# DATING AND KNOWLEDGE POTENTIAL OF SECULAR STONE BUILDINGS IN MEDIEVAL OSLO

**EGIL LINDHART BAUER**
NORWEGIAN INSTITUTE FOR CULTURAL HERITAGE RESEARCH, OSLO

## ABSTRACT

Archaeological constructions and deposits predating 1537 in Norway lack legal protection, leading to insufficient documentation and loss of historical information. This issue particularly affects secular stone buildings, which have often been misdated to the post-medieval period. This study reassesses the dating of previously excavated stone buildings in the Old Town of Oslo, stating that many are indeed medieval and constructed from the late 13th century onwards. This research sheds light on medieval Oslo's townscape, correcting misconceptions and emphasizing the significance of these structures. The findings contribute to a more accurate understanding of Oslo's architectural history and facilitate heritage management by suggesting where stone buildings might be found in the future.

**Communication: Egil Lindhart Bauer E-mail: egil.bauer@niku.no**
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## Introduction

Currently, archaeological constructions and deposits from after 1537 lack protection under Norwegian cultural heritage law.[1] This means that such features are excavated with minimal documentation, leading to a loss of information.[2] This has been a particular problem surrounding secular stone buildings, as many of these buildings have for a long time been mistakenly dated to the post-medieval period. Only a handful of articles are written on Oslo's secular stone buildings (Schia, 1988; Ekroll, 1991a), and these buildings' low priority may even have created an erroneous image of Oslo's townscape (Ekroll, 2015a, p. 263). Recent investigations in the Old Town of Oslo have shown that many of the secular stone buildings are indeed medieval.

My aim with this article is threefold: First, I will reassess the dating of the stone buildings in medieval Oslo, arguing that many of them were constructed during the medieval period, particularly from the late 13th century onwards. The reassessment includes a brief discussion of dating methods for stone buildings. Secondly, I will show how the buildings with revised dating lie in certain parts of the town, affecting the townscape. This makes it possible to predict where stone buildings could be discovered in the future, which will be invaluable for planning archaeological investigations related to future urban development. Finally, an increase in the number of medieval stone buildings identified within the medieval town calls for new discussions of urban secular stone architecture, and I will suggest questions for further research on this topic.

The medieval part of Oslo lies in the district called Gamlebyen (literally "the Old Town"). Oslo was established around the beginning of the 11th century and lay in the same location until 1624, when a fire led to the town being abandoned and the population being unwillingly moved to a new town called Christiania, established on the opposite side of the Bjørvika inlet (Figure 2).

Following the Reformation in 1537, most of Oslo's medieval churches were torn down, and the stones were used for foundations, cellars, and chimneys in secular buildings (Ekroll, 1991a, p. 78), and for expansion of Akershus fortress (Schia, 1988, pp. 109–110). This readily available stone material is one of the main reasons that, until recently, it was assumed that most stone buildings excavated in medieval Oslo were built from the remnants of demolished churches after 1537. While medieval Oslo undoubtedly was a primarily timber-built town, recent archaeological excavations have shown that stone buildings were prominent in parts of the medieval townscape (Bauer and Engen, 2024; Berge et al., in prep.; Der-

*[1] The 1537 protection date was established in the law of 1978. Work on a new cultural environment (sic) law is ongoing, with the new law possibly being effectuated in 2027. 1650 and 1850 has been suggested as the protection date in the new law (NOU 2025: 3).*

*[2] See McLees, 2019 for an extensive discussion of this topic.*

rick, 2018; Edman, Hegdal and Haavik, in prep., Haavik and Hegdal, 2020; Stige and Bauer, 2018).

### Definitions

In this article, a stone building is defined as a building with at least one storey made of stone, regardless of whether this was a partially dug-down cellar, a ground floor underneath a timber building (often also called "cellar"), or a building with several stone-built storeys.

Several medieval cellars are known from Norway's countryside (see for instance Bauer, 2018; Bendixen, 1891; Gjesvold, 1999; Pedersen and Sæther, 1995), where timber buildings on stone cellars was a common construction method (Berg, 1995, pp. 176–177; Ekroll, 1997; Lidén, 1974, p. 11). Similar buildings must have been built in towns, although were perhaps not very common (Koren-Wiberg, 1921, pp. 79, 87). Archaeologically, it is difficult to discern whether a stone cellar supported storeys of stone or timber, hence my decision to include cellars – which usually is the only part of a building that is preserved and excavated.

The ground plan of a building provides information about the rest of the building. In their article on the profane building environment by Ringsaker church and Hamar diocese, Meyer and Moberg (2021, pp. 68–69) argue that the ground plan

*Figure 1. The partially dug-down cellar in stone building 29 (see Figure 4), excavated in 2017–18 directly south of the medieval Bispeallmenningen / Bishop's Street. The building was constructed around AD 1300. Parts of the building were excavated in 1953 and was then mistakenly dated to the 16th century. Facing east. Photo: NIKU. CC BY-SA.*

indicates whether there was a second storey above the stone cellar. Specifically, they see a pattern in which buildings with an antechamber / staircase room and opening into a main room commonly had more than one stone storey. Wall thickness can also indicate more stone storeys. However, in most cases, archaeological remains provide too little information to reconstruct a building's complete appearance.

With a stone vault, the cellars were considered fire-safe, as opposed to building with wooden beams supporting the floor above the cellar (Koren-Wiberg, 1921, p. 78). This made them important for storing goods. Apart from emphasizing that cellars primarily served as storage rooms, I will not go into the function of each stone building. Kolstadløkken (1999, pp. 166–169) discusses differences and similarities between stone cellars and stone buildings, which she argues could be significant. Certain stone buildings could for instance function as venue for town council meetings (DN, vol. 3, no. 138; vol. 1, no. 216) or as wine cellars, as in Bergen (Grieg, 1933, p. 38).

**Material**

Stone buildings in medieval Oslo are known from both archaeological excavations and written sources. I will present the archaeological material first. I will also address source critical issues for both types of material.

Archaeological material

The Norwegian Institute for Cultural Heritage Research (NIKU) has carried out large-scale urban excavations relating to development covering major parts of medieval Oslo. During the last twelve years, remains of 17 stone constructions have been investigated, ten of which had already been located, but only partially excavated (Figure 1). In total, the remains of 99 stone buildings or other types of stone constructions have so far been documented within the boundary of the medieval town (Figure 2 and 4).[3] Not counting the royal and episcopal manors, monasteries, and churches, the number is 89.[4] Excluding the constructions that cannot be confirmed as stone buildings, there are 81. Most of these were earlier interpreted as being constructed and in use in the period 1537–1624.

The earliest archaeological investigations in Oslo focused on the monumental royal and ecclesiastical architecture: churches, monasteries, and the episcopal and royal residences (Fischer, 1917; Fischer, 1935; Fischer, 1937; Fischer, 1951; Nicolaysen, 1866; Nicolaysen, 1891; Nicolaysen, 1862–1866). This work was led by architects primarily interested in stone architecture of high-quality craftsmanship; secular dwellings were not considered equally interesting. Stone and timber buildings were removed with limited documentation (Blix,

*[3] Note that some of these include separate walls that are not necessarily part of the same building. The total number of buildings could thus potentially be somewhat higher.*

*[4] The Cistercian monastery at Hovedøya lies outside the town, and the church and hospital dedicated to St Laurent have been located based on graves and descriptions in written sources.*

1879; Enger, 1954). There is also a lack of collected datable artefacts and stratigraphic information relating to the late 19th / early 20th century excavations of the town's secular buildings (Molaug, 2008, p. 74). The limited documentation is often confined to unpublished diaries (for an account of the Gerhard Fischer diaries, see Hommedal, 1990) or as plan drawings lacking clear stratigraphical information. Sketches, such as the ones made by Johan Meyer in the late 19th century, contain a great deal of useful information, but is challenging to use, with buildings overlapping one another, making the stratigraphy difficult to distinguish (Fischer, 1950, p. 62).

Sometimes even thorough documentation is not enough, as constructions can be almost completely removed, thus leaving insufficient remains for secure archaeological interpretation. In other cases, only a small part of a building is exposed, thus making it impossible to determine the type of building, its full extent, or its structural context – and its dating. Even some newly excavated buildings, like building 67, is exposed in such a limited degree that little can be said about its function (Alvestad, Derrick and Oldham, 2025).

Prior to NIKU's investigations, no stone buildings were dated using C14 dating or dendrochronology. The dating of these earlier excavated buildings relied heavily on typology and relative dating techniques – or they were not dated at all. With just a few exceptions, stone buildings in recent excavations have consistently been dated to the period from the late 13th to early 15th century, using C14, dendrochronology, or optically stimulated luminescence dating (Bauer and Stige, 2018, p. 71).

Whereas the undated buildings in Oslo were earlier assumed to be post-medieval, I suggest that most of them are in fact from the medieval period. This fits the assumption for Bergen that stone construction for regular townspeople started in the first half of the 13th century (Koren-Wiberg, 1921, p. 79).

### Written sources

The Norwegian diploma material (Diplomatarium Norvegicum) provides valuable information on Oslo's secular dwellings (Bull, 1922; Fischer, 1950; Grieg, 1933), listing approximately 70 urban tenement plots by name. These documents are crucial for understanding the prevalence of stone buildings in the medieval town. Twelve tenement plots are explicitly mentioned as having stone buildings or cellars. While three appear in 15th-century diplomas, the rest are recorded in the 14th century. In total, 16 stone buildings are directly or indirectly referenced on these plots. Including Turnen (The


*Figure 2. Map showing important features in medieval Oslo. Timber constructions are shown in dark brown, while stone constructions are shown in grey. The royal, episcopal and monastical complexes are shown in black, with completion of the walls where such were lacking. Map key: 1 = St Mary's Church; 2 = The royal manor; 3 = St Nicolay's Church; 4 = St Clement's Church (southern parish church); 5 = The Franciscan Monastery; 6 = St Hallvard's Cathedral; 7 = The bishop's manor; 8 = St Olav's Monastery (Dominican); 9 = Church of the Holy Cross (northern parish church); 10 = St Laurence Church with hospital; 11 = Nonneseter cloister (Bendictine nunnery); 12 = Western Street / Vestre strete; 13 = Eastern Street / Østre Strete; 14 = Northern Street / Nordre strete; 15 = Bishop's Street / Bispeallmenningen; 16 = Clement's Street / Klemensallmenningen; 17 = Goat Bridge / Geitabru. The arial photo shows the medieval town's location within present-day Oslo. After the fire in 1624 destroyed Oslo, Christiania was established next to Akershus fortress on headland visible in the middle of the photo. Map: Bauer et al. (2024), with additions by Egil Lindhart Bauer, NIKU. Arial photo: Norge i bilder, Oslo Municipality 2019, owner: Oslo Municipality.*

Tower), which is assumed to have had a stone building, the number rises to 17 (Bauer and Stige, 2018, p. 79). Of particular note is Brandgård, which must have been substantial, as it featured a three-storey stone building (Bandlien and Norseng, 2024, p. 261).

These buildings are documented between 1323 (1310, if Turnen is included) and 1477. However, the dates in the diplomas represent terminus ante quem, meaning that the buildings already existed by the year they are mentioned and may have stood for generations prior.

Very few stone buildings from named tenement plots can be directly linked to excavated structures. Notable exceptions include Saxegården and probably Belgen. Since the names themselves are not directly identifiable in the archaeological record, it is impossible to definitively match them to excavated buildings or the medieval townscape, despite attempts to do so (Bauer, 2020, p. 258; Løberg, 1956; Løberg, 1957; Stige and Bauer, 2018, p. 93).

Basing the number and dating of stone buildings solely on written sources is speculative (Ekroll, 2015b). These sources must be used critically, and one must avoid uncritical repetition of earlier interpretations (cf. Herteig, 1991; Koren-Wiberg, 1921). Additionally, the number of documented stone buildings is uncertain, as most diplomas are lost (Bull, 1922, pp. 170–171). Some stone buildings may have existed without being explicitly identified as such in the records, and many more likely remain undiscovered.

It is conceivable that all tenement plots in town had stone cellars for storage (Ekroll, 1991a, p. 84), a scenario that likely applied to other cities such as Bergen (Ekroll, 2015b, p. 144).

Kolstadløkken's review of cellars in Bergen, Oslo, and Tønsberg even suggests that two-thirds of tenement plots with a cellar had more than one. She concludes that most households had access to a cellar for storage (Kolstadløkken, 1999, p. 173).

**Methods**

In addition to the newly located buildings, I have reassessed the dating of all previously excavated stone buildings. Øystein Ekroll (1991b) reviewed excavated stone constructions in his work Renessansebyen Oslo. I have considered his assessment of each construction and referred to original documentation where this has been available. I have approached each construction with a diametrically different hypothesis than the title of Ekroll's work indicates. While he sought to find out how the town looked after the Reformation (the paradigm

in the 1990s being that most secular stone buildings were post-medieval), I have approached the material considering all the stone buildings as medieval unless there is convincing evidence that they are younger. Some, for instance, are located within medieval cemeteries (Schia, 1988, p. 112) or blocking medieval streets (Ekroll, 1991a, p. 82). These I have excluded from my discussion (Figure 3).

All the buildings referred to in this article are numbered according to Ekroll's (1991b) review, but with several newly excavated buildings added to the sequence. I have also added earlier excavated constructions that Ekroll did not include, most notably two cellars under buildings situated along the assumed northern boundary of the bishop's property. In the sequence, I have also included the buildings already acknowledged as medieval and thus not relevant in Ekroll's review of the renaissance town.

In many cases, reliably reassessing the date of a stone building is impossible due to the absence or incompleteness of original documentation. When available, dating criteria include the building's stratigraphic position, C14 or dendrochronological dating of wooden wall foundations or other wooden features, C14 dating of lime mortar, OSL dating of bricks, typological analysis of masonry, identification of stone types (e.g., from specific quarries), number of floor

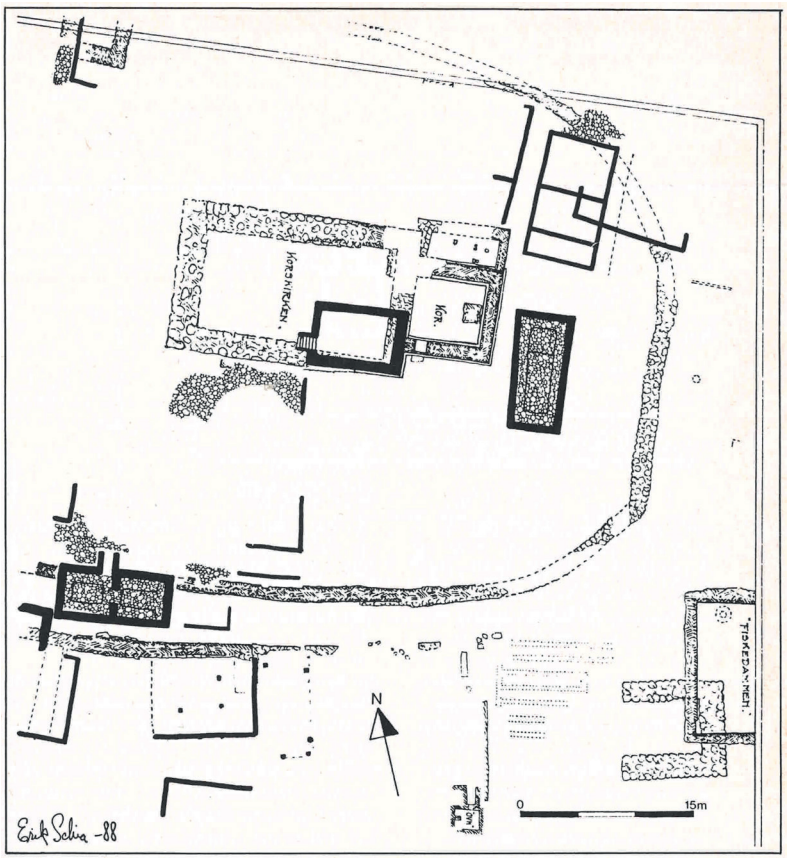


*Figure 3. Examples of clearly post-medieval stone buildings: one inside a church ruin, one in the cemetery directly east of the chancel, and one in the middle of an earlier street. Drawing: Erik Schia (1988, p. 113). Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).*

layers, the building's physical layout, fire deposits inside or outside the structure, orientation relative to medieval or later structures, topography and ground conditions. The different criteria have various weaknesses. Typological dating of artifacts found in the building's context cannot be used for assessing its construction date (e.g. Enger, 1954), as the artefacts' deposition can be hundreds of years later than the construction of the building. During the large-scale excavations in Oslo in the 1970's and 80's, typological dating was the main method used for placing the stone buildings in the late 16th and early 17th century (Schia, 1987a, p. 65). As noted above, some stone buildings are mentioned in written sources; however, since these references rarely correlate directly with excavated structures, they are useful for dating only in rare cases.

Interpretations made in earlier excavations generally focused on the buildings' latest history. The buildings were connected to younger phases rather than the phases in which the buildings might have been constructed. In these earlier excavations, absolute dating methods were not used. Frequent use of dendrochronology, C14, and to some extent OSL dating, in recent excavations have given better opportunities for precise dating.

Stratigraphic interpretation of stone buildings can be difficult due to their often-long history. There can be long sequences of deposits both outside and inside of the buildings, helping with the interpretation, but often these deposits are removed due to changes in use inside or changes in the plot outside, for instance after a fire destroyed timber buildings on the plot but leaving the stone building intact. A critical interpretation of deposits around a stone building is needed, specifically distinguishing between deposits cut by the building's construction and deposits accumulated around the standing building. Deposits in contact with the walls are always younger than the building, and if a stone cellar has a transition from a rubble back wall to smooth wall surface, it demonstrates where the ground surface was at the time of construction.

Depth below the present-day ground surface has in some cases been used as a dating method, but it is not reliable, since later activity may have altered the depth significantly. In several areas of the medieval town, there are no remains from the 15–17th centuries. Instead, deposits from the 14th century lie directly below modern infilling. This could be due to larger undertakings in the 17th century to level out areas, for instance after the fire of 1624 and the transition from town to arable land.


*Figure 4. Map showing all documented stone buildings in old Oslo. While the exact date of many cannot be ascertained, only the ones drawn in black can be reliable dated to the post-medieval period. Thus, all the grey buildings could conceivable be medieval. Some of the remains are so limited that they are hardly visible next to the building number. Map: NIKU. CC BY-SA.*

The presence of cobble stone floors or small yellow bricks have often been used to argue that a building has a post-medieval date. However, it has rarely been considered that buildings may have several phases of floor. It is very unlikely that multiple floor layers accumulated over the period of less than a hundred years, between the Reformation and the fire of 1624. Moreover, recent excavations in Oslo have shown that stone cellars with cobble stone floors were constructed around 1300, thus excluding this as a tell-tale sign of a post-medieval date. Yellow bricks were introduced in the 16th century, but these can be a later addition to an older building.

All these factors illustrate challenges when trying to date stone buildings, as they were durable constructions, commonly in use for several centuries – and changes were continuously made to the buildings themselves or their use.

**Reassessing specific buildings**

As mentioned, many secular stone buildings were found in earlier excavations and most of these were assumed to have a post-medieval date. Even if documentation in many cases is limited, I argue that with a more critical approach, as many as 69 buildings could be medieval. I have here selected a few buildings to exemplify this. The building numbers are shown in Figure 4.

The excavation of building 28 in 2015 marked the start of the new paradigm. The building was first discovered in 1954 and interpreted as post-medieval (Enger, 1954). It was not until the wooden pile foundations underneath the cellar walls were radiocarbon dated that it was realized that the building was constructed around 1300 (Edman, Hegdal and Haavik, in prep.). When two additional stone buildings (59 and 64) from excavations in 2015 yielded medieval dating, the approach to such constructions fundamentally changed: it was clear that the assumption that they were post-medieval was false.

It came as no surprise, then, when building 29, immediately north of building 28 was re-dated to around 1300 (Berge et al., in prep.), after first having been assumed to be post-medieval in the 1954 excavation. Building 29 (see Figure 1) was well-preserved, with two cellar rooms with separate doorways, wooden floors, and plant, insect, and faunal remains testifying to its use throughout the high and late medieval period (Bauer and Engen, 2024, pp. 206–207; Berge et al., in prep.). The two doorways could suggest shared use by separate households.

Building 26, further east, is another building likely from the same time. It has not been completely excavated; thus, it is still possible to find datable material below the walls. It has been assumed to be post-medieval, but stratigraphically it could be medieval. In fact, its size and layout, which corresponds to building 29, indicate a similar dating. It furthermore adheres to the orientation of the medieval plots. Below the eastern room were deposits from the 12th century (Molaug, in prep.), but this does not say anything about the building's age.

Together, buildings 28, 29, and 64 make up a concentration of stone buildings south of the bishop's manor – a likely high-status area (Bauer and Engen, 2024, pp. 203–207). If building 26 is included, the area is even larger. However, we do not know if there are other stone buildings between building 26 and the others to the west.

Building 15 is another building like 26 and 29, with two rooms with separate doorways. The building had several

post-medieval floor layers but was still interpreted as from the high or late medieval period (Ekroll, 1991b, p. 15). This makes sense considering the buildings assumed relation to the shoemakers' area in the northern part of town, towards which the excavated doorways face. A building's physical layout is not the best dating indicator, as stone cellars were similar for centuries, but being almost identical to buildings 29 and 36, the medieval dating is likely.

The previous age assessment of building 36, south of Bispeallmenningen, exemplifies the old paradigm: It was argued that since the buildings further east that lay next to Bispeallmenningen (e.g. 28 and 29) were assumed to be post-medieval, 36 was as well (Ekroll, 1991b, p. 22). Now that the buildings further east are reliably dated to the high medieval period, this problematic circular reasoning becomes obvious. Still, the location of building 36 so far west could indicate a later date. The same may go for buildings 34, 35, and 79. These may date from a time when land elevation had made the area suitable for construction. Thus, they could be younger, but it cannot be ruled out that ground conditions here became suitable earlier than further south due to the curve in the shoreline, combined with land reclamation, and possibly sediments carried with the river Akerselva, which had its outflow in the area. Hence, I have included them all as possible medieval stone buildings.

*Figure 5. Stone building 59 with cobblestone floor with drainage canals leading to a sunken barrel in the corner (right). Photo: NIKU (Derrick, 2018, p. 155). CC BY-SA.*

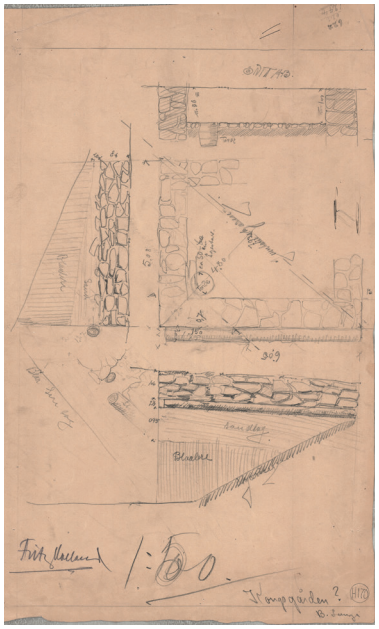

*Figure 6. Example of early documentation of a stone cellar. No written documentation belonging to the building is available. Still, this drawing is better than the available documentation of many other stone buildings. Note the scribbled word "Kongsgården?" in the bottom right corner, added by Bernt C. Lange. This later addition shows that even the location of the cellar was uncertain. I have located the cellar and given it number 60 (see Figure 4). Note the sunken barrel in the corner, a feature found in several other buildings, for instance no. 59 (Figure 5). Drawing: Fritz Holland. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).*

As mentioned, cobblestone floors cannot be used to asign a building to the post-medieval period. In fact, a layout that occurs in several stone buildings, is a cellar room with cobblestone floor with drainage leading to a dug-down barrel in the corner. The just mentioned building 36 had such a layout, as did for instance buildings 37, 59 (built in the mid-14th century, see Figure 5), and 65 (Hegdal, 2021, pp. 120–132). A similar feature is seen in Fritz Hollands drawing of building 60, north of the royal manor (Figure 6). Building 58, in the northern part of town, is only represented by a stone-paved floor, but the presence of a dug-down barrel in the corner shows that it is a cellar. This building could be as old as from the last part of the 11th century of early 12th century (Smestad, 1991, pp. 43, 46). Whether this early date can be correct, is difficult to say. However, it fits with the relatively recent realization that the northern part of the town was developed earlier than previously assumed (Martens, 2010).

Regarding the northern part of town, building 5b should be mentioned. This building (Figure 7) could be part of a gate tower (Ekroll, 2015a, p. 274), but whether it is post-medieval or earlier is uncertain. If it is medieval, it is tempting to connect it to the other constructions further east (particularly 2a and 2b), possibly forming the northern defensive boundary of the town.

As mentioned, stone buildings could be in use for centuries. We have several examples of new buildings being constructed next to or atop older building phases. This is especially relevant for cellars. Saxegården (building 45) is one of the few buildings we know the name of from medieval Oslo. The present-day louis-seize-style building is from 1800 and is constructed atop a medieval cellar. Recent investigations of a preserved vault and floor show that these are from the early 14th or late 13th century. The walls themselves are probably earlier (Hegdal, Åkerstrøm and Meyer, 2024, p. 72). Thus, the building is older than what is known from the diploma material (DN, vol. V, no. 100), and has been in use for at least 500 years.

Building 24 was discovered in 1904 and believed to be post-medieval. Recently, it was fully excavated, with two phases defined, the first built in the early 14th century, while the second in the late 14th century – a clear example of rebuilding in the medieval period. A post-medieval cobblestone surface was even incorporated into the walls, thus indicating that the building was reused at this time (Derrick et al., 2023, pp. 124, 131, 144)

Another example is building 55, which consisted of two rooms, where the eastern and smaller one was older. The western room had raft foundations, and the eastern room had pile

*Figure 7. Wall in Arups gate. Could this be the remains of a medieval building, possibly a gatehouse, reused in the boundary of the playground? Note that the area of the wall in Figure 4 is smaller than what is visible in this image. Photo: Bauthler / Oslo byarkiv. CC BY-SA.*

foundations. The eastern room had five floor layers, while only one floor layer was found in the western room, but above-lying floors may have been removed by a modern cellar. The single floor layer nonetheless does not necessarily entail a much shorter use period than the eastern room (Schia, 1987a, pp. 59, 61). While the exact date of the building's two phases are hard to ascertain, it is important to note that the phase plans from the excavation show that the building's footprint is not in conflict with earlier buildings after ca. AD 1300 (Figure 8).

Even though the bishop's manor is not the focus of this article, some of the buildings in this area must be mentioned. Building 33 is a case in point, being described as having a vault with bricks of medieval format (Figure 9). Together with its layout, this indicates a medieval date. Ekroll (1991b, p. 22) suggests that the building's deviant orientation from the bishop's manor to the east can suggest a later date, but this is uncertain. Just north of building 33 lays building 76 which is known to be post-medieval, but the cellar coincides with the presumed outer boundary wall of the medieval manor. This could suggest that the cellar was part of the original, medieval complex. And finally, building 77 (below another post-medieval building) is remarkably similar to the hall building in the west wing of the bishop's manor, with centrally placed pillars , just northeast of building 30. Whether this hall building in the west wing was medieval or later was even discussed at the time of excavation, in 1903. While the archaeologist in charge, Heinrich Jürgensen, wrote that it was a medieval hall building (Fischer, 1950, p. 64), an anonymous newspaper article upheld a post-medieval date (Aftenposten, 1903). Recent excavations dated a supporting wall to the mid-13th century (Berge et al., in prep., p. 392), thus finally laying the discussion to rest. Thus, the similarity between the hall building and building 77 suggests a medieval date for the latter, as well.

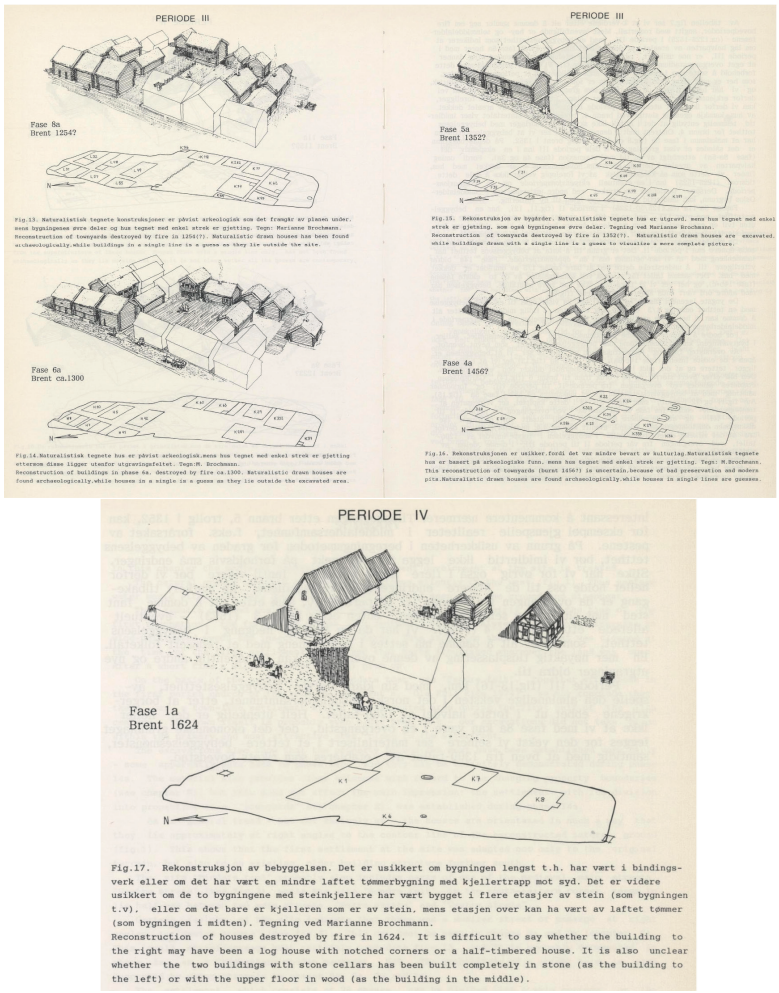


*Figure 8. Phase maps from the excavation sites called Mindets tomt and Søndre felt, excavated in 1970–1976 (Schia, 1987b, pp. 184–187). Drawings: Marianne Brochmann. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).*

Not only do we now know that the total number of stone buildings is much higher, but also that many are or may be medieval. Even though uncertainties remain, as many as 69 of the 81 stone buildings may have been part of the medieval townscape.

## A revised townscape

Despite the increase in available building materials due to the demolition of stone churches after the Reformation, stone buildings were a crucial part of the earlier, medieval townscape. The durability of stone buildings made them more than just architectural elements. Their placement and size played a role in ensuring stability within the town while simultaneously demonstrating the builder's wealth and status (see Bauer, 2020).

The newly excavated stone buildings, together with the previously excavated which are now attributed to the medieval period, form certain patterns in their placement. Several buildings cluster along Vestre strete in two distinct groups:

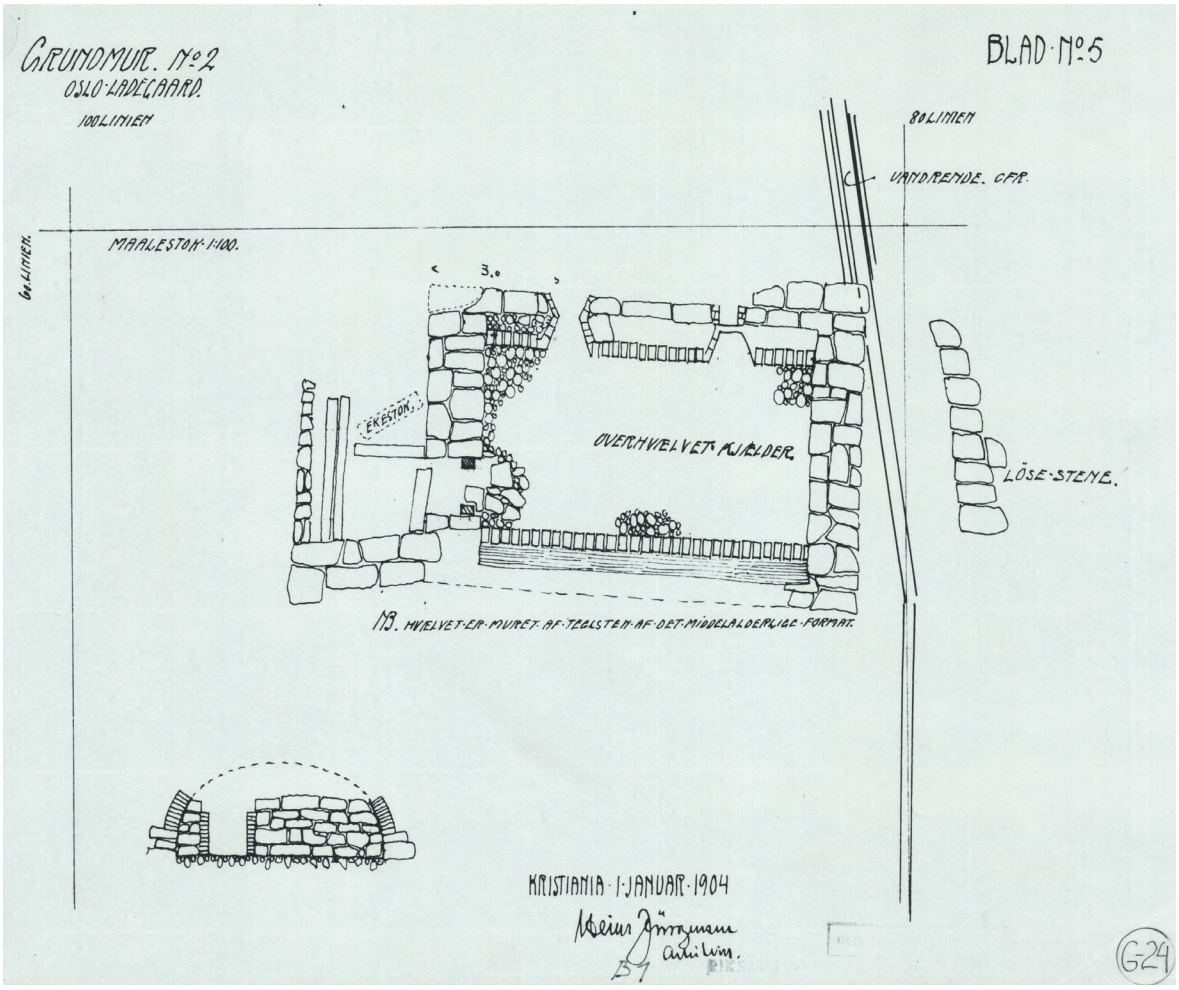


*Figure 9. Building 33, west of the bishop's manor, is described as having a vault with bricks of medieval format. Drawing: Heinrich Jürgensen. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).*

one near the king's manor and another near the bishop's manor (Derrick, 2023). This suggests that stone architecture was used by the owners to assert their status among these two elites in the medieval town. We see that proximity to streets is a key factor in general, not only along Vestre strete. Stone buildings facing main thoroughfares or squares would allow their owners to assert their presence in the urban landscape (Ekroll, 1991b, p. 30). There is also a practical reason for this placement, as storage rooms accessible from the streets would facilitate the transportation of goods in and out. Additionally, the stone buildings' non-flammable material would, in combination with the streets, have limited the spread of fire (Derrick, 2023; Derrick and Sunde, 2024). What we now know about the stone buildings' placement contradicts an earlier assumption that these lay in the back part of the town plots (Koren-Wiberg, 1921, p. 78).

Most of the stone buildings lie along the ridge from the headland in the south-west to the presumed northern boundary of the town, in present-day Arups gate. In the western part of town, poor ground conditions and vulnerability to storm

surges likely discouraged the construction of stone buildings. Flooded cellars would be a disaster for stored goods. Instead, storage buildings in the harbour area were lighter log constructions, built on timber foundations. A possible exception is in the north-western part of the town, where the already mentioned buildings 34, 35, and 79 were excavated.

Future nuances in dating will influence the overall picture of stone buildings in the townscape in different periods. It is, for instance, hard to differentiate between early 14th-century buildings and buildings from the late 15th century.

For the post-medieval town, Schia (1988, p. 111) argues that the area between Vestre and Østre strete was characterized by an open settlement pattern, with stone cellars and stone-paved yards between domestic buildings. According to the phase maps from the earlier excavations, only stone buildings were present, and less of the area was covered by buildings than in the High Middle Ages (Figure 8). This raises important interpretive challenges: Specifically, where were the dwellings in the later phases if only stone buildings remained?

Leaning on Schia (1988, p. 108) and his map of presumed post-medieval stone buildings, Ekroll (1991b) argues for a topographic shift in the last one hundred years of Oslo's history, wherein the main settlement moved from the southern part of the town to the area surrounding the cathedral. First, I do not agree that the settlement is denser around the cathedral than in the southern part of town. Second, since recent excavations show that the stone buildings southwest of the cathedral were medieval, a major part of the settlement was already here in the medieval period.

In any case, it appears unlikely that dwellings were relocated to other parts of town. The area between Vestre and Østre strete occupied a central location with continuous habitation from the earliest phases of Oslo's urban development throughout the Middle Ages (Bauer and Engen, 2024, p. 203). There was, however, a large population reduction after the plague epidemics from the mid-14th century, reducing the population from its high of around 3 000 in the first half of the 14th century (Nedkvitne and Norseng, 2000, pp. 178–179; Sigurðsson and Ødegaard, 2024, p. 127). Still, Oslo's population in the early 1600's had risen again. It has been estimated to have been between two and three thousand (Bull, 1922, p. 444). Thus, it is unlikely that the area was so sparsely covered by buildings, compared to the high medieval period (Figure 8). This becomes especially apparent considering that the size of most of the stone buildings in

the area suggest they were storage houses and not dwellings. There simply would not be enough room for Oslo's citizens.

Schia argues that most of the stone buildings were from the 16th and/or early 17th centuries (Schia, 1988, p. 111). He does, however, agree that there were still timber buildings in the town (Schia, 1988, p. 118). Still, these are not shown in the phase plans from the excavations. Combining what we now know, my hypothesis is that not only were there many more stone buildings in the medieval town, but there were also a lot more timber buildings in the post-medieval town. This results in a revised townscape for both periods, with the medieval and post-medieval town being more alike than previously assumed. Thus, Oslo in the century prior to 1624 retained many of its earlier characteristics, and there is little evidence for a dramatic shift in the townscape.

Taking a broader view of construction practices in the period, the notion that post-medieval Oslo consisted exclusively or even primarily of stone buildings is implausible. Even in Christiania, where regulations mandated stone, brick or timber-frame construction, log buildings continued to be built. These regulations were not strictly enforced until the early 18th century (Roede, 2001, pp. 204–205; Roede, 2016, p. 17). The reluctance to adopt stone and brick as building material in Christiania indicates that such materials were even less likely to be used in Oslo between 1537 and 1624.

I agree with Ekroll (2015a, p. 262), who argues that despite the institutional changes brought by the Reformation, the history of Oslo should be seen as continuous up to 1624 rather than marked by a sharp break in 1537. To understand the post-medieval townscape, it is crucial to recognize the degree of continuity with the medieval town.

In the phase plans from the area of the 1970–80's excavations between Vestre and Østre strete, the types of buildings are very different in the 1624 phase than in the medieval phases (see Figure 8). However, there are no clear changes in the plot boundaries from the high medieval situation to the last phase which burned in 1624 (Schia, 1987a, p. 67). A continuation of the plots indicates a continuation of the same town. As I have argued, the lack of timber buildings related to the later phases is improbable. Instead, it is more likely that timber buildings, with shallower foundations than the stone buildings/cellars, have been removed by later activity (Schia, 1987a, p. 59) – probably from the time after the fire of 1624, when burnt-out building remains were demolished to prepare the area for agriculture.

**Implications and usefulness for urban heritage management**

This reassessment of stone building dating can aid in preservation efforts by identifying protected structures. It also provides reference tools for improving dating techniques, thereby optimizing excavation and documentation strategies. Furthermore, a clearer understanding of secular stone buildings in medieval Oslo can inform future urban development projects. It allows for better predictions regarding the location and number of stone buildings, which is essential in assessing potential conflicts in city planning.

The 1537 boundary in the current Norwegian Cultural Heritage Law provides clear protection for stone buildings (and all other archaeology) older than this date. However, an unfortunate consequence has been the systematic downplay of importance of stone buildings younger than the Reformation (Ekroll, 2015a, pp. 262–263). Naturally, stone buildings younger than 1537 are of great importance for understanding Oslo's history. The town lay in the same place until the fire of 1624, and its history should be seen as continuous until 1624, rather than as a history of a medieval town until 1537 and a renaissance town in the brief century after (Ekroll, 2015a, p. 262). Except for the several demolished churches, the late 16th and early 17th century town was still like the medieval town in many ways: It was organized by the same streets (Ekroll, 1991b, p. 39) and, broadly, the same plot structure. Secular building traditions did not change significantly just because of the Reformation. While more stone material was made available from torn-down churches, the inhabitants would still construct log buildings, and stone buildings would generally be raised using the same masonry techniques.

The administrative consequence of stone buildings not immediately being attributed to a post-medieval date is significant, particularly for future excavations. When new stone buildings are found, they cannot be dismissed as unprotected. Work on a new cultural environment law is ongoing, and one suggestion is to extend the protection date to 1650. This would include all post-medieval stone buildings (and all other archaeology) in the Old Town of Oslo prior to the fire of 1624. Such an expansion of the law would be a welcome change – and essential for understanding Oslo's history.

Based on the revised townscape already presented, I can suggest areas with high potential for revealing medieval secular stone buildings in future investigations. Compared to the southern part of the medieval town, few large-scale excavations have been carried out in the north. In Arups gate it will be possible to expose larger parts of already known stone

constructions, making it possible to interpret them more securely (se suggestion for research question 5 below).

There is great potential for finding stone buildings in Oslo gate, along the street marked by the eastern dotted line in Figure 2. In almost all investigations in Oslo gate, stone buildings have been uncovered, even in narrow trenches. The same goes for the presumed route of Østre strete, southwards from St. Hallvard's Cathedral. Furthermore, considering that a long stretch of Vestre strete is not excavated, excavations along this street's path has potential for locating stone buildings.

It is also significant where the potential for finding stone buildings is low. It is very unlikely to uncover medieval stone buildings in the westernmost areas of the town, due to the poor ground conditions and vulnerability to storm surges during most of the medieval period.

**Further research questions**

Several questions can be raised regarding stone buildings in Oslo's townscape, some general and some more specific:

1. Stone architecture was relatively exclusive due to the required access to building materials and craftsmen. They were a larger initial investment than log buildings, but also lasted longer, considering both regular material decay and resistance against the great threat of town fires. As such, their placement, size, and to some degree function, were important for the stability in the town. Combined with a prominent position along main streets and the clustering of buildings near the royal and episcopal manors, the stone buildings contributed to shaping the townscape. This raises several questions about social structures: Were the stone buildings used for underlining the owners' position? Were their placement attempts to control urban development? Did stone buildings contribute to gentrification of the town?

2. What do the stone buildings indicate about economic structures? Using the number and size of stone buildings, primarily cellars, it may be possible to estimate the total storage capacity for certain commodities in medieval Oslo. The town law specifies what kind of commodities should be stored in cellars, and a calculation of such volumes could provide valuable insights into trade and the urban economy.

3. There is a layout that occurs in several buildings: that of two similarly sized rooms, with separate doorways leading to an enclosed yard. Given that several stone buildings had two rooms, did they serve different owners? The division of

Blesusgård in 1477 (DN, vol. 5, no. 900), for instance, suggests that such shared use was common. This question should be considered in relation to changes in the names of tenement plots, which, it has been suggested, shows attitudes towards ownership and self-expression (Bauer, 2020).

4. If the dating of building 58 is correct, this raises several questions: were there stone buildings in town so early? What does this tell us about the development of the northern part of Oslo, earlier believed to be a later expansion? We now know that there was regular settlement as far north as Arups gate. Furthermore: Who had the opportunity to build in stone this early, when primarily churches were built in stone?

5. Little is known about the walls in Arups gate. These could belong to stone buildings, but they could conceivably be part of a town wall, which could possibly have incorporated the cemetery wall north of Korskirken (no. 9 in Figure 2).

6. Considering Oslo had more medieval stone buildings than previously assumed, does the same go for Bergen (Ekroll, 2015b, p. 144), and how does this compare to Tønsberg? Furthermore, how come almost no stone buildings are found in medieval Trondheim? (See McLees, 2008 for a notable exception; Ekroll, 2015a, p. 271) How can similarities and differences between Norway's medieval towns be explained?

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