to the second construction phase of the building.

Western Building

Located west of the Guide Wall trenches and Main Excavation were the partial remains of a building found during a watching brief for the oil separator trench. The building was most likely the western extent of the probable *Vragerbros* (G537). This structure consisted of two parallel northwest-southeast oriented walls, which lay 2.85 m apart, a fragmentary northeast-southwest oriented wall, and a short section of red brick wall on a timber foundation.

Service Pipes

During the watching briefs in 2010-11 a series of timber structures interpreted as gutter canals in a large system of sewers were found and documented. In a number of cases the southern extensions of these were found during the Guide Wall excavation and even in the Main Excavation.

In most cases, the groups interpreted as drains consisted of a wooden pipe, but there are few exceptions to this rule, where either the pipe was not preserved or the drain would have been constructed differently.

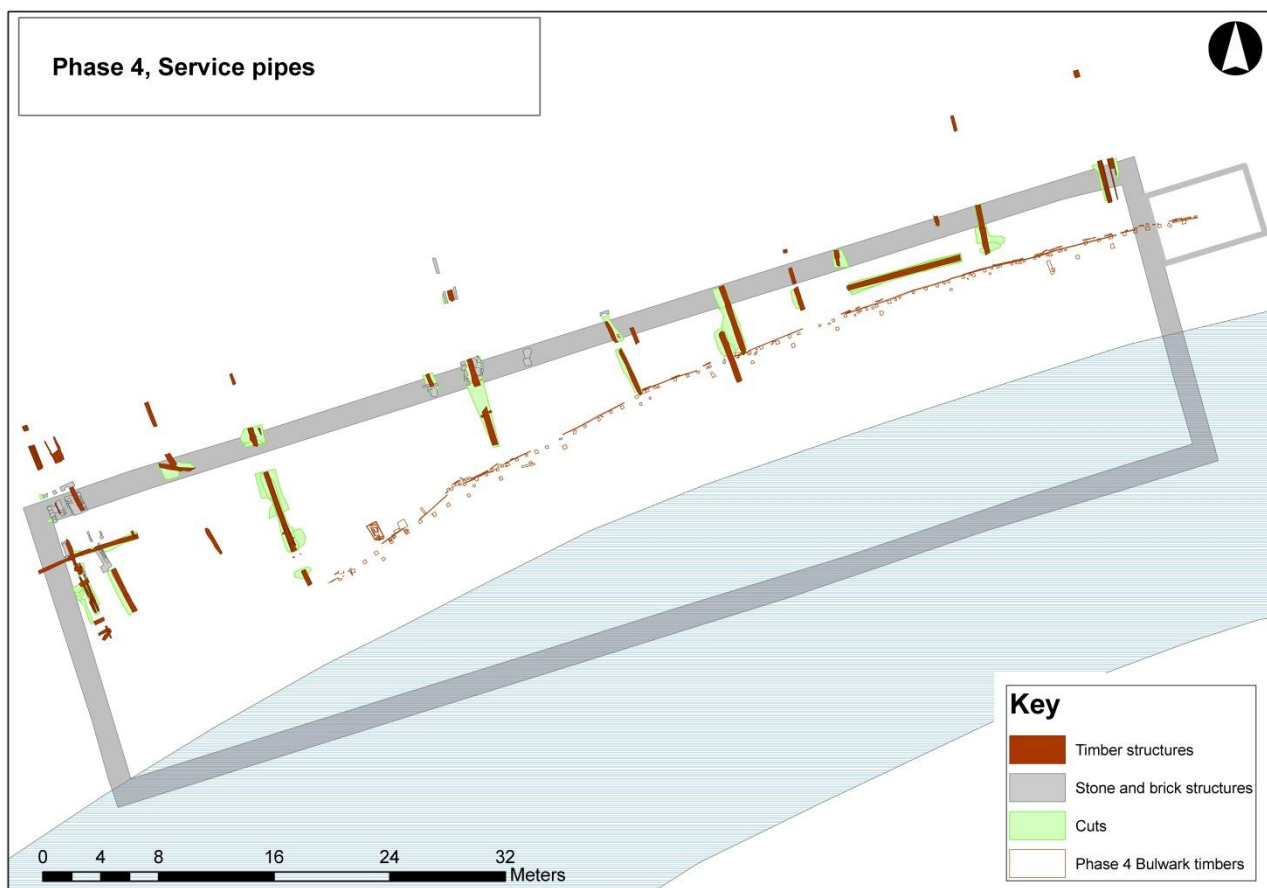


Fig. 114 Plan of Phase 4 drains and culverts.

Within some of the drains, soil and finds were found to represent waste ‘flushed out’ from the houses north of the excavation area. In most cases this comprised similar types of finds as also seen within the land reclamation and usage deposits in the harbour, but a number of surprises were also seen. In the drain, G708, at the western end of the excavation area, more than 70 cowrie shells were found together with a clay pipe, produced in Copenhagen between 1753 and 1755. The shells represent more global trade at Gammel Strand and may have been previously used as either currency or for decorative purposes. As an example they may have been used at the African Gold Coast, where the Danish settlement and trading post of *Christiansborg* was located, as an alternative means of payment. They have been also used by the Danish Life Guard since 1786 as decoration (*snekketøj*) of the horses head collars, and, originally, for protecting the horses from sabre cuts.



Fig. 115 Cowrie shells FO211730, SD28362, G708. Museum of Copenhagen.

The End of the Working Harbour (Phase 5)

1820s-1870s

Introduction

Phase 5 lasted approximately 50 years. In this phase Gammel Strand continued briefly as a working harbour, fishing harbour and administrative centre for the Copenhagen harbour. This ended in 1850s with the tax laws changing in Denmark. The buildings were demolished in the 1850s and the former area became an open square. Many plans were made for the area but due to lack of funds, they did not develop. This led to the harbour continuing as a fishing harbour into Phase 6.

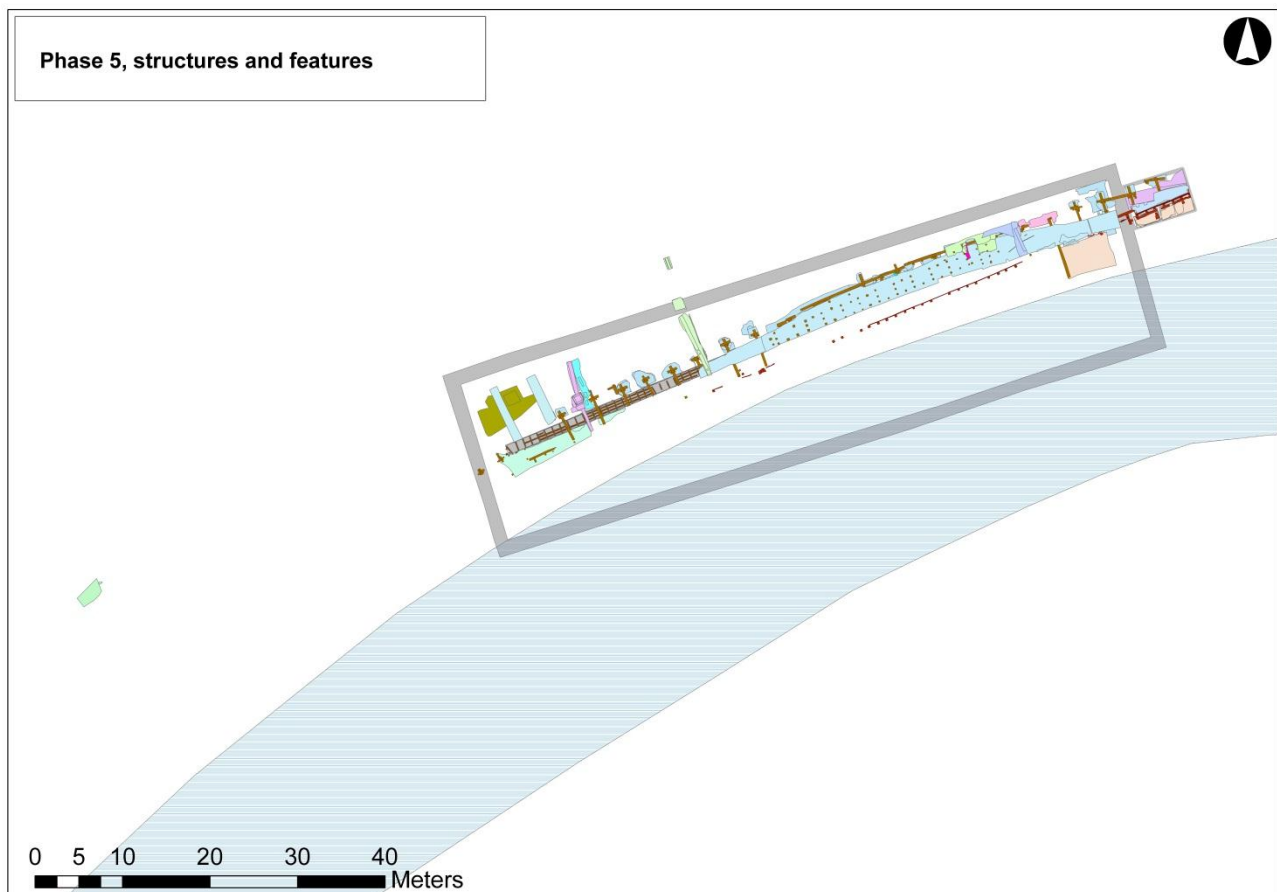


Fig. 116 Plans and structures related to Phase 5

The new phase of harbour-front rebuilding used the same method of land tie and bulwark construction seen in Phase 4. The bulwarks from this phase were only fully extant in the Stairway trench to the east of the Main Excavation trench, although some partial remains were also uncovered underneath the later 1880s wall. The land ties associated with the new harbourfront were extant throughout the Main Excavation trench; however the connections between most of the land ties and bulwarks of this phase were destroyed during the construction of the final phase of harbour development. Contemporary with the new

harbour-front was a structure referred to as the 'fiskegang'. This was a low level quay running along the south of the harbour side, which would have formed an elongated walkway just above sea level, and survived as a series of in-situ posts which would have held a timber platform.



Fig. 117 Painting of Gammel Strand by A. Juul, ca. 1820. Museum of Copenhagen/VÆGGEN

There were several contemporary episodes of construction at the beginning of the 1820s on Gammel Strand which mark Phase 5 of the harbour development. This began with a series of land reclamation dumps, G634, at the western end of the Main Excavation trench, to stabilise the southern edge of building G707 prior to the deconstruction of the previous phase of bulwarks and the construction of new bulwarks further south into the harbour. This episode of levelling could be contemporary with the reported construction undertaken in the area by A.H.Seith in 1823, but this could not be corroborated archaeologically.

Land reclamation

The initial activity during this phase was an episode of levelling at the western end of the Main Excavation trench in order to reclaim land southwards further out into the harbour. The levelling area extended to 15.6 m northeast-southwest and 3.44 m northwest-southeast and was 0.4 m thick, with the top of the deposits at 0.18 m OD. The material used was very mixed in colour and composition. A horizon of wood chips within one of the deposits was likely to have been residue from the construction of these early 19th Century bulwarks (see below), and demonstrated that the timbers were worked on site prior to assembly.

Harbourside

This fifth phase of harbourside development consisted of twenty land ties and 60 m of remaining timber bulwark, of which 7.6 m was fully extant in the Stairway trench at the easternmost end of the excavation. The land ties were aligned northwest-southeast, perpendicular to the bulwark which ran northeast-southwest, and were constructed using the same method as the previous phases; northwest-southeast anchor beams were supported on lower posts and often jointed to them with lap-half joints, stretcher beams were then placed across the northern end of the anchor beams to which they were fixed with lap half joints and iron bolts. Vertical support posts to hold the structure in place were driven in to the south of the stretcher beams and were fixed to them with horizontal iron bolts. The single stretchers were an average of 1.2 m long and 0.25 m in cross section. The lower posts were an average of 0.22 m in cross section dimensions and the support posts were an average of 0.2 m. The lengths of these were not often recorded but where they were, they appear to have been approximately 2.5 m long. While all of the anchor beams were truncated, they were an average of 0.2 m in cross section and the longest was 4.6 m in length. The land ties occurred at an average height of 0.2 m OD and the bulwark seen to the east was at 0.3 m OD. All timber elements were pine, although no provenance was suggested for the timber.

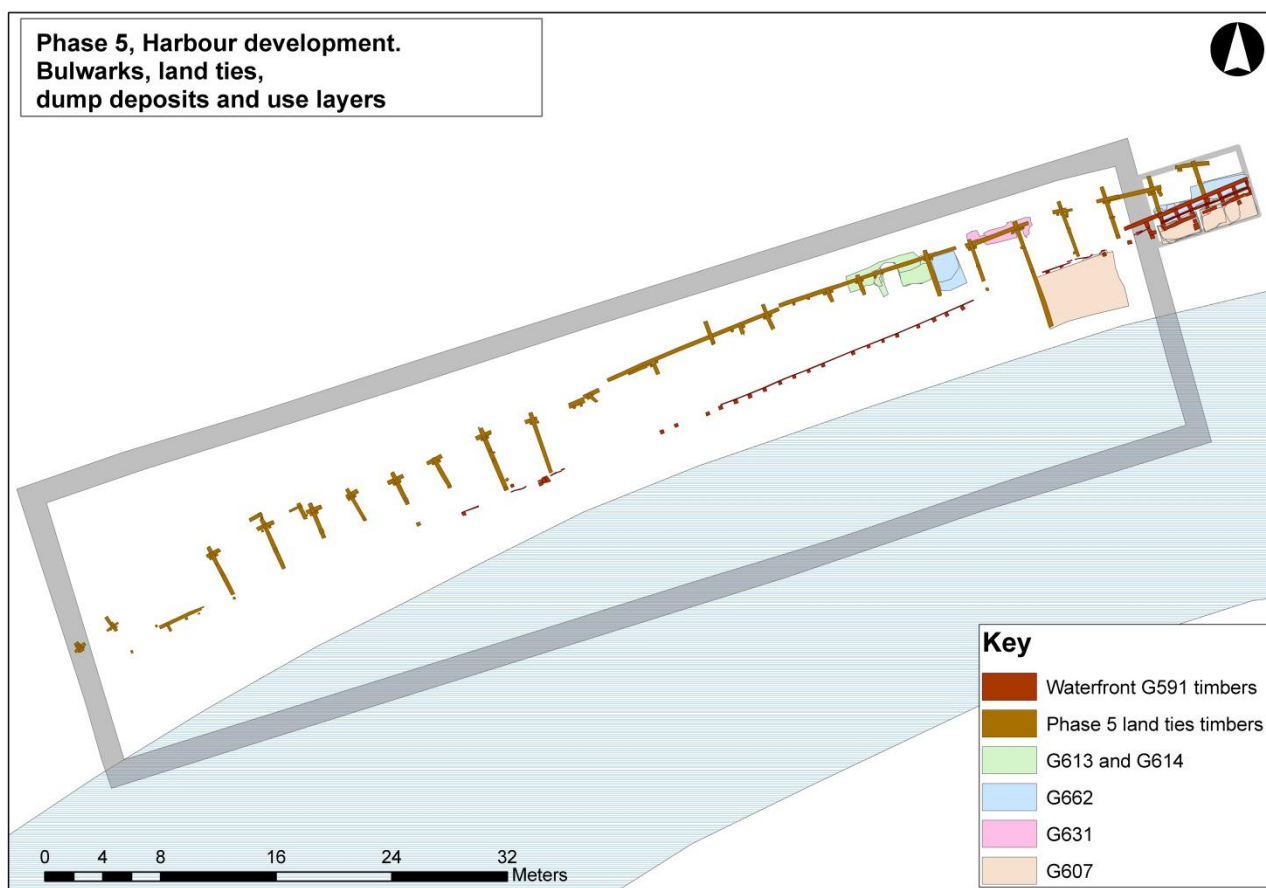


Fig. 118 Phase 5 harbour development. Bulwarks, land ties, dump deposits and use layers.



Fig. 119 Land tie group G562 to the left, with truncated and disturbed anchor beams. The upright posts with peg holes for the contemporary *Fiskegang* (G583) can be seen to the right hand side of the picture. C03_20140331_9244 (cropped)



Fig. 120 A photogrammetric rendering of land ties G580 of the Phase 5 harbour and G576 of the Phase 6 harbour, showing how the land ties were related to each other

The Bulwark

The bulwark only remained complete in the stairway trench in the eastern end of the Main Excavation trench. It was constructed from southwest-northeast aligned planks ST13627 held in place with a batten (14013) across the top to the south. This was reinforced by a row of square posts driven into the underlying deposits with a beam in front of them. Behind the planking, to the north, were a series of blocks between the planks and a stretcher beam. All these elements were fastened together with an iron bolt. The planks formed two rows; lay horizontally to the south and vertically to the north. It was suggested that the upper edge of the planks would have corresponded with the old waterline, and the alternating of wet and dry environments would have resulted in the deterioration to the top edge of the planks seen in the excavation, and consequently the upper extent of the bulwark may have originally been higher. One storm post, ST51882, was recorded towards the easternmost end of the excavation. Behind the timberwork was a series of four mixed dump deposits which contained building rubble and very mixed finds.

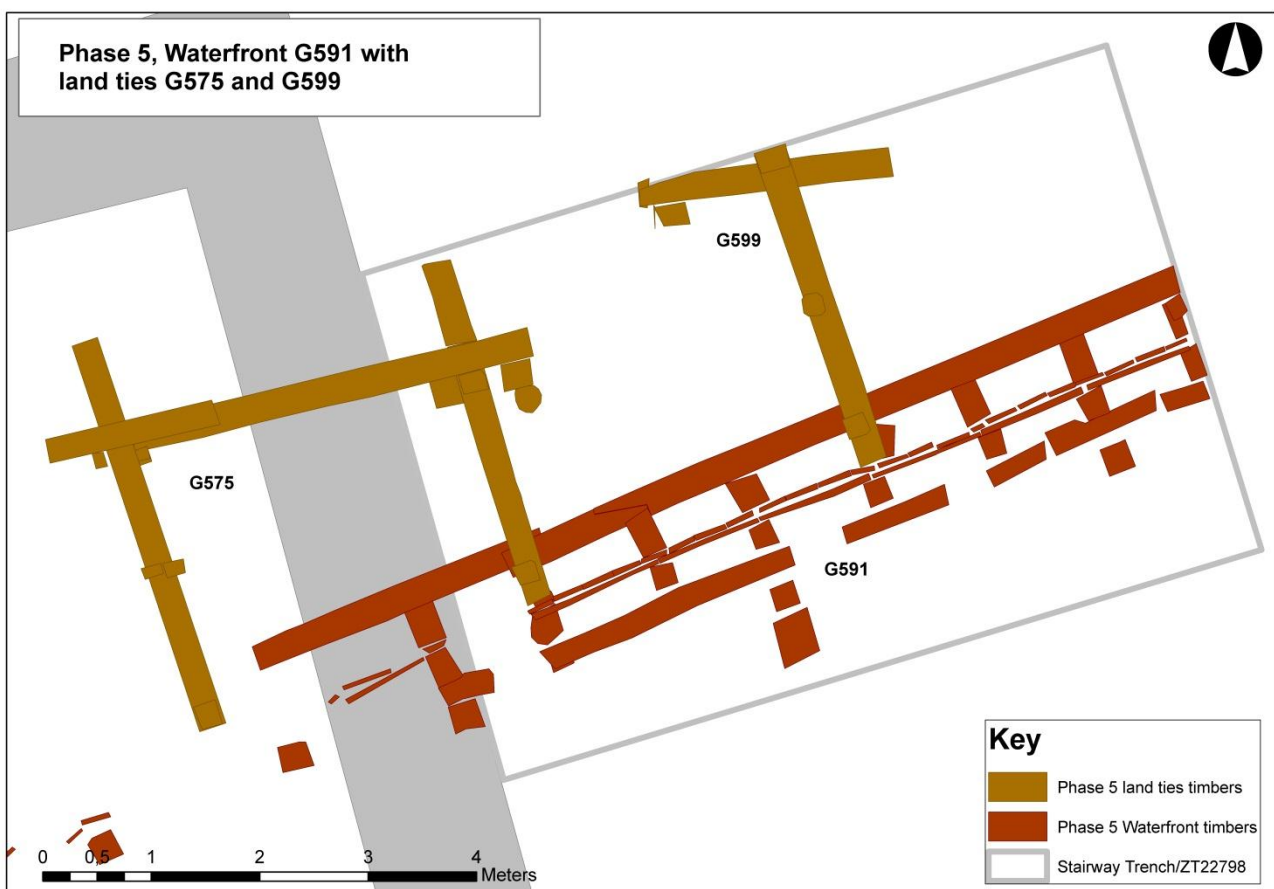


Fig. 121 Plan showing the extant remains of bulwark G591 from the 5th phase of harbour development and its relation with land ties G575 and G599

To the west of the stairway trench, the bulwark was only recorded during a watching brief at the end of the excavation. A row of 19 square posts with planking behind was recorded extending southwest underneath the later 1880s harbour wall foundation.



Fig. 122 The remains of the bulwark under excavation in the Stairway trench/ZT22798, looking west. C03_20140403_9295 (cropped)



Fig. 123 Bulwark post SD28486 with marks incised into the surface.



Fig. 124 The excavated planking construction of the bulwark in the Stairway trench, looking north. C03_20140718_11660

Three dendrochronology samples taken from bulwark G591 dated from the mid 18th Century; the planking, ST13627, dated to After AD 1726 (PD212240), one of the posts, ST51252, to After AD 1753 (PD212227), and the southern beam, ST13623, to After AD 1760 (PD208507). One of large bulwark posts, ST28486, had marks incised onto its east facing surface. They were not carpenter's marks, but presumably relate to the construction of the harbourfront in the 1820's.

Usage deposits

In front, to the south, of the remaining bulwark was a series of fourteen silt and dumping deposits, G607, which measured 16.25 m by 3.9 m and 2 m deep. This material accumulated while the bulwark was in use. The sequence of deposits began with a sandy layer, which contained a large quantity of mixed finds from the late 18th and early 19th Centuries which included many clay pipes, glass fragments, and ceramics derived from China, Denmark and Holland, and point to a contemporary deposition rather than re-deposition from



Fig. 126 Toy tin pot, FO212842, found in SD53437, G607. Museum of Copenhagen

earlier layers, thereby reflecting the general ceramic consumption in Copenhagen during this time. A sherd of Siegburg ware dating from 1300-1550 was likely to be part of a small episode of re-deposition within the sequence. A small, slightly corroded cannonball (FO215160) was also recovered from this deposit. It was thought to derive from a small ship's or land cannon and did not show any signs of having impacted, so may have been lost overboard accidentally rather than fired. It also contained a possible ramrod for a rifle (FO218246). Thereafter, the sequence of deposition alternated between organic rich silting and more sterile sand layers. The organic deposits were richer in finds, with the

lowest deposit, SD47888, having contained many fish bones and cattle jaws which was indicative that the market was still in use while this deposit was laid down. A silt deposit in the middle of the sequence contained part of a rubber shoe from Edinburgh, which represented a more unusual piece of household waste. A deposition of concrete towards the base of the sequence appeared to have set in situ due to the presence of concrete within surrounding pottery fragments, and was thought to have been a waste dump from local construction. The sandy layers were thought to derive from dredging activity to clear the harbour; however they could also have derived from the *sandkiste* (sand-chest) which was located to the east of Højbro bridge or from the barges which delivered the sand.



Fig. 125 Post-medieval bone cone ("kaste gris"), FO213584. SD53367, G607. Phase 5. Museum of Copenhagen



Fig. 127 Rubber shoe, FO218278 found in SD53437, G607. Museum of Copenhagen

Fiskegang

The *fiskegang* (“fish-walk”) was a low level quay (located at 0.25 m OD) along the south of the harbourside, which formed an elongated walkway just above sea level, and was accessed by a short flight of steps down from street level at either end. Beside this quay were moored small barges which contained fish to be sold on the harbour by the *fiskekoner* (literally “fish wives”).

The remains of the *fiskegang* G583 consisted of 74 square pine posts, vertically set and arranged in 26 rows. Each post measured approximately 0.2 by 0.2 m in cross section, was 3-3.5 m long and tapered to a four sided point which was driven into the underlying silting layers of the harbour. Saw marks were present on 16 posts, and 50 contained peg-holes to the top, 17 of which had round pegs remaining which would have been used to fix overlying planking to form the walkway. These posts formed the foundations for the northeast-southwest aligned structure which would have run parallel to and abutted the old harbourside to the northwest.

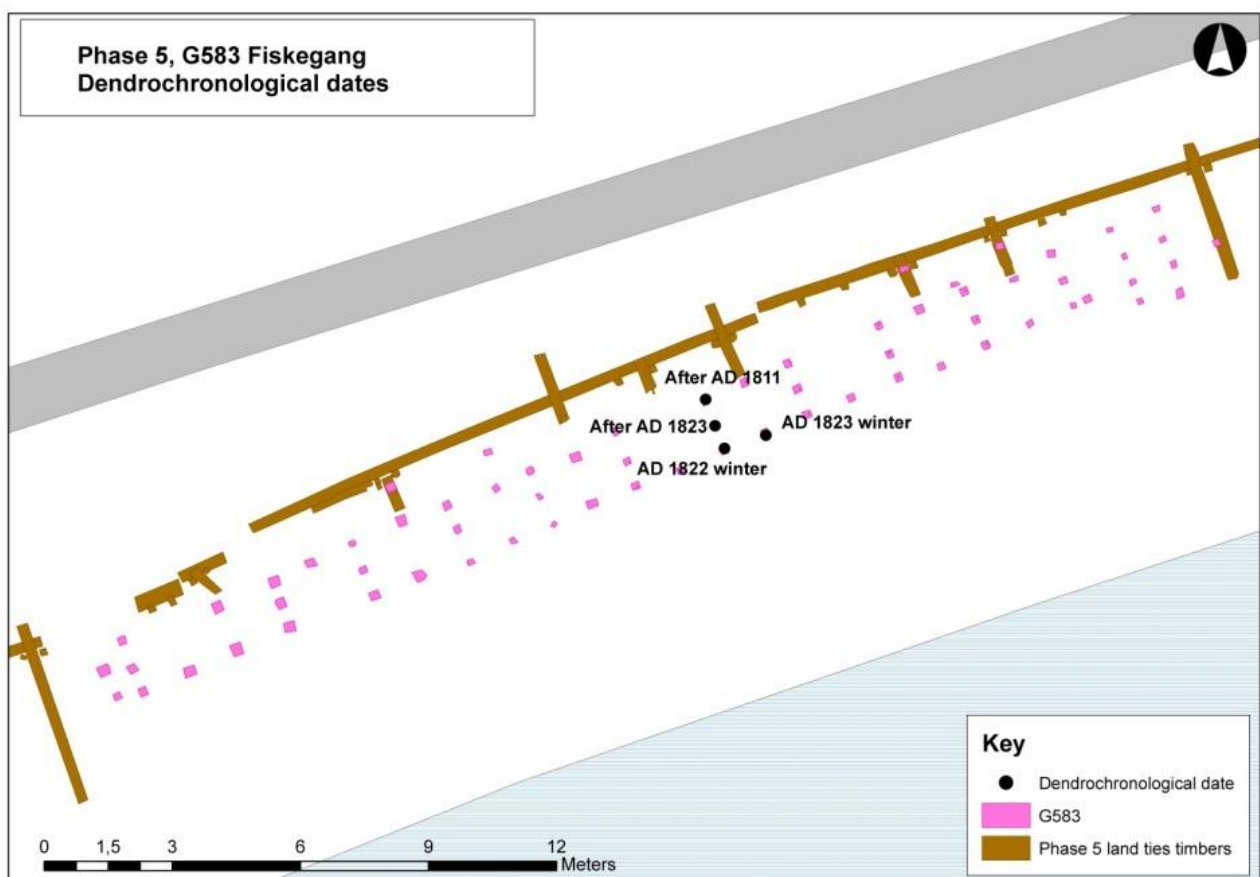


Fig. 128 Plan showing the upright square posts in rows which formed the foundation of the *fiskegang*. Dendrochronological dates were obtained from four of the posts.

Four dendrochronology samples were taken from the *fiskegang* posts, three of which (PD209027 from ST 26000, PD209024 from ST26008 and PD209025 from ST26016) dated from the winter of 1822-3 and one (PD209026 from ST27539) returned a date of after 1811.



Fig. 129 FO 212841. A toy plate recovered from SD33971 (G629).
Museum of Copenhagen

The posts appear to have been backfilled around with building rubble, probably as a stabilisation measure, although the precise stratigraphic relation of the posts with the underlying deposits through which they were pushed was unclear. The backfill, grouped as G629, also contained mixed artefacts from domestic sources with many clay pipe stems and bowls recovered, window and bottle glass, and stove and floor tiles. A small toy plate was also found (FO212841). The presence of a disarticulated humerus and a femur, from different skeletons (one adult and one juvenile) suggests that part of the deposit came from a disturbed former burial ground. Nearly all of the artefacts date from the

mid 17th to mid 18th Centuries, with three pot sherds dating from the Medieval period, which indicates that this backfill was derived from redeposited material and does not therefore reflect contemporary use of the harbourside.

There are one or two artefacts which could be contemporary, such as a porcelain cup and saucer which



Fig. 130 FO 212461. A lead line to ascertain the depth of water. Recovered from SD53332 (G629)

date between 1800-1900 (FO217954 and FO217953 respectively) and the lead line FO212461. Some of this material is also indicative of the trade which had been occurring during the mid to late 18th Century, with faience which originated from the Netherlands and stoneware from Germany, along with Chinese porcelain among the finds recovered. The 18th Century dates for the bulk of the ceramics could indicate that this deposit derived from previously dumped material which was redeposited here after the *fiskegang* was constructed in 1822-3.



Fig. 131 Detail of the Daguerreotype showing Gammel Strand in 1840. The *fiskegang* can be seen as a break in the harbourside behind the ship masts, although the walkway itself is hidden from view by the Højbro Bridge

Drainage

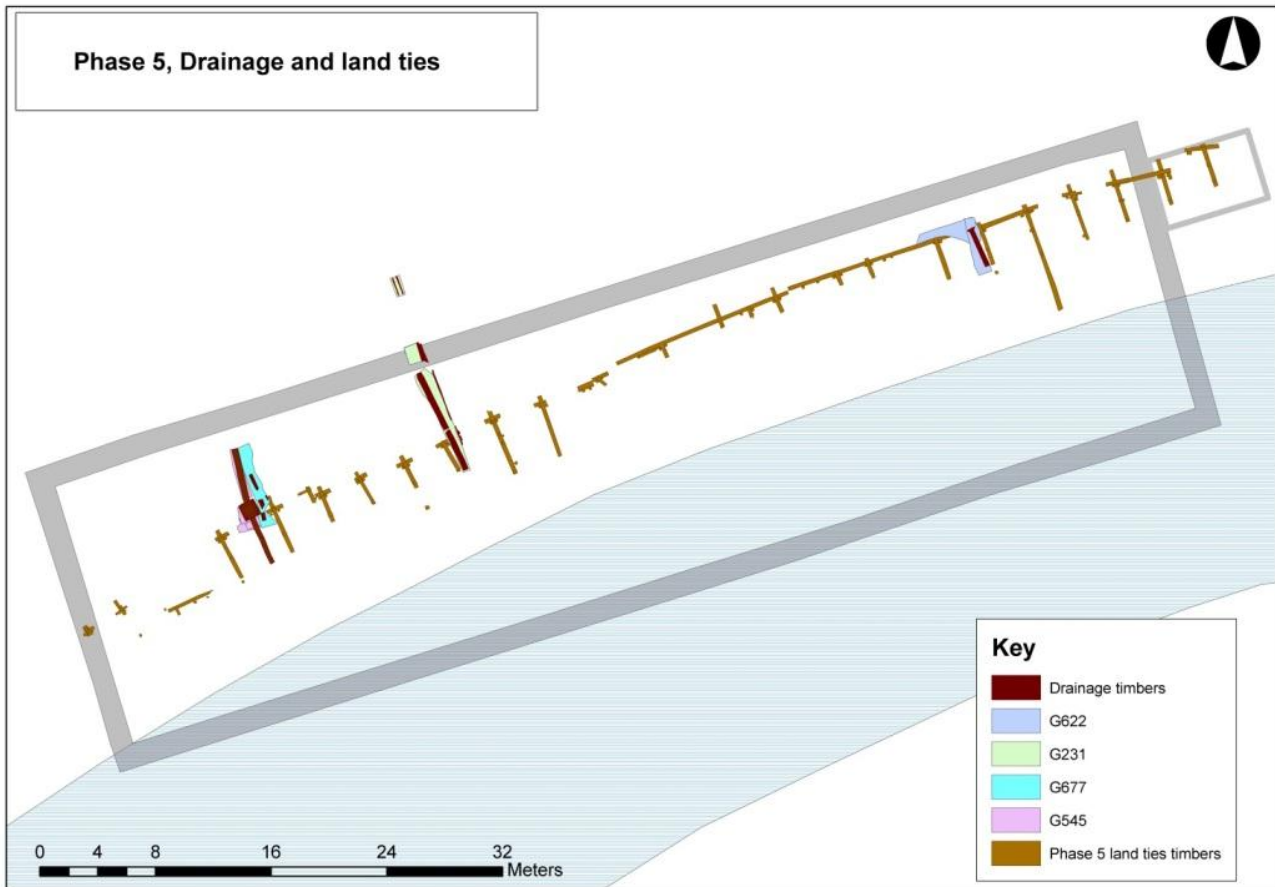


Fig. 132 Plan showing the four drainage features in relation to the Phase 5 land ties

Three features in this phase of harbour development were connected with the management of water, and one other represented the location of another drainage feature which had been removed in antiquity. All of the elements were on a northwest-southeast alignment, which would have run perpendicular to the harbourfront, and although it is assumed that the waterpipes and drains would have linked with properties to the north side of Gammel Strand, only one pipe (G231) was seen to extend beyond the Main Excavation trench.



Fig. 133 Drain G231, Looking NNE

Drain G231 was cut through the backfill deposits of the previous phases of harbour development, and also necessitated the removal of stones from the Renaissance harbour wall. To the north, during a watching brief, the feature consisted of two planks lining a cut, although the timber pipe itself was not seen. This could be due to the relative depth of the watching brief and Guide Wall trenches compared to the Main Excavation trench which was c. 0.4 to 0.6 m lower. In the Main Excavation trench, the wooden

pipe was truncated through the middle by a modern gas pipe cut. The southern half, which still retained bark, was sampled for dendrochronology but returned no date.

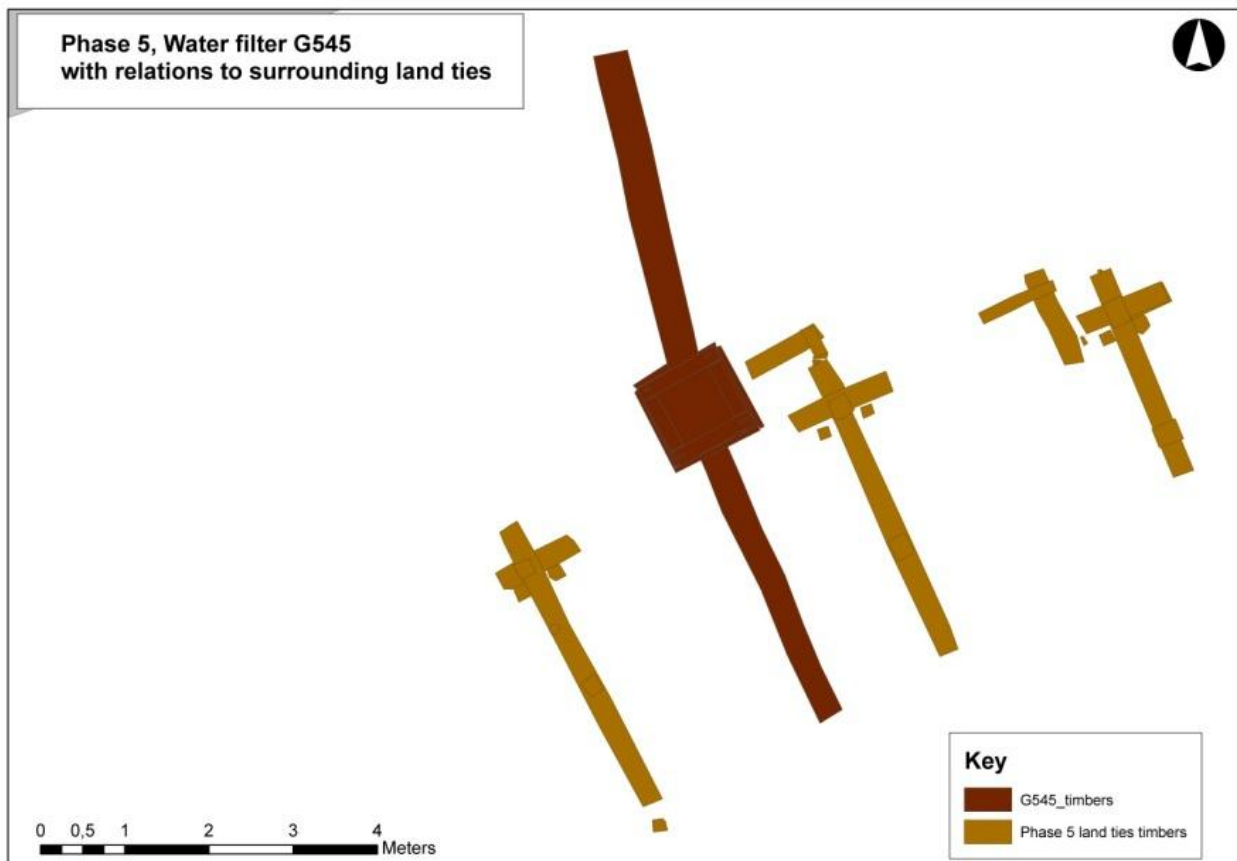


Fig. 134 Plan showing the timber elements of water filter G545 in relation to the surrounding land ties of this phase of harbour development.



The feature interpreted as a water-filter, G545, consisted of a timber box with two waterpipes extending from it; one to the north and one southeast. The box was constructed from four sill beams, into which were jointed four timber posts, one in each corner, with timber planks set horizontally between; four surviving to the south, two to the north and east, and one to the west, and a timber plank floor, constructed of five planks. The lower three side planks on the north and south sides were shaped to fit around the two water pipes, and so the pipes and timber sides must have been constructed simultaneously. The plank floor sat inside the timber sides and was shaped to fit around the posts. The exterior of the waterpipes were packed with blue clay to cover the joint with the timber box to make it watertight.

Fig. 135 Overview of the water filter pipes with the timber box between, looking north. C02_20140312_8529

This feature was interpreted as a water filter used to remove waste products from foul water before it was disgorged into the canal, as it is very similar to a structure found on 19th Century plans. This feature could also have been part of a stand-pipe at street level which would have been attached to the small bored hole in the top of the northern pipe. The box 'filter' would then have been used to catch the overspill water



which was then channelled back into the canal via the southern water-pipe. The cut on the western side could then represent the time when the stand pipe was removed.

Fig. 136 Detail of the excavated central filter, looking south east. C03_20140314_8795



Fig. 137 Detail from an etching of 1869 "Vinteren 1869 I Kjobenhavn III ved Gammel Strand" by B. Dlien, showing a stand pipe on Gammel Strand by the harbour wall. Højbro can be seen in the background. National Museum

Destruction of the harbour buildings, 1850s onwards

Change in the tax law in 1849 led to the end of use to the *Vejerhus* as a tax institution, and also the *Vragerbro* area. With the decaying buildings on the Gammel Strand harbourfront having no use, a decision was made in 1859 to demolish them along with the poorly constructed Bargeman Guild house. The buildings were then demolished with only the foundations left in the ground. The area was then levelled, and covered over with a new cobbled surface. A large space and square now was created in the former location of the building that has not really changed in over 150 years.

Concrete Quayside

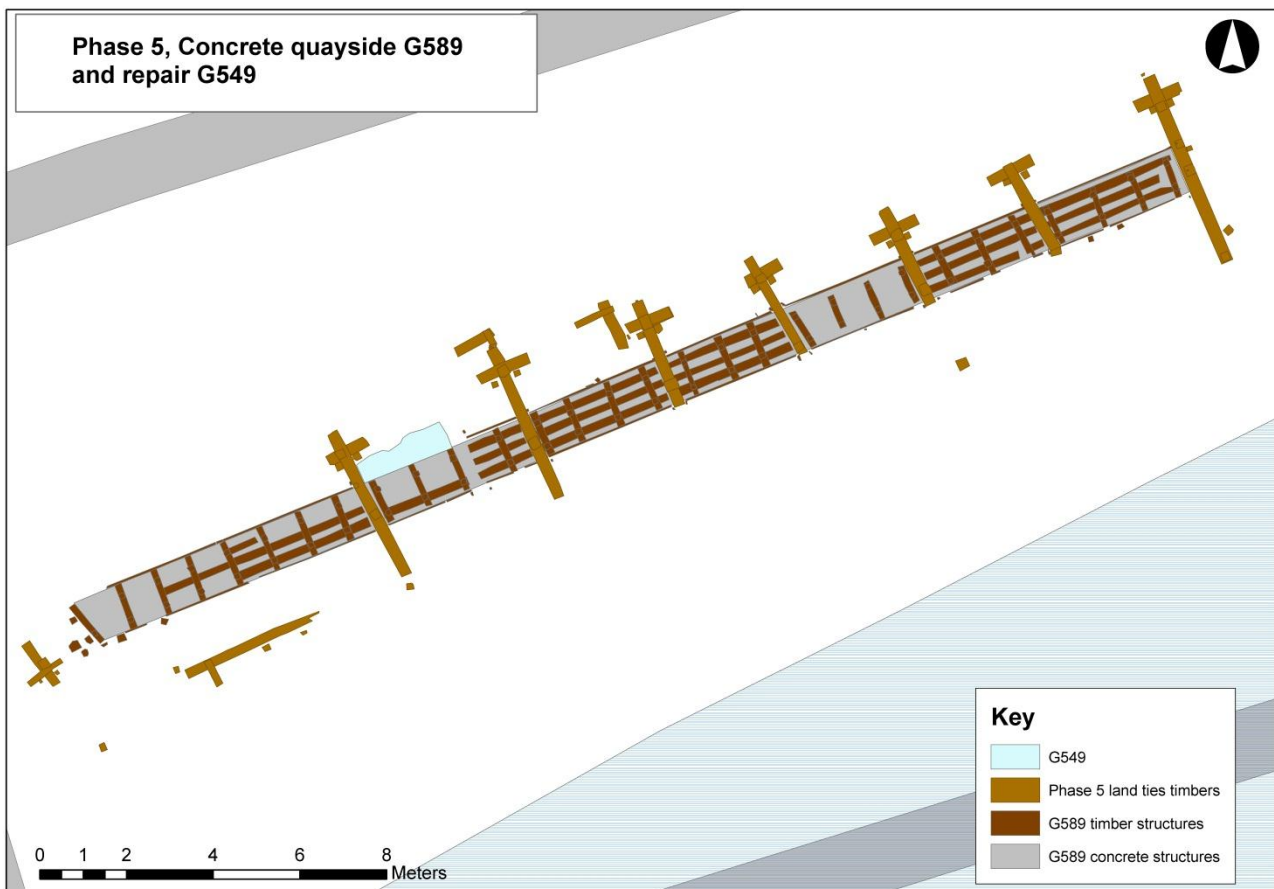


Fig. 138 Plan showing the structural elements of the concrete quayside

This concrete structure measured 27.94 m by 1.2 m with its upper surface at -0.14 m OD, and lay to the north of the 1880s harbour wall towards the western end of the Main Excavation, forming a continuous alignment with the western end of the 'fiskegang' G583. It was constructed within a trench, the sides of which were lined with 25 planks, which measured c. 2.8 m long, 0.04 m thick and 0.19 m deep, standing on edge horizontally, two planks deep, and were held in place by wedges. 58 square posts, which measured c. 0.12 m square by 0.75 m long, were driven through the base of the trench in pairs approximately 0.8 m apart and stabilised with a hard-core layer of packing stones, to form a foundation for the concrete. Each pair of posts was jointed with a lap joint to an overlying transverse beam. Between each of these beams lay three parallel longitudinal beams – 23 in total, although some were removed along with the overlying

concrete. The planking acted as shuttering to contain the liquid concrete, SS50128, which was then poured over the timberwork to create a foundation or walkway. The depth of the concrete was not recorded but appears to have been c. 0.5-0.6 m.

The timber structures were dated using dendrochronology to 1868.



Fig. 139 “Udsigt over Gammel Strand og Højbro ved Stranden” dated to c. 1865? (source Væggen/Museum of Copenhagen), however this must post-date 1868, the construction of the concrete quay which can be seen here. The absence of any buildings on Gammel Strand at this time supports their probable near contemporary demolition.

Conclusion

The inclusion of the *fiskegang* at the eastern extent of the harbour during this phase of construction illustrates the increasing importance the sale of fish played in the function of the harbour at this time. The area was no longer exclusively for the import of goods, with the expansion of other harbour areas around the city during the course of the 17th and 18th Centuries, however, the harbour infrastructure itself now reflected the downturn in the importance of Gammel Strand in the trading life of the city, even though the *Vejerhus* retained its function until 1849. Thirty five years after the re-build this change was reinforced by the deconstruction of the previous trade administration buildings in the area in 1857, thereby again confirming through infrastructure the change in function of the area away from trading goods. This deconstruction created a large open area in front of the harbour where markets were subsequently held (Linvald, 2006). Whether this demolition was due to the deterioration of the buildings is unrecorded, however, the obsolescence from their previous functions is evident by the lack of any subsequent

replacement. The addition of the western extent to the *fiskegang* in 1868 indicated the further expansion of fishing as the main role of the harbour.

The presence of the water filter to the western end of the Main Excavation demonstrates an acknowledgement that the waste water from the houses to the north of the harbour would have been polluting the water in which the fish were kept alive prior to being sold. It is unfortunate that no dates were provided through dendrochronology to be able to show a relative sequence for the installation of the pipes, and where this structure would have been placed in that sequence, as it is unique in the area and tempting to think it was the most recent.

The Modern Harbour 1880s-2007

Introduction

The final phase of the development of Gammel Strand was categorised by the construction of the recognisable modern harbour. During this period the *loppetorv* (flea market) which had been established on the site of the demolished *Vejerhus* moved to Vandkunsten (Københavns Historie, u.d.), although the *fiskekoner* (fishwives) continued to sell fish from the harbourfront until their stalls were disbanded in 1958 following the construction of a new *fisketorv* (fish market) building in Gasværkshavnen (Kongsbak Larsen 2008, 5). One single booth remained on Gammel Strand until the owner, Doris Marx, retired in 2008. The Gammel Strand area had become in the late 20th and early 21st Century, a tourist centre with restaurants, bars, museums and small boutiques and part of the tourist boat tour, with the new harbour of Copenhagen located at the far north east of Copenhagen at Nordhavn (North harbour) on the Øresund. The time of Gammel Strand being the centre and maritime harbour of the Scandinavian metropolis had long since passed.



Fig. 140 Plan of all structures and features related to Phase 6

The major episode of activity during this phase was the re-building of the harbour wall in stone in the 1880s. This expanded the harbour slightly further south, and was constructed using the same method of

land ties and land reclamation dumps which had been used in the two previous episodes of harbour building. The main difference in this instance was the construction of the harbour wall in stone rather than the continued use of timber bulwarks which had distinguished all previous phases. This demonstrated a willingness to re-invest in the area thirty years after the demolition of the old administrative buildings on the site which had created an open space, and implied a will to 'gentrify' the old harbour side through the replacement of timber with dressed stone. The Højbro Bridge at the eastern end of Gammel Strand had been reopened in 1879 after being rebuilt, so the rebuilding of the harbour side at this time was likely to have been the continuation of a program of development.



Fig. 141 The newly redeveloped harbour-front c. 1890-1900, with the *fiskekoner* wearing their distinctive white head coverings, selling fish along the harbour-side. Nationalmuseet Antikvarisk Topografisk Arkiv Fotografier

Thereafter were a series of discrete interventions which may either have been associated with the repair or maintenance of the harbour wall, or the removal of features on the harbour side such as the whale-oil street lamps or salt water pumps. The archaeological identification of contemporary street furniture is impossible due to the depth at which the archaeology began. There was, however, evidence of two tall street lamps seen in early 20th Century photographs, in the form of two square, brick foundations. Photographs from 1924 also show a large gas pipe being laid which was identified during the Main Excavation.

Overlying all features was an extensive episode of levelling which formed a ground raising layer and a foundation for the cobbled surface of the harbour side. One further pit cut through these layers was probably associated with an isolated repair incident, indicated by the presence of a lens of mortar within the base.

The final major intervention to the harbour side was the renovation of the harbour wall undertaken in 2007 where the upper courses of the 1880s harbour wall were replaced and the waterside edge remodelled. The statue of the *fiskekone* to honour the hard work of the fishwives situated at the far eastern end of the harbourside by Charles Svejstrup Madsen dates from 1939/40.



Fig. 142 The statue of the Fiskekone by Charles Svejstrup Madsen dated 1939/40. The statue has currently been relocated due to the Metro Cityring construction. Photo: Københavns Kommune

Harbour Wall Construction

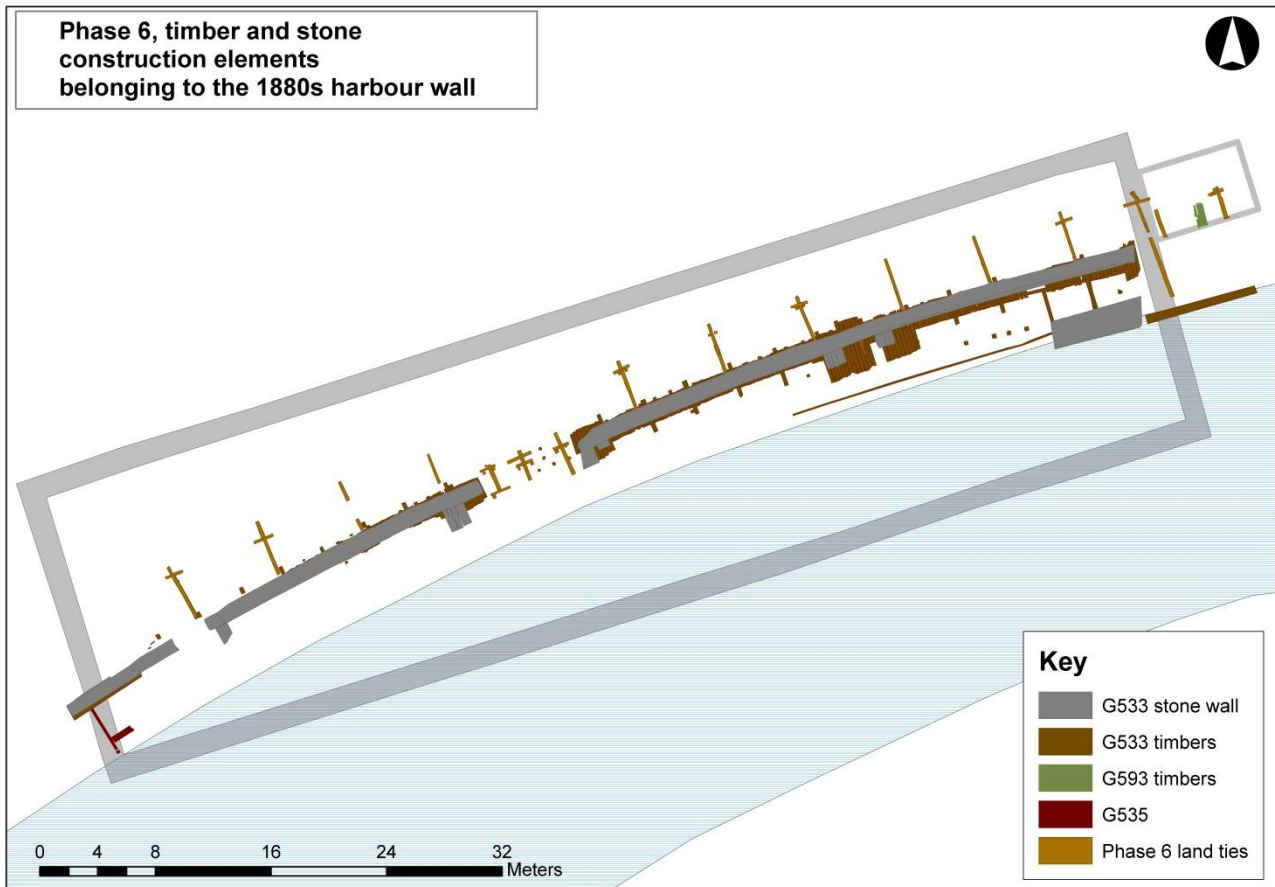


Fig. 143 Plan of 1880s harbour wall showing the timber and stone construction elements

Timber Foundations

The new harbour wall was built on a timber foundation. This was constructed from 104 support posts which carried northeast-southwest aligned horizontal beams jointed to the posts with mortise and tenon joints, which in turn carried northwest-southeast aligned horizontal planks. The support posts were seen during the machining at the end of the Main Excavation, so their full lengths were not recorded, however they measured 0.26 m^2 with a mortise to the top. Most of the foundation structure was uncovered by machine during the final stages of the excavation, so only seven of the overlying beams were fully recorded in the Main Excavation. Their lengths varied in size from 1.48 m to 3.64 m, and they were laid end to end in three rows over the support posts to which they were jointed with tenons, with approximately two to three joints per beam. These beams carried 202 horizontal planks, aligned northwest-southeast, which created a flat, stable surface onto which the stone wall was constructed. The lengths of these planks varied from 1.55 m to 3.5 m with the majority being shorter, and they were an average of 0.28 m wide at a height of -0.32 m OD. The longer planks extended south beyond the others, and were laid together to create a platform approximately 6.7 m wide which corresponded with the positions of flights of steps which lead south down to a lower level of the quayside outside the area of excavation.

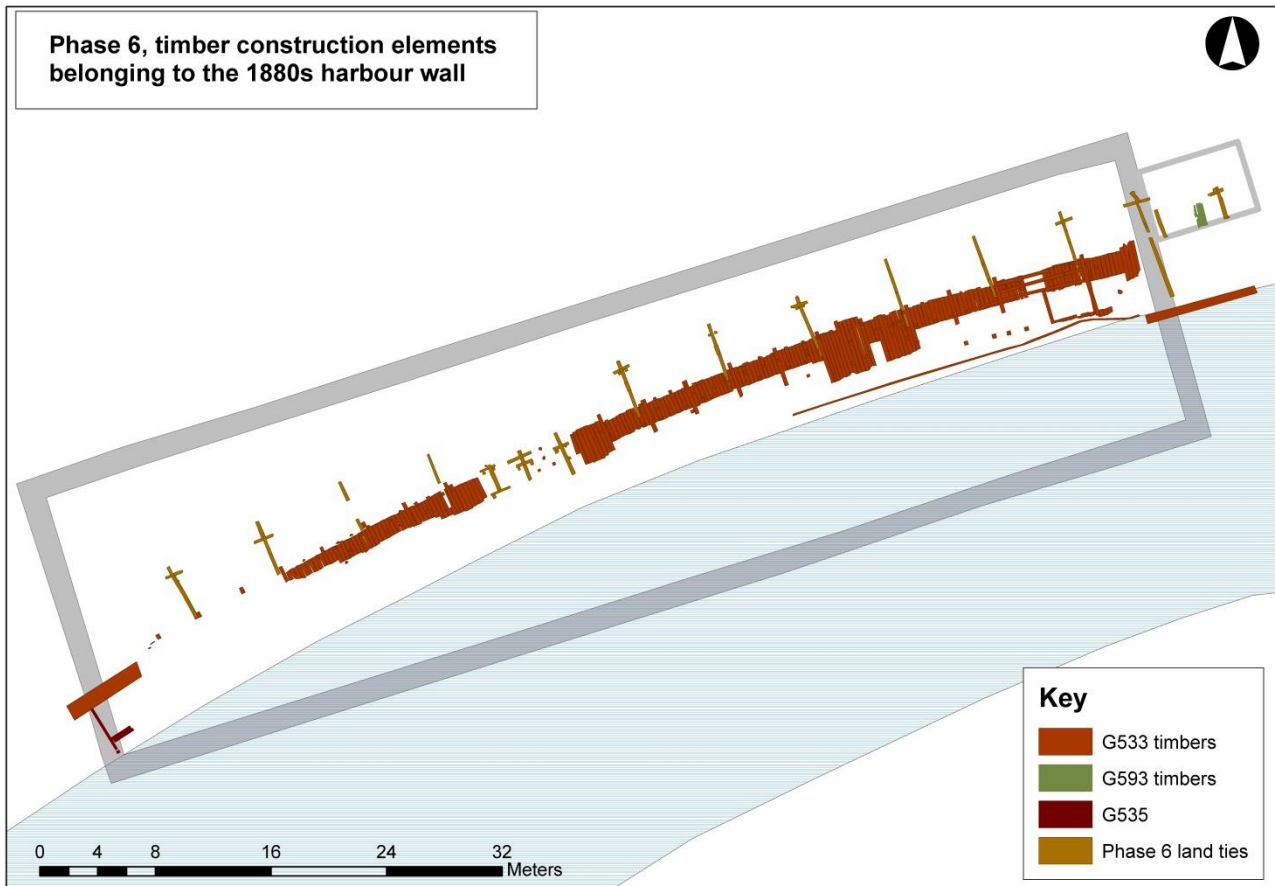


Fig. 144 Plan showing the timber elements of the 1880s quay wall including the timber planking foundation and sixteen land ties

Land ties

The timber foundations were held in place with sixteen land ties each constructed from support posts, a stretcher beam and an anchor beam. In the eastern half of the Main Excavation, the southern end of seven of the land tie anchor beams were jointed into the plank platform of the wall foundation, but this was not observed in the western extent. While each of the land ties varied in its construction depending on the placing or reuse of extant surrounding elements, they were all constructed from the basic formula which had been seen in the previous phases. This was, namely, a northwest-southeast aligned anchor beam with a northeast-southwest aligned stretcher beam above and two posts either side. The anchor and stretcher beams were often fixed together with an iron bolt, and sometimes, e.g. G669 and G600, with a lap half joint.



Fig. 145 View of the stone harbour wall looking west shows some of the land ties in situ. In the middle of the picture the anchor beam from G600 can be seen overlying the stretcher beam from G562 from Phase 5, and fastened to it by means of a lap joint and an iron bolt. The square timber posts throughout are the *fiskegang* from the previous phase, and the truncated anchor beam in the foreground is also from land tie G562 in Phase 5. C03_20140331_9229 (cropped)

The stone harbour wall was constructed on top of the timberwork foundation by bedding large stones onto a layer of mortar over the planks. Three courses of 19th Century stonework were recorded with squared-off stones lying on their long edge to the seaward side of the wall, and more roughly shaped boulders behind. The stone sizes varied from between 0.23 m by 0.13 m, up to approximately 0.8 m by 0.5 m, but were generally fairly uniform in size. The stonework was a mixture of Öland sandstone, fine grained sandstone and concrete. Each course was mortared together, with a mortar 'lip' between the first and second courses.

Harbour wall

The construction of the stone harbour wall necessitated the partial removal or truncation of some of the elements of the previous, Phase 5 harbour side. The construction cut for the new harbour wall extended back (northwest) a maximum of approximately 4.7 m from the previous bulwarks i.e. far enough to expose the rear long stretcher beams from the previous phase in the eastern half of the Main Excavation. This was to remove many of the land ties which would have interfered with the construction of the new harbour wall, although nineteen of the anchor beams which connected with the previous phase of bulwarks were merely sawn off at their southern ends. In the western half of site, the construction cut for the wall was only observed to extend to a maximum width of 1 m, although the construction cuts for the associated land ties in that area extended further northwest from the harbour wall (none of the previous phase of bulwark was extant in that area); from 2.73 m for the easternmost land tie, to a maximum length of 4.16 m for the westernmost land tie. The construction cut may not have been observed here due to disturbance in this area or the excavation conditions, and the initially undetermined relationship with the concrete quay from Phase 5.

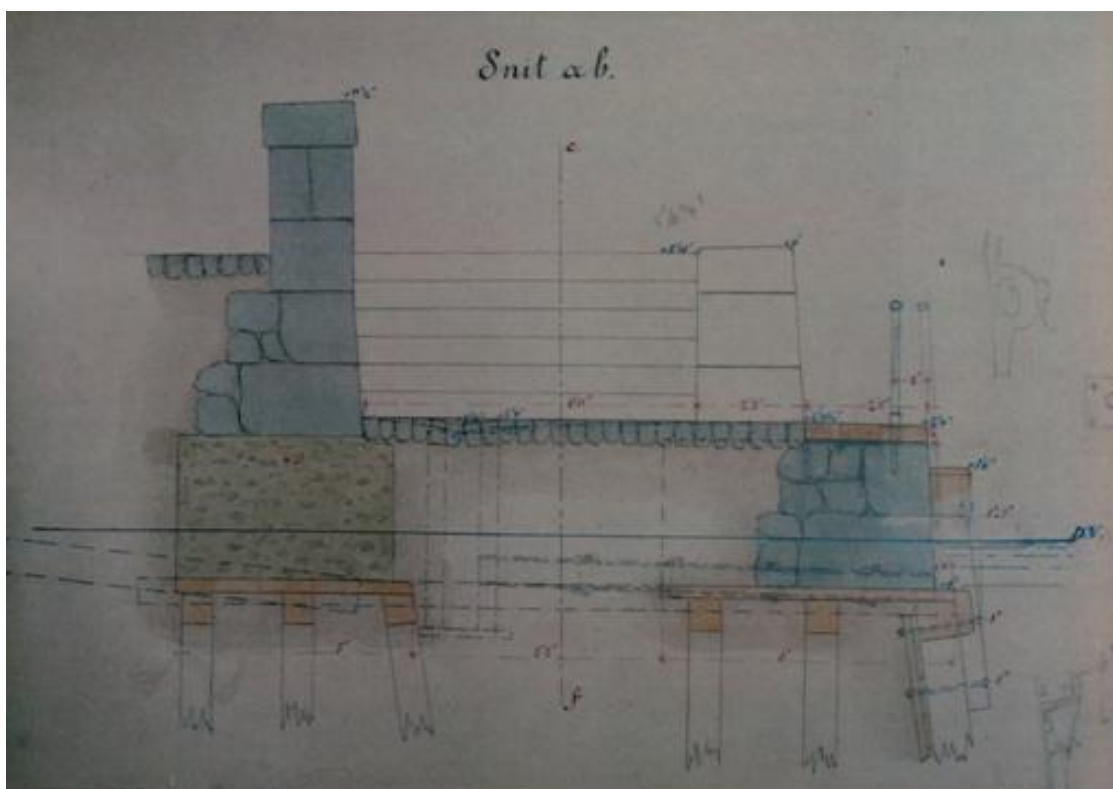


Fig. 146 Undated (?) section through the proposed 1880s harbour wall and fiskegang, showing the various construction elements of the wall itself. An anchor beam from a land tie is shown as two dotted lines in the left of the picture, and the steps are shown in outline in the middle of the picture.

Street Lighting

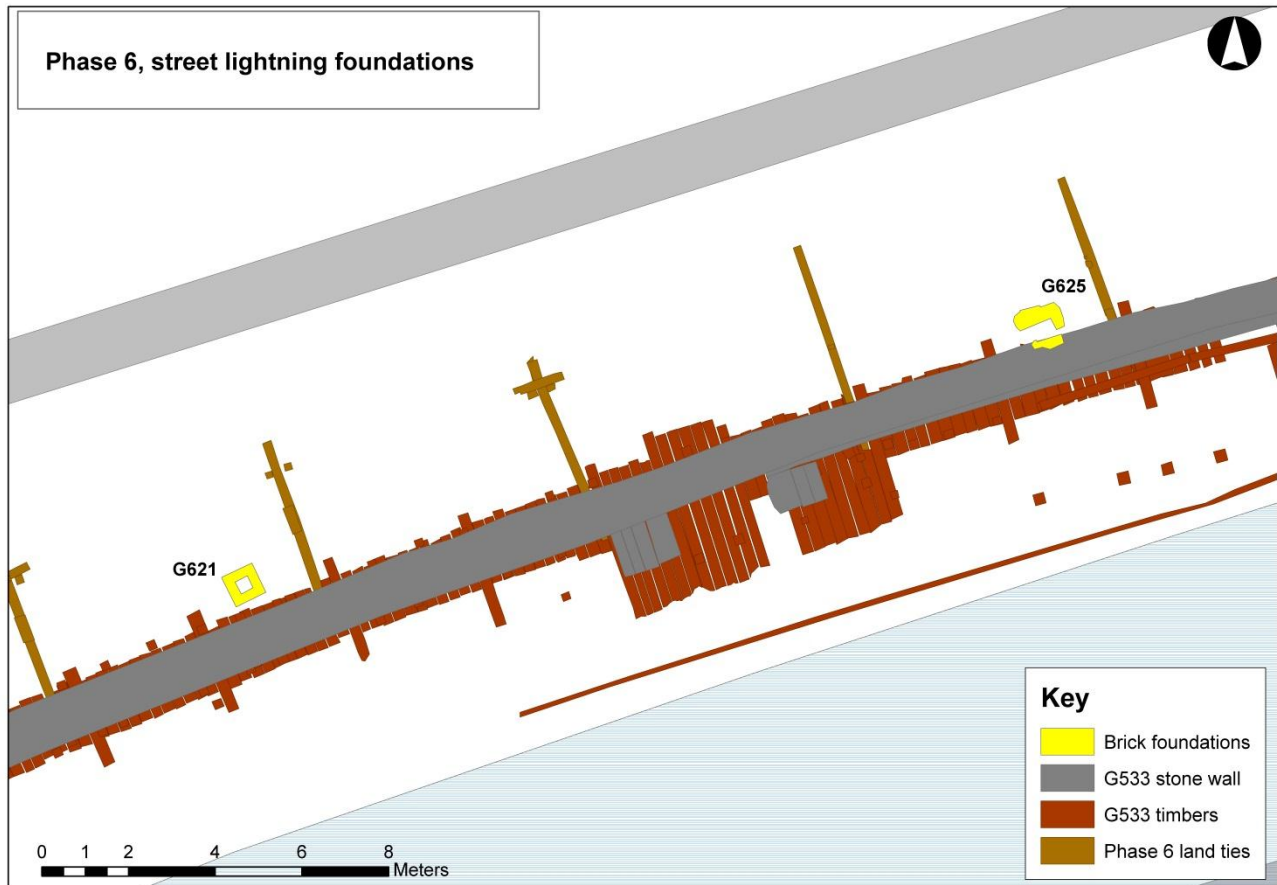


Fig. 147 Plan of the brick street lighting foundations

Cut through the upper backfills behind the 1880s harbour wall and situated close to the wall itself, were two hollow square structures approximately 18.75 m apart. These were constructed of yellow brick in alternating rows of headers and stretchers. The construction of these foundations differed slightly from each other; the eastern one had a single course step foundation; and the exterior face of western one was rendered, presumably to prevent damp penetration. They were initially thought to be either drains or manholes behind the harbour wall; however the presence of a narrow iron pipe protruding southwards from the base of the western structure is suggestive that these structures were associated with the gas street lighting of the harbour.



Fig. 148 Brick street light foundation G625 abutting and built into the earlier 1880s stone harbour wall, looking south. C03_20140204_7913 (cropped)



Fig. 149 Photo of Gammel Strand dated to ca. 1908. The shorter, more common street lamps can be seen in the left foreground, along with the tall iron lamps along the harbourfront. Museum of Copenhagen

Gas pipes

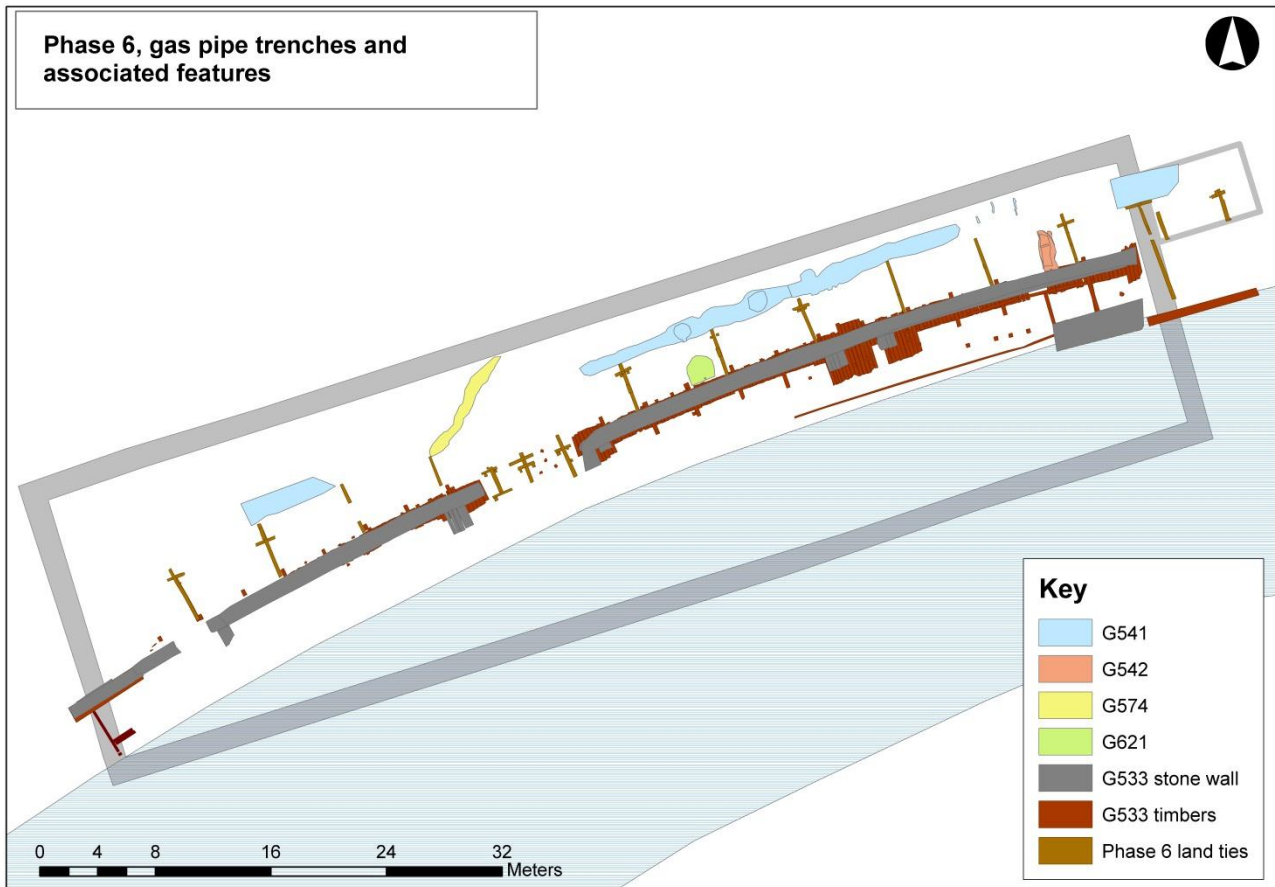


Fig. 150 Plan of the gas pipes trenches and associated features

Gas street lighting was first introduced to Copenhagen in 1857, but a map from 1852 showed the projected route of the proposed gas pipelines. Three gas pipes were found within the Main Excavation trench, one with a large diameter and two narrower. There was also a narrow iron pipe to the south of one of the street light foundations (see above). The gas pipes in the Guide Wall trench were surveyed as disturbance and can be seen to disrupt many of the relationships between the features in the area.

The large northeast-southwest oriented gas pipe, which measured 43.78 m by 2.11 m and 0.5 m deep from an average height of 0.33 m OD, truncated most of the late 19th Century deposits along the northern side of the Main Excavation and stairway trench, however it did not extend into the western half of the trench. There were probably two episodes of gas pipes within this cut, with the first being removed before the other was placed on to the wooden strut supports found further east. Two large vertical iron pipes, c. 1.2 m in diameter located towards the western end of the pipe, may have been connected to the pipe or may have been beneath it for support. The gas pipe itself was removed by machine and was not surveyed. Neither of the two narrower gas pipes connected with the large east-west pipe.

Levelling

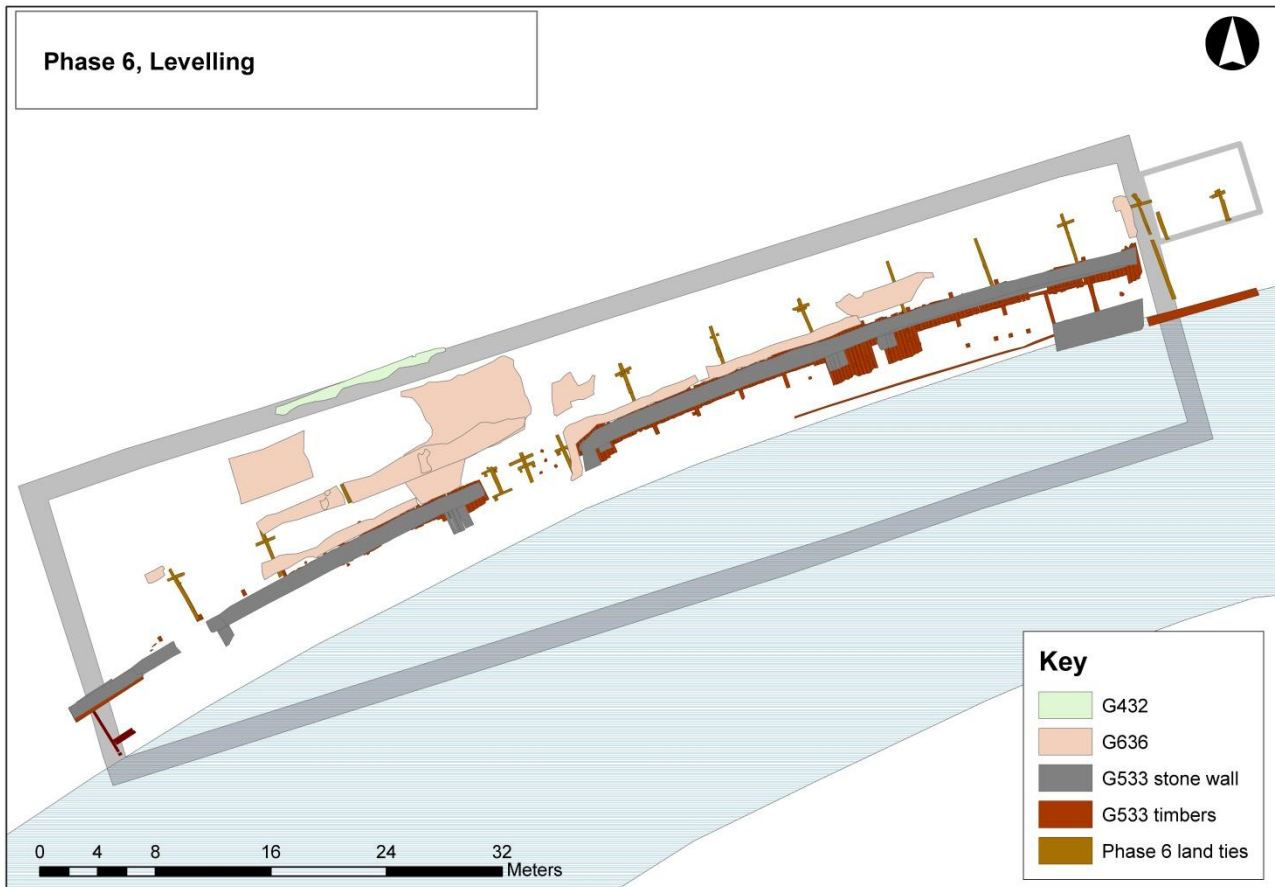


Fig. 151 Plan of Phase 6 levelling

Overlying all of the previous features and extending across the entire Main Excavation area was a series of thirteen dumped deposits, covering an area of 77.32 m by 9.93 m at an average of 0.3 m OD. The material within and between these deposits was very mixed, but there was a high content of building waste throughout in the form of CBM and rubble.



The main deposit, SD20146, which overlay all of the Main Excavation area consisted of general waste which contained ceramic and glass sherds, animal and fish bones, slag, leather and clay pipe fragments. The only objects which could be associated with the contemporary use of the harbour were a pine fid FO212448, and the five small copper alloy coins, FO212523, FO212525, FO212533, FO212536 and FO212537, which were too corroded to date. The remaining artefacts consisted of those

Fig. 152 FO211629. Well preserved lead cloth seal (probably from Hamburg) found in the large levelling dump SD20146 (G636) which covered the entire site. This demonstrates the very mixed nature of the material with a probably 16th-17th Century cloth seal found in a late 19th Century deposit. Museum of Copenhagen

which could have been accidentally lost or thrown out, such as a bone comb FO213515, and iron padlock, FO218090, and various copper or bone buttons and cutlery. Much of the material was likely to have been re-deposited, as illustrated by the recovered glass fragments which date from the 17th Century to 1754, two lead cloth seals, FO211629 and 212822 which are likely to date from the 16th to 17th Century, and the discovery of a Medieval leather shoe FO218263. Five corroded musket balls were also recovered, and although three of them were shot only one of these appears to have suffered impact. However, muskets were out of use by 1900 so again these are likely part of the re-deposition.



Fig. 153 Clay pipe, FO213419, found in the levelling dump, SD20146, G636. Its design comes from the Schmidt family in Stubbekøbing and dates to around 1740-70. The unusual lid is probably brass which contains four holes and is attached to the body of the stem with a decorative wire. Museum of Copenhagen

The full depth of the levelling varied across site, with the main deposit, SD20146, having a maximum recorded depth of 2.4 m, but this would have fluctuated depending on the depth of the underlying archaeology. This deposit extended across the whole of the Main Excavation and was removed by machine. The purpose of these deposits was to raise and level the ground surface to the required height and to provide a foundation layer for the overlying stone-block paving. Finds from these deposits were dated as either Post-medieval or 19th Century, with no modern material

observed, so this episode of levelling was likely to be contemporary with the construction of the 1880s stone harbour wall.



Fig. 154 FO213355 (left) and FO213357 (right). Two spoons with the stamp 'London' on the back, found in the levelling layer SD20146, G636. Museum of Copenhagen



Fig. 155 FO213530. A small glass bottle found in the levelling layer SD20146, G636. The remains within the base of the bottle could be the bottle stopper. Museum of Copenhagen

Conclusion

The final phase of harbour redevelopment was characterised by the deconstruction of the Phase 5 timber bulwark and the construction of a substantial harbourfront in stone which maintained the form of the Phase 5 harbour with *fiskegang*. This was part a programme of general improvement of the harbourfront and continued on from the rebuilding of Højbro Bridge just to the east. The use of stone demonstrated a willingness to invest in the area rather than using cheaper wood, and may also have been seen as more cost-effective in the long term by mitigating the requirement for replacing a decayed structure every fifty or so years. Economy in design can also be seen through the re-use of some of the stretchers from the Phase 5 land ties to the east of site. The rebuilding not only made the design of the harbourside uniform along its entire length, but also did not allow for further expansion, possibly preventing the channel between Gammel Strand and Christiansborg from becoming too narrow.

The subsequent interventions identified in the harbour side all related to larger infrastructure development such as the installation of street lights and the large gas mains, rather than to the specific use of the harbour, although it can be inferred from the necessity for street lights that this area was a main public space. The artefacts recovered from this phase were mostly re-deposited from earlier phases, and as such do not contribute much to the understanding of the life in the city or use of the harbour at this time.

The finds and natural science work undertaken for Phase 6 was small in quantity due to the overall prioritisation strategy on Gammel Strand. What was analysed point to a collection of redeposited material from the 18th Century with some contemporary finds within 19th and 20th Century deposits. The finds were most prevalent from backfill group G543 and various other modern interventions and truncations linked to the early 20th Century service pipes into earlier Post-medieval layers. This may explain the recovery of even some Late Medieval finds and Post-medieval artefacts from Phase 6.

