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Soapstone in the North Quarries, Products and People 7000 BC – AD 1700

Gitte Hansen and Per Storemyr (eds)



UNIVERSITETET I BERGEN

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Preface

This book has been a long time in the making. It is an outcome of the five Norwegian University Museums' joint research programme *Forskning i Felleskap* (FIF, 2010–2015), supported by the Research Council of Norway. FIF kindly facilitated a number of workshops and meetings between archaeologists, geologists and craftspeople, all with a common interest in premodern soapstone quarrying and use. The result is the chapters of this book, which are based on studies carried out over the last two decades and, for the most part, are published scientifically for the first time. We very much thank the authors for participating in this venture. We also thank several colleagues – archaeologists, geoscientists and craftspeople – that assisted the editors in peer-reviewing the chapters: Irene Baug, Birgitta Berglund, Laura Bunse, Poul Baltzer Heide, Richard Jones, Tor Grenne, Torbjørn Løland, Therese Nasset, Astrid J. Nyland, Lars Pilø, Kevin Smith, Lars F. Stenvik, Frans Arne Stylegard and Stephen Wickler; we are very grateful for the job you have done. Not least, thanks go to Tromsø University Museum, NTNU University Museum (Trondheim) and the University Museum of Bergen for their economic support in publishing the book.

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Gitte Hansen

Per Storemyr

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Cistercian Soapstone. Production and Delivery of Building Material from Lyse Abbey to Bergen in the 13th century

Geochemical analyses of four medieval building stones in the collections of the University Museum of Bergen and one sample from a standing church have demonstrated a geological provenance to the soapstone quarry located close to the Cistercian abbey of Lyse south of Bergen. The five samples derive from four different monumental stone buildings in medieval Bergen: The Benedictine abbey church (Munkalif), the Franciscan friary church (St. Olaf's), the royal residence's great hall (King Håkon's Hall), and the same Residence's Royal chapel (the Church of the Apostles). The archaeological and historical contexts of the building and building fragments are discussed, dating the soapstone deliveries from Lyse to the second half of the 13th century. This paper also discusses the organisation of a Cistercian abbey and asks if the lay-brothers in the abbey may have played an important role as craftsmen in the quarry at Lyse. The soapstone quarry seems to have been essential for the Cistercians, not only for building their own monastic complex from the mid-12th century onwards but also as a source of income, selling soapstone material to royal and ecclesiastical building projects in Bergen – at least documented in a period from the mid-13th century onwards.

Introduction

Among the soapstone quarries in western Norway the quarry at Lyse is interesting due to its close connection to a monastery and thus to an organised economical unit of international character. Norwegian monasteries took an active part in introducing the European building tradition of masonry to Norway, and seem to have followed the European norm of layout and building material in their houses (Hommedal 1999:178–180). It is therefore not surprising to find a soapstone quarry for building stones connected to the Cistercian abbey of Lyse, c. 27 km south of Bergen.

Lyse abbey (*cænobium Vallis lucidæ*) was founded in 1146, from Fountains abbey in England, as the first of altogether four Cistercian foundations in medieval Norway. This close connection to England also explains the 12th century Anglo-Norman architectural style of the buildings at Lyse. The high quality of the architectural details indicates that the stone sculptors were English, or Norwegians who were directly influenced by English masonry skills (Nybø 1987:185). It has even been suggested – but still not fully documented – that the Anglo-Norman style found in ecclesiastical monuments in Bergen from the 1160s onwards has a direct connection to the Cistercians at Lyse, who started the erection of their own monastic complex in the decades after their arrival in 1146 (Lidén & Magerøy 1990:87–90).

In this paper I will not discuss the possible architectural influence of the Cistercians in 12th century Bergen, but rather look into the connections between Lyse and Bergen in the 13th and the very beginning of the 14th century. The discussion is based on the geologists Øystein J. Jansen and Tom Heldal's visual analysis of ashlar in situ in the Franciscan church of St. Olaf's, i.e. the present Bergen Cathedral (Jansen et al. 2009:591–592). In addition, the discussion is based on the results of geochemical analyses of five soapstone samples: four from moulded building stones in the collections of the University Museum of Bergen and one in St. Olaf's church (Jansen et al. 2009; Jansen & Heldal 2015; Hommedal 2015 b; Jansen pers. comm. 2016). The content of trace elements (Ni, Co, Cr, Zn and V) and Sr/Nd isotopes of the sampled building stones has been compared with similar data from 14 quarries in or near the Hordaland County (Jansen & Heldal 2015). According to Jansen and Heldal (2009; 2015) the visual analysis of in situ masonry as well as the geochemically sampled moulded masonry stones point out Lyse as the most likely origin quarry for the building stones under study.

The discussed geological analyses relate to four different monuments in medieval Bergen. In addition to the still standing Franciscan St. Olaf's church, the archaeological provenience of the sampled building fragments relates to the Benedictine church of St. Michael's (*Munkalif*, now buried), the royal residence's still standing great hall (today known as *King Håkon's hall*), and to the same Residence's (third) royal chapel dedicated to the Apostles (now either location or extent of possible ruins are certain). The altogether four soapstone receiving monuments discussed thus relate to the royal palatium (two monuments) and to two monastic institutions, the Benedictine abbey and the Franciscan friary. A third monastic institution, the Cistercian abbey at Lyse, is the presumed deliverer of stone material.

With the starting point in the geochemical and visual geological analysis strongly indicating contacts between Lyse and Bergen in the 13th century, I am going to look more into the archaeological context of the four buildings involved. In other words, in the following I will try to put the results of the geological analyses into a cultural and historical context. How did a Cistercian monastery function with regard to building activity and crafts, and in what way does it tell or indicate that the quarry at Lyse was a part of a Cistercian institution? What can be indicated about the buildings and the institutions in Bergen where the Lyse stones were used?

The Cistercians abbey and the soapstone quarry at Lyse

The ruins of the abbey at Lyse are among the best preserved sites of a total of 31 monasteries known from Norway's Middle Ages (Hommedal 1999:156–157). The central buildings at Lyse were built as a complex with four ranges or wings like most monasteries of the order, even though the west range is now lacking and may have been built in wood (Figure 1). The function of the rooms seems largely to follow the usual pattern for a Cistercian house. According to the art historian Marit Nybø, the building of the church started just after the foundation of the abbey in 1146, and it seems likely that the conventual quadrangle, with the cloister, was finished within the first third of the 13th century (Nybø 1987:186). Outside the conventual quadrangle the remains of two buildings, one of them probably the monastery's tannery, have been discovered together with traces of the monastery's drainage system (Lidén 1976:30–33; Nybø 1987:184, 186).

The soapstone quarry is located a few hundred meters into the valley to the east of the conventual quadrangle. The visible quarry walls make a deep scar in the hillside and they are 6–18 m high, enclosing an area of a possible quarry floor of 2–3000 m². There have not been any proper archaeological registrations and excavations in the quarry. One would, for example, have expected a road for stone



Figure 1. Parts of the central quadrangle of the abbey at Lyse, with the cloister garth and the surrounding cloister walks. The arcade arches are reconstructed. The ruined walls of the church lie in the background. (Photo: A.T. Hommedal).

transportation from the quarry to the monastery site and to the fjord, since it seems improbable that all stones were transported on snow sledges during winter. A sizable heap of waste is found directly in front of the quarry (Jansen et al. 2009:591) but no workshops have been documented. The traces of mining of building stones are distinct (Figure 2), but two unfinished and abandoned soapstone vessels have been found in the spoil heaps, also demonstrating other exploitation of the quarry. One of the vessels (BRM 182 in the University Museums of Bergen's collections) seems to be a cooking vessel. The other one (BRM 151) is, however, with its quadratic shape (c. 24 x 24 cm), 6–10 cm height, and the 3–4 cm thickness of its sides, not consistent with a vessel for food, even though the vessel is not finished. It seems also to be too large to be a type of oil lamp. A possibility is that this vessel was intended to be a laver for holy water located at the entrance of a church. Since the vessel has no mark of connection to a stone wall it seems to have been intended to be free-standing, and maybe intended for a wooden church. It is absolutely conceivable that the Cistercians in their quarry also produced such liturgical artefacts for themselves or to sell.

The Cistercian order was one of the strictest religious orders to establish itself in medieval Norway. The monks lived a contemplative life with a totally imposed *stabilitas loci* – which means living absolutely inside the monastery's premises or enclosing walls where the religious rules and routines governed the monastic life. At Lyse one would expect that the area of the quarry was included in the monastery's premises, even though it must have been located outside the precinct walls.



Figure 2. The soapstone quarry at Lyse. One can see traces of exploiting the quarry for ashlars. (Photo: A. T. Hommedal).

In a Cistercian monastery one would find two kinds of ‘monks’. In addition to the ordained clergy or choir monks one would also find the *conversi* or lay brothers, that is, the brothers who were not priests. They were also defined by their beard and cloak. The system of lay brothers seems most likely to have been introduced to the order between 1111 and 1119 (France 2012:34), and thus before the foundation of the abbey at Lyse. After a period, the system seems to have declined, especially during the 14th century, and in the 15th century no *conversi* are recorded in many of the European monasteries (France 2012:306–322).

The lay brothers are especially interesting in the discussion of the building activity in a Cistercian monastery – and at Lyse then also of the quarry. The priests and the lay brothers lived and practiced on different levels. For the choir monks the day-and-night cycle was divided into three parts. The first third was reserved for the divine office with liturgical prayer and mass, preceding all other activities. The second third was reserved for reading

and studies and manual work. The last third was reserved for rest and sleep. The three parts were subdivided into intervals so that the choir monks, for example, gathered eight times in the church to pray during a given day, seven times during the day and once during the night. The lay brothers, on the other hand, took the same vows as the choir monks after a year-long novitiate, but they were not required to observe the full divine office. They were therefore more available for manual work. This class-divided monastic society, also excluding the *conversi* from the administration of the monastery, is illustrated by the fact that the lay brothers were restricted to their own quarters in the west range of the conventual quadrangle and to the western part of the church. They were, for instance, not normally admitted to the cloister (Braunfels 1972:75, 77–79; Greene 1992:234; Leroux-Dhuys 1998:73–74; Kinder 2002:55–58, 305–331; France 2012).

With the Cistercians’ ideology of *ora et labora* – pray and work – not only the lay brothers, but also the ordained clergy, as already pointed out, were required to perform manual work. However, the main part of the material business of the abbey, such as agricultural labor and work in workshops of different kinds, would mostly be dealt with by the lay brothers. Due to their ideology, and with the international contacts of the Cistercians, inventions were often developed in monasteries, for instance when it comes to technology. It is then only to expect that the Cistercians also introduced new elements to Norway – such as, for instance, the Anglo-Norman style in the architecture at Lyse – especially since the monks should normally erect their building complexes themselves. This last statement, however, has been disputed (see e.g. Greene 1992:68–69), but as the historian James France has documented, both priest monks and lay brothers attended to building processes, and a number of Cistercian General Chapter statutes in the 12th century refer to priest monks and

lay brothers engaged in building work (France 2012:48–56). There are also indications that the Cistercians in Norway could work as masons and house builders in the late Middle Ages: When Munkalif abbey in Bergen was destroyed by fire, the Bridgettine nuns and monks there were relocated to Hófuðey abbey outside Oslo from c. 1460 to c. 1478, while the Cistercians at Hófuðey in the same period were in Bergen, probably to rebuild Munkalif (Lange 1856:301–304, 415; Hommedal 2014:622). This was after the general main period of the conversion, and most likely the priest-monks must have taken an active part in the rebuilding process.

For the Cistercians at Lyse, the soapstone quarry would therefore have been essential already from the foundation of the abbey. It is not surprising that the geochemical analysis of a soapstone sample from the abbey ruins isotopically matches the rock in the quarry. It has even been suggested that the quarry was established for the purpose of building the abbey (Jansen et al. 2009:591). This is conceivable, but there is also a possibility that the quarry existed as a vessel quarry before the monastery was established, even though this is not documented. In fact, the existence of rich soapstone resources may have been one of the reasons for placing the Cistercian monastery just at this site.

In the following I will return to the four masonry buildings in Bergen where building material from Lyse quarry are geochemically documented.

Håkonshallen – King Håkon’s hall – and its high seat

The museum collection contains seven original stone fragments from the high seat in King Håkon’s hall, the still standing great stone hall from the royal residence in medieval Bergen (Figures 3 and 4). These original high seat fragments were removed from the building during the first restoration of the hall in 1880–95. The stones are verified as part of the original masonry due to documentary drawings and analytical building descriptions from before the restoration (Nicolaysen 1861a; Hommedal 2013:19, 34–35). Geochemical analyses of samples from the two stones (BRM 62/2 and BRM 62/32



Figure 3. Håkonshallen – King Håkon’s hall – the great hall in the royal residence of medieval Bergen, built between 1247 and 1261. The building was restored in 1880–95 and again in 1957–61. (Photo: University Museum of Bergen).



Figure 4. King Håkon's hall, the high seat with its arched moulding in the present, restored version. Two of the moulded stones from the original high seat have a geological provenience to the soapstone quarry at Lyse. (Photo: O. E. Eide).



Figure 5. The moulded stone BRM 62/2 in the collection of the University Museum of Bergen. Originating from the quarry at Lyse and used in the masonry in King Håkon's hall. (Photo: A. T. Hommedal).

– see Figure 5) match the rock in the soapstone quarry at Lyse (Jansen et al. 2009; Jansen & Haldal 2015).

Based on its architecturally and archaeologically distinctive features, King Håkon's hall must have been built in the middle of the 13th century. Based on a written source, the saga of King Håkon Håkonsson, written in the 1260s, the period of construction can be defined more precisely to between 1247 and 1261 (Fischer & Fischer 1980:124–125; Helle 2013:111–113).

We can thus conclude that the Cistercians at Lyse in the 1250s delivered soapstone from their quarry for the construction of the royal banquet hall in Bergen. The Lyse material was at least used for moulded parts of the King's high seat.

The royal chapel: The Church of the Apostles

The University Museum of Bergen's collection of building stones from demolished medieval buildings at Bergenhus have been catalogued and discussed by, for instance, the two architecture historians Ole

Egil Eide and Hans-Emil Lidén. The work of Eide and Lidén has shown that a small number of these stones most probably are fragments from the third version of the Church of the Apostles, the royal chapel in the King's residence. This third church was initiated by King Magnus the Law Mender (1263–80) and built between 1275 and 1302 (Lidén 1980:163–179, 196–199; Helle 2013:114–115).

We do not know much about this third Church of the Apostles. Neither the layout nor the exact site of the church has been clearly established. But narratives give some information, and in combination with the identified stone fragments with rather complicated mouldings and delicately shaped capitals, we learn that the church must have been one of the most precious high Gothic buildings in Norway. The church was torn down in 1529–30 and parts of the stone material was reused in other buildings in the present day Bergenhus and therefore preserved until today (Lidén & Magerøy 1980:137–139; 1990:94; Lidén 1980:164–165).

A geochemically analysed sample from the stone (BRM 62/162) from a window frame matches the rock in the soapstone quarry at Lyse (Jansen et al. 2009; Jansen & Heldal 2015). With the premise that the interpretation of this building fragment as part of the third Church of the Apostles is correct, we can then conclude that the Cistercians at Lyse in the third quarter of the 13th century delivered soapstone for the construction of the new royal chapel in Bergen.

St. Michael's abbey church at Munkalif

The last museum collection stone to be discussed is a moulded fragment from the west portal frame in St. Michael's church at Munkalif, meaning 'where the monks are living' (Figure 6). The layout of the Benedictine abbey church is known from an archaeological excavation in 1860 (Nicolaysen 1861b:59–79). Then also the discussed portal fragment was found in its original masonry position. St. Michael's, the oldest monastic church in Bergen, was built in the first part of the 12th century. In

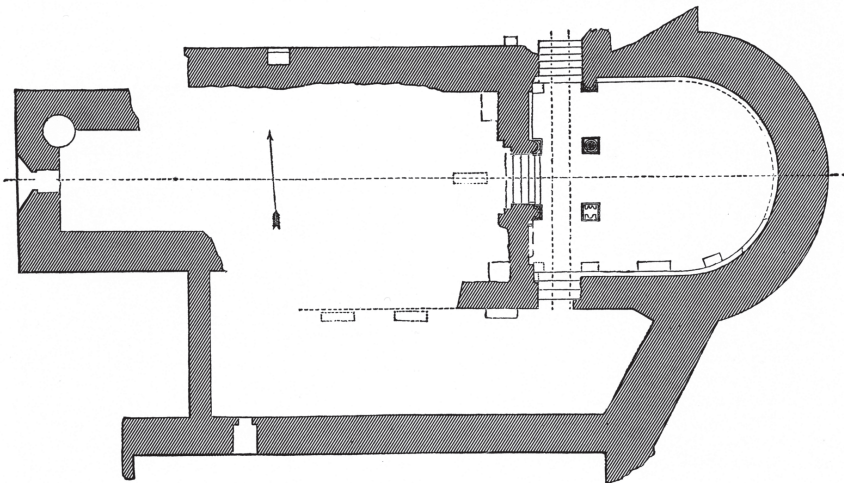


Figure 6. The ground plan of the Benedictine St. Michael's church at Munkalif. The church was about 35 m long and 13 m wide. It seems to have been built in the first part of the 12th century as a long church with an apsidal chancel. In the 13th century the church was extended with a west tower, and one of the moulded stones from the new west portal has a geological provenience to the soapstone quarry at Lyse. The south aisle of the church was originally the northern cloister walk of the Benedictine conventual buildings. (Drawing: N. Nicolaysen 1861 in Lidén & Magerøy 1980:151).



Figure 7. The moulded stone MA 370a in the collection of the University Museum of Bergen. The corresponding stone (MA 370b) originates from the quarry at Lyse. The stones are used in the masonry of St. Michael's church at Munkalif in the second half of the 13th century. (Photo: A.T. Hommedal).

the 13th century the church seems to have been extended with a west tower, or at least a new west portal which also comprised our fragment. The mouldings indicate that the portal was erected within the last three decades of the 13th century (Lidén & Magerøy 1980:150–157; 1990:91, 93–94). It has been suggested that the west portal was created by the craftsmen Arne grjótmeistare and Rane grjótsmidr who apparently worked at Munkalif in 1287 (Lidén & Magerøy 1990:94, endnote 18).

A geochemically analysed sample from a stone (MA 370b) originating from St. Michael's west portal (Figure 7) matches the rock in the soapstone quarry at Lyse (Agdestein & Jansen 2006:17; Jansen et al. 2009; Jansen & Heldal 2015). We may therefore conclude that the Cistercians at Lyse in the last decades of the 13th century, maybe in the 1280s, delivered soapstone to the Benedictines in Bergen for the new west portal of the abbey church.

St. Olaf's friary church

The last building to be discussed is St. Olaf's church, first erected in stone c. 1150, probably as a parish church. The church seems to have been donated to the Franciscans in the 1240s, possibly by King Håkon Håkonsson, even though this is not clearly documented (Ullern 1997:116–120). During the rest of the century the church was rebuilt by the friars on two or three occasions and subsequently also extended, first to the west with a prolonged nave, in the decades around 1270, and then to the east with a new chancel within the period 1270–1301 (Figure 8). The eastern extension seems to be related to the extension's function as royal grave chancel for King Magnus the Law Mender. In connection with the Reformation in 1536–37 the church was given a new function as the Lutheran cathedral, a function it still retains (Lidén & Magerøy 1983:9–13; Ekroll 1994; Hommedal 2014:625–626).

It seems that soapstone from Lyse was used in both the western and eastern extensions of St. Olaf's. In the western extension the identification is based on visual geological assessment of the masonry. The majority of the ashlar are, according to Jansen and Heldal (2015),

'...typical greyish/green, schistose, containing talc, chlorite and carbonate with intercalated veins and lenses of brownish weathering carbonate. Some of these ashblars contain a characteristic feature; dark green veins of chlorite with a rim of talc – often displaying spectacular folding structures. The visual appearance of the stone is similar to the ones with proposed Lyse provenance from the University Museum of Bergen collection...'
(Jansen & Heldal 2015).

In addition, some soapstone samples from the masonry of the western extension, not fully discussed here, seem to maintain the indication to the quarry at Lyse (pers. comm. Øystein J. Jansen 2016).

It is interesting to observe that in this western extension of St. Olaf's, the monumental west portal is very similar in architectural expression to the corresponding portal at Munkalif (Lidén & Magerøy 1983:29–33, 1990:107). With a documented Lyse provenance of the stone material of the Benedictine portal at Munkalif, erected in the same period as the portal in St. Olaf's, one would not be surprised if the stone material in the Franciscan portal also turned out to originate from the same quarry. This is for future research to decide.

In the eastern chancel extension of St. Olaf's, the identification of Cistercian soapstone is related to a sample (BRM 1083/1) from the sedilia (Figures 8 and 9) inserted in the south wall of the new chancel (Hommedal 2015b). The sample has been geochemically analysed and matches

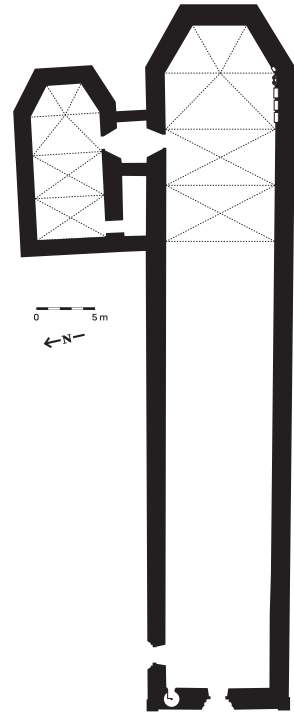


Figure 8. The ground plan of St. Olaf's, the Franciscan friary church in Bergen, as it occurred at its consecration in 1301. The vestry, to the left, is first mentioned in 1309. In the chancel's south wall the sedilia, the piscine and a repositorium are marked (compare to Figure 9). (Drawing revised by P. Bækken & A. T. Hommedal, after drawings by O. E. Eide (unpublished) and E. B. Andersen in Lidén & Magerøy 1980:282).

Figure 9. The sedilia inserted in the south wall of the extended St. Olaf's. The soapstone sample matching the quarry at Lyse originates from the original sidewall of the easternmost sedile, i.e. the masonry filling out between the sedilia and the piscina. The sedilia with its three sedile represents the seats of the celebrating priest and assisting deacon and sub-deacon during mass, and the sedilia is therefore situated by the main altar. To the east (left) of the piscina a repositorium (cupboard) is inserted in the wall. (Photo: A.T. Hommedal).



the rock in the soapstone quarry at Lyse (pers. comm. Øystein J. Jansen, 2016).

We may therefore conclude that the Cistercians at Lyse in the course of the last decades of the 13th century delivered at least some soapstone from their quarry to the Franciscans' extension work of their church's chancel. The delivery of Cistercian soapstone had probably also taken place earlier, in the third quarter of the 13th century, when the Franciscans extended their church's nave to the west.

The actors at Lyse and in Bergen

Based on the premise that the results of both the visual geological and the geochemical analyses are valid, we may conclude that the Cistercians at Lyse delivered soapstone from their quarry to three of the main institutions in Bergen in the second half of the 13th century: The King, the Benedictine abbey and the Franciscan friary. In the 1250s and again after 1275 the Cistercians delivered stone material for building activity in the royal palatium or residence, respectively, for King Håkon's hall and the third Church of the Apostles. This was a period of extensive building activity in the King's palace complex in Bergen, starting in the 1240s with the second Church of the Apostles and ending in 1302 with the consecration of the third royal chapel with this same dedication (Lidén & Magerøy 1990:91; Helle 2013:112–115). Even though we do not know how extensive the delivery from Lyse was, we can at least say that the Cistercians delivered stone material during different decades of this royal building period of c. 60 years.

In the last decades of the same period, maybe in the 1270s and 1280s, there are indications that Lyse also supplied material for the western extension of the Franciscans' friary church with its new western portal, and at around the same time Lyse supplied stone material for a similarly shaped new western portal in the Benedictine church at Munkalif. Since we know so little about the monastic building complex at Munkalif, we cannot tell whether this supply was a once only delivery or whether the Cistercians also had other deliveries to the Benedictines. For the Franciscan, however, the Cistercians at Lyse seem to have delivered stone material throughout the 13th century and at least towards the completing and consecration of the new Franciscan church in 1301, one year before the consecration of the Church of the Apostles in 1302.

It is also interesting to note that the Cistercians at Lyse delivered building material not only to two of the richest institutions in Norway, the King and the abbey at Munkalif, but also to the Mendicants in St. Olaf's church. The Franciscans were not allowed to have any estate giving income, and formally they were even not allowed to own their own friary. We must assume that the King and the Benedictines at Munkalif had soapstone quarries of their own, whereas it is unlikely that the Franciscans as Mendicants had such quarries. We know that the Franciscans in Bergen in 1277 got a precious testamentary gift from King Magnus the Law Mender, and the testament tells the gift already was disbursed (DN IV, no. 3). The King also selected for himself to be buried in the Franciscan church, probably partly explaining the extension of the church chancel in the last decades of the 13th century (Lidén & Magerøy 1983:9, 18). King Magnus, instructing the erection of the third Church of the Apostles in the King's palatium c. 1274, thus also obtained the money for the Franciscans' building activity in Bergen at the same time. This may suggest that the supply of building material for St. Olaf's was at least partly organised in cooperation with the royal deliveries. Maybe the construction work even was performed by the masons from the royal mason lodge? Lidén (Lidén & Magerøy 1990:65–67) has suggested that King Håkon Håkonsson established a royal building workshop when renewing the (second) Church of the Apostles in stone in the 1240s, continuing with King Håkon's hall and other secular buildings in the royal precincts, but also with buildings in the town itself. Lidén suggests that the royal mason lodge was re-constituted in connection with building

King Magnus the Law Mender's (third) Church of the Apostles, and that this was the workshop's main task. There may be a possibility that the royal mason lodge also was given the task of organising and performing the building work at the Franciscan church, especially since King Magnus was going to be buried there. Could the King even formally own the Franciscan church and friary, since the Franciscans were not allowed to own property themselves? In all cases, even if the Franciscan building activity was performed by the royal mason lodge, the architectural expression of the work in St. Olaf's was given a typical Franciscan character, still visible, e.g., in the west front's combination of a large tracery window over the west portal (Figure 9). The Franciscan architecture is likewise visible in the location of a north portal in combination with the west portal (Figure 8), in a characteristic Mendicant way (Larsen 2015:114–115).

When the King and the Benedictines at Munkalif seem to have bought soapstone from the Cistercians at Lyse in the three last decades of the 13th century, this may be because of the quality of the stone. Another explanation would simply be that a network between the Cistercians at Lyse and different institutions in Bergen then was already established. The abbey at Lyse, with its quarry, was also well located in connection with Bergen and with a relatively short sea route from the Lyse fjord to the town.

It has been suggested that the Lyse quarry could have been a major source of soapstone for Bergen from the late 12th century onwards and throughout the 13th century (Jansen et al. 2009:592). That is absolutely a possibility, but one should also be aware of the possibility that the supplies from Lyse to Bergen started at the time of the beginning of the extensive building activity undertaken by the King, that is around 1240. As already mentioned, it seems likely that the building of the conventual quadrangle at Lyse was finished within the first third of the 13th century. There is a possibility that the Cistercians until then had been giving priority to their own building activity, and that they started more external deliveries to Bergen within the second third of the 13th century. It is in this connection interesting to see that at Munkalif, geochemical analyses of the few, preserved soapstone fragments of the 12th century church seem not to give the provenience of Lyse, but rather Russøy and Bergsholmen, two other quarries south of Bergen (Agdestein & Jansen 2006:16–17). Even other quarries within the present county of Hordaland seem to have delivered soapstone to buildings in Bergen in the 12th century, but Lyse is not documented among them (Jansen et al. 2009).

When building the monastery at Lyse in the 12th and early 13th century, we must assume that the *conversi* worked in the mason's lodge as stone cutters and sculptors, and also, for instance, as carpenters and smiths. Although the system of lay brothers was not a Cistercian innovation, no religious order had previously used such a large number of them and to such good effect (France 2012). At the time of the foundation of Lyse in the mid-12th century, a Cistercian monastery could normally have two or three times as many lay brothers as priests or choir monks (Leroux-Dhuys 1998:74). If we assume that Lyse had the lowest possible number of choir monks for a Cistercian abbey, i.e. 13, we can assume that there were between 20 and 40 lay brothers. The *conversi* were normally recruited from among the local peasants. We must suppose this also was the situation at Lyse except during the founding period, when the monks and the masons, and then probably also lay brothers, seem to have been English (Gunnes 1995:135–136; Nybø 1987:185; Lidén 2014:21).

The Cistercian *conversi* were, to a certain extent, allowed to take part in activities outside the enclosure walls (France 2012). We can therefore also assume that some of the lay brothers at Lyse worked as craftsmen in the quarry and with related activities. In addition to the *conversi*, other men generally associated with a Cistercian monastery may have been employed there as hired workers (*mercenarii*) or as *familiares*, that is, men who lived in close association with the *conversi* and who did much of the same work, but did not have the same religious duties and obligation (Kinder 2002:308).

We must learn more about the structures, the activities and the actors in the monastic quarry at Lyse. Surely archaeological excavations would give valuable information on both the working techniques and on labor structures as well as on workshops, lodges and roads. More geochemical investigations regarding the relations between the raw material in the quarry and the stones in the walls of the monastic ruins should be undertaken. The accumulations of waste in the quarry would surely be a fountain of information. Analyses of the quarry waste would probably throw light on the question of whether the quarry is older than the Cistercian foundation, and also provide information about how long the Cistercians used this soapstone source or even if the quarry was used after the dissolution of the monastery. Likewise, analyses of the quarry could possibly tell if the Cistercians also produced other goods such as soapstone vessels for cooking and items for religious purposes. Further geochemical analyses of the building material delivered to Bergen and maybe to other places will be important, as will be a discussion about the economic income that the soapstone deliveries could generate. And last, but not least, it is necessary to address the question of the role which the *conversi*, the *familiares* and the *mercenarii* played as actors in the quarry industry, and the question of the extent to which the general decline in the numbers of *conversi* in the late Middle Ages affected the Lyse quarry.

At present we can conclude that the soapstone quarry at Lyse seems to have been essential to the Cistercians, not only in building their own monastic complex from the mid-12th century onwards, but also as a source of income, selling building material to Bergen. This network seems to have been documented at least in a period from the mid-13th century onwards and throughout the century, giving unique building material to some of the town's most prestigious royal and ecclesiastical building projects of the time.

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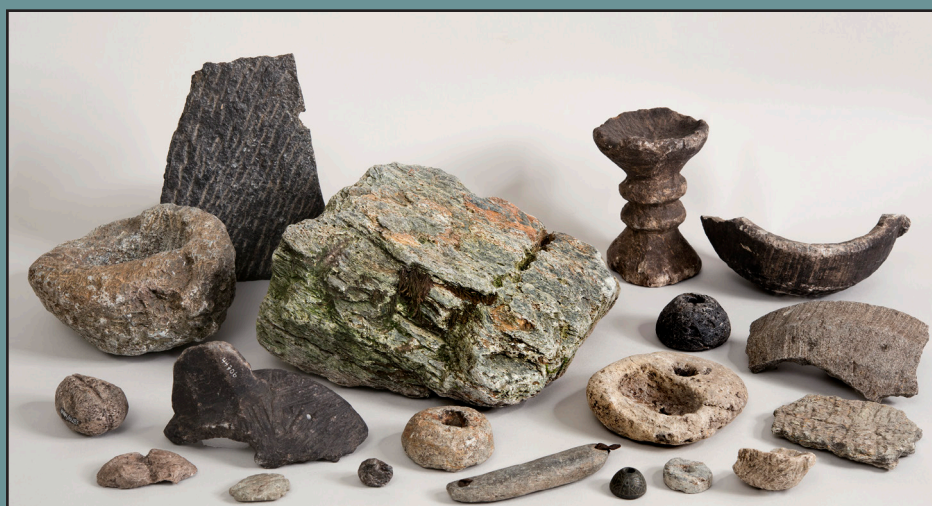
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Soapstone in the North. Quarries, Products and People. 7000 BC – AD 1700

Soapstone is a remarkable rock. While it is soft and very workable, it is also durable and heat-resistant, and with a high heat-storage capacity. These properties have been recognised and valued around the world since prehistoric times, and soapstone has been used for a multitude of purposes, ranging from everyday household utensils to prestigious monuments and buildings. This book addresses soapstone use in Norway and the North Atlantic region, including Greenland. Although the majority of the papers deal with the Iron Age and Middle Ages, the book spans the Mesolithic to the early modern era. It deals with themes related to quarries, products and associated people and institutions in a broad context. Recent years have seen a revival of basic archaeological and geological research into the procurement and use of stone resources. With its authors drawn from the fields of archaeology, geosciences and traditional crafts, the anthology reflects cross-disciplinary work born of this revival.



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