

Archaeology down the track

Cultural Historical Report of Cat. 2 Sites
Metro Cityring



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MUSEUM OF COPENHAGEN

Contents

Introduction	3
The largest archeological project in Denmark.....	3
Public Outreach.....	5
Questions for the project	6
Results in a wider cultural historical context	6
Results in numbers.....	7
The sites.....	8
Historical development of the outer areas of Copenhagen	33
Prehistory	33
Middle Ages.....	36
The 17 th –18 th Centuries	39
Militarism and Absolutism	40
The Commons	42
The bourgeoisie and emerging urbanization	44
The Modern Period.....	47
Land fill and land development along the coast	47
Municipal institutions.....	48
Literature	51

Introduction

As a result of the decision to build a connecting metro line in Copenhagen - the Metro Cityring - the Museum of Copenhagen was appointed to conduct archaeological excavations in the areas that were to be affected by the construction works and where material remains of considerable cultural historical importance were to be expected. After initial desktop evaluations and trial drillings across the planned construction areas, 4 sites were assessed as affecting underground preserved material with very high cultural historical potential, and 16 sites were assessed as having limited, but yet important cultural historical value. On the basis of these initial assessments, the sites were divided into two categories according to the information level and complexity of the expected cultural deposits; Category 1 for the high potential sites and Category 2 for the sites with limited potential (fig. 1). There was in the initial assessment a Category 3, as a label for construction sites with no archaeological value.

A report has been written for each of the Category 2 sites, and the work on the very large Category 1 sites are ongoing except for the site of Rådhuspladsen, which is also completed at this point. The individual reports are published on the museums website: www.copenhagen.dk. This report has the purpose of giving a collected account for the results of the smaller excavations in a broader cultural historical context – in short, to put the results in the wider frame of the historical development of Copenhagen. For the Category 1 sites, there will be individual cultural historical reports, but with a content that will draw on the collected results for the whole Metro Cityring project.

The largest archeological project in Denmark

The Metro Cityring project is one of, if not the largest archaeological excavation campaigns in Denmark to this date. It is very rare, that such large areas within the city centre get exposed for construction work, and hence are subjects for archaeological excavations. The Museum Law of Denmark states that underground preserved material remains of cultural historical importance are protected from destruction, and if they stand to be destructed anyway by building construction, they must be documented by the museum with the responsibility of archaeology in the region in question, at the cost of the developer. For Copenhagen and Frederiksberg, it is the Museum of Copenhagen who is responsible for archaeology.

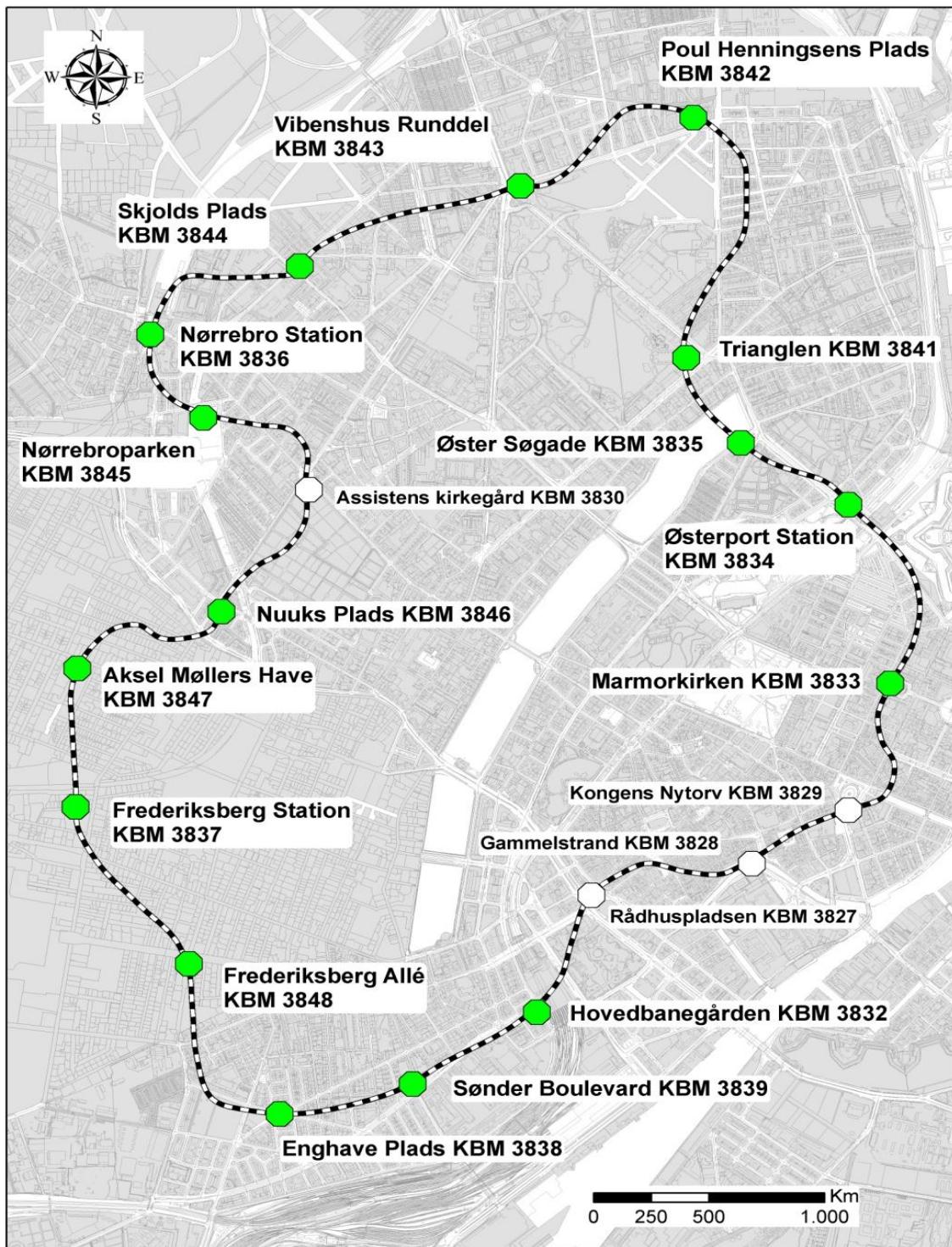


Figure 1 Metro Cityring archaeological sites: Category 2 (green) and Category 1 (white).

Public Outreach

A number of events directed to the public in order to present the work and results of the archaeological activities connected with the construction works were undertaken. At Trianglen a pedagogical campaign was undertaken outside the framework of the Museum Law. The initial part of the excavation was pedagogic and was carried out as a community dig (fig. 2). The purpose of the public excavation was to strengthen the local inhabitants' connection to their area and to give them a practical experience in how and what archaeology can achieve as a tool for generating information about the past. Several hundred schoolchildren and adults participated in the excavation of the modern dump layers that covered the site. The project was carried out as a joint project between the museum's archaeological department and the public outreach department. The two departments gained valuable experience in the process, and the project was a success. It will be used as a model for future similar activities at the museum and hopefully serve as inspiration for other museums and construction companies as to how the full value of archaeology can be used for several purposes.

At several of the sites there were pop-up speeches made by the excavating archaeologist where the sites were described and people could ask questions about the archaeological work procedure. Also, there were on some occasion's public displaying of finds and presentations of the work given to the public and to different organizations. Several of the sites also appeared in media when interesting results occurred, for instance Østerport.



Figure 2 Community dig at Trianglen.

Questions for the project

Since the whole of the medieval town is classified as a protected area with very high cultural historical potential, the sites within this area were classified as Category 1 sites and were subjects of large-scale excavations of many months length. However, the areas outside the oldest town, formerly suburbs or areas completely outside the city, also hold potential for acquiring new knowledge of the growth and development of Copenhagen. Therefore, it was deemed important to document archaeological remains also in these areas. The sites in these areas were mostly investigated by the method of monitoring; that is, the archaeologists followed the developer's work, and stopped the machines when something of archaeological interest showed. The remains were investigated, documented and then construction work could continue.

Before the start of the project, and on the basis of the initial assessment of the historical character and preservation of remains, some overall archaeological themes for the Metro Cityring project were appointed. These were:

- The background, course and characteristics of urbanization
- The economic and demographic growth and cycles
- Cultural and social implications and consequences of town life

Results in a wider cultural historical context

As assessed beforehand, the archaeological results from the Category 2 sites were limited. The areas where these sites were placed have not been the subject of intense human activity at any point in time, resulting in sporadic material traces in the ground. It is however possible to discern some themes where the archaeological observation from the Category 2 sites have proven to contribute with information. These will be presented in this report, and they are:

- Prehistoric activities in the Copenhagen area
- Use of the areas outside of the old city – both civilian and military
- The growth and development of the city area, both inlands and on the coast as landfills
- Bourgeoisie culture in the 19th century
- Municipal institutions

Results in numbers

The relevant construction works were conducted during 2010 to 2014, and they were supervised by 22 archaeologists from six countries: Denmark, Sweden, Norway, United Kingdom, Ireland and USA. In total, 26.000 m² were monitored, 354 archaeological structures recorded and well over 6.000 finds collected (tab. 1).

Excavation site	KBM nr	Excavated area (m ²)	Nr. of archaeological contexts	Finds nr.	Finds weight (kg)
Hovedbanegården	3832	2 011	7	1 142	30,83
Marmorkirken	3833	2 284	108	346	19,52
Østerport Station	3834	3 222	34	502	8,89
Øster Søgade	3835	569	8	27	6,96
Trianglen	3841	3 004	73	2 420	42,47
Poul Henningsens Plads	3842	2 392	36	921	30,52
Vibenshus Runddel	3843	971	60	45	0,98
Skjolds Plads	3844	1 807	6	175	4,29
Nørrebro Station	3836	2 164	1	27	1,97
Nørrebroparken	3845	306	0	0	0
Nuuks Plads	3846	0	0	0	0
Aksel Møllers Have	3847	1 941	2	18	0,24
Frederiksberg Station	3837	0	0	0	0
Frederiksberg Allé	3848	1 676	17	266	5,37
Enghave Plads	3838	2 583	1	66	0,84
Sønder Boulevard	3839	1 060	1	636	15,98
Sum		25 990	354	6 591	168,86

Table 1. Metro Cityring Category 2 archaeological sites. KBM nr= Museum of Copenhagen inventory number.

The sites

The results from the 16 Category 2 sites are presented below. Archaeological structures or finds were recorded in 13 of them (tab. 2). The sites Nørrebroparken (KBM 3845), Nuuks Plads (KBM 3846) and Frederiksberg Station (KBM 3837) did not contribute with any archaeological remains.

Archaeological site	Prehistory	Middle Ages	1650 – 1850	Modern time	Characteristics
KBM 3832 Hovedbanegården			F	S + F	Garden plots and ropewalks until urbanization at end of 19 th cent.
KBM 3833 Marmorkirken			S + F	S + F	Part of "New Copenhagen". From rural to urban cadastre in 1676.
KBM 3834 Østerport			S + F	S + F	Part of "New Østerbro" 1620s-1659, fortification, close to city periphery
KBM 3835 Øster Søgade	F	F	S + F	F	Water reservoir during 1700s, later recreational use
KBM 3836 Nørrebro Station				F	Rural landscape until modern development at end of 19 th c.
KBM 3838 Enghave Plads			F	S + F	Garden plots and ropewalks until urbanization at end of 19 th c.
KBM 3839 Sønder Boulevard			S? + F	S + F	Garden plots and ropewalks until urbanization at end of 19 th c.
KBM 3841 Trianglen			S + F	S + F	Pasture, military drilling ground, park from start 1900s
KBM 3842 Poul Henningsens Plads			F	S + F	Rural landscape until modern development at end of 19 th c.
KBM 3843 Vibenshus Runddel	S + F		S?	F	Park. Rural landscape until modern development at end of 19 th c.
KBM 3844 Skjolds Plads				S + F	Rural landscape until modern development at end of 19 th c.
KBM 3847 Aksel Møllers Have	S + F			F	Park. Rural landscape until modern development at end of 19 th c.
KBM 3848 Frederiksberg Alle	S?		S + F	S + F	Royal land, wealthy country houses 1765-1850, then residential building activity

Table 2. Metro Cityring Category 2 & 3 archaeological sites. S=Structures (including layers, dumps, ditches, etc.), F=Finds (some quantity).

Hovedbanegården (KBM 3832)

During the 17th century, Stampsgade lay outside the city's major moat and rampart complex but within the "Western Retrenchement". In the mid 17th century, the locality lay at the southern margin of a royal pleasure garden located just outside Vesterport. Cottage industries like rope-making, cloth dyeing and laundries also existed here with large areas used as gardens, hayfields and common pastures. After about 1860, a large area of the Kalvebod coast between the rampart and Enghavevej was filled in and levelled in several stages and much of the natural terrain to the west in the blocks between Tietgensgade and Vesterbrogade was buried under as much as two meters of fill to complete the grade from the new coastline. There were few actual houses and farms in the area before apartment blocks were constructed at the end of the 19th century (fig. 3, 4).

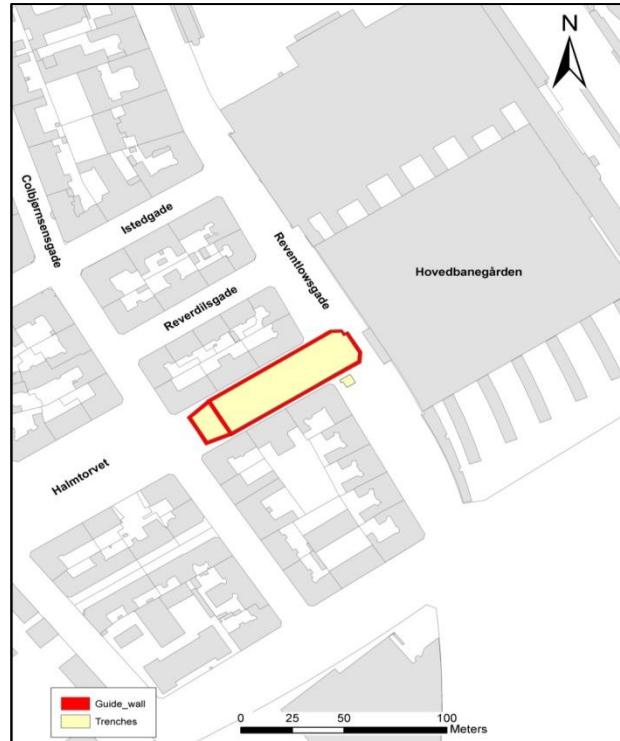


Figure 1 Hovedbanegården. Modern city map and station box (yellow footprint).

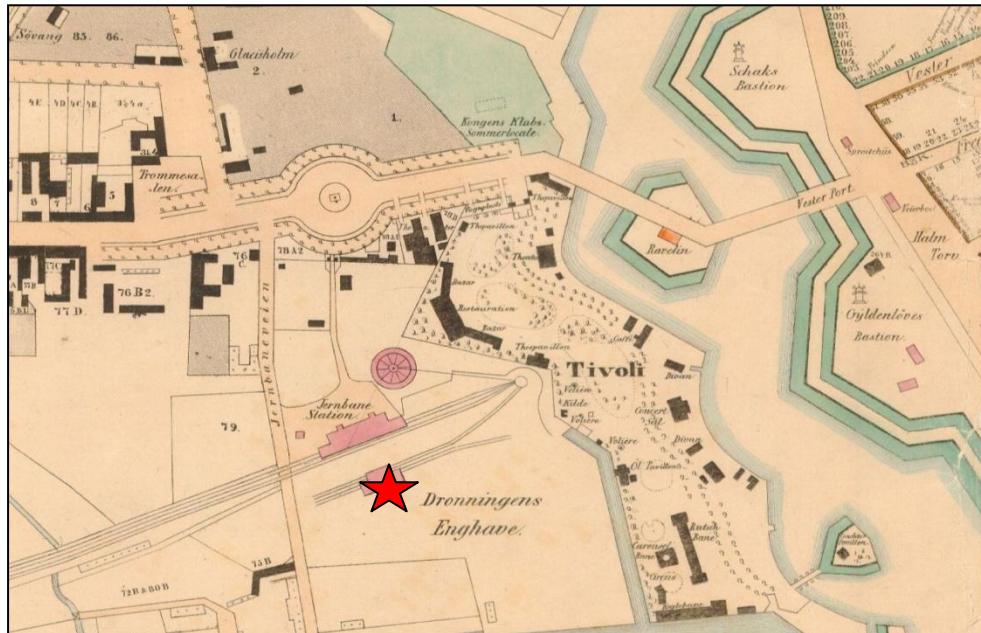


Figure 2 Hovedbanegården. 1858 city map with the approximate location of the site (red star), just west for the earliest train station.

At the corner of Reventlowsgade and Stampsegade, a possible cobblestone surface was exposed one meter below street level. Below the cobblestones a street surface with regular sett paving was found. It probably dates to around 1845 when the first train station was constructed. In Stampsegade, the excavation revealed massive levelling layers down to a depth of 2.5 meters below modern street level. Based on the finds, these layers likely date from the second half of the 18th century and to the first half of the 19th century. The finds from the levelling layers consist of various types of ceramics, glass and a few bone, leather and metal objects. Except for a prehistoric retouched flint flake, the finds date from 18th to early 20th century. Household objects and personal items were predominant among the finds (fig. 5). There were relatively speaking quite a lot of remains from imported objects, i.e. porcelain and other vessels from the 18th century.



Figure 5 Hovedbanegården. 19th century lathed bone ink pen shaft (FO 100132).

Marmorkirken (KBM 3833)

There is very little information about settlement and other suburban activities outside the medieval town gates in the archaeological sources, written records or older maps. Bredgade seems during the middle Ages to have been a cattle road. In the late 16th century, it was the broadest thoroughfare from Østerport. When the district went from rural to urban cadastre in 1676, it becomes possible to follow aspects of the housing developments. Most of the houses in the 1600's were single-family homes built in one or two floors over a basement. The major trading houses and mansions stood out to the main streets, while the smaller buildings lay in the side streets. But for a long period it continued to be a low-lying and swampy area and large deposits of rubbish and soil were regularly brought to the district in order to raise the ground level.

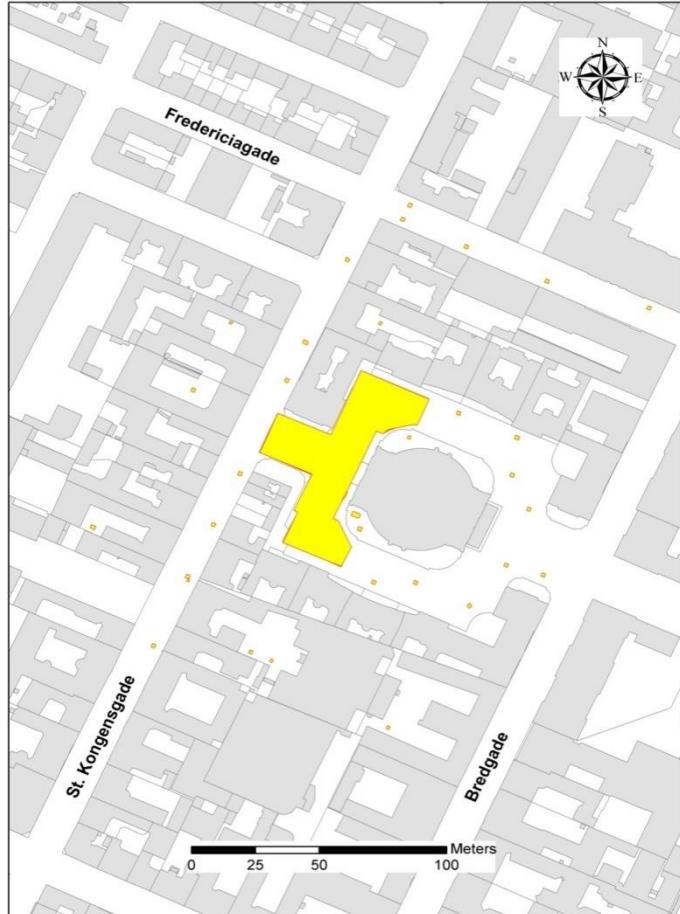


Figure 6 Marmorkirken. Modern city map with the station box (yellow footprint) and monitoring wells.

The most crucial event in terms of progress towards the expression that characterizes the district today was king Frederik V's decision to build Frederiksstad on the area between Esplanaden, Bredgade, the harbour and St Annæ Plads. Frederik's Church was initially conceived as a grand feature of the planned Frederiksstad. A building plot was selected on a portion of Charlotte Amalie Garden next to Amalienborg Palace Square and the projected Frederiksgade, which was the centre of the new town. Originally, the plot had been leased to a bleach field manager who could exploit the swampy terrain for washing and subsequent drying.

The choice of church builder fell on Nicolai Eigtved, who began the work in 1749. Conscribed soldiers dug a 30-meter deep hole and royal builder Zuber conducted the carpentry for the pile work. The building material would be sand and brick, but a resolution in 1753 determined that the walls both inside and outside were to be clad in Norwegian marble. As the project proved too expensive, the unfinished church lay for many years as an overgrown ruin until the state took over ownership of the church square and the monument in 1849. The church was finally finished and inaugurated in 1894.

Excavation west of the church revealed remains of habitation that predate the construction of Frederiksstad (fig. 6, 7). The main features uncovered were four wells and remains of the 17th–18th century street houses facing St. Kongensgade. Massive levelling layers, accumulated topsoil and dump deposits with degraded, highly organic materials are present throughout the area. They date mainly to the 16–1700s and represent a continued effort to dry up the low-lying, marshy terrain. The watching brief also gave a rare glimpse of the Frederik Church's foundations with the massive pile- and brick construction beneath the building itself as well as building remains (marble and brick fragments, mortar) from the construction of the church 1749–1770 and 1874–1894. An unidentified wooden structure close to the church is interpreted as a work- or storage building used during the construction work. A large, mid 19th century brick culvert was found SW of the church.



Figure 7 Marmorkirken. Painting of Frederik Sødring: *Parti af Marmorpladsen med ruinerne af den ufuldførte Frederiks Kirke*, 1835. Statens Museum for Kunst, Copenhagen.

Ceramics and clay pipe fragments, glass, leather and midden materials (animal bone, fish bone, mollusc shells, etc.) were recovered in moderate quantities from dump and levelling layers and from the surface of exposed wells. Whereas most finds may be dated to the mid 17th to mid 18th century, the ceramic types recovered across the site reflected the historic use and occupation of the site from the 17th through into the mid 19th century when the area around the church was sealed beneath paving.

Østerport (KBM 3834)

The archaeological investigation preceded the construction of a new metro station, which will be located to the west of the current Østerport station (fig. 8). The station will be located on the outskirts of historic Copenhagen. The Museum of Copenhagen carried out a watching brief in the area during the initial construction work in order to document any remains of archaeological interests. The work started in the summer of 2011, with several long interludes due to non-archaeological concerns.

The natural soil at Østerport consisted of yellow clay and smaller sand pockets, interspaced in the natural soil in a non-systematic arrangement of larger boulders and smaller stones transported here from the northern Scandinavian mountain range during the last Ice Age. The average depth of postglacial layers in the area is rarely more than 0.5 m. The site at Østerport was heavily modified by massive fortification work from the early 18th century and onwards (fig. 9, 10). The redeposited material come from the same area and consisted mostly of natural soil having been dug up to form a moat and the fortification and then 200 years later being thrown back where it came from. The archaeological remains were in line with what could be expected for an area belonging to the outskirts of the fortification. It is also possible that the upper layer once formed part of one of the outer raised artillery positions. The soil seemed very sterile and there was no evidence of there being organic inclusions from the grassy soil that would have grown on the fortifications in the deposit, and that might have been expected, if it was the case that the redeposited layer came from the ramparts. It is therefore more likely that the deposit was made up of soil deposited as part of an outer firing position that has since been razed and flattened like a pancake, leaving the lower parts of the foundation for the firing position intact on top of the organic topsoil. Almost all of the sparse finds came from this layer and included pottery, broken bricks, weathered animal bones and a copper coin dating to 1771 (1 skilling, Christian VII). The layer covered the entire site and there is no reason to presume that the layer does not continue beyond the site's limits. The finds material was quite small and typical of a late post-medieval environment in a suburban context. Of particular interest was the layer of intact topsoil and building remains from the 17th century that was buried beneath the redeposited soil from the moat.



Figure 8 Østerport. Excavation trenches and archaeological structures.



Figure 9 Østerport. Early 18th century ashlars foundations for ravelin bridge pillars.

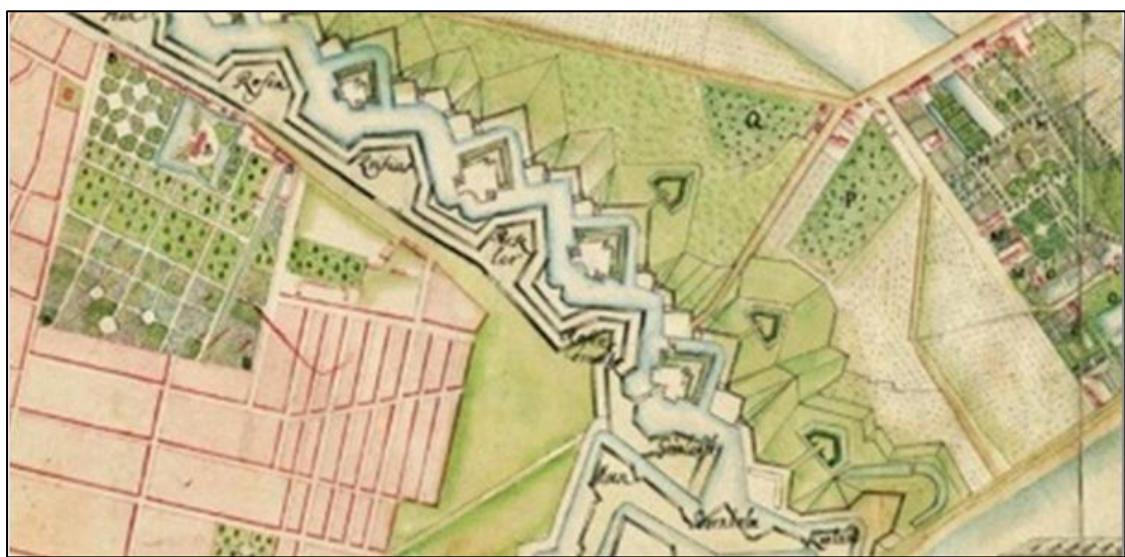


Figure 10 The fortification seen on a map from 1742, the area stayed as depicted up until its abolishment in the 1860s. Frederik V's atlas, book 36, plate 21

Øster Søgade (KBM 3835)

The area, now referred to as *Sortedamssøen*, was initially a part of Peblingesøen. However researchers believe that around the turn of the century 1600 a bridge was built across Peblingesøen, where Dronning Louise's Bridge is situated today. It is supposed that its presence led to the subdivision of Peblinge Søen into two dams, the southern Peblingesøen and the new *Sortedammen* upstream (ie. northern side) of the Peblingesøen. Exactly what year this happened is unknown, as no remains of the bridge have ever been found. However, the name *Sortedamssøen* was first time mentioned in 1619.

At that time thousands of years of landscape changes had transformed the area around Copenhagen into a river valley. In the 17th century several dammed mill ponds were constructed. The present Sortedamssø layout derives from the 1720's where extensive work was facilitated. At that time the intention was not to build a mill pond, but to incorporate the lakes into the fortification of Copenhagen and that required a precise and well defined water filled boundary. Also the intention was to avoid annual flooding of the nearby bleaching ponds. Finally, a drain canal was placed at the location of the present day Østerbrogade, allowing for fresh water to access the king's fishing ponds to the east.

At the northern end of Sortedamssøen the terrain was so low that the water now would flood out into the Sound without a second dam. The necessity of new dams is documented in a source dated to 1524, which states that two "grave" (ie. dams) had to be dug: one at the southern end of Peblingesøen and another in the northern end. A quote, dated to 1543, indicates that this work was not yet finished this year. The character and dimensions of the dam are unknown as no remains have ever been found.

The archaeological fieldwork at Øster Søgade was performed as an extensive watching brief along Sortedamssøen's eastern shoreline (fig. 11). The area was characterized by the partly constructed lake of Sortedamssøen, the later changes of its shoreline and the recreational facilities around it. Materialization hereof came in form of old seabed, accumulations and structures related to the straightening of the shoreline such as stone edging, gravel paths and earthworks. These finds seem to correspond with the general understanding of the area, i.e. the creation of the lake by extensive expanding work on the already existing Peblingesøen dam in post medieval time, followed by a straightening of the shoreline in the 18th century and finally, in the 20th century, the establishing of the current gravel path and adjacent earthworks.

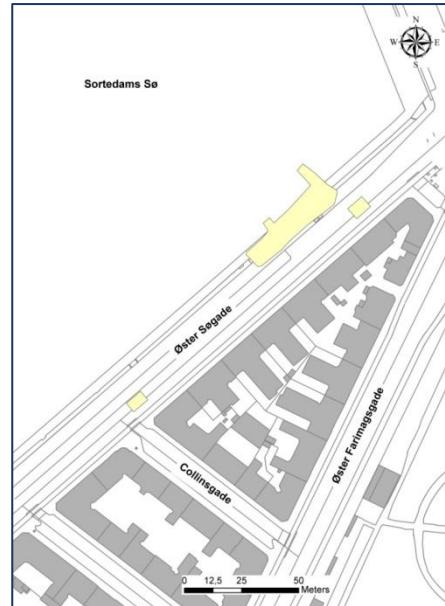


Figure 11 Øster Søgade. Excavation treches

Nørrebro Station (KBM 3836)

Up to the mid 19th century the North-western parts of todays Copenhagen formed a rural, agricultural landscape near the former medieval villages Serridslev and Nyby. A small brook –Lygteåen – ran through the area of the present investigation (fig. 12, 13). Due to the development of the City of Copenhagen, including the construction of the Nørrebro Station c. 1930, the brook had to be put in a culvert and the area was leveled into today's altitude.

Even though there were no indications of archaeological remains in the actual area, there was a potential for prehistoric, medieval and post medieval features to be found. The likelihood of this, however, was considered negligible, and leveling layers from shortly before the erection of the Nørrebro Station were the only archaeological remains documented. The finds material consists of various types of ceramics, including small clay pipe stems, a fragment of a glass bottle and an iron horse shoe. There are 27 objects in total, and they date from 18th to early 20th century.

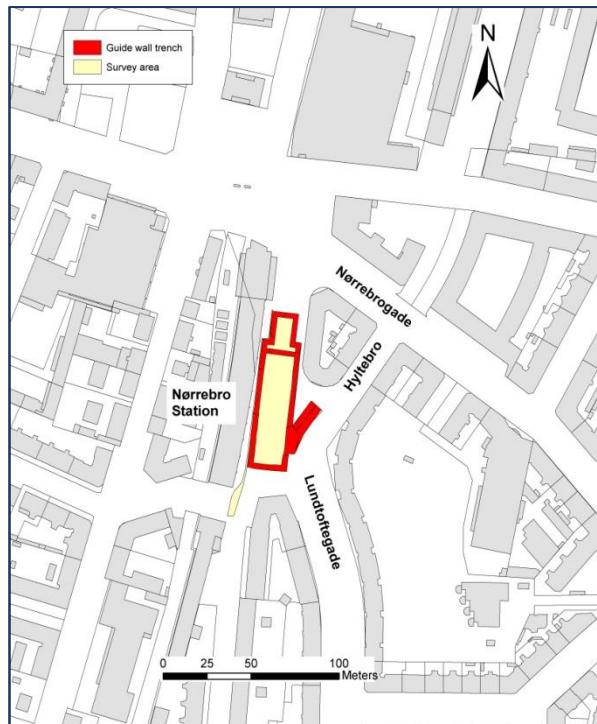


Figure 12 Nørrebro Station. Excavation trenches



Figure 13 Nørrebro Station. Lygteåen (Lygte Brook) seen from Nørrebrogade, c. 1910. In the 1920's it was put into a culvert under the present street Lundtoftegade (see fig. 5). Photo: Museum of Copenhagen.

Frederiksberg Station (KBM 3837)

The excavation site was located just south for the Frederiksberg Centeret and c. 300 m north-east of the former medieval village Solbjerg. In 2002 Museum of Copenhagen conducted an archaeological excavation (KBM 2526) just west for the actual site, which revealed prehistoric pits, probably representing an Iron Age settlement (fig. 14).

Museum archaeologists were present only during the preparatory excavations of the site, when nothing of archaeological interest was recorded. Due to infelicitous circumstances the excavation of the main trench was conducted without any archaeological supervision.

Further archaeological investigations at Frederiksberg Station might have revealed some complementary information on the oldest history of this part of Frederiksberg. This, however, presupposes the conditions of preservation on the site to be excellent, which is not likely to be the case.

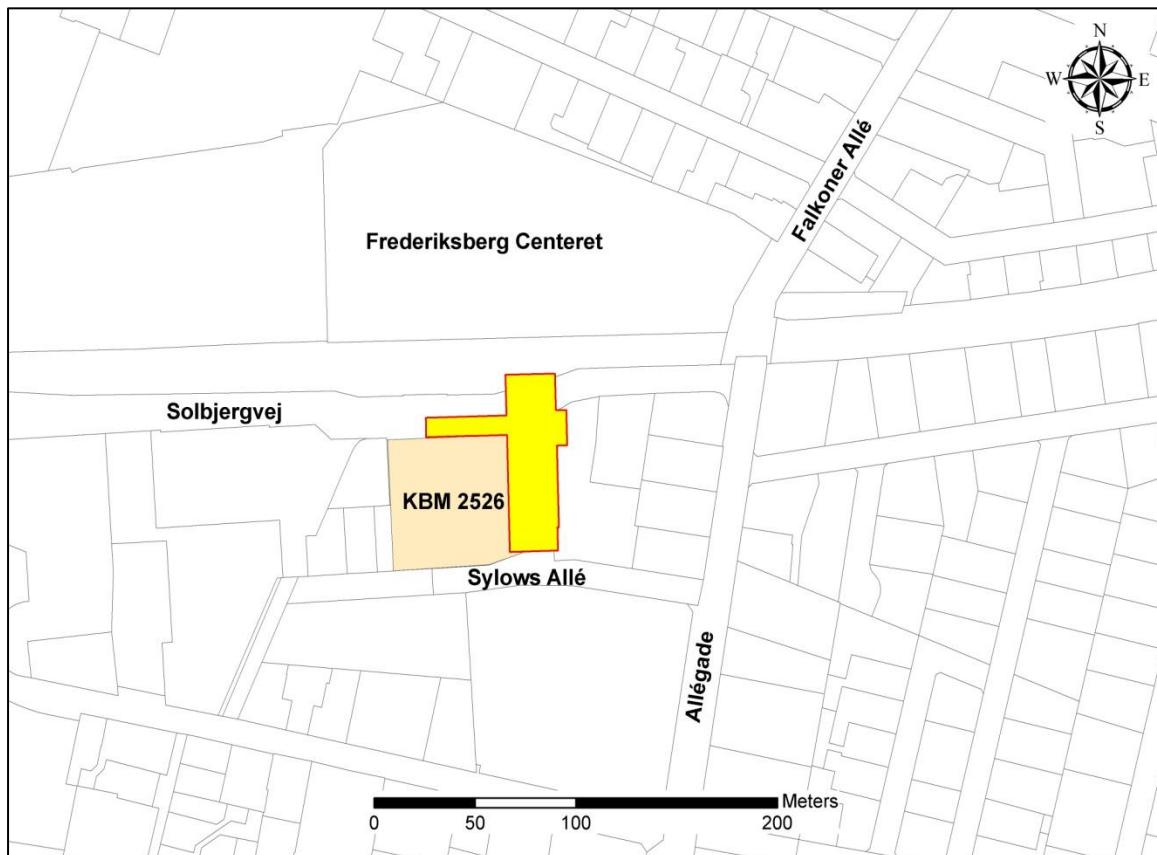


Figure 14 Frederiksberg Station. Location of main trench (yellow) and the earlier investigation site KBM 2526.

Enghave Plads (KBM 3838)

Enghave Plads was originally located outside the town walls and hence only regarded as being a part of the outskirt of Copenhagen. In 1852, the year of the abolishment of the building ban on the demarcation terrain outside the walls of Copenhagen, the use of the area changed dramatically and the development of the area began and in the last half of the 19th century the entire Vesterbro area became fully populated.

A massive dump deposit comprising household waste and demolition material was identified throughout the entire site (fig. 15). It was built up by dark, compact, gravelly sand with frequent inclusions of ceramic building material, charcoal and stones. It contained enormous amounts of household waste, including pottery, iron objects such as handmade iron nails and various brackets of significant size. This seems to correspond with the general understanding of the area, i.e. it is built by landfill accumulated here in the 18th and 19th century prior and during the early stage of the industrialization of Copenhagen.

The household waste and demolition debris date from the Renaissance period to Modern times but mainly to the 18th and the 19th centuries. Due to its mixed contents of waste and demolition materials it seems to be related to the different periods of large-scale city development, from the aftermath of the great fires in the 18th century, to the bombardment in 1807 and the later 19th century massive urbanisation of Vesterbro. Pottery from this deposit consists of red wares (glazed and unglazed) in the forms of jugs and storage vessels from Denmark and possibly Lower Saxony and the Nederlands, and cream ware of either English or Continental origin. Local handicraft products are represented by *jydepots* (dark grey or black, unglazed pots made in Jutland country parishes from about 1500 to about 1900). Evidence of seafaring and fishing is also apparent with small bone and shell fragments.



Figure 15 Enghave Plads. Location of excavation trench.

Sønder Boulevard (KBM 3839)

The Vesterbro landscape was initially marine foreland, formed after the Stone Age. The coastline lay along the present Tietgensgade, and continued to the southwest just east of the modern Halmtoev curving away to the south along the line of the modern Sønder Boulevard. The extensive marsh lands were sometimes flooded by sea water and were only suitable for pasture land. After the great fires in the 18th century and the bombardment of Copenhagen in 1807, large quantities of debris from destroyed neighbourhoods had been unloaded on the beach. In that way, the reclamation of land in Kalvebod Strand started. Much of the natural terrain is now buried under as much as two meters of fill to raise the grade above the new coastline to the east. The release of the land gave rise to intense construction activity, which within a few years changed Vesterbro (fig. 16).



Figure 16 Sønder Boulevard. Location of excavation trench.

Massive, levelling layers found under the street were dominated by demolition waste, likely from the buildings destroyed during the bombardment in 1807. It seems that there were several deposition episodes during the four decades between the clean-up after the bombardment and the construction of Vestbanen in 1847. Below the levelling layers the upper level of the salt marsh of Kalvebodstrand was found. This earlier coastal landscape bears evidence of sporadic Stone Age activity and a single flint flake may have been discarded directly onto the salt marsh or redeposited by wave action. A large, brick-built vaulted sewer was encountered that perhaps can be attributed to the English engineer John Aird, who constructed a vaulted brick sewer on Vesterbro in 1856 as part of the city's early suburban sewer plan.

The levelling layers contained red burned pottery, earthenware, Industrial Ware, porcelain, stoneware, clay pipe fragments, glass, a few bone and metal artefacts (fig. 17, 18). A quite unusual object is a Bavarian crucible (da. *dige*) with maker's marks in the base.



Figure 17 Sønder Boulevard. Left: lead musket ball (FO 100079), middle: pewter tea spoon (FO 100080), right: Danish 2 skilling Rigsbankstegn bronze coin dated 1815 (FO 100086).



Figure 18 Sønder Boulevard. 18th/19th century Bavarian crucible (FO 100028). Base with makers marks.

Trianglen (KBM 3841)

The area where the Metro Cityring station of Trianglen will be constructed was initially used as a summer pasture for the stabled cows and horses from within the city walls of Copenhagen. It was a part of Østerfælled, or the Eastern pastures. During the age of Absolutism (1660-1848), the area was also used as a drilling area for Copenhagen's militia and later for the standing army. In the early 20th century, the pastures were slowly being absorbed by the expanding city, Copenhagen was growing exponentially, as the age of industrialism upturned the demographic census, which had existed for centuries between countryside and city. The social movements of the late 19th century and early 20th century, focused on workers' rights and in some cases, made it possible to establish large green areas, where factory workers could relax or engage in sports in their newly acquired leisure time. One such area was Trianglen and it was never built upon as the city rapidly grew beyond the constraints of its antiquated fortifications.

The area lies on a moraine flat formed by the Øresund Glacier during the last Ice Age. The terrain has only modest undulations. The topography rises towards the south, which is reflected on modern maps and in the average height values for the till deposits found in recent geotechnical investigations. The average depth of postglacial layers, where cultural layers are deposited, is in the area rarely more than 0.5 m. The excavated area consisted of flat terrain with a few shallow water holes that have been filled in or regulated in modern times. The area was situated on average 8.5 meters above sea level. The geological material seems to have been above water since the last Ice Age as it lacks any evidence of having undergone fluvial activity.

Archaeological remains were in line with what could be expected for an area belonging to the Commons. The finds material is quite small and typical of a late post-medieval park-like environment in a suburban context. Some interesting structures were however encountered. Of particular note was a wooden structure, consisting of two large wooden frames; both had the figure of a double cross (fig. 19). These frames had been assembled on the ground before being lowered into the narrow cuts for the structures. The purpose of the frames seems to have been to hold firmly in position a long pole that would have been standing vertically from the ground. The supporting frames indicate that the long pole would have been exceedingly top heavy compared to the relative simple supporting structure of a flagpole.

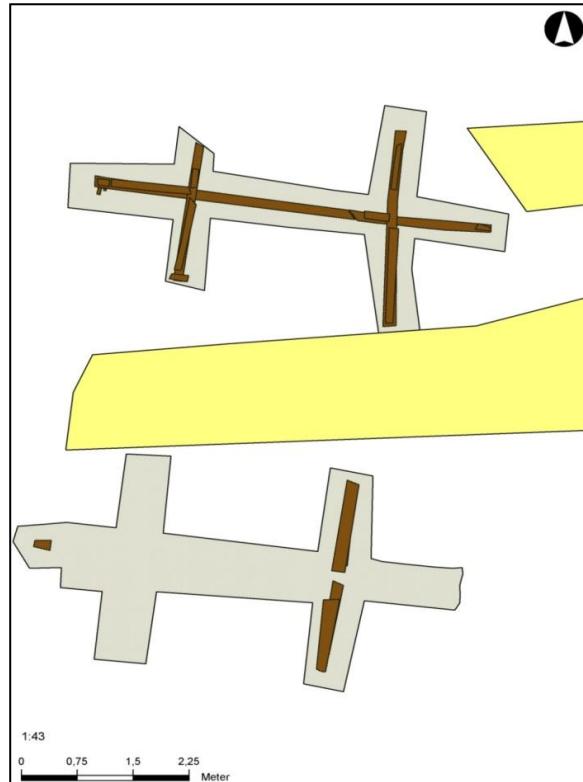


Figure 19 Trianglen. Late 18th or early 19th century wooden structures, possibly representing the foundations of a Breaking Wheel (hjul og stejle).

The structure can be dated to the late second half of the 18th century, based on ceramics in the fill and dendrochronological¹ results from the wood itself. The dating and the shaping of the structure suggest that it is very likely that the structure could have been a “Hjul and stejle”. (fig. 20). These structures were used to display the bodies of dead criminals. It is a very interesting find, since structures affiliated with crime and punishment found in-situ is uncommon even in a wider European context.



Figure 20 *Hjul and stejle* or *wheels on poles*. Used to display the bodies of dead criminals.

¹ A method that can date the time a tree was cut down by study of its tree rings, these rings are affected by outside environmental factors and fluctuate year by year, forming chronological patterns that makes it possible to date the tree, often the exact calendar year can be estimated.

Poul Henningsens Plads (KBM 3842)

In the medieval period, the area was part of the agricultural land of Serridslev village. In the 1530's, the field was donated to Copenhagen and made available to Copenhagen brewers who used the field for grazing and harvesting hay. After 1795, the field was parcelled out for agriculture and horticulture. The building expansion on Bryggervangen started around 1900. At the site there were previously several villas with stables, garages and smithies. The smithies produced tackle for horses of the Tram Company and Eastern Gasworks (Østre Gasværk). The properties were owned by a private haulage contractor, but in 1916 the Copenhagen municipality took over the business and established the Copenhagen Municipality Vehicle Unit, responsible for removing public waste. A wide variety of activities would have taken place here, including the shoeing and grooming of horses, asphalting and cleaning of barrels, repair work, etc. The buildings were demolished in 1959 (fig. 21).

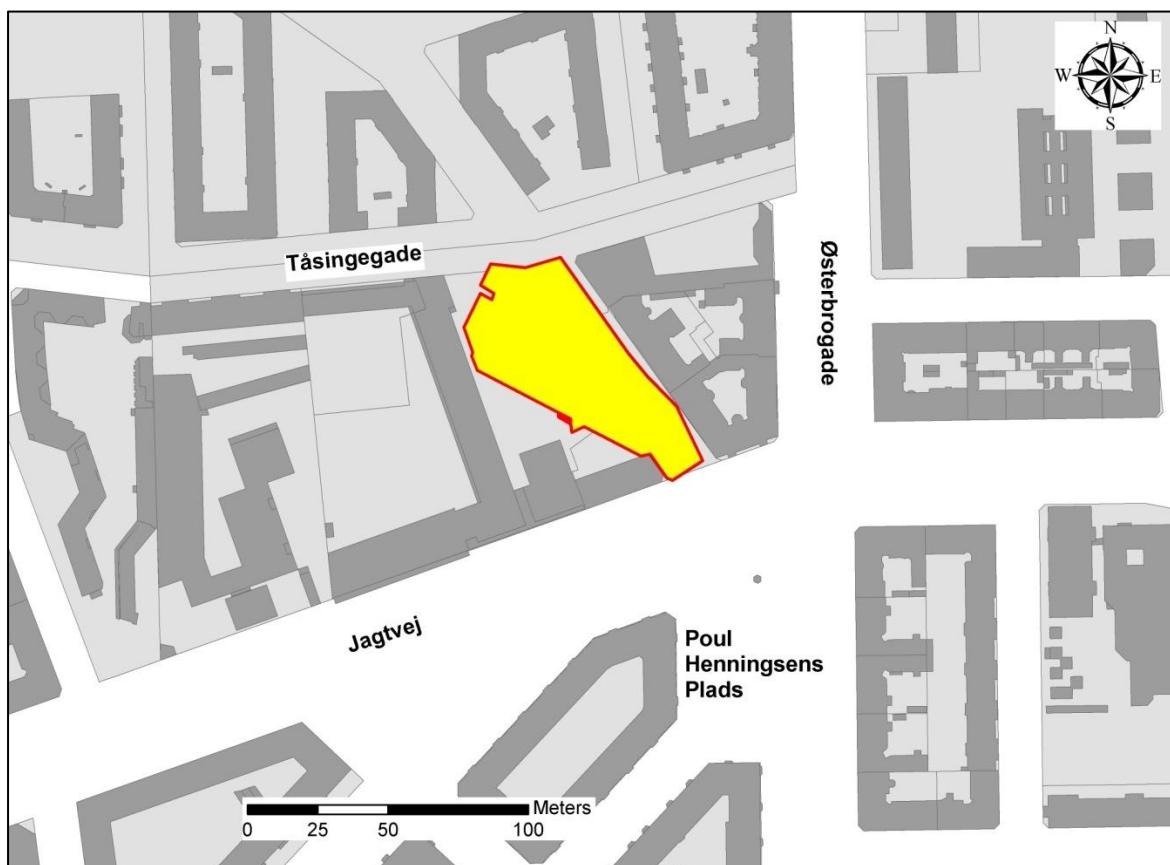


Figure 21 Poul Henningsens Plads. Location of the investigation site.

Foundations of late post-medieval buildings, deconstruction and leveling layers were documented. These included a well, stables, a blacksmith's forge and vehicle sheds.

The foundations can be associated with the Copenhagen Municipality Vehicle Unit, which resided at the site from 1916–1959. The top soil layers at the site locally contained densely packed accumulations of household debris, particularly fragmented ceramics. A large assemblage of mainly household objects was collected from the site that is interpreted as discard from the adjacent early villas. These include an impressive range of pots, jars, dishes, bowls, bottles,

ointment jars, inkwells, tea pot lids, mustard bottles, egg cups, candle holders, figurine bases, porcelain tobacco pipes, dolls heads, perfume/medicine bottles, luminaire pendants, a crochet hook, slate styli and a toy ocarina (fig. 22). No finds could be dated to earlier than 1800 and most are from the 19th and 20th centuries.



Figure 22 Poul Henningsens Plads. Fragment of a 19th century slipware toy ocarina (FO 100051).

Vibenshus Runddel (KBM 3843)

Østerfælled was originally a large area of uncultivated meadows where people let their cattle graze. While the Commons after the medieval period belonged to the city of Copenhagen, the military gradually took control of the area. In 1716, Tsar Peter the Great's Russian army of 30,000 men camped on the Commons along with 23,000 Danish soldiers. The damage to the Commons after the Russians' visit was enormous.

Archaeological test-trenches within the park revealed a number of features, including five pits and four postholes (fig. 23). Their dating to the prehistoric period is based on their shape and the character of the fill, which include cooking stones, which are commonly found in prehistoric pits. A small ceramic sherd of prehistoric character and a worked flint flake were found in two of the pits. A small quantity of undated worked flint was also recovered from the topsoil. The lithics hint at settlement activity or intermittent visits by hunter-gatherers or Neolithic people in the general vicinity.



Figure 33 Vibenshus Runddel. Excavation trenches

A group of vertically cut, flat-bottomed, sub-rectangular pits may represent temporary entrenchments from military exercises in the 17th and 18th centuries. A range of finds from the topsoil reflects the varied use of the Commons during the last couple of centuries.

Skjolds Plads (KBM 3844)

Skjolds Plads lies on *Rådmansmarken*, which included almost the entire area between Jagtvejen, Tagensvej, Lygten, Lersøen and Lyngbyvej (fig. 24). The name “*Rådmansmarken*” refers to the fact that the area from 1527 was made available to the aldermen for agriculture as a reward for their work at the City Hall. At the beginning of the 1800’s, the landscape was dominated by small lakes, ponds and some sandpits. Following the abolition of the demarcation line in 1852, the Haraldsgade area was developed in the first half of the 1900’s with a mixture of small and large manufacturing facilities and public housing. In 1899, the military had given permission to continue Tagensvej over the Commons, which gave the district a direct connection to the city. This was the beginning of the area’s evolution towards a mixed industrial and residential area.

A stone culvert or stone-covered drainage was found in Haraldsgade (fig. 25, 26). The culvert was built with two sidewalls of unmortared, two-coursed rubble masonry, which supported a row of large capstones. The culvert could have belonged to a country estate on the former *Rådmansmarken* and probably dates from the end of the 1700’s until the mid 1800’s. Despite modern extensive disturbance resulting from the installation of electricity, water supply and gas pipelines in Haraldsgade, five shallow pits or lenses were found cut into the natural soil. The pits and the disturbed overburden under the street contained 1800’s pottery and a small group of other artefacts characteristic of everyday life.

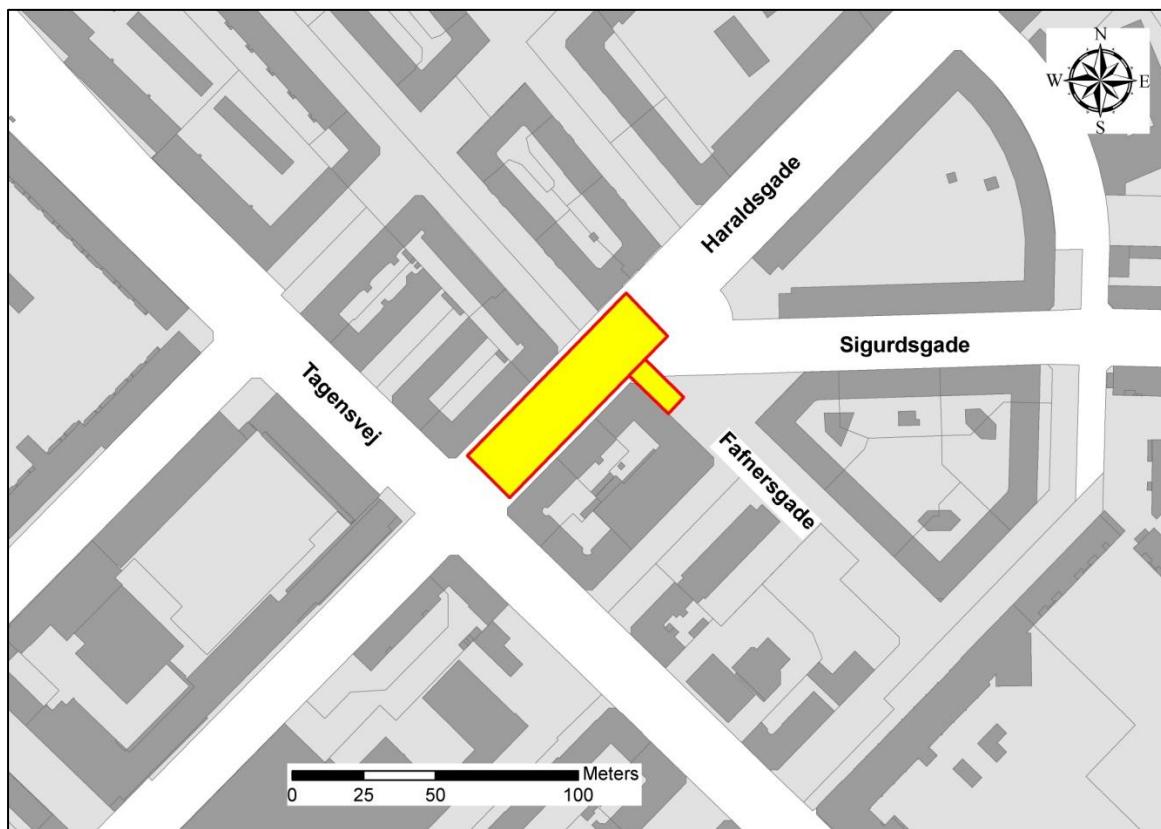


Figure 44 Skjolds Plads. Location of excavation trenches

Most of the finds date from the mid-19th and early 20th century. A small group of finds include a delicate stalk-glass with an engraved floral vine and two circumferential bands, and a ceramic toy ocarina. The finds illustrate a level of activity in the area prior to the construction of the apartment buildings around Haraldsgade.



Figure 25 Skjolds Plads. 19th century stone culvert.



Figure 26. Culvert from the 1800s excavated at Hasselager in 1985 by Moesgaard Museum. Photo: Forhistorisk Museum Moesgård.

Nørrebroparken (KBM 3845)

Up to the mid 19th century the excavation site was a rural area, situated in a peripheral part the medieval village Serridslev, formerly located c. 0.9 km to the north-west. In 1863 a railway, *Nordbanen*, was built between Copenhagen and Klampenborg, and a station building, Nørrebro Station, was constructed on the site. *Nordbanen* was in use up to 1930, and after that the park, Nørrebroparken, was established. No archaeological observations have earlier been made in the area.

In the areas available for investigation, nine trenches were excavated down to natural ground (fig. 27). The trenches had a total length of 165 m, and they were c. 1.8 m wide and c. 1 m deep. The fill in the trenches consisted of modern top soil and leveling layers. Nothing of archaeological interest was documented.

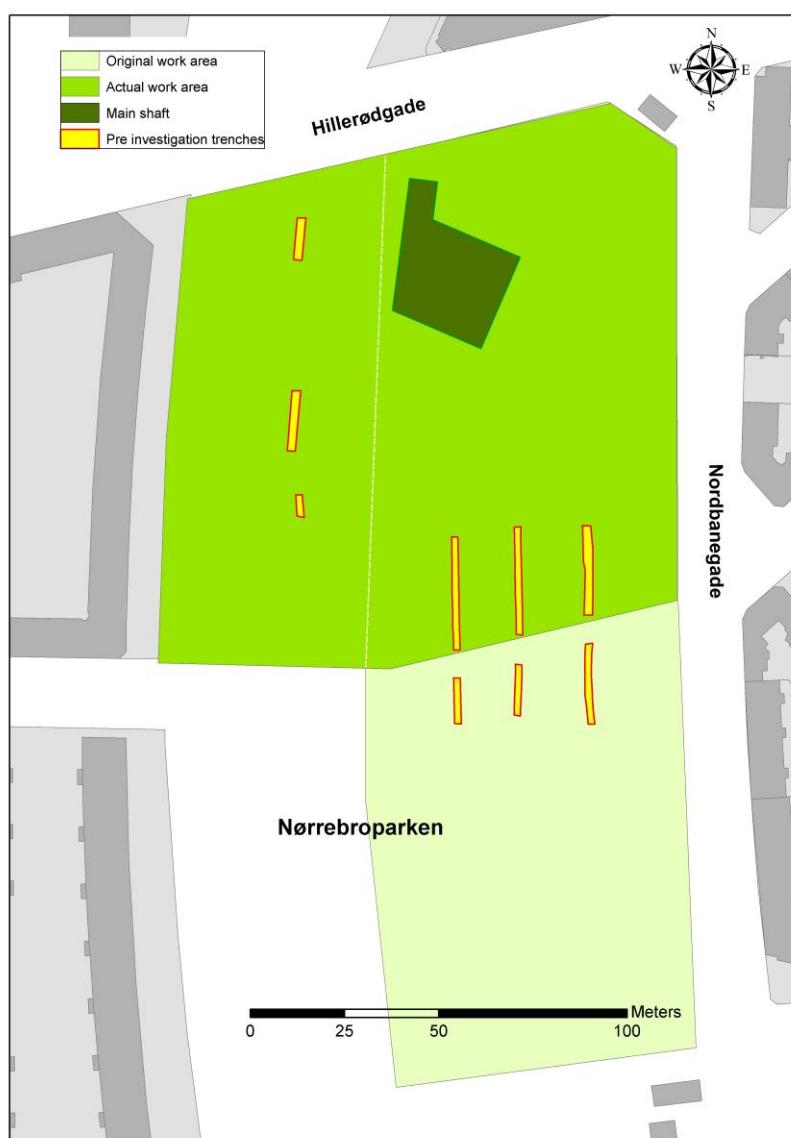


Figure 27 Nørrebroparken. Location of the pre investigation trenches

Nuuks Plads (KBM 3846)

Before establishing a Metro Cityring station at Nuuks Plads, next to Landsarkivet, Jagtvej 10, Copenhagen, Museum of Copenhagen was supposed to conduct watching briefs as archaeological pre-investigations (fig. 27). However, due to insufficient communication the excavation of the site was conducted without any archaeological supervision.

The excavation site was located c. 400 m north for the former medieval village Nyby. No earlier archaeological observations have been made in the immediate vicinity. Jagtvej is one of the oldest streets in the Nørrebro area, originally used by hunting societies at the Frederiksberg castle, which was erected in 1703. The Landsarkivet building was designed by architect Martin Nyrop (1849–1921) and erected in 1893. In 1963 it was partially converted and enlarged after design by architects Eva and Niels Koppel.

Archaeological investigations at Nuuks Plads might have revealed information on the oldest history of this part of Copenhagen. However, any remains on the site were likely to have been severely damaged by the construction work related to the erection of the Landsarkivet building, and therefore probably of low archaeological significance.

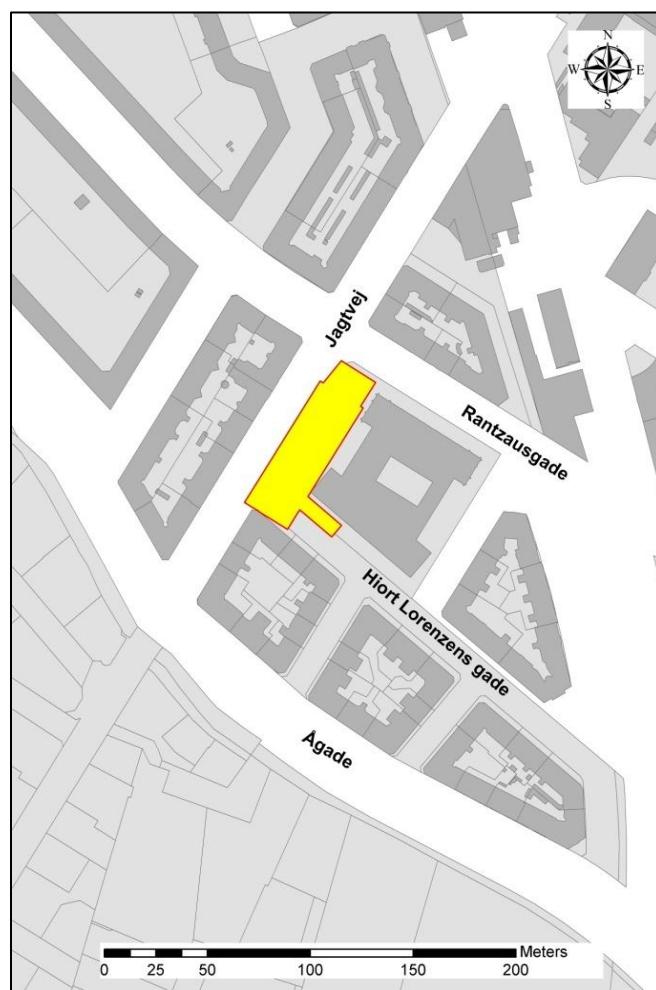


Figure 57 Nuuks Plads. Station box (yellow footprint).

Aksel Møllers Have (KBM 3847)

By the time of the investigation the site was partly a street and partly a park area in the center of Fredriksberg municipality. Up to the mid 19th century the area formed a rural, agricultural landscape near the former medieval villages Nyby and Solbjerg.

With the intentions of providing decent dwellings for the working class, the *Classenske Boliger* was built on the site between the years 1866 and 1881. Due to questionable maintenance, the demolition of this large block of buildings started already in 1915, but it wasn't completed until 1959. In 1966 the area was transformed into a park, which was given the name Aksel Møllers Have, after the late mayor of the Fredriksberg municipality.



Figure 28 Aksel Møllers Have. Location of the excavation trench.

When the archaeologists were notified of the start of the construction work, the excavation for the guide wall had already started. In the trench wall a dark area that contrasted sharply to the

surrounding, natural geology, was observed. After some investigation it became obvious that it was a large pit, probably of prehistoric origin, suggested by a few very small pot sherds that were found when the section was cleaned (fig. 29). The fill was sampled in order to extract organic matter for radio carbon analysis. The sample was at first subjected to macrofossil analysis. Two barley kernels (*Hordeum vulgare*) and two unidentified grain fragments were found in the sample. The two barley kernels were submitted for radio carbon analysis², which resulted in a date to Early Pre Roman Iron Age (tab. 3). The size and shape of the pit, along with the state of the surrounding natural geology, suggest the primary use as for extracting the moraine clay. The clay is not good enough for pottery production, but the composition is appropriate for use in e.g. wattle and daub.



Figure 29 Aksel Møllers Have. Prehistoric pottery from the extraction pit S6 (FO 100008).

Some finds, mostly ceramics, were also retrieved from the topsoil. They represent the households of working class people during the *Classenske Boliger* era, i.e. late 19th and early 20th century.

Lab. ID-nr	Sample	Context	¹⁴ C-date BP	2 ⁰ Cal. date	1 ⁰ Cal. date	Material
LuS-10394	1027	Fill 1024 (S6)	2225 +/- 50	395–175 BC	375–205 BC	Macrofossils, Barley (<i>Hordeum vulgare</i>)

Table 3. Aksel Møllers Have. Result of ¹⁴C-analysis.

² Radiocarbon dating is a method for determining the age of an object containing organic material. When an organism dies it stops absorbing ¹⁴C. The rate at which this radioactive ¹⁴C decay is measured and the time since the organism last absorbed ¹⁴C can be calculated, thus obtaining a chronological point in time for the object's death.

Frederiksberg Allé (KBM 3848)

Frederiksberg Allé was originally a royal avenue completed in 1704. Because it was initially reserved for the nobility it was not settled with farms, inns, mills or small factories and never served as a major thoroughfare to the city. Frederiksberg Allé continued to be the dominant feature in the area for a long period but the development of the avenue began in 1765. From the end of the 1700's and into the first half of the 1800's, wealthy locals bought large areas and built country houses and recreational farms with some agricultural activities. All these houses were replaced by apartment buildings from around 1900. The same developments also happened on the south side, but construction of residential buildings started here only around 1850. Prior to this, the south side was used for horticultural activities.

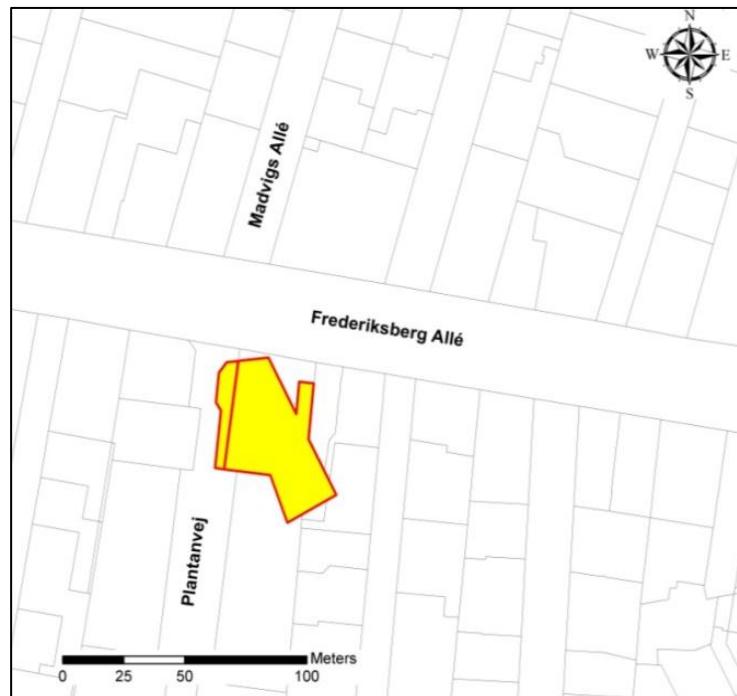


Figure 30 Frederiksberg Allé. Location of excavation trenches.

The fieldwork revealed demolition layers and cut features dating to the 1800-1900's (fig. 30). Drainage ditches, several shallow pits and two brick-wells might be associated with the building development of the area from the 1850's onwards, but could also belong to the plant nurseries existing south of Frederiksberg Allé prior to building development.

The finds consisted of post-medieval pottery, worked bone, glass, and clay pipes. Particularly ceramics was recovered in considerable quantities from both the overburden and from the surface of exposed drainage ditches and pits. The ceramic types reflect the increasing wide range of ceramic choices available as the nineteenth century progressed, and in general reflect both local horticultural activities and the bourgeois villa idyll during the 1700's and 1800's and into the 1900's. The forms and types are related to mainly domestic food functions, represented by tea wares (cups, saucer), table wares (plates), serving (platters, jugs, dishes), and container items (jars). A particular group is stoneware vessels that appear to be related to gardening. The ceramics provide hints on consumer choices, market availability and living standards for the local occupants.

Historical development of the outer areas of Copenhagen

Prehistory

The Copenhagen area is part of a rich cultural landscape with traces of human activity and habitation dating back 12,000 years. The coast played a vital role in the development of Copenhagen for the last 10,000 years and throughout prehistory, it shaped and re-shaped the landscape. It has been used by humans as a highway, a boundary, and a food store. In Copenhagen today, most of the coast has artificial embankments, but in prehistory, the coast was wider and shallower and a number of streams led to the sea.

Only scattered and unstratified archaeological evidence of prehistoric settlements has been found within the city centre – often residually in post-medieval contexts (fig. 31). The remains of a hunter-gatherer settlement have been revealed at the corner of Frederiksbergsgade and Nytorv but the extent and character of this is still largely unknown. In general, it may be that further prehistoric evidence exists under the modern city, but with a millennium of urban activity, such remains will frequently have been obscured, built over, or removed completely.

The majority of known prehistoric sites are located outside the city centre and range in date from the Mesolithic to the Iron Age. Settlements from the Kongemose Culture are known at Frihavnen and off the coast of Amager, and there are other Mesolithic settlements at Utterslev Mose, on Amager, and at Frederiksholms Quarters at Sydhavnen.

The sea level has changed many times because of changes in global climate. Each time the sea level rose and fell, new sediments washed up onto the beaches. The Øresund has transgressed areas below about 3.5 m above current sea level at least once during the early-to mid-Holocene Littorina Transgressions. During these events, the sea level rose relative to the land and the shoreline moved toward higher ground, resulting in flooding. The current evidence therefore seems to support the hypothesis that several Mesolithic ‘activity spots’ or camp sites were inundated and disturbed on one or several occasions by flooding. The basinward movement of the shoreline since the late-Atlantic Littorina high-stand (c. 3500 B.C.) allowed Neolithic, Bronze Age and Iron Age settlements to expand progressively eastward. This is evident in the archaeological site distribution. Both single finds and settlements dating from the mid- to late-Atlantic (Ertebølle Culture, c. 5300–3950 B.C.) through to the late Subboreal (Bronze Age, c. 3200–600 B.C.) are expected and do occur on higher elevation landforms and on the generally higher terrain to the west of the city centre. In contrast, Palaeolithic and Mesolithic sites predating the Littorina transgressions could potentially be encountered anywhere in the region and many may be submerged beneath the Øresund.

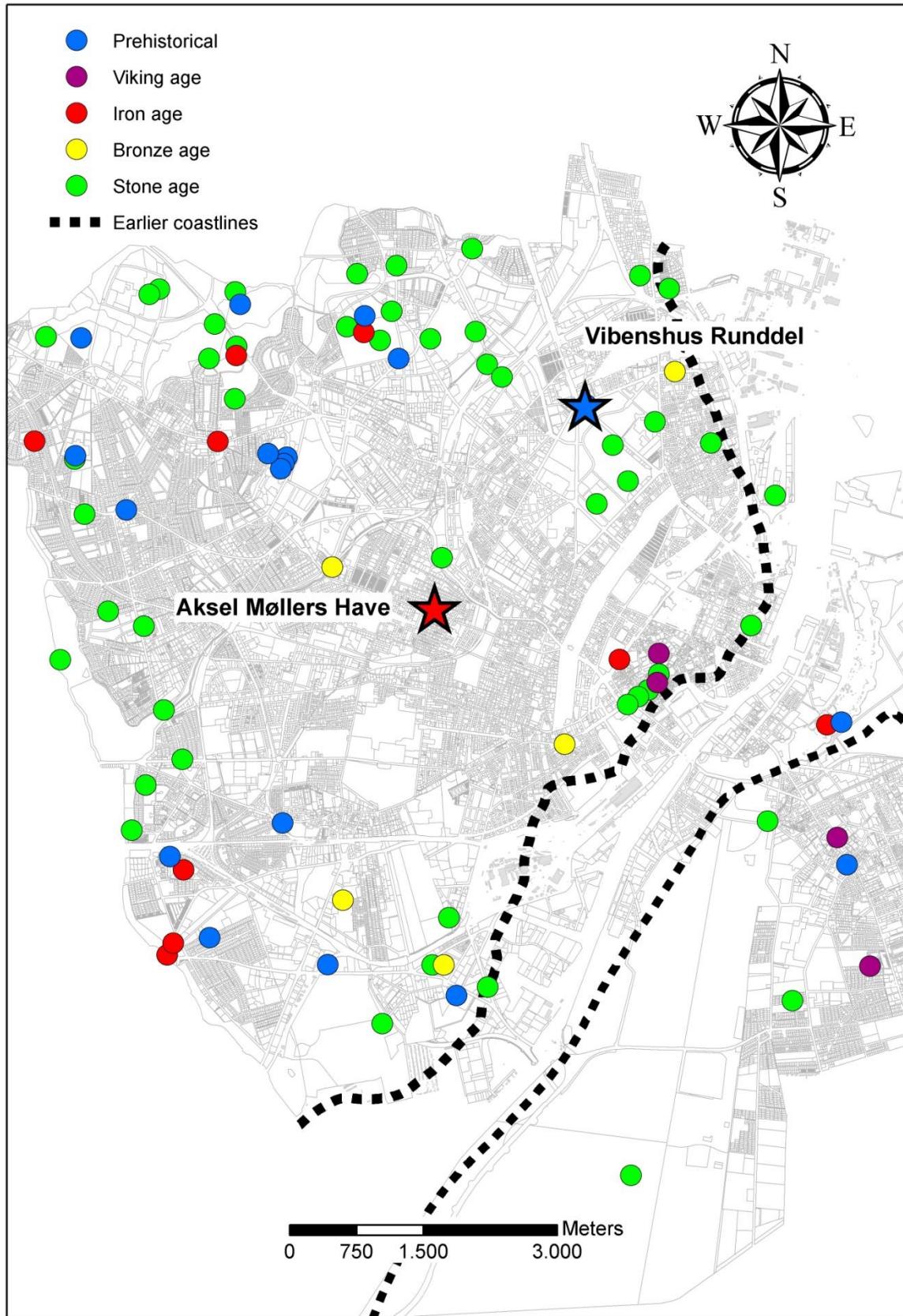


Figure 31 Prehistoric sites and find spots within the municipalities of Copenhagen and Frederiksberg (data extracted from Finds and Monuments, 2015). Many additional prehistoric localities are known but these have not yet been included in the digital archives.

Based on the current evidence, it seems that hunter-gatherers moved along the former Øresund coastline and stayed at small settlements for short periods to extract food and other resources from the coastal environment. Late Mesolithic find spots show a maritime preference in terms of both elevation and location for near-shore locations. Early and later Neolithic find spots are located in the same areas, but generally, these sites are found at higher elevations and more inland in relation to the coastline. Mostly they lie at the edges of current or former wetlands: Damhussøen, Utterslev Mose and Lersøen.

Bronze and Iron Age remains have also been scarce, and they mainly consist of single finds, likely from destroyed graves. The clearest archaeological evidence of Iron Age settlements and graves/burials is found at Bellahøj, Brønshøj, Vigerslev and Utterslev.

Of particular note are the prehistoric finds made in connection to the construction of the metro-station at Vibenshus Runddel at the corner of Østerfælled on Østerbro. Finds in this area are generally few and scattered, which is probably due to a lack of archaeological surveillance when the area was further developed from the 1850s onwards. However, historic mapping indicates that the Commons has been open ground since at least the Medieval period and no previous land-use or construction impacts have been identified other than those arising from agricultural use. The average depth of postglacial layers in the area is rarely more than 0.5 m.

Although largely undated, the find is significant as prehistoric in-situ features are uncommon in the Copenhagen area. Five pits and four postholes were encountered in evaluation trenches, and their dating to the later part of the prehistoric period is based mainly on the character of the fill containing boiling stones, a small ceramic sherd of prehistoric character and a worked flint flake. It is difficult to ascertain the function of the pits encountered due to the lack of artefacts, although this lack of material culture may discount a function for non-organic rubbish disposal. Neolithic flint tools and waste have earlier been found at two separate locations in Fælledparken and a Late Neolithic cist grave was excavated in 1910.

The archaeological evaluation carried out prior to the building of the station box at Aksel Møllers Have recorded a possible clay extraction pit from the Iron Age. The fill of the feature contained ceramic sherds and remains of carbonized grains. Two barley kernels were submitted for radiocarbon analysis, which resulted in a date in the Early Pre Roman Iron Age. There is proof of more than one Iron Age settlement in the area as a group of Iron Age pits earlier have been excavated just 600 m south of Aksel Møllers Have.

The Viking Age period is poorly represented in the Copenhagen area and no new data on this period has emerged during the construction of the Metro Cityring. The first Metro construction work in Copenhagen in the 1990s led to the discovery of a boundary ditch near Kongens Nytorv dating to the transition from the Viking Age to the Middle Ages. The settlement for which the ditch was the boundary was probably even older. A disposal pit in Regensen in inner Copenhagen and two single finds from Amager can also be dated to the Viking Age. Although modest, these

finds show that there must have been a settlement here, even before the small trading place of Copenhagen came into being just prior to 1100.

Middle Ages

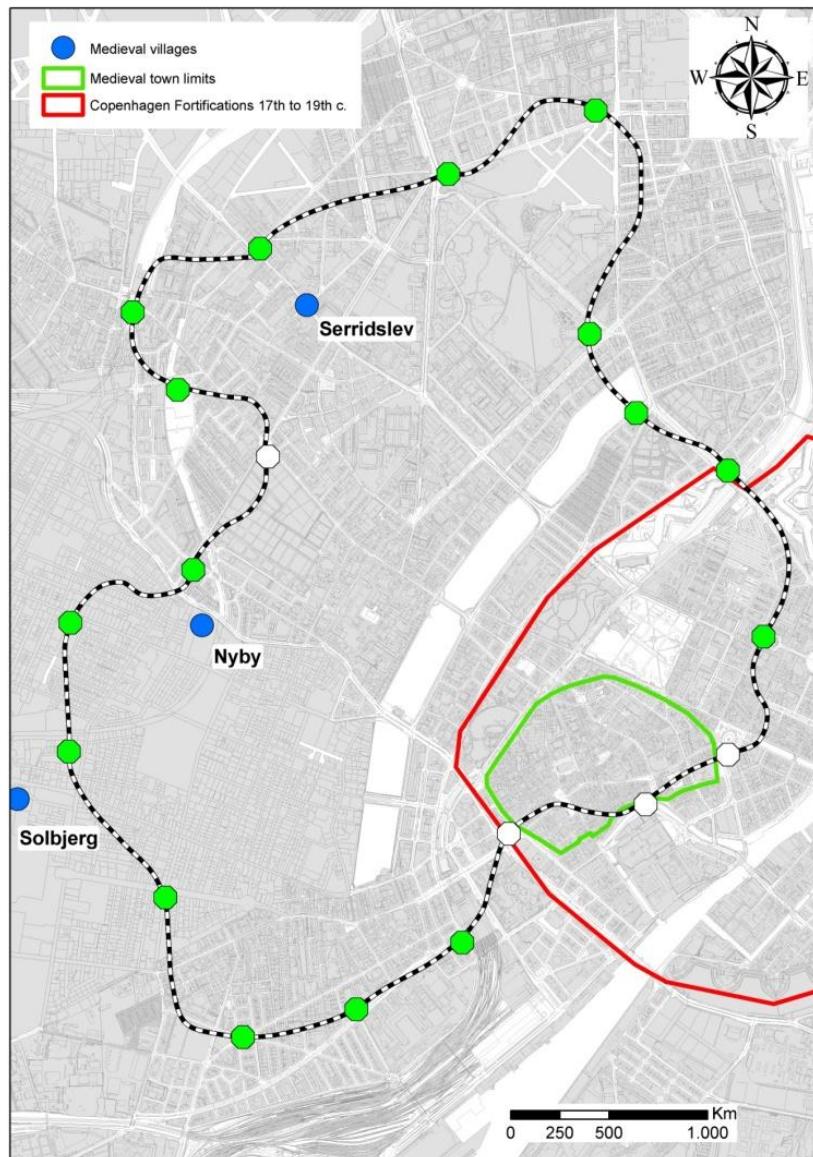
The medieval period in Denmark is in general considered to span from 1000 AD until 1536 AD. This period was characterized by the emergence of the two basic state institutions, namely the church and the feudal state. The centralisation of power during the feudal period saw the loss of individual rights, but increased personal security from violence and extrajudicial abuse. This resulted in towns and villages becoming increasingly rigid in the landscape, as individual farmers came under the control of lords and the church. These social changes with its increased stability and order resulted in an improved specialization in the rural workforce and an increase in trade. In concert with technological advances and knowhow brought in to the country from the increasingly interconnected catholic world, A more structured and permanent landscape arose around Copenhagen, infrastructure sprung up between and around the settlements; roads, harbours, windmills, watermills, pastures, fields and forests dotted the landscape around the town of Copenhagen and the surrounding villages and connected the individual units in a network of exchange and services.

As the main port in the network Copenhagen grew in importance and wealth and it became necessary to fortify it against the internal and external enemies of the feudal state. However the town never expanded beyond its initial medieval fortification line and it retained its physical size up until the Renaissance. The slow expansion of Copenhagen has two explanations. *Firstly* the town from the start had a much larger fortification than what was needed. The local geography meant that the fortification had to stretch over a wide area that also included the high ground around Kultorvet to the west. This resulted in a fairly large enclosed area in which the city could expand. *Secondly* the town was governed by the Bishop in Roskilde until 1417, the successive Bishops had no particular interest in solidifying institutions or power in the city, and the nobility had been banned from settling or owning property in the town. It was probably a bleak place with a small merchant class, thriving on fish trade and living under strict religious regulations, but with a high taxation value for the Bishops. It was not until it was handed over to King Eric of Pomerania, that Copenhagen became the capital of the Kalmar union and later Denmark/Norway. This was the beginning of an increasing accelerating of the numbers of inhabitants and a territorial expansion of the town that goes on to this day.

16 of the stations for the new metro city ring are placed outside the medieval town, in the rural landscape that surrounded medieval Copenhagen (fig. 32). The first written source that mentions the surrounding villages comes from Pope Urban III, in a letter dated to the 21 of October 1186 in it he enshrines a gift to archbishop Absalon that includes the citadel and the town "Hafn" this also includes the villages of; Utterslev, Serridslev, Solbjerg, Vanløse, Vigerslev, Valby, Brønshøj, Emdrup, Gjentoftegaard, Mørkhøj, Bagsværd, Virum, Høsterkjøb, Rødovre, Burgby (On Amager) and Nærum. Other earlier and later medieval sources mention Brønshøjholm, Husum, Nyby, Sundbyvester and Sundbyøster. Some of these villages have disappeared from the modern map,

others have been swallowed by the expansion of Copenhagen and have lost their status as separate villages, but still remains as place names.

Three of these villages were in proximity to the excavations and could potentially have been located as their exact location is unknown, these three were Solbjerg, Nyby and Serridslev. A book on the subject of the property of the Archbishop of Roskilde from 1370 states that at that particular time the village of Serridslev, numbered 18 farms, Nyby consisted of 8 farms and some abandoned farms and Solbjerg had a total of 17 farms. Unfortunately none of these villages were located and their exact location is still unknown. The reason for this is that during the medieval period villages consisted of a close cluster of farms with the fields lying around them, it is not until the middle of the 18th century that the individual farms are moved out of the villages and placed on individual plots in the countryside. This would explain the absence of medieval finds during the excavations. As the likelihood of locating a small cluster of buildings from the medieval period in the countryside surrounding Copenhagen is diminutive, but not impossible with some luck.



Figur 32. The approximate location of medieval villages close to Copenhagen

Due to the processes described above, the areas that have been surveyed and described in this report are all void of medieval artefacts and structures. The excavated areas were not used for anything other than fields, pasture or simply left untouched, during the medieval period. In the likelihood of there once being any structures that were constructed at the locations it would have been temporary wooden structures that have not left any traces. The results of the surveys

therefore seem to support the popular narrative about the medieval landscape around Copenhagen being rural and agricultural in its characteristics.

The 17th –18th Centuries

The period from the reformation up until the establishment of absolutism in 1660 was a peaceful period for the town of Copenhagen, trade increased in volume and with it the navy and the merchant fleet. The harbour infrastructure expanded and the town grew towards Amager, with the construction of Christianshavn. The town also increased in size towards the north and a new fortification line was constructed that more than doubled the area of Copenhagen. A large citadel was also constructed to the north of the city.

Wars with foreign powers were fought inside their territories or at sea, leaving Copenhagen untouched by the many wars with the other Baltic powers. It even escaped the horrors of the 30 Years' War. When war did come to Copenhagen with the Swedish siege in 1658-59 and the loss of the eastern Danish provinces of Skåne, Halland and Blekinge, Copenhagen and its inhabitants now suddenly found themselves direct neighbours with the new major power in the Baltic, Sweden. From having enjoyed a relatively secure position in the middle of Denmark, Copenhagen was suddenly a town under permanent threat of attack. Consequently, the capital was heavily fortified during the following centuries and it was turned into a permanent military and naval encampment. One of the most important consequences brought about by the loss of the three eastern provinces was the establishment of the so called Absolutism, where the crown was inherited by the son of the monarch and ruled the country alone. Apart from many social and economic implications to this new way of governing a country, the introduction of absolutism allowed the successive monarchs exclusive power to implement grand building projects. This is seen in a large scale in Copenhagen.

Due to the nature of the obligations of the successive monarchs, as both divine rulers and protectors of the realms, money and resources were channelled into projects of personal glory or military and religious nature. The many royal castles outside the capital and the Marble Church (Frederikskirken) were some of these projects (fig. 33). Another important building project was the massive fortification system that was constructed and continuously being upgraded around the town.



Figure 33 The Marble Church

Militarism and Absolutism³

The excavation at Østerport touched upon and exposed the 1700's fortification around the capital. In the initial phase of the excavation at the site the Ravelin Bridge that connected the countryside with the capital was excavated; it was a massive structure, made of Norwegian granite, build during the Great Northern War (1700–1721). The moat which the bridge spanned over was completely empty of any waste from the town and revealed that a massive work effort was put into maintaining a clean and proper functioning moat, no vegetation was allowed to grow in the moat, and the massive moat structure that surrounded Copenhagen must have been cleaned every year. In all probability by the many soldiers that served in the standing army.

To the north of the bridge, beneath the massive redeposited earth that had formed one of the many bastions outside the moat, lay the remains of the eastern suburb that was burned down during the Swedish siege in 1658. The building remains were fragmented and consisted of foundation walls and paved surfaces. The few ceramic finds seem to support the theory that the buildings were covered with earth from a newly expanded moat sometimes before the 18th century. The buried suburbs from the period of Danish supremacy in the Baltic region serves as an example of the new siege mentality that for many years to come halted the expansion of the city at the expense of maintaining a massive fortification with a clear defence line (demarcation line), which meant that no permanent settlement was allowed at fire range from the city.

On the northern edge of the site, parts of the massive road that ran from eastern gate and out towards the north and west was found. A well-constructed canal for leading away and collecting water and refuse was recorded. The road bears the mark of the monarch's absolutistic power; it was expensive, massive, and served to facilitate the movement of the royal household to their royal estates and also to be used by the military. Ordinary Copenhageners would have had very little interest in or possibilities to invest so many resource's on a project of this size, especially not one that lay outside the areas of their everyday necessities and which they hardly ever used, as they lived and died inside the fortified town.

If one had followed the road, during this period, out of the eastern gate, one would have at some point ended up at the commons, a large grazing area that since the medieval period had been used by the inhabitants of Copenhagen for their livestock. During the excavation of this area for the new metro station at Trianglen, a wooden structure that shows remarkable similarities with contemporary drawings was found.

³ A form of government in which the monarch has absolute power among his or her people, an absolute monarch wields unrestricted political power over the sovereign state and its people

"The monarch shall from this day forth be revered and considered the most perfect and supreme person on the Earth by all his subjects, standing above all human laws and having no judge above his person, neither in spiritual nor temporal matters, except God alone" - Kongloven, 1665.

The structure has been dated to the 1760-1790 by dendrochronology and ceramic typology⁴ from the fill of the structure. The structure is conceivably a Breaking Wheel construction (fig. 34, 35), used by either the military judicial system or by the civilian judicial system. It was used for punishing criminals that had committed some severe crime like disobedience or slander against the monarch or members of the military. The punishment was widely used in the Central European armies and it is not unlikely that this particular structure was used by the military at the citadel, where many of the professional soldiers came from central Europe. Evidence of this being that the drill language in the army until 1772, was German. These structures were often located along side roads, so that the visual impact of the king's justice could be seen by travellers coming and going into town. The display of dead bodies of people who have been sentenced to death, may seem brutal by today's standards but at the time they served to remind people that justice was unconditional and that the state, in this case the king, could and would protect the law abiding citizens from crime.

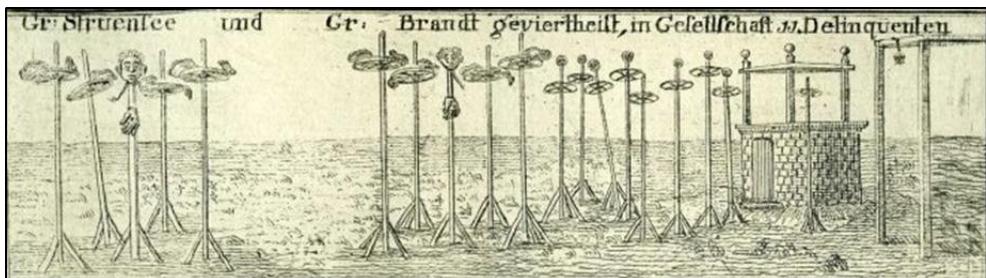


Figure 34 Contemporary depiction of breaking wheels outside Copenhagen, notice the grouping structure with 4 outer poles and a central pole to support the head.



Figure 35 The excavated wooden remains of one of the possible foundation for a Breaking Wheel

⁴ In archaeology typology is the classification of objects according to their physical characteristics. Certain types of ceramics only appear at a certain time. For example porcelain in Denmark only becomes common in the 18th century. Consequently a feature from the middle ages, and the fill, would not contain any broken porcelain. If it did it would not be from the middle ages and the archaeologist would have to reconsider the feature's chronological date.

The Commons

In the remote past, the East Commons stretched all the way to the coast, and Strandvejen then passed over the Commons. From the mid 1250s, we know that the Commons extended from Sortedamssøen to Rosbæk. While common land might have been owned collectively or by the crown, it was subject to different forms of regulated usage. Mostly, it was an area of uncultivated meadows where the city's inhabitants let their cattle graze.

The area was called Østerfælled and consisted of Blegdams fælled, Østerfælled and the pastures along the coast up to Gamle Vartov and Rosbæk bridge (fig. 36). In 1682 it was valued at 180 Høved. A Høved is an Old Danish term for one unit/or head, in this case one cow which equals six sheeps. You had to pay money to the magistrate for keeping your animals on the pasture. In total the towns pastures where valued at around 1000 animals. This number does not include animals that were in the private enclosures or animals that were kept in stock all year round.

Although the city of Copenhagen had appointed a field guard to protect the Commons, he could not prevent the military from gradually appropriating the area, and in 1679, the army held its first muster on the commons. In 1710, 15,000 soldiers held military exercises for four weeks on the Commons. The field guard afterwards complained about the many holes that had been dug by the troops, "some necessary and many unnecessary". In 1716, Tsar Peter the Great's Russian army of 30,000 men camped on the Commons along with 23,000 Danish soldiers. The damage to the Commons after the Russians' visit was enormous and it took 160 soldiers eight days in 1719 to repair the damages. Also in 1753 and 1755 there were large military units camping on the Commons.

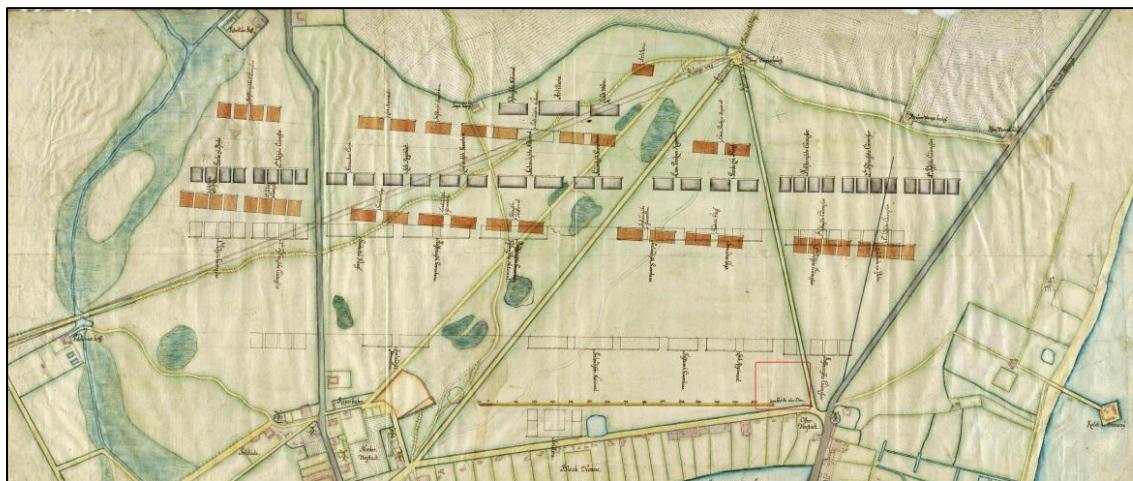


Figure 366 Østerfælled, around 1750. The coloured hand drawn map shows the position of the different regiments for the yearly army inspection., unknown artist.

People used to dump dead livestock on the Commons where the carcasses would gradually build up. Carcasses were removed during large-scale clean-ups in both 1715 and 1778. Horse races were held on the Commons in 1770–72, probably spurred by the famous political leader Johann Friedrich Struensee, who had great interest in equestrian sport. A scaffold was built at

Østerfælled in 1772 for the execution of the Counts Brandt and Struense. After the great fire in 1795, the Commons were used as a tent camp for the homeless.

While the Commons belonged to the municipality, the military had gradually taken control of the area. While the cattle grazed on the Commons in the summer, the soil had become so depressed by the soldiers' boots that the grass withered away. Other activities also took their toll on the grass. A growing interest in equestrian sports at the beginning of 1800s once again prompted the organization of horse races on the Commons from 1833–36 and in 1843–47. In 1847 there was almost only moss left, prompting Head Gardener Rothe to make the suggestion that the military use less space, but the Ministry promptly replied that it could not spare an inch of the land. However, in 1857, the police had to take care of the cattle. Police Director Bræstrup wrote to the magistrate that the cattle were starving because of persistent drought. At this time, roughly 1,100 heads of cattle were grazing on the Commons.

Horses and livestock roamed freely on the Commons until about 1906–07 and the large area was enclosed with a wooden fence, which had only a few entrances. At the corner towards Vibenshus Runddel, there was a simple wooden gate guarded by a crippled gatekeeper. He also looked after a kiosk close to the entrance.



Figure 77 An array of objects that can be found at the commons, toy horses, pipes, ceramics, coins, silverspoons, prehistoric flint, decorations for buildings.

A debate on what to do with the Commons erupted during the 1880s. Should the area be developed for buildings, or should the citizens be given access to the green space? In the late

1800s, the Commons were a favourite place for neighbourhood children during the summer months. Drunkards, delinquents, and other suspect characters from the surrounding districts frequented the Commons. The “Lersø Gang” was notorious. At the same time, local farmers grazed their cattle in the area and the military used it for grazing of horses, exercises and drills. Actual ownership was therefore a matter for debate.

During the archaeological pre-investigation at Vibenshus Runddel, a number of disturbances were observed below the topsoil in many of the evaluation trenches. Several of the features appeared to be aligned north-northeast to south-southwest but there was no uniform pattern. Some of the features were of similar size, shape, profile and composition of fills and are best described as vertically cut, flat-bottomed, sub-rectangular pits. Excavation did not produce any conclusive evidence to indicate their function, but considering the tradition of 17th- and 18th-century military encampments in Fælledparken, it is very likely that the sub-rectangular features represent temporary, military entrenchments. Unfortunately, the pits did not contain artefacts of any kind and they are therefore undated.

An unexpected and quite unusual find in an archaeological context was several plastic-wrapped packages, buried at a shallow depth in the topsoil. The packages contained a variety of personal items, children’s magazines, household goods and foodstuff (including several bags of flour). Judging from the dates on magazines included in the packages, the hoard was likely buried in the early 1970s. The character of the items as well as the packaging could suggest that it was the hoard of a homeless person. While the find itself has no value to archaeological research, it demonstrates with clarity the significance to many individuals of green spaces in built-up areas. In that sense, this curious find falls in line with the diverse, extraordinary activities that have taken place on the Commons throughout the centuries.

The bourgeoisie and emerging urbanization

Until the latter part of the 19th century, Denmark was above all a nation of farmers, and 80% of the population lived in the countryside. While Copenhagen was by far the largest city in the kingdom, it was smaller than many other European capitals. The restricted amount of space available in the city was strictly confined by the defence work surrounding it, but also by the destruction of the urban fabric in the Fire of Copenhagen in 1795 and the English bombardment in 1807. Also for the increasingly significant urban bourgeoisie, life in Copenhagen was marked by the limited number of dwellings available. This resulted in a series of movements away from the city to the countryside as Copenhagen was gradually reconstructed.

The demarcation line (mentioned earlier) had for a long period denoted a building restriction line for an area around the city, where the landowners only under specific conditions were permitted to construct buildings. The position of the line was dependent on the range of the guns. In order to prevent invaders to be able to hide in buildings and fire towards the city, or to set fire to buildings close to the city, no buildings were allowed at a certain range from the city border. Despite the existence of the demarcation line, from the end of the 1700s and into the first half of the 1800s, wealthy Copenhagen citizens had acquired large areas of land outside the city’s

fortifications and built country houses and recreational farms. Regardless of the country's absolutist rule, it is the values and styles of Copenhagen's bourgeoisie that characterised the decades from 1800 onwards. Country houses were often owned by individuals who also kept a town house or flat. This allowed them to spend time in the countryside as well as in the city. The villa phenomenon was particularly widespread on Inner Østerbro and on Frederiksberg.

Frederiksberg Allé had been the dominant feature in the latter area for a long period. Completed in 1704, Frederiksberg Allé was constructed with two double rows of lime trees to provide the king with a private road between Vesterbrogade, the main road out of Copenhagen's Western City Gate, and his new hill top summer palace with its extensive adjoining gardens. The new avenue was known as the *king's new road* as opposed to the *king's old road*, Gammel Kongevej. In 1736, the avenue was extended to Værnedamsvej. Because it was initially reserved for the nobility it was not settled with farms, inns, mills or small factories.

Development of the avenue began in 1765, when 29 lots of land were offered for sale. Gradually, villas with extensive gardens were constructed along the north side of the avenue while a significant portion of the undeveloped land to the south side was laid out as horticultural gardens, which produced vegetables and flowers for the growing population of Copenhagen and Frederiksberg. Here, local gardeners had room to expand their plant nurseries and develop their horticultural operations. The gardeners had small stalls by the roadside from where they sold flowers.



Figure 38 The property Sans Souci on Frederiksberg Allé across the road from the excavated plot. The house was demolished in the beginning of the 1890s. Note the moat-like ditch and the ornamental, outward slanting fence. Painted by Fattig-Holm in 1853. Copenhagen

The archaeological investigations in connection to the construction of the station-box on Frederiksberg Allé revealed shallow refuse pits containing domestic waste from the 1800's. Such material likely derived from the villas across the road, and they provide an interesting insight into household items from a different social and economic context than those encountered in excavations in the city. Several brick-built wells and drainage systems with remains of plant pots are probable remains of gardener Hintze's commercial activities who bought a wide strip of the original Engtofte in 1830. He died in 1859 and the land was taken over by his son, C.F. Hintze, who continued the nursery. One drainage ditch contained sherds of a range of stoneware storage jars and jugs from Cologne/Frechen, Westerwald, Raeren and the Rhine area.



Figure 39 Left: Sherds of a large, imported dish or plate decorated with band shaped lilac transfer print. Made by Turner and Tomkinson of Victoria Works in Tunstall in 1861. Above: an example of an intact set.

When the city decided to abandon the demarcation line in 1852, which had previously kept the city within very limited geographical limits, a building boom took place. The new neighbourhoods consisted still mainly of villas and larger detached houses in the villa style of 2-3 floors, but towards the end of the period most villas were demolished and replaced by residential apartment blocks, hospital buildings, foundations as well as individual factories.

The emerging industrialism and recovery in other industries in Copenhagen was one of the motors behind the population growth and urbanisation that characterised Frederiksberg in the second half of the 1800s. Frederiksberg also experienced a nascent modernity with respect to public attractions, although this happened on a rather small scale. The entertainment industry benefited from population growth in the capital and soda shops, bars as well as entertainment venues started appearing in Frederiksberg Allé.

The Modern Period

Land fill and land development along the coast

Since the earliest settlement, Copenhagen had grown gradually, partly seen in a continuous deposition of landfill material. During the millennia, the initial settlement grew into a town and the town became a city. The city in particular grew out of an expansion of the harbour along the coast and by landfilling former wet areas with waste building debris and sediments.

Since the eighteenth century, deposition of landfill on the shore has raised ground levels to those of the surrounding natural land. After the great fires in 1728 and 1795 and the bombardment of Copenhagen in 1807, large quantities of gravel and bricks from destroyed neighbourhoods were unloaded on the beach south of the ropewalks at Kalvebod Strand. In that way, the reclamation of land had started.

In 1852, the ban on construction outside the ramparts was repealed, and in 1856 the demolition of the ramparts themselves began. The areas around the city functioned as commons and here were also the city's landfills. As new buildings began to spread out over the surrounding landscape, the waste was pushed further ahead. Landfills expanded parallel to the growing city in its periphery, at first to the east coast of Amager and to Valby Common. Later, also the west coast of Amager was used.

After about 1860, approximately 3.25 km² of the shallow Kalvebod coast between the ramparts and Enghavevej was filled in and levelled in several stages. The waters around Copenhagen are shallow with a natural water depth of no more than 2-3 meters. Clay and gravel from the harbour basins, which were deepened at this point in time, were used as parts of the fills in connection with the land reclamation. Other sediment was mined from the new railroad cut that extended the line through the western part of the city. Extending the coast of the Kalvebod nearly 500 m required raising the level of the former coastal plane. Much of the natural terrain to the west in the blocks between Tietgensgade and Vesterbrogade was buried under as much as two meters of fill during this period to complete the grade from the new coastline. By 1879, the long wharf "Tømmerpladsen" had been dismantled and the shore extended with fills to form a three-sided harbour called the Tømmergrav. By the turn of the century, this harbor had been filled in completely and at present day it forms the blocks between Tietgensgade and the Kalvebod Brygge.

The 1890s saw the continued extension of comprehensive landfilling onto the marine foreland. In the south, Kalvebod Brygge was between 1894 and 1896 landfilled with earth, stone and gravel, ahead of the construction of the freight track area. Waste disposal areas were moved to low-lying coastal areas and created landfills in Kongens Enghave and Valby. On the former West Common that stretched east of Enghavevej a massive landfill of mainly municipal waste existed. Between 1880 - 1908 it made up a 250m broad corridor along Enghavevej from Ingerslevsgade to Teglværkshavn.

Evidence of massive landfills were encountered at the sites Hovedbanegården, Sønder Boulevard and Enghave Plads. At Sønder Boulevard, the whole sequence of levelling layers was deposited prior to the construction of Vestbanen in 1847. The time bracket for the artefactual evidence is 1750-1850 but the levelling layers themselves should probably be dated slightly more accurately to the period 1807-1847. It is hardly surprising that some artefacts date back to the last half of the 1700s since some valuable household objects may have been used during a long time span. Examples are some objects of porcelain, which show signs of repair. A two-shilling coin from 1815 indicates that there could have been several deposition episodes during the four decades between the clean up after the English bombardment after 1807 and the construction of the railway. This fits well with the division of the deposit in two major horizons.

The layer was generally not very rich in artefacts, but contained red burned pottery, earthenware, Industrial Ware, porcelain, stoneware, clay pipe fragments, glass, and a few bone artefacts and animal bones. The lower part of the layer was dominated by demolition material consisting of brick fragments, dissolved mortar and roof tiles. Only a few artefacts were collected from this lower part. It was possibly demolition waste from the buildings that were destroyed during the English bombardment of Copenhagen in 1807.

The household waste and demolition debris mainly date to the 18th and the 19th centuries. Due to its mixed contents it seems to be related to different periods of large-scale city development, from the aftermath of the great fires in the 18th century, to the bombardment in 1807 and the later 19th century massive urbanisation of Vesterbro.

Municipal institutions

By the beginning of the 20th century, Copenhagen had become a thriving industrial and administrative city. With the introduction of the Constitution in 1849, the municipal autonomy in defining its own tasks was stipulated by law. A number of magistrate departments under the municipality dealt with relevant issues such as urban growth, transportation and sanitation.

In 1916, Copenhagen established its own Municipality Vehicle Unit (Københavns Kommunes Kørselsafdeling) immediately north of the current Poul Henningsens Plads. The unit was established under the Directorate of Roads and Sewers under the Magistrates 4th Department. From 1 October 1917, the unit became an independent institution under the Magistrates 5th Department and it became responsible for collecting and transporting domestic waste in parts of the city, while the rest was outsourced to private carriers. The vehicle unit expanded rapidly, took over two more haulage businesses, and employed c 100 private carriers. A strike in 1923 among the municipal workers resulted in the private carriers once more taking over garbage collecting in the capital.

At the left side of Jagtvej were previously several villas with stables, garages and smithies. The smithies produced tackle for horses of the Tram Company and Eastern Gasworks (Østre Gasværk) and the stables were occupied by the horses themselves. From the second half of the 1800's until 1916, the property was owned by haulage contractor Henry Meier until the municipality took over

his business. Contemporary plan drawings show the original villas from the mid-1800's situated along Jagtvej. Behind the villas were stables, vehicle-sheds, smithies and administrative buildings distributed around irregular courtyards. A wide variety of activities would have taken place here, including shoeing and grooming of horses, asphalting and cleaning of barrels and repair work.



Figure 40 Haulage contractor Henry Meier's property before it was acquired by the municipality.

Remains of these utility buildings, barns and storage garages were found during the archaeological excavation for the metro station at Poul Henningsens Plads. It turned out that wall foundations, floors, wells and drainage features had been preserved below the modern parking lot along Reersøgade. Most of the foundations were made from crushed brick mortar, which became common as structural masonry bedding in the Danish building industry from the 1850's onwards.

A long building along the later Reersøgade was divided into a northern part that housed stalls for the horses, and a southern part that was a garage for automobiles. Remaining sections of the foundation wall show that the building was 9.65 meters wide and at least 42.5 meter long. The floor area in the southern part would have measured 200 m². It included a small separate room in which a section of the original mortared floor was preserved. The floor featured a possible oil drain, which was covered with a perfectly preserved wooden lid. The building was probably open towards the courtyard, which explains why only one wall was present. Other preserved foundations at the site can reasonably be associated with a small smithy and a spare bracket room that extended slightly into the compound's courtyard.

Paradoxically, almost none of the 836 finds from the excavation can specifically be related to the activities of the Vehicle Unit. Instead, they can be identified as discarded household objects from the adjacent early villas during the second half of the 1800's. A dump deposit of limited extent

consisted of a densely packed accumulation of household debris, particularly fragmented ceramic material.

Haulage of waste continued to be organized by the City of Copenhagen until 1960 when the task was privatized and transferred to Copenhagen Landowner's Sanitation Company. The Vehicle Unit's buildings on the compound were demolished in 1959 in connection to the construction of the apartment block "Øbrohus".

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