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University of Bergen Archaeological Series

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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University of Bergen
Bergen University Museum and
Department of Archaeology, History, Cultural Studies and Religion
P.O. Box 7800
NO-5020 Bergen
NORWAY

ISBN: 978-82-90273-90-8 UBAS 9
UBAS: ISSN 0809-6058

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Cover: Arkikon, www.arkikon.no

Print
07 Media as
Peter Møllers vei 8
Postboks 178 Økern
0509 Oslo

Paper: 100 g Arctic volume white
Typography: Adobe Garamond Pro and Myriad Pro

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 Nesset, 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.

Bergen/Hyllestad, Spring 2017
Gitte Hansen
Per Storemyr

Contents

Preface *5*

A Versatile Resource – The Procurement and Use of Soapstone in Norway and The North Atlantic Region *9*
Gitte Hansen and Per Storemyr

Soapstone Quarrying, a Stoneworker's Approach *29*
Eva Stavsøien

Soapstone in Northern Norway: Archaeological and Geological Evidence, Quarry and Artifact Survey Results *41*
Stephen Wickler, Ingvar Lindahl and Lars Petter Nilsson

Multi-ethnic Involvement? Production and Use of Soapstone in Northern Norway *59*
Laura Bunse

Mesolithic Soapstone Line-sinkers in Western Norway: Chronology, Acquisition, Distribution, Function and Decoration *73*
Knut Andreas Bergsvik

The Sandbekkdalen Quarry, Kvikne: A Window into Early Iron Age Soapstone Exploitation in Norway *93*
Tor Grenne, Bodil Østerås and Lars F. Stenvik

Reconstructing a Medieval Underground Soapstone Quarry: Bakkaunet in Trondheim in an International Perspective *107*
Per Storemyr and Tom Heldal

Trade and Hierarchy: The Viking Age Soapstone Vessel Production and Trade of Agder, Norway *133*
Torbjørn Preus Schou

Slipsteinberget Soapstone Vessel Quarry. Home Production or Professional Craft? *153*
Bodil Østerås

Bakestones – Production and Trade in the Middle Ages *165*
Irene Baug

From Numeric Data to Cultural History – A Typological and Chronological Analysis of Soapstone Vessels from the Medieval Bryggen Wharf in Bergen, Norway *185*
Hilde Vangstad

The Soapstone of Norse Greenland *207*
Mogens Skaaning Høegsberg

From Homeland to Home; Using Soapstone to Map Migration and Settlement in the North Atlantic *225*
Amanda Forster and Richard Jones

Soapstone Vessels from Town and Country in Viking Age and Early Medieval Western Norway. A Study of Provenance *249*
Gitte Hansen, Øystein J. Jansen and Tom Heldal

From Soapstone Quarries to Churches: Control, Ownership and Transport Along the Helgeland Coast in North Norway *329*
Birgitta Berglund, Tom Heldal and Tor Grenne

The Building Stones from the Vanished Medieval Church at Onarheim, Tysnes, Hordaland County in Western Norway: Provenancing Chlorite Schist and Soapstone *359*
Øystein J. Jansen and Tom Heldal

Cistercian Soapstone. Production and Delivery of Building Material from Lyse Abbey to Bergen in the 13th century *391*
Alf Tore Hommedal

List of Authors *405*

Birgitta Berglund, Tom Heldal and Tor Grenne

From Soapstone Quarries to Churches: Control, Ownership and Transport Along the Helgeland Coast in North Norway

Several soapstone quarries are found along the coast of Helgeland in north Norway, including some on islands in the mouth of Vefsnfjorden, where there are significant ancient workings. Several medieval stone churches in the area are built of soapstone. Soapstone vessels are found in grave mounds from the Viking Age. In farm mounds, everyday utensils and rough-outs made from soapstone are commonly found. The most important quarries are briefly presented here, along with the soapstone churches. Provenance studies are used to determine from which quarries the soapstone used in the churches came. The results indicate that such studies may tell us much about the ownership and control of the quarries, the distribution of soapstone for building purposes, the builders of the churches and aspects related to the production and quarrying of soapstone used for building purposes.

Soapstone quarries in Helgeland

Occurrences of soapstone are found in many places in Norway, including the coast of Helgeland in the southern part of the county of Nordland. Most of these occurrences have been exploited in the past, in particular those found in coastal areas and at the mouth of the fjords (Figure 1) (Berglund 1999). These quarries seem to have been utilised since at least the Viking period, but most likely also long before (Lund 1965:296–297; Berglund 1999:19–21).

Most of the old quarries in the Helgeland district are in the mouth of Vefsnfjord, on the islands of Haltøya, Flatøya, Tro, Røøya and Esøya. A single quarry is found on Storesjeøya, beyond Torget, an island in Brønnøy, and a few quarries occur further south, in Sømna. The largest in the district are on Haltøya, Tro and Esøya.

The first written information so far known about the use of soapstone in Helgeland came from Petter Dass (1997 [1739]:71: Jorgensen 1954:77), the priest of Alstahaug and a baroque poet. In 'Nordlands Trompet', he described three churches built of soapstone. Moreover, he mentioned contemporary quarrying of soapstone for stoves and that this production was declining. In his own words: '*But many such stones in hot fire will crack; The buyer all pleasure and profit may lack; And therefore the business is lagging*' (translation Jorgenson 1954:77). Peter Schnitler, member of the boundary commission between Norway and Sweden in the 1740s, mentioned in 1742 that soapstone was quarried in Vefsn for stoves (Qvigstad & Wiklund 1929:42). Slabs for other purposes were also quarried. Helland (1893:148), a geologist, described soapstone occurrences in Sømna, Hestun in Vevelstad and Leirskardalen in Ranen, as well as several other localities in Helgeland. In addition to

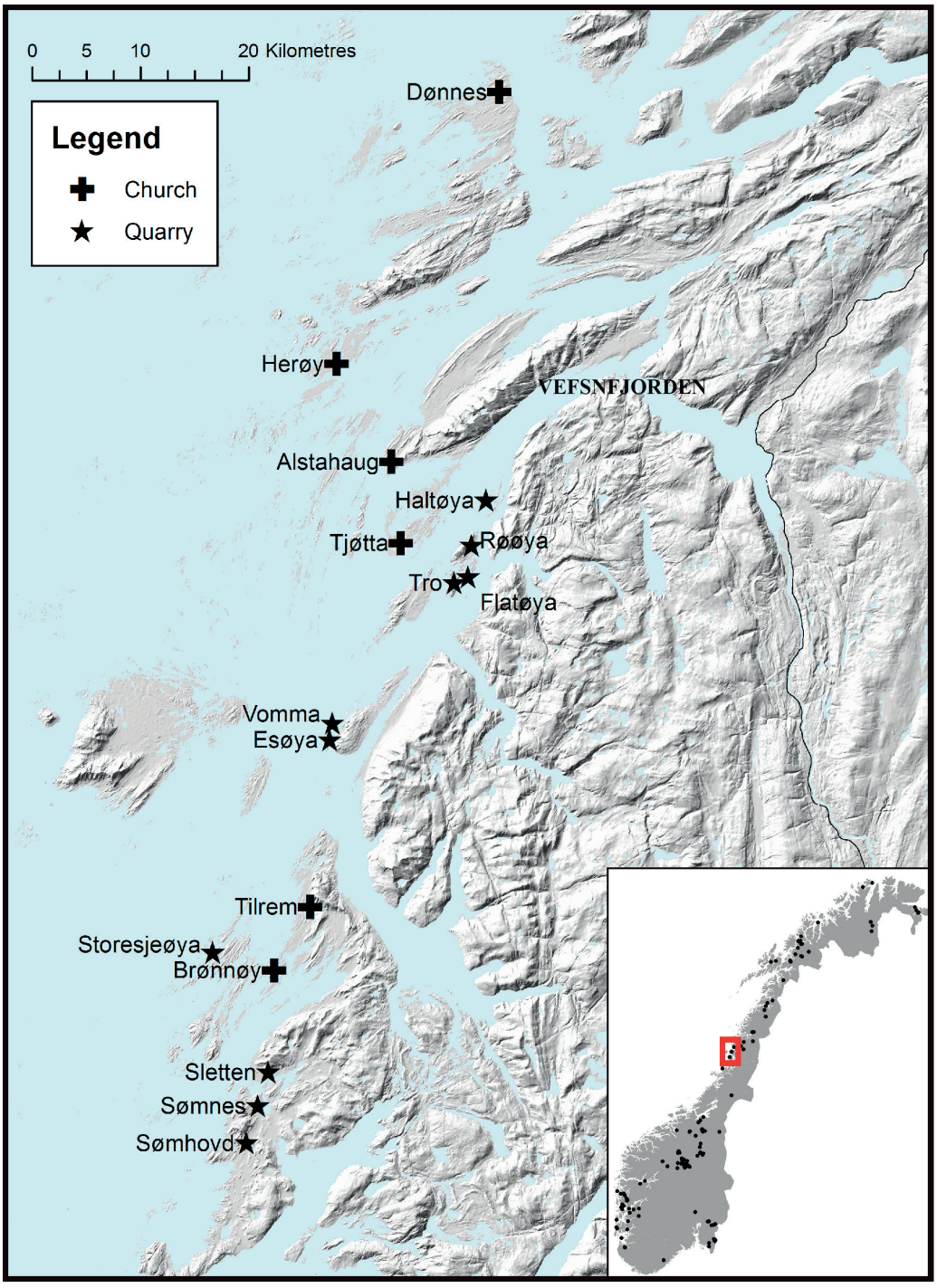


Figure 1. *Known medieval churches and soapstone quarries along the Helgeland coast.*

stoves, he mentioned that soapstone was formerly used for cooking vessels and tombstones.

Harald E. Lund, an archaeologist at the present NTNU University Museum in Trondheim, mentioned many of the soapstone quarries (Lund 1955; see Skjølsvold 1961:147). Several small quarries were investigated in the 1980s in connection with archaeological fieldwork for the land-use map series. No excavations have been carried out at the Helgeland quarries, except for a waste disposal heap excavated in 1985 at Remman, a farm on the island of Tro in the mouth of Vefsnfjorden (Berglund 1995, 1999).

On Haugen farm on Tro, a large heap of quarry waste near a small lake, Lågjen, was used as landfill during road construction in the early 1950s. Two iron chisels (NTNU University museum's inventory no.: T.17782) (one flat and the other pointed), probably used when quarrying soapstone, were found in this heap and were sent to the present NTNU University Museum in Trondheim by a teacher, Håkon Flatøy. Flatøy and Lund also brought some vessels from the same heap to the museum. Lund reported in 1963 that six vessels and vessel blanks and two sinkers from the same heap were still on the island (Berglund 1999:14–17).

There are farm names which show connections between farms in the area and soapstone quarrying. The most obvious is Hestun (Hesjutúna), where Hesju means soapstone (Rygh 1905:50). Esøya, an islet where there are large soapstone quarries, is situated near Hestun, but is not on land belonging to this farm. Es or Esje in the name of the islet has the same meaning as Hesju (Rygh 1905:50). Hestun was owned by Bakke Nunnery in the 17th century (Berglund 1995:557) and probably also in the Medieval period. Another name that may have the same meaning as Hesju is Hes in Hesgarden, which belonged to Haugen farm on Tro. There are several soapstone quarries on land attached to Hesgarden.

Use of soapstone in Helgeland in the Viking (AD 800–1030) and Medieval (AD 1030–1537) periods

The most visible use of soapstone in Helgeland is in the churches (Figure 1), usually supposed to have been built in the last half of the 12th century, mostly in Romanesque style. All are situated along the coast. Five existing churches and one that has been demolished are wholly or partly built of soapstone. Several of the churches had both outer and inner walls built of soapstone ashlars and some of them have preserved soapstone arches and archivolts.

Artefacts of soapstone, mostly spindle whorls and cooking vessels, are common grave goods from the Viking Age, especially on the islands in the mouth of Vefsnfjord in the same area as the majority of the quarries are located (Berglund 1995:149–150).

Soapstone artefacts are also found in farm mounds. These are mounds built up of material from especially buildings, fire debris and manufacturing waste, typical of long-lasting rural settlements along the north Norwegian coast. Most of the soapstone artefacts are spinning whorls, fishing weights, loom weights, cooking vessels, baking slabs and oil lamps.

Soapstone artefacts are found in mounds on farms known to be wealthy and on less wealthy ones (Berglund 1995, 2007), indicating that most people could afford the local soapstone products. Metal cooking vessels were expensive and earthenware had to be imported from the Continent or the British Isles. Pottery was more luxurious than soapstone and occurs exclusively in the rich farm mounds in the Medieval period (Berglund 1995:320, 1998:85, 2007:132–133). The use of soapstone cooking vessels seems to fall of in the 15th and 16th centuries (see Berglund 2007:96). However, even though wealthy people could afford earthenware and metal pots, they used soapstone cooking vessels

as well. An important reason may be the particular qualities of soapstone; the heat capacity keeping the vessel hot long after it is removed from the fireplace, and the fact that soapstone can tolerate open fire better than pottery. The increasing popularity of earthenware among the wealthiest from the 17th century onwards may have been linked to a more advanced food culture containing several dishes with a variety of supplements (Berglund 2007:109). Surely, the more wealthy people developed this first. The heat capacity also made soapstone popular for constructing fireplaces and stovepipes in Helgeland and other parts of Scandinavia. Soapstone is still widely used in modern stoves. It was also used to cast moulds during the Bronze Age and later periods.

Soapstone blanks and rough-outs are found in some farm mounds in Helgeland, showing that some stone working was done there and not in the quarry. Considerable quantities of rough-outs and building stones revealed a stonemason's workshop close to at least one of the churches (Berglund 2007:233–235).

Approach and methods

The aim of the present investigation is to determine the origin of the soapstone used as building stone in the medieval churches in Helgeland. Establishing the provenance of the stone contributes to a better understanding of the building history of the churches, as well as the organisation behind its quarrying and transport. The building history of all the five existing churches and one ruin is examined below, with particular emphasis on rebuilding and renovation.

We have visited most of the possible Viking Age and medieval soapstone quarries in Helgeland and the quarries have been roughly characterised according to their size (from small 'artisan' quarries to large 'industrial' ones) and products (soapstone vessels, building stone and other products). Thus, we have tried to locate the most likely sources of the stone in the five churches and the church ruin, judged from the evidence of production in the quarries. When interpreting such evidence, we have assumed the following: The medieval extraction technique involved carving channels in the bedrock around ashlar blocks and vessel blanks with a pickaxe and splitting free-standing blocks and blanks along the base plane (usually the foliation in the rocks) with pickaxe or chisel blows. Roughly the same quarrying method was used up to the late 19th century, when drilling was introduced (leaving drill holes on the quarry face). Thus, observations of quarry marks can only give a rough estimation of age (pre-1870s). Visual characterisation and comparison of soapstone found in the quarries and the church walls has been important to establish whether there are 'easy' ways of suggesting provenance based on geological features unique to one quarry or a group of quarries.

Samples were collected from the five stone churches, the church ruin and the soapstone quarries in Helgeland. Major and trace elements were analysed using XRF at the laboratories of the Geological Survey of Norway (NGU). The samples were ground to powder. Powder tablets were made for the major element analyses, glass tablets for trace element analyses. The content of different elements was plotted on standard diagrams, one element against another. Four elements proved more useful than others in separating samples: Al_2O_3, MgO, Co and Ni. We have considered that at least five samples from each quarry were needed to obtain a valid result for soapstone.

Since the samples from the churches are chips that have fallen from the facade, we cannot be quite sure whether these relate to the original medieval building stone or later rebuilding. This is a limitation of the present study. The samples were, however, chosen after visual comparison with soapstone in the medieval walls of the churches, where such still exist. The building history helps to clarify whether or not soapstone was used when churches underwent rebuilding.

The provenance analysis could clarify the relations between quarries and churches, which could

give a better understanding of who owned and/or controlled the soapstone quarries and who initiated the building of the various churches, the King with his church, a powerful landowner, or both? In any case, the elite must have built the churches, whether it was a king or a landowner, as the conclusion of an investigation concerning medieval churches in Trøndelag indicates (Brendalsmo 2006:285–286). In addition, the investigations could contribute to the church building history and knowledge of the transport routes for the soapstone.

Building history of the soapstone churches

As far as is known, six churches were built entirely or partly of soapstone in the Medieval period along the coast of Helgeland (Figure 1). Most of them were more or less rebuilt later, often using another type of stone. All six churches were visited.

Petter Dass (1997 [1739]:74–75; Jorgensen 1954:77) mentioned three of the soapstone churches: Tjøtta, Alstahaug and Herøy. Few old written sources mention the church buildings except in connection with accountancy, land registers, inspections and episcopal visitations. Christian Christie, an architect, undertook a journey in Helgeland in 1859 to draw plans of, and describe, the medieval stone churches there. These are the only known documents giving a detailed description, since many of the churches were extensively rebuilt a few years later.

As far as possible, we will describe and analyse aspects of the building history of these churches that are relevant for understanding the use of soapstone. The rebuilding or renovation of the churches is thus emphasised. It is possible that a church could be built of soapstone from different quarries. We assume, however, that when the church was built the soapstone came from the same quarry or a group of neighbouring quarries if the colour and structure of the soapstone in the church has a uniform character. We also think that an effort was made to use the same quarries when the church was rebuilt, to get the same colour and structure of the stone as it had originally, but we think this often was difficult to accomplish. Therefore, a church could be built of soapstone from one quarry and rebuilt using stone from another. Knowing the building history is thus an essential prerequisite for understanding the provenance analysis of the soapstone. However, when we judge the results of the analyses we need to consider differences in how well the building history of the churches is elucidated through archaeological investigations and information in the written sources.

Dønnes church

Dønnes church is usually considered to have been built in the first half of the 13th century when, according to the Saga of Håkon Håkonsson (1963:166), one of the more reliable of the Medieval Icelandic Sagas (Helle 2001:460–463), the lendmann (vassal) and landowner, Pål Vågaskalm, owned the Dynjarnes estate, today Dønnes. The will from 1308 of the mighty lendmann and landowner, Bjarne Erlingsson of Bjarkøy and Giske, mentioned Dønnes church as a recipient of gifts (Regesta Norvegica III:548), so there must have been a church there at that time. The church remained in private ownership until 1796 when it was sold to the Royal Norwegian Missionary College (Coldevin 1980:52).

According to C. Christie (1859), Dønnes church was built of rough, unhewn stone, but had soapstone ashlars in the outside corners. The frames of the west portal in the nave and the south portal in the chancel were also built of soapstone. A private grave chamber was built under the chancel at the same time as the church, and there were lofts above both the chancel and the nave (Nicolaysen 1862–1866:680; Coldevin 1980:47–49; Ekroll 1994:105–108, 1997:298–299, 1999:86–99).

The church was, however, changed before 1860. A grave chapel was built for the owner of

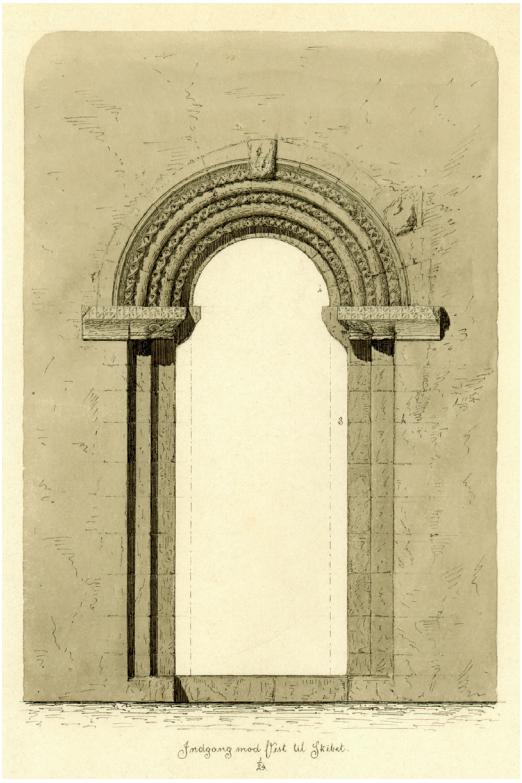


Figure 2. *The old west portal in the nave of Dønnes church as it was drawn in 1860 by C. Christie before the church was rebuilt in 1866. The frame of the portal with its ornamentation is made of soapstone. (©The Directorate for Cultural Heritage, The Archive).*

the Dønnes estate around 1690 (Coldevin 1980:46, 83). Then part of the chancel wall was demolished. When the church was rebuilt in 1866, half of the nave was removed. The rest became the new chancel (Coldevin 1980:49). The richly decorated soapstone frame forming the west portal was unfortunately removed at that time, but a drawing of it made by Christie six years before the rebuilding in 1866 still exists (Figure 2).

The church was renovated again in 1966–1974 by the Directorate for Cultural Heritage (Coldevin 1980:377). Håkon Christie, the architect responsible for this renovation, excavated the ground under the old chancel and nave in 1966–1969, and coins and other artefacts from as far back as the 13th century were discovered. Christie wrote in a letter dated September 6th 1966 to the present NTNU University Museum, Trondheim, that there were no signs of building activity on the site before the time of the stone church. In the chancel, significant amounts of soapstone rubble, including chips and pieces of building stone, were found resting on the bedrock beneath a layer resulting from burning (H. Christie 1998). This layer has been interpreted as representing remains from the oldest part of the stone church.

In conclusion, it may be assumed that soapstone found at the site of the church originates from the medieval church. No information suggests that soapstone was brought to the site during renovation work. Nowadays, soapstone is only found as recycled blocks in some parts of the church, in particular the corners.

Herøy church

Herøy church was described by C. Christie in 1859 before it was rebuilt in 1879–1880. Both the inner and outer walls were made of large soapstone ashlars (C. Christie 1859). According to his drawing from 1860 (archive of the Directorate for Cultural Heritage) the church at this time had an apse, a chancel and a nave, which he proposed had originally been longer. He also showed that the church had rich soapstone ornamentations both inside and outside, like Alstahaug church (H. Christie 1973:15).

Archbishop Aslak Bolt's Land Register from the 1430s reports that Jakob on Altern, in what is now the borough of Alstahaug, had to pay fines to the Archbishop for committing adultery and for having removed soapstone ashlars from the church to make a private stove (Jørgensen 1997:56, 80). This tells us that one or more of the church walls was in a poor state in the 15th century. The walls must have been rebuilt afterwards, since they appear undamaged in the drawing made by C. Christie.

Probably the nave was shortened in connection with this rebuilding (Nicolaysen 1862–1866:678).

H. Christie (1973), who excavated the ground beneath Herøy church in 1959 in connection with the rebuilding of the church, showed that the church has a complicated building history (Figure 3), in many ways like Alstahaug church. The old chancel is the oldest part of the church, and was built of soapstone. According to H. Christie (1973:17–19), this chancel must have belonged to an older, wooden church, even though no certain remnants were found. The chancel must originally have been the nave linked to a chancel in this wooden church. Afterwards, an apse of soapstone was built east of the chancel and a nave of the same material to the west. Both the inner and outer walls were built of ashlars, as in Alstahaug church. H. Christie (1973:21) was of the opinion that both these stone churches were built between 1150 and 1250, and that the craftsmen alternated between them. In his report from 1959, he suggested that both churches derived their inspiration in the 12th century building milieu in Bergen. The apse, he said, was scarcely built later than 1200, and the chancel must have been built before. The stone church with its chancel, apse and nave was, however, planned at the same time.

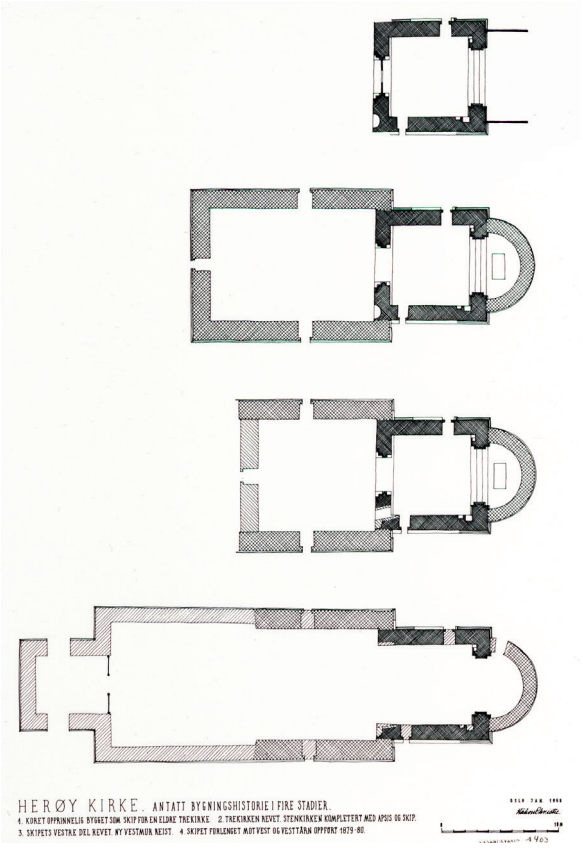


Figure 3. *The building history of the soapstone church at Herøy. Floor plan by H. Christie. (©The Directorate for Cultural Heritage, The Archive).*

During the excavation in 1959, more than 200 coins and bracteates were found in the chancel (Digre 1960:156; Ekroll 1994:105). The oldest are from the reigns of King Sverre (1177–1202) and King Håkon Håkonsson (1217–1263). Other artefacts from the same time or earlier were also found.

In conclusion, the stone church has been rebuilt several times and different quarries may have been used. Here, we postulate that the soapstone from the first stone church with its chancel, apse and nave came from a single quarry.

Alstahaug church

Alstahaug church was described by Bishop Fr. Nannestad in 1750 (Wolff 1942:50–52) and C. Christie (1859). The original church was influenced by a Romanesque style and had a chancel and a nave. From the descriptions and drawings, it seems not to have been changed from its construction (H. Christie 1973:12) until it was rebuilt in 1863–1865, shortly after the visit by C. Christie. The western part of the nave was demolished then and a new, bigger nave was built (H. Christie 1973:9)

of rubble masonry from the local bedrock (Brovoll 1999:41). The eastern part of the old nave was transformed into a new chancel (H. Christie 1973:9). The medieval features of the church became less obvious with the rebuilding in the 1860s.

In 1936, a new renovation of the church began, but it was not finished until 1970. The aim was to restore the medieval features of the church. During the rebuilding of the old chancel and nave, more soapstone was required to close the big openings of the windows from the 1860s and for the upper parts of the soapstone walls. These were demolished in the 1860s to give the roof a lower pitch. The new soapstone was quarried at Haltøya in 1936, since the quarries there provided soapstone that visually matched that in the medieval parts of the church (Lund 1955; Brovoll 1999:51–54). The renovation was combined with archaeological investigations of the walls and the ground in 1967 and 1969 by Håkon Christie of the Directorate for Cultural Heritage.

The oldest chancel and nave (Figure 4) were built between 1150 and 1250 according to art history dating (H. Christie 1973:19). They were planned at the same time, but the chancel was built first (H. Christie 1973:11–12). The inner and outer walls of the chancel were made of soapstone ashlars (H. Christie 1973:9) and fine stonework. The south wall of the chancel has a round-headed portal flanked by columns. The arch is decorated with a sunken star motif (Figure 5) made using a chip-carving technique originating in wood carving. This motif was used in both Nidaros Cathedral in Trondheim and St Mary's church in Bergen in the 12th century. It originates from the Norman area in northern France and England (Ekroll 1994:99). Both the chancel and the nave have a moulded plinth with an Attic base. On the top of the southern and northern walls of the chancel is a double blind arcade frieze (H. Christie 1973; Ekroll 1994:100–102; Liepe 2001:12–16). According to C. Christie (1859), the old nave had round-headed entrances in the north and south, in addition to the one in the west. He also mentions decorations made of soapstone inside the church.

Figure 4. *The medieval church at Alstahaug as it appears today after the rebuilding in the 20th century. To the right are the south walls of the old chancel and nave, built of soapstone. (Photo: B. Berglund).*

The excavations inside the church revealed many graves and artefacts. The oldest dated artefacts were found in the chancel, among them an enamelled plaque from the 13th century made in Limoges in France (Berglund 2007:250–251). The oldest coins found were from the time of King Håkon Håkonsson (1217–1263) (Skaare 1970; Berglund 2007:315–316). Nine of the skeletons are ^{14}C dated. The oldest is dated to the first half of the 11th century. However, it is uncertain whether this grave is related to the stone church (Berglund 2007:297, 322–326). The church was obviously in use in the 13th century, but was probably built before.

In conclusion, the church has been rebuilt several times, but as far as is known soapstone was used only in the medieval church and when

Figure 5. *Right: The south portal of the medieval chancel of Alstahaug church with the round- headed arch with the sunken star pattern carved in soapstone. Left: The opening between the medieval chancel and nave. Drawings by C. Christie in 1860 before the church was rebuilt in 1863–65. (©The Directorate for Cultural Heritage, The Archive).*

the renovation took place in the 20th century. Soapstone from Haltøya was used in this renovation because it matched the old soapstone best. It is therefore possible that the soapstone in the medieval church and that used in the recent renovation originated from the same quarry.

Tjøtta church

The first time Tjøtta church is known to be mentioned in written sources is in Trondhjems Reformats from 1589 (1983:79), the first overview of the local ecclesiastical economy after the Lutheran Reformation in 1537. The church was in a poor state in the 17th century and, according to accountancy information and inspections, it was built of stone (Åsvang 2000:60–62).

The Church Register at Tjøtta recorded that the church was struck by lightning on 23 January 1811 and all that could burn was destroyed (Åsvang 2000:83). When the church was inspected after the fire (Åsvang 2000:84–85), it was noted on 15 June 1811 that only the stone walls were left, and some of the stones had fallen down. It was also noted that the walls were of the old type. They were double and the cavities were filled with sand and gravel like the walls in other stone churches from the 12th and 13th centuries. This information supports the view that Tjøtta church is at least as old as the other soapstone churches in Helgeland. The inspection concluded that the church was too small and a more suitable church should be built. Thus, the old walls had to be carefully taken down so that the stones could be re-used in the new church. It was decided that the new church should be a cruciform church, and it was built in 1818–1821.

This church was struck by lightning in 1843 (Åsvang 2000:90), and its rebuilding was finished in 1851. The stone walls had survived this time, too, and they were taken down during the rebuilding process and good stones were again re-used. Some soapstone was quarried on Haltøya, while rubble stone was quarried in Kalberghaugen in Tjøtta (Åsvang 2000:90–93). Ashlars from the medieval church are still visible in the walls, especially the west front (Figure 6).

In conclusion, even though the church has burnt twice, much of the soapstone from the medieval church remains in the walls. New soapstone came from Haltøya in the 19th century. Maybe this quarry was chosen to get the same colour and structure as the old stone. If so, perhaps the soapstone in the medieval church was also quarried on Haltøya.

Figure 6. *The west front of Tjøtta church as it appears today after the last rebuilding finished in 1851. Soapstone ashlars from the medieval church are visible in the wall together with rubble stone. (Photo: B. Berglund).*

Tilrem church ruin

Close to the farm mound where the central farm of Tilrem was situated, there is a church ruin from the Medieval period. A local farmer, John A. Nordhuus, mentioned already in 1848 that a farmer at Tilrem discovered hewn soapstone when he was digging a cellar there (Nordhuus 1977:49). The incident was reported to the Norwegian Culture Heritage Society which reported that the discovery took place in 1842 (Nicolaysen 1862–1866:676). No church at Tilrem is mentioned in the Trondhjem Reformats from 1589 (1983), so it must have closed earlier. Archbishop Aslak Bolt's Land Register from the 1430s mentions *Knutzkirkia j Harme* (The Church of St Knut in Harm) and the farms this church owned in Harm. Einar Høvding, an amateur historian in Brønnøy, suggested that this was the Tilrem church ruin (Høvding 1937:7–14). From the position of the farms said to be located in Harm, it seems, however, more probable that that church was in Velfjord, another part of Brønnøy (Pedersen 1994:67; Berglund 2014:177).

The Icelandic Saga of King Håkon Håkonsson tells about events that took place in Tilrem in Brønnøy in 1239 in connection with the struggle between the King and Hertug Skule, the duke (1963 edition:199–201). Jon Silke was a lendmann of the King, and his farm at Tilrem was robbed by Hertug Skule´s men while Jon Silke was away from home. The Saga does not mention a church

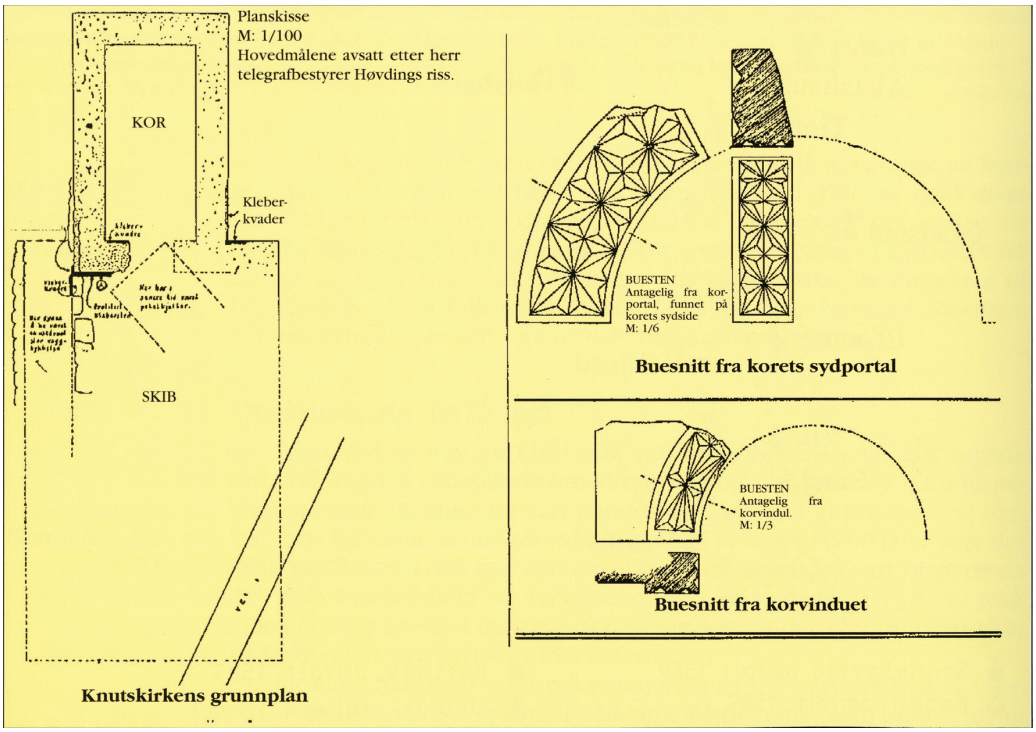


Figure 7. *Floor plan of Tilrem church after the excavation by E. Høvding in 1934–35. Parts of soapstone arches were found during the excavation. A sunken star pattern was carved in these arches. (©The Directorate for Cultural Heritage, The Archive).*

at Tilrem, but it is not unlikely that the lendmann had a church on his farm. An annual market took place at Tilrem until 1940. It was situated by the sea 700 m from the church ruin and the farm mound. It had developed from a ledingsbergting (a kind of assembly) known from written sources from the 17th century, but probably with its roots in the Medieval period (Berglund 1995:377–383, 454–457). This market could perhaps be another reason to build a church here, but if so it is difficult to understand why it closed so early.

After the owner of the Tilrem farm close to the church ruin had shown Høvding where he thought the ruin was located, Høvding excavated the ruin in 1934–1935 (Høvding 1937; Pedersen 1994:57–62). The excavation indicated, according to a floor plan made from the measurements by Høvding, that the church was of the same type as most of the medieval soapstone churches in Helgeland with a chancel and a nave, but it was mainly the chancel that was excavated (Figure 7). According to the same floor plan, it seems that both the inner and outer walls of the chancel were built of soapstone ashlars, while only the inner walls of the nave were built of such stone. Høvding (1938:143), however, wrote that the interior walls of the chancel were built of rubble stone and he found 50 soapstone ashlars on the ground in addition to 15 in the walls. There was also carved soapstone, not least part of a semi-circular arch with the sunken star motif like that above the south portal of the chancel at Alstahaug church (Høvding 1937:75–77).

The excavation does not seem to have satisfactorily answered the question of whether or not the chancel and nave were built at the same time (Høvding 1938:140–143). Erling Gjone, an architect

who visited the excavation as a representative of the Society for the Preservation of Norwegian Ancient Monuments, suggested, however, that the first church consisted just of the chancel owing to how the masonry of the nave was connected to the chancel (Gjone 1934).

An excavation was carried out by an archaeologist, Kari S. Binns, in 1992 (Topographical archive, NTNU University Museum, Trondheim) in the area where the nave of the Tilrem church is assumed to be. One of the trenches was situated close to visible remnants of the northern wall of the nave, but she did not find any other parts of the walls of the nave than those Høvding located. The walls of the nave have probably been destroyed by building activity in the area. It is said that people in the neighbourhood took stones from the ruin for different purposes. Charcoal collected in the nave during the excavation was ^{14}C dated to 880±80 BP (AD 1030–1240) (Binns 2000:11), a span of time during which the church both could have been built and abandoned. The relation between the charcoal and the church is, however, somewhat uncertain. It may also be questioned whether the nave was ever finished, since such small parts of its walls have been discovered during the excavations (Berglund 2014:180–181).

The church could have closed after Tilrem, together with Tjøtta, was handed over from the immense, privately owned estate of Bjarkøy-Giske to the Archbishop soon after 1350, according to Archbishop Aslak Bolt's Land Register (Berglund 1995:395–396; Jørgensen 1997:145). This could also have happened earlier when the farm became part of the same estate, since it is likely that no local owner lived at Tilrem from this time onwards. Without a local owner, there would be no reason to maintain a church and a priest there. In this perspective, it is reasonable to suggest that the building of the church was never finished.

In conclusion, the church was left in ruins very early and has not been rebuilt. There has therefore hardly been any need to bring soapstone to the church after it was built, but in contrast stones have been taken from the church for different purposes. It is, however, uncertain whether the chancel and the nave were built at the same time or not. It is also a question whether the nave was ever finished.

Brønnøy church

Brønnøy church as it appears today is from the 19th century. It is, however, known from written sources like Archbishop Aslak Bolt's Land Register from the 1430s and the Trondhjem Reformats from 1589 that a Brønnøy church existed before the Reformation. Parts of the medieval church may therefore survive in the new church.

Bishop Nannestad stated in 1750 that Brønnøy church was a stone church (Wolff 1942:3). The church was struck by lightning in 1772 and all the wood inside the church burnt, except for some church ornaments (Nordhuus 1977:59–62 [1848]). Nordhuus wrote that the walls also suffered from the fire. Most of the walls were, nevertheless, left as in Tjøtta church. A photograph (Figure 8) from 1960 shows a section of soapstone ashlar masonry in the east wall of the old chancel.

Nordhuus (1977:61–62 [1848]) also wrote that the church was extended in 1800 and that local farmers acquired the stone needed for the extension. A photograph of the church (Ekroll 1994:92) clearly shows that transepts were built in the northern part and the rest of the church consisted of a chancel and a nave, like churches from around the 12th century in Helgeland and other parts of Norway. The transepts must be the extension that Nordhuus wrote about.

An alter mensa must also have been saved from the fire in 1772 since mouldings are visible in a drawing by C. Christie from 1860 (archive of the Directorate for Cultural Heritage). Nicolaysen (1862–1866:676) wrote that Brønnøy church was built of rubble masonry, but the doors and windows had soapstone frames.

Figure 8. *The outer east wall of the chancel in Brønnøy church. The photograph from 1960 shows that a section of the medieval wall with soapstone ashlars is preserved. (Photo: E. Høvding. ©The Directorate for Cultural Heritage, The Archive).*

The church burnt once again in 1866 and a new church was consecrated in 1870, the one that still exists. Tradition says that soapstone was brought from the church ruin at Tilrem (Lund 1961). The new church is, however, built of rubble stone. Therefore, it is possible that it was the soapstone for the frames in the earlier church that was brought from the ruin at Tilrem.

Brønnøy church was renovated in 2004–2008. Some years before, in 1999, investigations were carried out to find out whether parts of the medieval church really were preserved in the new church (Ekroll 2000:162–165). The same medieval wall with soapstone ashlars as could be seen in the photograph taken by Høvding in 1960 (Figure 8) was located. Ekroll considered it possible that some of the northern wall of the medieval chancel is also preserved and that some old soapstone from the base was recycled in the cornice of the new church. A bracteate from around 1350 was discovered under the floor of the chancel. Thus, there is little doubt that parts of the old soapstone church are preserved inside the new church.

In conclusion, the church was probably supplied with soapstone at least once after the original stone church was built. This could be for the frames of the church that burnt in 1866 or for some details in the church still existing after the fire in 1866. It is said that soapstone was brought from the Tilrem ruin to Brønnøy church in the 19th century.

Figure 9. *Features from the soapstone quarries. a) quarry at Esøya (dotted line shows extent of extraction), b) quarry floor close to sea level at Esøya, c) small ashlar quarry at Tro, d) vessel and ashlar quarry face at Storesjeøya, e) ashlar quarry at Haltøya, f) leftover ashlar blocks at Haltøya. (Photos: T. Heldal).*

The soapstone quarries

A number of quarries were visited (Figures 1, 9), from Sømna in the south to Haltøya in the north. In Sømna, three small quarries (Sømhovd, Sømnes and Sletten) are recorded. Judging by the lack of significant spoil heaps and only sporadic signs of quarrying on the rock face, they seem to have been used for local requirements only, to make vessels and small utensils. A small quarry is situated on the steep southern cliff of an islet called Vomma. There are no harbour facilities for loading ashlar blocks, and no visible sign of such production. Very small-scale exploitation of soapstone for vessels took place on Flatøya. There are some small quarries on Røøya, mainly to make vessels. Due to their small size and lack of any sign of ashlar quarrying, none of these quarries are considered to represent likely sources for ashlar blocks. Hence, they have not been part of the present study.

Four quarry areas are sizeable enough to have supported the quarrying of stone to construct churches. These are Storesjeøya, Esøya, Tro and Haltøya. They are all close to the sea and good harbour facilities, which must have been important.

Storesjeøya

The islet of Storesjeøya is far west in Brønnøy. Most of it consists of gabbroic bedrock, but a lens-shaped body of soapstone, about 8 m at its thickest, occurs within the gabbro in the northeast. A steep quarry face is seen at the southwest end of the quarry (Figure 10), and it displays traces and marks from the extraction of soapstone vessels and ashlar blocks. The quarry floor in front of the steep face also has extraction marks, and a rough estimate of the extracted volume is 500 m^3. Most of the quarrying spoil is assumed to have ended in the sea beside the quarry, but one ashlar block is found by the far northeast end.

Figure 10. *Location of the Storesjeøya quarry. Black line indicates quarry face.*

Figure 11. *The location of quarries at Esøya.*

Figure 12. *The location of quarries at Tro.*

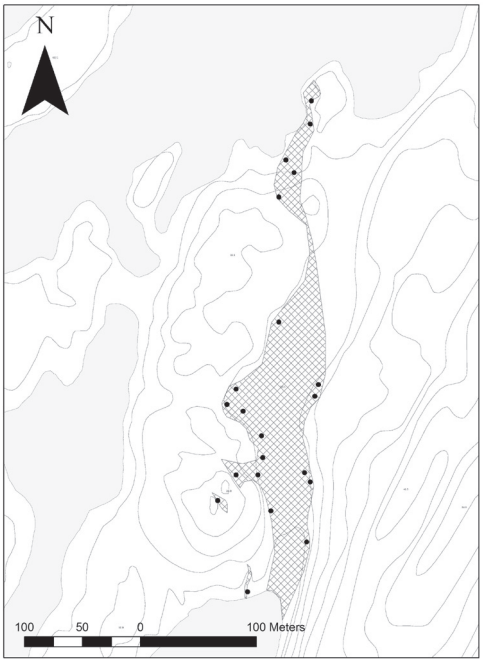


Figure 13. *The location of soapstone (cross-hatched area) and quarries (dots) at Haltøya.*

Esøya

A large quarry where at least hundreds of cubic metres of rock have been extracted is found on the island of Esøya in Vevelstad (Figure 11). Soapstone appears to have been quarried here for cooking vessels, fishing weights and building stone. There are no indications of fairly recent soapstone production, but a small deposit of actinolite seems to have been exploited by mineral collectors in recent times. The western part of the quarry displays evidence of the extraction of vessels and probably fishing weights on the quarry floor. However, a significant amount of rock has been quarried and the schist behind has been partly undermined so that large blocks have fallen onto the quarry floor. It is therefore difficult to tell whether building stone was extracted before the last phase of quarrying.

The eastern part of the quarry displays some quarry faces and spoil heaps indicating ashlar quarrying. In particular, the straight, carved quarry faces provide good indications of such

Figure 14. *Visual characterisation of soapstone from the four quarry areas. Bold shows the most characteristic feature.*

	Tro	Haltøya	Esøya	Storesjeøya
Fine network of carbonate veins		X	X	X
Folded and multidirectional thick carbonate veins		**X**	X	X
Perpendicular thick carbonate veins				**X**
Disseminated fine to medium sized carbonate grains	X	X	X	X
Disseminated large carbonate grains				**X**
Strongly foliated and sheared	**X**		X	

quarrying. A runic inscription on the rock face may indicate that production took place in the 11th century (Hagland 1984; 2000). At least, the writer knew the occurrence of soapstone and the qualities of the stone.

Tro

A large cluster of soapstone quarries is found further north, on the island of Tro in Alstahaug. We visited 11 quarries (Figure 12), but there are several more which we did not manage to cover during the fieldwork. The most prominent production seems to have been soapstone vessels, and one underground quarry used to acquire these was investigated by Berglund (1999). Only one quarry shows clear evidence of ashlar quarrying, having straight, carved faces. The quarry has not been dated, but pickaxe marks on the face and an apparent lack of drill holes indicate a medieval date.

Haltøya

Haltøya, an island in Alstahaug, north of Tro, was important for building stone production. Nineteen quarries here display evidence of ashlar quarrying (Figure 13). In addition, two quarries produced vessels. Abandoned ashlar blocks are scattered around the site. Modern workings are found in the far south of the site, probably industrial trial extraction of talc in 1935–36 (Lund 1955). Although some of the ashlar quarries may have been used in various attempts to restore medieval churches in the area, the large size of the quarry area indicates a major medieval soapstone production site.

The quarries, conclusions

Four of the quarrying areas (Storesjeøya, Esøya, Tro and Haltøya) display clear evidence of ashlar extraction and are thus the most likely candidates for exploitation of stone for the medieval churches. The soapstone in all four areas shares the same mineralogy, predominantly talc and carbonate, minor chlorite, oxides and pyrite. The structure of the rock differs however, and seven subtypes were identified, based on the structure and distribution of carbonate (types of veins, occurrence of clusters of carbonate grains and distribution and size of single grains) and the occurrence of foliation and shear structures (Figure 14).

Soapstone provenance

The visual features of the soapstone found in the churches have been described using the same criteria as the quarries (Figures 9, 14). Figure 15 summarises the observations from the churches. Figures 16, 17 show the correspondence between churches and quarries, indicating the most likely provenance.

Figure 15. *Visual appearance of soapstone observed in the churches.*

	Alstahaug	Herøy	Dønna	Tjøtta	Tilrem	Brønnøy
Fine network of carbonate veins	X				X	X
Folded and multidirectional thick carbonate veins	X	X			X	X
Perpendicular thick carbonate veins					X	
Disseminated fine to medium sized carbonate grains	X	X	X	X	X	X
Disseminated large carbonate grains					X	X
Strongly foliated and sheared			X	X		

Figure 16. *Match between visual appearances in soapstone from churches and those observed in quarries. The first number illustrates the number of similar features, whilst the last shows the opposite — the number of non-similar features. Bold represents the most likely provenance judged from visual inspection.*

Quarry\church	Tro	Haltøya	Esøya	Storesjeøya
Alstahaug	1-3	**3-0**	**3-1**	3-2
Herøy	1-2	**2-1**	**2-0**	2-3
Dønna	**2-0**	1-3	2-2	1-5
Tjøtta	**2-0**	1-3	2-2	1-5
Tilrem	1-5	3-2	3-3	**5-0**
Brønnøy	1-4	**3-1**	**3-1**	**4-1**

The soapstone found in Alstahaug and Herøy churches shows strong similarity with the Haltøya and Esøya quarries, while Dønnes and Tjøtta churches contain stone that seems to originate in the Tro quarries. The church ruin at Tilrem contains soapstone that has many features resembling the Storesjeøya quarry. Brønnøy church has soapstone that may come from several sources, and the Esøya, Storesjeøya and Haltøya quarries may be candidates.

Trace and major elements were analysed by XRF in whole-rock samples from the quarries and all the churches, excluding Dønnes (Appendix, Table 1). The number of samples analysed from the Helgeland soapstone quarries is: Esøya 13, Haltøya 7, Tro 6 and Storesjeøya 6. Since Esøya displays the largest visual variation of soapstone, more samples were taken from there (Berglund 1999:18). Haltøya and Tro have several small quarries, but most of them are close to each other (Berglund 1999:16–18) and display little variation. The Storesjeøya quarry is smaller than the others and is in a single body of soapstone (Berglund 1999:18–19). We have tried to choose representative samples from the quarries based on visual characterisation.

Several combinations of major and trace elements were plotted. Magnesium oxide (MgO), aluminium oxide (Al_2O_3), nickel (Ni) and cobalt (Co) distinguished between the quarries best. Figure 18 shows plots of MgO against Al_2O_3, Ni against MgO and Ni against Co. Only one quarry, Storesjeøya, is sufficiently unique geochemically to be easily separated from the others. Haltøya and Esøya are separated from each other, but show a small overlap. Tro plots close to Haltøya and in the overlapping field between Haltøya and Esøya.

The numbers of XRF-analysed samples from the Helgeland churches are: Herøy 2, Alstahaug 3, Tjøtta 4, Tilrem 6 and Brønnøy 4. Four samples from Tilrem plot clearly within the field of the

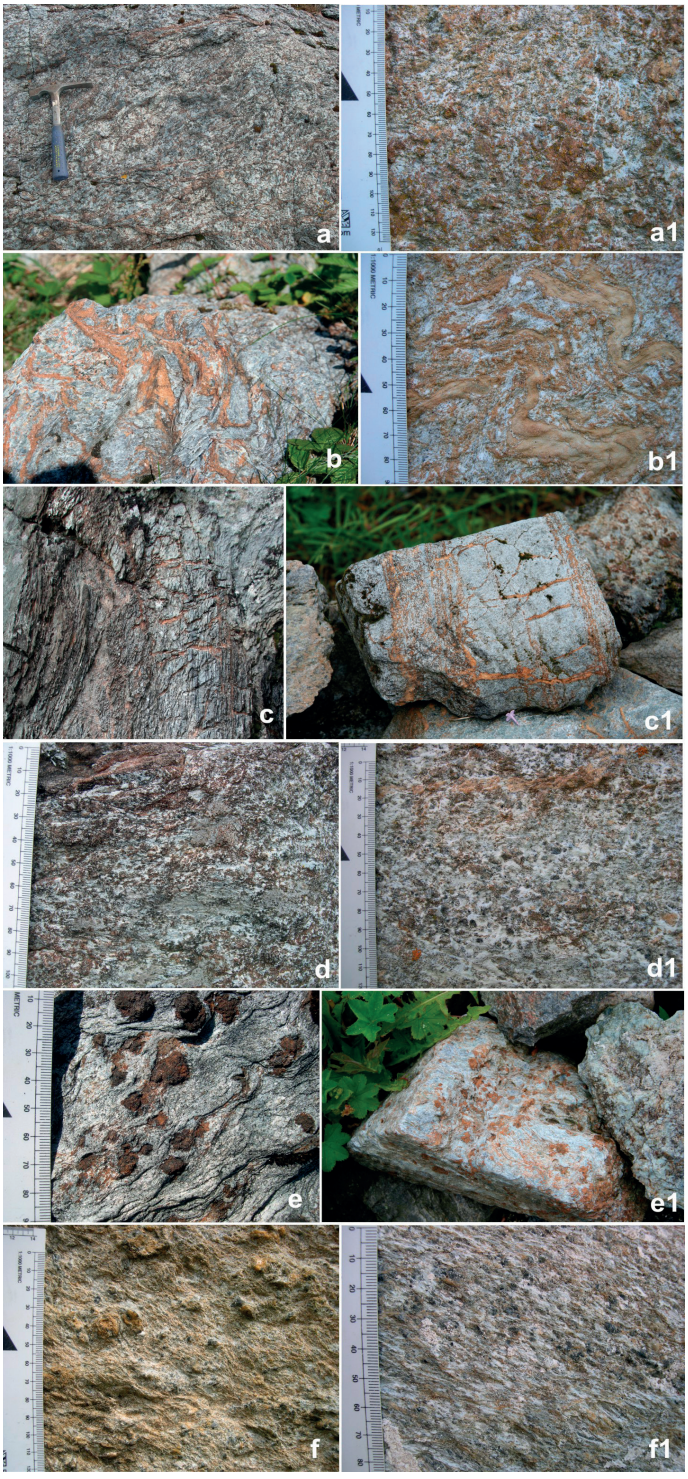
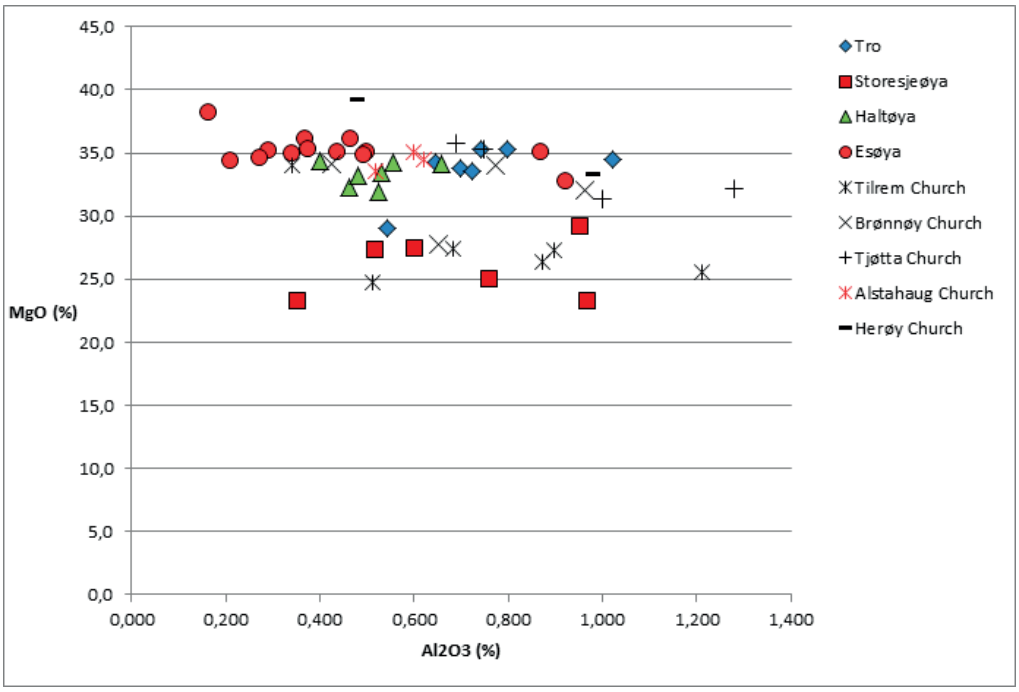
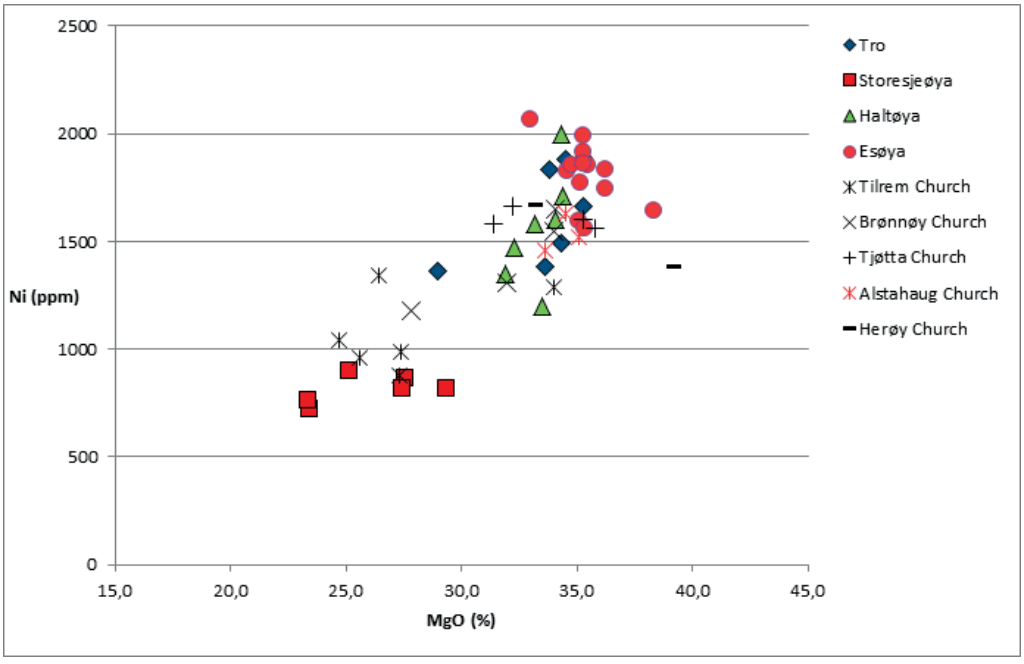


Figure 17. *Features of soapstone from quarries and churches. a) Fine network of carbonate veins (Haltøya), a1) same as seen in Alstahaug church. b) Folded and multidirectional thick carbonate veins (Haltøya), b1) same as seen in Alstahaug church. c) Perpendicular, thick carbonate veins (Storesjeøya), c1) same as seen in Tilrem church. d) Disseminated fine to medium sized carbonate grains (Esøya), d1) same as seen in Alstahaug church. e) Disseminated large carbonate grains (Storesjeøya), e1) same as seen in Tilrem church. f) Strongly foliated and sheared (Tro), f1) same as seen in Dønnes church. (Photos: T. Heldal).*


45,0
40,0
35,0
30,0
25,0
20,0
15,0
10,0
5,0
0,0
MgO (%)
0,000
0,200
0,400
0,600
0,800
1,000
1,200
1,400
Al2O3 (%)
Tro
Storesjeøya
Haltøya
Esøya
Tilrem Church
Brønnøy Church
Tjøtta Church
Alstahaug Church
Herøy Church


2500
2000
1500
1000
500
0
Ni (ppm)
15,0
20,0
25,0
30,0
35,0
40,0
45,0
MgO (%)
Tro
Storesjeøya
Haltøya
Esøya
Tilrem Church
Brønnøy Church
Tjøtta Church
Alstahaug Church
Herøy Church

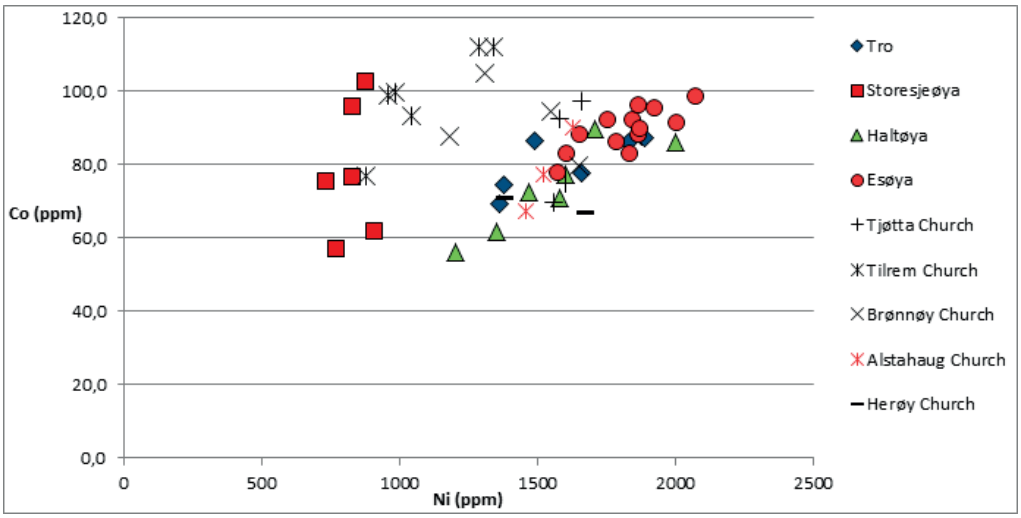


Figure 18. *MgO-Al2O3 , Ni-MgO and Co-Ni plots of samples from quarries (coloured symbols) and churches.*

Figure 19. *Likely provenance for soapstone found in the different churches. Bold means rather secure provenance.*

Alstahaug	**Haltøya**/Esøya
Herøy	Haltøya/Esøya
Dønna (only visual inspection)	**Tro**
Tjøtta	**Tro** + Esøya?
Tilrem	**Storesjeøya +** unknown
Brønnøy	**Storesjeøya** + Haltøya/Esøya + unknown

Storesjeøya quarry. Two samples plot closer to other fields. These two are clearly separated from all the quarry fields on the Co-Ni plot (Figure 18), indicating a source that is not yet identified. One sample from Brønnøy church plots together with the anomalous Tilrem samples, others between the fields, one close to the Esøya field and the last close to samples from Tro, Esøya and Haltøya. According to Høvding (1938:167–168), Rekstad at the Geological Survey of Norway compared samples from Storesjeøya and Tilrem church, and concluded that this quarry was not the source. Given that our study points towards the opposite conclusion, it may be that Rekstad got a sample from the unknown source for comparison. Rekstad also compared soapstone from Brønnøy church with the analysed soapstone from Tilrem, concluding that the soapstone from the two churches probably originated from the same quarry. The analysed stone in Brønnøy church originates from the cornice with the recycled stones (Høvding 1938:168) from the medieval base (Ekroll 2000:162–165).

Four samples from Tjøtta church split in two groups. Two of them plot closest to the samples from Tro and Haltøya, while the others show best fits with the Esøya samples. Herøy church plots close to both Tro and Haltøya, while Alstahaug church matches best with Haltøya and Esøya.

Thus, it is possible to find support in the geochemical analyses for the conclusions drawn from the visual inspection of samples. It is likely that both Tjøtta and Dønnes churches used stone from Tro. However, the analyses also indicate a second source for Tjøtta church, perhaps the Esøya quarry. Alstahaug church fits with the Haltøya quarry, but Esøya cannot be ruled out for at least one sample.

Two samples from Herøy church could indicate Haltøya or Esøya, given that visual inspection excludes Tro. Four samples from Tilrem most likely originated at Storesjeøya. Two samples and one from Brønnøy church, however, plot outside any of the fields in Helgeland, and may represent a still unknown source. Figure 19 summarises the possibilities and likelihood of provenance for the different churches.

Control, ownership and transport in the light of the provenance studies

There are some central farms in Helgeland where the landowners started to build up large landed properties early, probably not later than in the Viking Age (Høgsæt 1986; Berglund 1995). One of these properties is Tjøtta (Figure 20), in the mouth of Vefsnfjord, one of the biggest fjords in Helgeland. It is typical that these landed properties controlled people and resources both in the fjord districts and in the archipelago. They could thus collect different types of resources typical for these different areas. Archbishop Aslak Bolt's Land Register from the 1430s reported that the Vistenfjord area belonged to Tjøtta, along with many islands in the archipelago (Jørgensen 1997:145; see Berglund 1995:395–398). Torget in Brønnøy, further south in Helgeland, is another central farm which started to build up large landed properties early (Høgsæt 1986:41–59; Berglund 1994:59–62, 1995:447–450, 2011:365).

However, did the owners of this type of landed property own and/or control the soapstone quarries? The early written sources do not mention the soapstone quarries. It is known that landowners built private churches on their estates at an early date. In such cases, it is probable that a landowner

Figure 20. *Ownership of the farms where the soapstone churches were built.*

The Farm	The Saga Literature	The Land Register of Arch-bishop Aslak Bolt (1430s)	The Land Register of Archbishop Olav Engelbrektsson (1530)	The Land Registers of the central authorithy (Stattholder) 1624-26	The Taxation Land Register of 1647	The Land Commission 1661
Dønnes	Pål Vågaskalm (1232)					The Noble Man Preben von Ahnen
Alstahaug					The Benefice of Alstahaug (Alstahaug prestebol)	The Benefice of Alstahaug (Alstahaug prestebol)
Sør-Herøy				The Priest	The Benefice of Alstahaug	The Benefice of Alstahaug
Tjøtta	Hårek Øyvindsson (10th-11th century	X	X	The King	The King	The King
Tilrem	Jon Silke (1239)	X	X	The King	The King	The King
Brønnøy					The Benefice of Brønnøy (Brønnøy prestebol)	The Benefice of Brønnøy (Brønnøy prestebol)

Figure 21. *Ownership of farms with building stone quarries.*

The farm	The Land Register of Archbishop Aslak Bolt (1430s)	The Land Registers of the central authorithy (Stattholder) 1624-26	The Taxation Land Register of 1647	The Land Commission 1661
Haltøy		The Priest	The Benefice of Alstahaug	The Benefice of Alstahaug
Haugen (Lauvøy)	X	The King and private 1625: Farmer	Anne, the widow of Peder Jacobsen	Anne, the widow of P. Jacobsen, and her children
Havn: Esøya		The Church	Herøy church	Herøy church
Bolvær: Storesjeøya			Erich The King	

on the Helgeland coast used soapstone from quarries he perhaps owned and/or controlled. In Bergen, soapstone buildings initiated by the King made use of a single, main quarry probably controlled by him (Jansen et al. 2003). Perhaps this was also the case for the churches initiated by central authorities on the Helgeland coast?

Comparison between the known early ownership of farms where soapstone churches were built (Figure 20) and the early ownership of farms with building stone quarries (Figure 21) in the light of the results of the provenance studies (Figure 19) might tell us more about who owned or controlled the quarries, the distribution of the soapstone from the quarries, and the person responsible for building the church.

Dønnes – control and ownership

Dønnes farm was privately owned in the 17th century and was the central farm in a large landed property (Figure 20). According to the Saga of Håkon Håkonsson, the property was owned by the lendmann and landowner, Pål Vågaskalm, in the 1230s. As a witness, he signed a letter from King Håkon Håkonsson in 1233 (Regesta Norvegica I:628). Dønnes church is usually considered to be a private church (e.g. Ekroll 1994:100, 1999:86). Since Dønnes is neither mentioned in the land registers of the Archbishops nor in the later land and tax registers, the farm was probably privately owned by a nobleman even before 1661 when the nobleman Preben von Ahnen owned the estate (see Berglund 1995:392). Such farms did not pay taxes and therefore do not figure in the tax registers. Since Dønnes church was rebuilt with rubble stone, not soapstone, soapstone at the site probably originates from the medieval church. Tro is the likely provenance of this soapstone (Figures 16, 19). However, no connection is known between Dønnes and Tro in the first centuries of the Middle Ages. It has been argued that the owner of Tjøtta, another big landed property in the area, controlled the island of Tro and its resources at an early date (Berglund 1995:396). However, according to Archbishop Aslak Bolt's Land Register (Jørgensen 1997:145), Tjøtta was handed over to the Archbishop between 1350 and 1355, but this is 100 years later than Dønnes church is believed to have been built. Tjøtta was private property in the 13th century (Berglund 1995).

Alstahaug and Herøy – control and ownership

It is not known whether the farms of Alstahaug and Herøy were privately owned or not when the medieval churches were built, but in the 17th century the farms of Alstahaug and Sør-Herøy, where Herøy church is situated, maintained the priest of Alstahaug (Figure 20). These farms probably also had this function earlier. Alstahaug and Herøy churches were in the same parish. There are, however,

no soapstone quarries on land belonging to the Alstahaug or Sør-Herøy farms. The soapstone in Alstahaug church was quarried on Haltøya and possibly also on Esøya according to the geochemical analyses, and the same applies to the stone in Herøy church (Figure 19). Since Haltøy farm maintained the priest at Alstahaug in the 17th century (Figure 21), there could be a connection between the Haltøya quarries and the Alstahaug and Herøy churches. Esøya belongs to Hamn farm, which was owned by Herøy church in the 17th century (Figure 21), so the quarries on both Haltøya and Esøya were owned or controlled by clerical institutions. If we accept that these ownerships go back to the time of the building of the stone churches, there could be a connection between these churches and the quarries. H. Christie (1973), who excavated the ground beneath these two churches, was of the opinion that the two churches were built at the same time and the craftsmen alternated between them during their construction. The use of the same quarries supports his opinion. A clerical institution, Bakke Nunnery, owned the neighbouring farm of Hestun in the 17th century (Berglund 1995:568). This strongly indicates that it was also the owner in the Medieval period. As mentioned above, the meaning of the name Hestun indicates that this farm had something to do with soapstone, probably the Esøya quarry.

Tjøtta – control and ownership

According to Snorres Kongesagaer, the early 13th century history of the Norwegian kings written by Snorre Sturlason (Holtsmark & Seip 1942), Tjøtta (Figure 20) was the farm of Hårek Øyvindsson at the end of the Viking Age. Hårek was one of the commanders at the battle of Stiklestad in 1030 where the Norwegian king, Olav Haraldsson, was killed. It seems that Tjøtta continued to be owned privately until the farm was handed over to the Archbishop in 1350–1355, according to Archbishop Aslak Bolt's Land Register from the 1430s (Berglund 1995:395–400). It is usually considered that Tjøtta church was built as a private church (e.g. Ekroll 1994:100). The most obvious building stone quarry on the island of Tro is on Haugen farm (Figure 21), which was once part of a larger farm, Lauvøy. Tjøtta may once have controlled Lauvøy farm (Berglund 1995:390–405). The provenance studies support this since the analyses of the building stone from Tjøtta church match those from Tro quarries, in addition to an unknown quarry, possibly Esøya.

Tilrem – control and ownership

Tilrem farm (Figure 20) was handed over from private ownership to the Archbishop on the same occasion as Tjøtta according to Archbishop Aslak Bolt's Land Register (Jørgensen 1997:145). At that time, 1350–1355, both Tjøtta and Tilrem were part of the enormous landed estate of Bjarkøy-Giske. Both the visual comparison and geochemical analyses of soapstone from the church ruin at Tilrem match very well with the quarries on the islet of Storesjeøya in Brønnøy (Figures 16, 19). This islet is situated seaward of Torget, a farm known from written sources such as Olav Engelbrektsson's Land Register from 1530 (Brinchmann & Agerholt 1926) and the Icelandic Egil Skallagrimsson's Saga (Egilssoga 1978). According to the former, many farms and islets, mostly in the vicinity of Torget, belonged to this estate (Høgsæt 1986; Berglund 1994, 1995, 2011). According to Egilssoga, the farm played an important role as one of the strongholds of the chieftains in this area in the 9th century. It is unlikely that the owners of Torget did not control the quarry on Storesjeøya. There could have been some sort of link between the owners of the big farm at Tilrem and the Torget estate. According to Olav Engelbrektsson's Land Register, Torget seems to have been handed over to the Archbishop little by little (Høgsæt 1986; Berglund 2011:364–366). In 1647, Storesjeøya belonged to Bolvær (Figure 21), which was owned by the King at that time. Bolvær could be one of the islands outside Torget that was handed over to the Archbishop and later confiscated by the King in connection with the Reformation in 1537. According to Rygh (1905), Bolvær was not matriculated before 1610.

Brønnøy – control and ownership

In the 17th century, Brønnøy farm maintained the priest of Brønnøy. It is not known who owned the farm when the church was built, but it is not unlikely that the farm also maintained the Brønnøy priest in the Medieval period. The farm was hardly handed over to ecclesiastical use after the Reformation in 1537. Both the visual comparison and the geochemical analyses of some of the soapstone from Brønnøy church match the soapstone on Storesjeøya (Figures 16, 19), in common with most of that from Tilrem church. The geochemical analyses also match those from Haltøya and Esøya. The soapstone from Storesjeøya was perhaps taken from the Tilrem church ruin to Brønnøy church in the 19th century, although we cannot exclude the possibility that it was taken directly from Storesjeøya in the Medieval period and was not recycled from Tilrem. If so, the medieval church could have been built of stone from Haltøya and/or Esøya since no stone from these quarries is so far known from the Tilrem church ruin.

It is interesting that the provenance studies show that the churches of Brønnøy, Alstahaug and Herøy have building stone from the quarries on Haltøya and Esøya, since all these churches are regarded as having been established by central authorities (Berglund 1995:499–500). The quarries on Haltøya and Esøya are also the ones which most clearly were owned by clerical institutions (Figure 21).

Transport of the soapstone

The transport of the building stone from the quarries to the stonemasons' workshops at the churches had to be by boat. This must have been an advantage for the soapstone quarries on the Helgeland coast. The overland transport was at most 500–600 metres from the quarry to a harbour and mostly even shorter from the sea to the churches. The quarries at Storesjeøya and Esøya are situated almost on the beach, making the logistics particularly easy.

Conclusion and further work

The provenance studies have so far not given unambiguous results, but there are some very interesting indications. In the Medieval period, soapstone from the Haltøya and Esøya quarries seems primarily to have been used in churches earlier supposed to have been established by central authorities. These are Alstahaug, Herøy and Brønnøy (Berglund 1995:499–500). The quarries on Haltøya and Esøya are the ones owned by clerical institutions. The church therefore used its own quarries for churches established after a central initiative.

Dønnes and Tjøtta churches are usually considered to have been built as private churches. According to the provenance analyses, the soapstone in these churches originates from quarries on Tro and, in the case of Tjøtta, in addition from an unknown quarry, perhaps Esøya. There could be a connection between Tjøtta and the farms on Tro, as well as between the owners of the Tjøtta and Dønnes farms. Those who initiated the building of the private churches seem therefore not to have used quarries owned by clerical institutions.

The soapstone in the church ruin at Tilrem mainly originates from Storesjeøya. As that quarry was probably controlled by the Torget estate, there could have been a connection between the owners of the Torget and Tilrem farms. This supports the idea that Tilrem was a private church since the soapstone did not originate from a quarry controlled by the church or another clerical institution. The soapstone from Storesjeøya may have been taken from the Tilrem church ruin to Brønnøy church in the 19th century, but we cannot exclude the possibility that soapstone from Storesjeøya was originally

used in Brønnøy church in the Medieval period.

Judging by the geochemical analyses, there is at least one type of soapstone in the churches (Tilrem and Brønnøy) whose source is not yet identified. This could, of course, be an unknown quarry in the region, but it is also relevant to explore the possibility that soapstone from more distant medieval quarrying operations was used, for instance Trøndelag, in central Norway.

The results of the provenance studies have given information concerning control, ownership and transport of soapstone for six medieval soapstone churches and four building stone quarries in Helgeland. This pilot study should, however, be tested further with more samples from both the soapstone quarries and the churches. We plan limited investigations of two of the quarries, Haltøya and Esøya, to learn more about questions such as When were the quarries used? and Which technology was used?. It is planned to study the quarries as mini-societies (Berglund 2015:129–140). We have also made preparations to perform provenance analyses of everyday utensils from farm mounds in Helgeland.

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Appendix

Table 1. *Major and trace elements analysed by XRF from four quarrying areas and five churches.*

Locality	NGU -lab no	SiO[2]	Al[2] O[3]	Fe[2] O[3]	MgO	LOI	Total	Cr	V	Zn	Ni	Co
Tro	74007	34.6	0.542	6.16	29	21.2	99.5	1950	22.2	29	1360	69.3
Tro	74008	35.3	0.646	7.21	34.3	21.6	100	1810	23.2	33.2	1490	86.7
Tro	74009	34.3	1.02	7.62	34.5	21.7	99.6	1730	26.8	35.5	1880	87.9
Tro	74010	32.4	0.741	7.75	35.3	23	100	1570	25.2	54.1	1660	77.9
Tro	74011	33.7	0.699	7.23	33.8	22.3	99.2	1820	26.5	36.8	1830	86.3
Tro	74012	31.4	0.799	7.59	35.3	23.9	99.4	1700	23.9	31.3	1890	87.4
Tro	74013	32	0.723	6.69	33.6	23.5	99.1	1700	23.4	29.7	1380	74.6
Storesjeøya	74025	27	0.949	7.51	29.3	26.9	99.4	2330	36.7	25	824	77.1
Storesjeøya	74026	31.5	0.598	9.51	27.5	22.3	99.7	1180	45.2	29.8	873	103
Storesjeøya	74027	25.1	0.965	8.09	23.4	25.6	98.6	2220	73.7	23.7	731	75.8
Storesjeøya	74028	26.4	0.516	6.69	27.4	27.2	99.6	1720	39.4	31.9	823	96.2
Storesjeøya	74029	23.8	0.351	6.14	23.3	28.4	99	1200	45.7	21	768	57.2
Storesjeøya	74030	34	0.758	6.56	25.1	20.8	99.1	2660	55	29.5	903	62
Haltøy	74037	36.8	0.555	6.08	34.3	21.6	99.6	1400	15	37.4	2000	86.3
Haltøy	74038	40.9	0.461	6.81	32.3	17.6	99	1630	16.8	42.8	1470	72.7
Haltøy	74039	34.5	0.525	6.42	31.9	22.7	99.5	1510	19.1	38	1350	61.7
Haltøy	74040	35.8	0.531	6.6	33.5	22	99.8	1240	20.7	33	1200	56.2
Haltøy	74041	32.6	0.658	7.91	34.1	23.4	99.2	2080	27.3	36.1	1600	77.5
Haltøy	74042	35.3	0.481	7.17	33.2	22.2	99.4	1490	17.7	39.2	1580	71.1
Haltøy	74043	36.8	0.4	5.85	34.4	21.4	99	2100	17.2	48.2	1710	89.8
Esøya	74201	35.7	0.495	7.46	35.2	21.2	100	1660	22.2	39.8	2000	91.8
Esøya	74202	21.1	0.16	8.34	38.3	32	100	1230	20	37.4	1650	88.4
Esøya	74203	42.6	0.919	7.36	32.9	15.2	99.1	1810	26.2	44.1	2070	98.8
Esøya	74204	27.9	0.489	6.07	35	27.3	99.6	1350	15.5	31.9	1600	83.3
Esøya	74205	33.8	0.867	7.05	35.2	22.2	99.4	1680	19.8	43.7	1920	95.7
Esøya	74206	28.7	0.366	7.92	36.2	26.1	99.5	1780	23.7	42.4	1840	92.5
Esøya	74207	31.3	0.461	7.84	36.2	23.9	99.8	1710	22.7	33.3	1750	92.4
Esøya	74208	35.2	0.371	6.22	35.4	21.7	99.1	1520	15.8	34.8	1860	88.6
Esøya	74209	36.2	0.289	6.03	35.3	21.6	99.6	1490	9	38.3	1570	78.2
Esøya	74210	33.4	0.337	7.43	35.1	22.7	99.2	1750	17.6	33.9	1780	86.5
Esøya	74211	33.5	0.207	8.88	34.5	22.1	99.3	2010	21.2	32.4	1830	83.5
Esøya	74212	31	0.269	9.07	34.7	23.8	98.9	1560	16.9	33.7	1860	96.4
Esøya	74213	33.6	0.435	7.62	35.2	22.4	99.4	1630	18	33.5	1870	90.3
Tjøtta church	74219	34.2	0.69	7.05	35.8	22.4	100	1540	22.1	62.3	1560	69.7
Tjøtta church	74220	35.7	1.28	8.42	32.2	20.1	99.2	2970	36.8	52	1660	97.2
Tjøtta church	74221	32	1	8.46	31.4	22.7	99.3	3300	35.8	53.7	1580	92.7
Tjøtta church	74222	30.2	0.749	6.89	35.3	24.8	99.4	1620	19.4	119	1600	74.9

Table 1 *(continued)***.**

Locality	NGU -lab no	SiO[2]	Al[2] O[3]	Fe[2] O[3]	MgO	LOI	Total	Cr	V	Zn	Ni	Co
Tilrem church	74223	34.5	0.512	7.88	24.7	20.1	99.2	1450	60.1	29.6	1040	93.5
Tilrem church	74224	37.8	0.897	6.58	27.3	19	98.7	2600	39.6	31.4	876	76.8
Tilrem church	74225	36.7	1.21	10.2	25.6	17.1	99.1	2260	68.6	35.4	959	99.1
Tilrem church	74226	28.4	0.342	8.49	34	26.6	99.2	3010	14.6	32.1	1290	112
Tilrem church	74227	33.7	0.684	8.55	27.4	21	99.3	1670	48.8	34.6	984	99.7
Tilrem church	74228	35	0.873	9.23	26.4	19.2	98.7	2760	50	35.7	1340	112
Brønnøy church	74229	27.4	0.962	9.95	32	25.8	99.3	4020	25.3	57.4	1310	105
Brønnøy church	74230	25.1	0.652	6.54	27.8	28.2	99.2	2830	22.8	41.5	1180	87.9
Brønnøy church	74231	28.6	0.773	9.91	34	24.6	99.2	4230	30.6	54.8	1550	94.7
Brønnøy church	74232	29.5	0.424	8.77	34.1	24.8	99.1	1860	19.6	190	1650	79.6
Alstadhaug church	74233	26.7	0.621	9.38	34.5	26.9	99.5	3010	29.4	68.7	1630	90.2
Alstadhaug church	74234	28	0.6	8.09	35.1	27.1	99.4	1380	20.3	73.2	1520	77.4
Alstadhaug church	74235	22.2	0.517	8.26	33.6	30.9	99.3	1300	17.8	39.3	1460	67.3
Herøy Church	49354	34.95	0.98	7.14	33.27	22.33	101.8	1991	65	41	1669	67
Herøy Church	49355	22.45	0.48	6.96	39.25	31.64	102.15	1407	25	34	1380	71

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.

ISBN: 978-82-90273-90-8