The Stave Churches of Northern Norway – Interpretation and Reconstruction of a Stave Church at Trondenes Museum, Harstad

Gisle Jakhelln

Abstract

Reconstructions are erected either 1) of a known structure, damaged or destroyed, or 2) of a structure not known, but of which there are fragments, archaeological finds or written sources. One aspect of reconstruction works is studying and understanding the past heritage and understanding the development of an earlier culture.
A piece of architecture cannot be fully understood through drawings and small-scale models. Only through full-scale models/reconstructions is it possible to grasp the architectural quality of the structure. And only through full scale work is it possible to study the building methods and craftsmanship from times past.

Stave churches were built from the 11th to the 17th centuries. Today there are 28 stave churches in Norway, all of them in Southern Norway. We know from written sources and from archaeological finds that there were stave churches in Northern Norway as well. There are two main types of stave churches: the Borgund type and the Möre type. Most of the Norwegian stave churches are of the Borgund type, a stave church with raised central room. A different type, of which there are only three churches remaining are all in the Möre og Romsdal County. What kind of stave church was built in Northern Norway? Some evidence shows it may have been the Möre type.
Research is based on studies of written sources and archaeological finds and on comparing them with built structures in the region.
This paper presents the hypotheses that the Möre type found on the northwest coast of Norway indicates the southernmost part of a much larger area for this type of stave church, i.e. Northern Norway. In addition to the difference in plan layout, the specific structural elements of the Möre type are presented to be different from the Borgund type, i.e. without internal bracing elements. The paper describes the development from the long house to the stave church. A reconstruction of this type of stave church built in Northern Norway will strengthen the consciousness of the particular historical identity of Northern Norway.

Background

The museum of Trondenes at Harstad, Northern Norway, is planning to establish a group of buildings showing the life of the community in the Middle Ages, i.e. 1200 AD, called *Almenningr*.

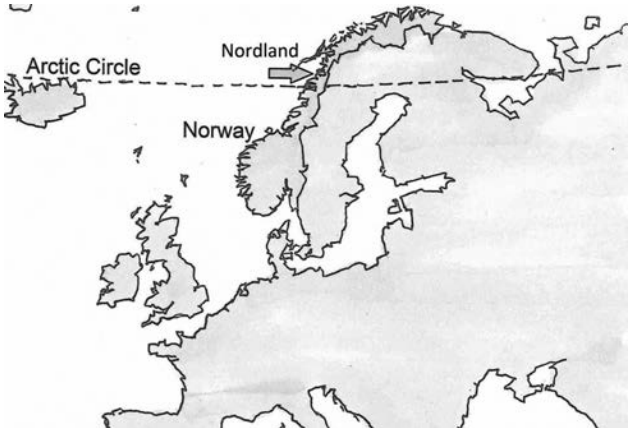


Fig.1 Norway and Nordland County in Northern Norway

Fig.2 Trondenes Church, 1440 (photo Gisle Jakhelln, January 2016)

Fig. 3 Urnes stave church, 1150, drawing of 1837, World Heritage Site since 1979 (from Anker 2005, p. 116)

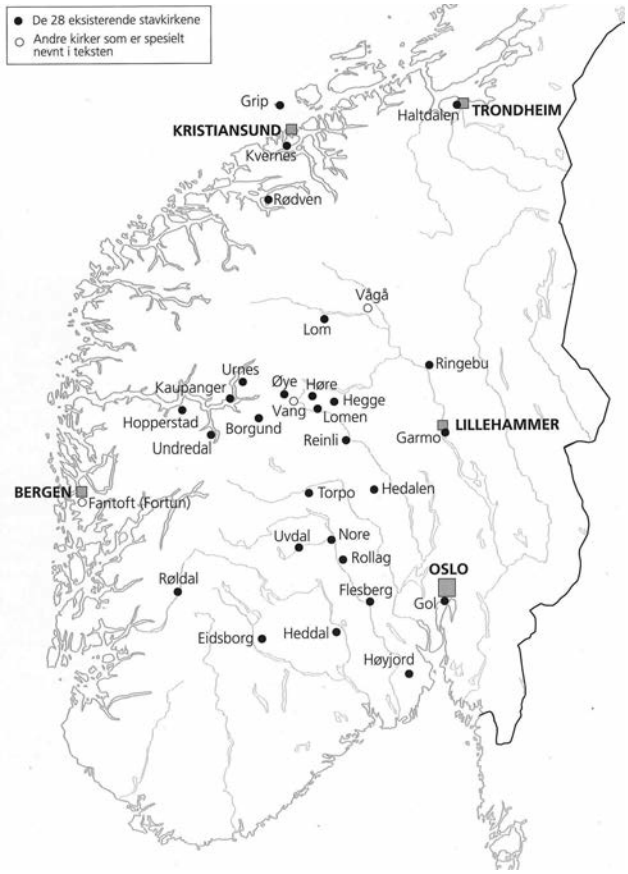


Fig. 4 The 28 existing stave churches in Norway, the three Möre-type churches being near Kristiansund

The stone church now standing at Trondenes was built in 1440. There were most probably stave churches on this site earlier. As part of the *Almenningr* project a stave church will be built in 2017 within the grounds of the museum.

Reconstructions

Reconstructions are erected either 1) of a known structure, damaged or destroyed, or 2) of a structure unknown, but of which there are fragments, archaeological finds or information from written sources. One aspect of reconstruction work is studying and understanding past heritage and understanding the development of an earlier culture.
A piece of architecture cannot be fully understood through drawings and small-scale models. Only through full-scale models/reconstructions is it possible to grasp the architectural quality of the structure. And only through full-scale work is it possible to study and appreciate the building methods and craftsmanship from times past.

Stave churches

Stave churches were built from the 11th to the 17th centuries. Urnes stave church (Fig. 3) is the oldest still standing in Norway; it was built in 1150. Urnes was inscribed on the World Heritage List in 1979. This present church is actually the third on the site.
Today, there are 28 stave churches remaining in Norway, all of them in Southern Norway. However, written sources and archaeological evidence confirm that there were stave churches in Northern Norway as well. Based on written records, I have located ten churches.[1] Only the two northernmost sites have been excavated.
Borgund (Figs. 6 and 7) is an example of the spectacular stave churches of Southern Norway. This is different from the Möre-type, as I will explain.

Fig. 5 Evidence of stave churches in Northern Norway; Mjölvik is far north

Fig. 6 Borgund, 1150–1200 (photo around 1900)

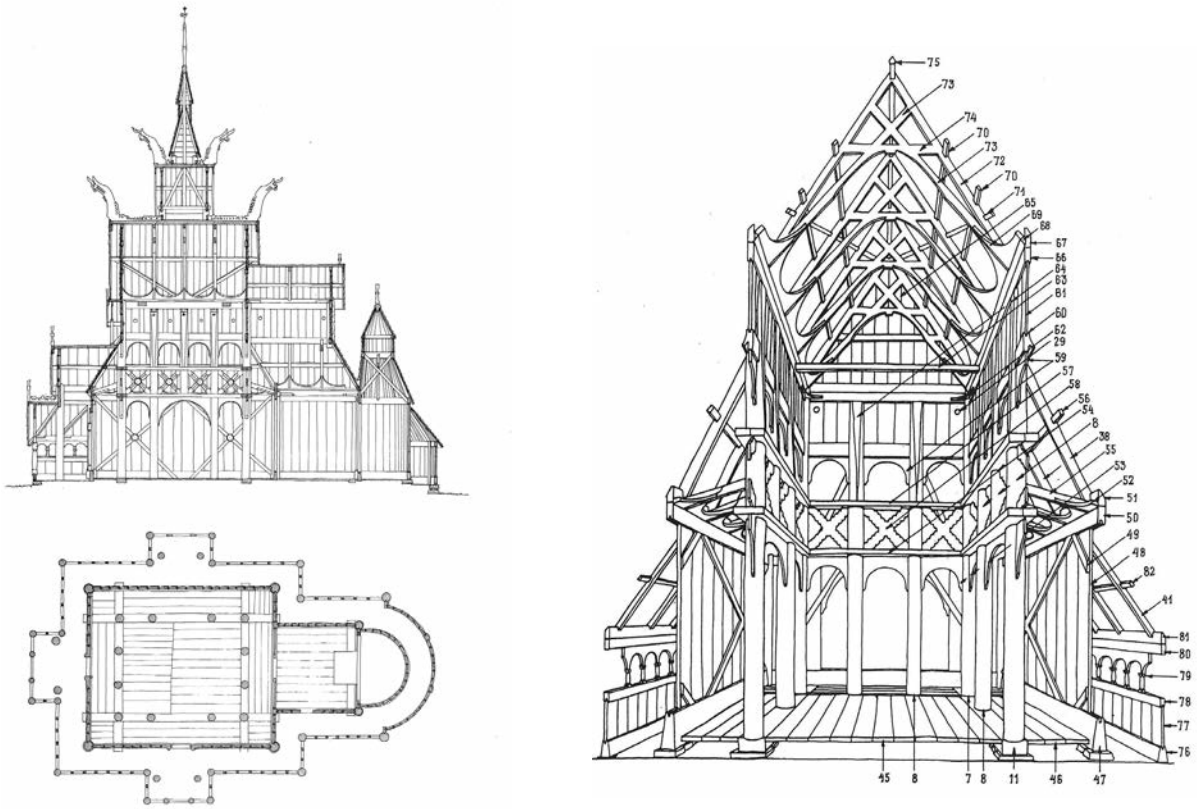


Fig. 7 Stave church with vertical central room: Borgund (drawing by Håkon Christie; from Anker 2005, p. 341)

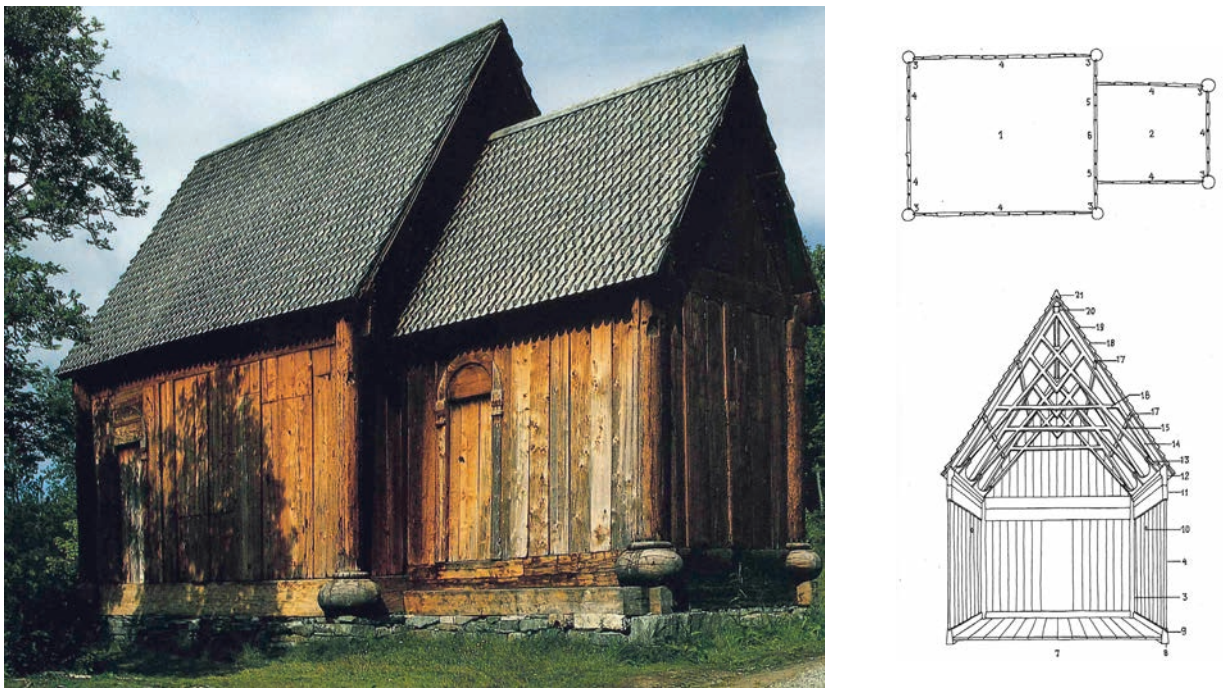


Fig. 8 Stave church without internal vertical central room: Haltdalen, 1150–1200 (drawing by Håkon Christie; from Anker 2005, p. 338)

"Stave churches derive their name from the principal load-bearing posts, also called staves (from *stav*, the Norwegian word for this particular kind of post). As opposed to the "ordinary" kind of post-borne construction, in which the posts' bases are anchored in the ground, stave-built structures stand on stone foundations. This meant, however, that some way of holding the staves in place had to be found, and the method that was developed was to join them top and bottom with horizontal members, thus forming a relatively rigid framework. The bases of the staves are jointed into, or ride on top of, the ground sills, while the crowns are fastened to top sills. This is, of course, a very simplified description."[2]

The structure is made stable by an elaborate system of bracing: quadrant brackets and crossed diagonal braces. The details vary from church to church. Borgund is an example of a church with a central space extended vertically.

Haltdalen (Fig. 8) is an example of the smallest type without the vertical central room. This church now stands in the open-air museum in Trondheim. A copy of Haltdalen was erected in Iceland in 2000.

The Möre-type stave churches[3]

Kvernes (Fig. 9) is one of three remaining churches of the Möre type. This type differs from the Borgund type in not having internal bracing. The bracing structure of these churches is provided by external buttresses.

The plans of the Möre type are based on a simple rectangle with corner posts and intermediate posts. Transversal tie-beams span the width of the building. (Early descriptions suggest that some of these churches also had transepts, thus forming cross-shaped plans.)

Grip (Fig. 10) is the smallest of the Möre-type churches standing on a small island far out in the sea, a settlement near the fishing grounds. The entrance is on the south wall. A chancel was added later. The roof has a lower pitch, perhaps in response to strong winds. There are no external buttresses at Grip.

Rödven (Figs. 11 and 17) represents a third variant of the existing Möre churches. There were entrances both on the south and on the north walls. Today's entrance on the west wall is a later addition. Here the builders employed external buttresses for the gable walls as well as for the long side walls.

The reconstruction of the longhouse at Borg[4]

The chieftain's longhouse at Borg on the Lofoten Islands was built around 800 AD. This is the largest of its kind ever found. My reconstruction (Figs. 12 and 13) is based on archaeological excavations in 1986–89.

The longhouse is a rectangular building with curved ends, posts and intermediate posts carrying the roof. If you take away the living quarter at one end and the byre at the other (marked as Room, Exhibition and Byre in Fig. 12) you are left with the hall, the most sacred part of the building. To my mind, this building type, the hall, was simply adopted as a church structure.

Based on archaeological finds, it is difficult to know the height of a building. In this case we discussed two alternatives: with turf or with shingles on the roof. We chose the steeper pitch – the taller building. (Fig. 14) We argued that the chieftain wanted to show off his social position.

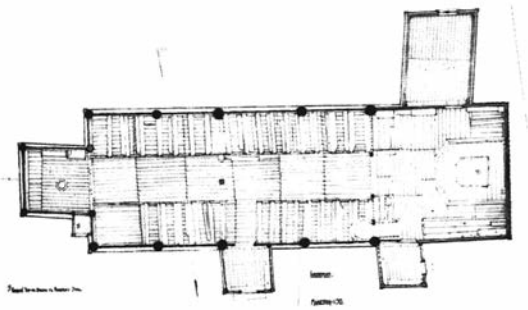
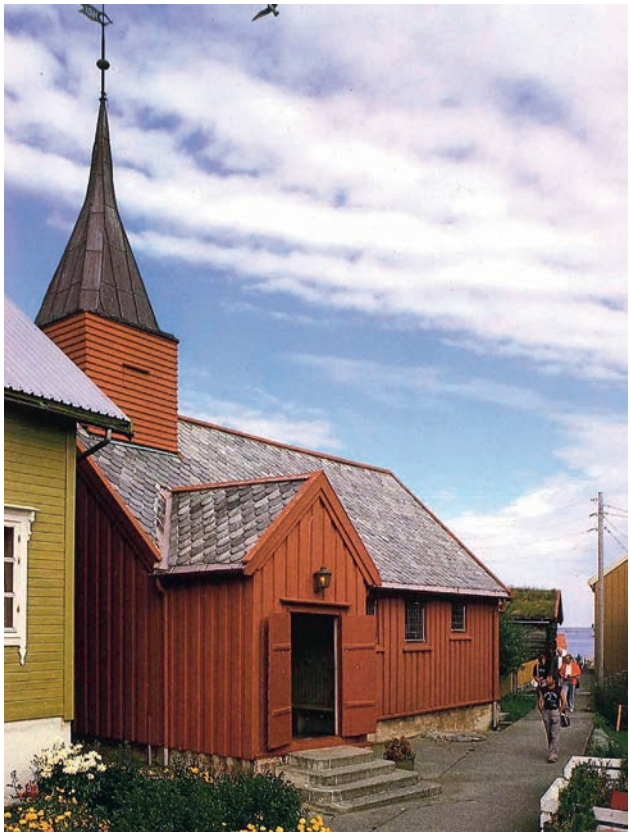
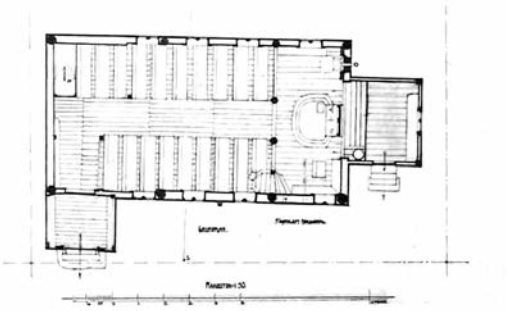


Fig. 9 a–b Kvernes, 1430 (?)–1630, drawing from 1900 (from Storsletten 1997, p. 48)





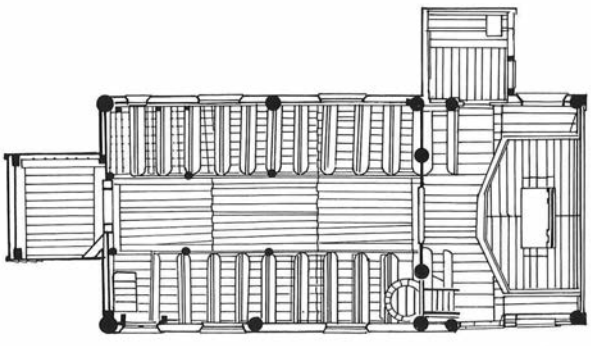
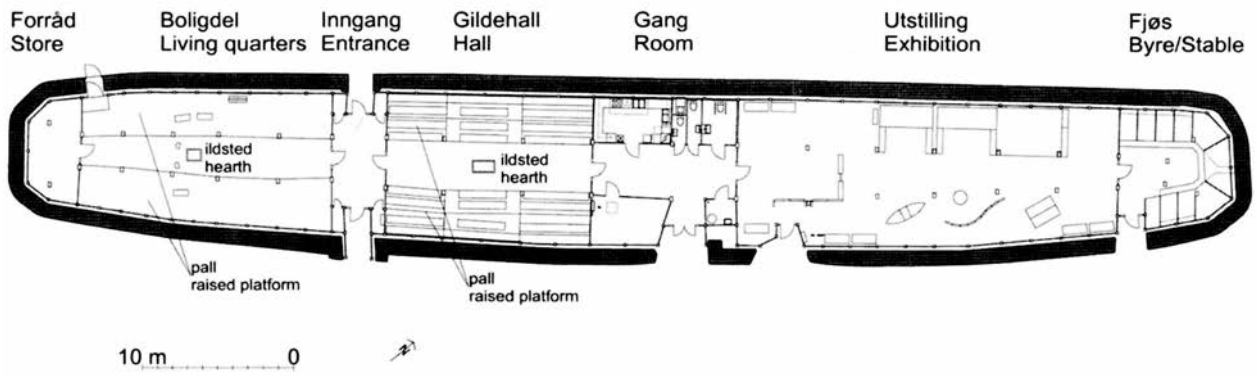


Fig. 10 a–b Grip, 17th century (photo from Storsletten 1997, p. 157), drawing from 1900 (from Anker 2005, p. 326)

Fig. 11 a–b Rödven, 1200 (photo Gisle Jakhelln 2008; plan drawing from Anker 2005, p. 330)



Figs. 12–13 Borg, chieftain's farm of 800 AD, reconstruction of 1995 by Gisle Jakhelln (drawing Gisle Jakhelln, photo Gisle Jakhelln 2004)

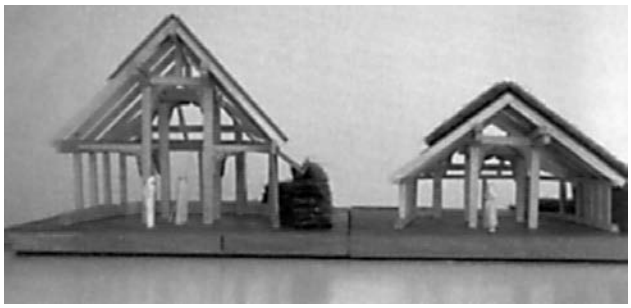
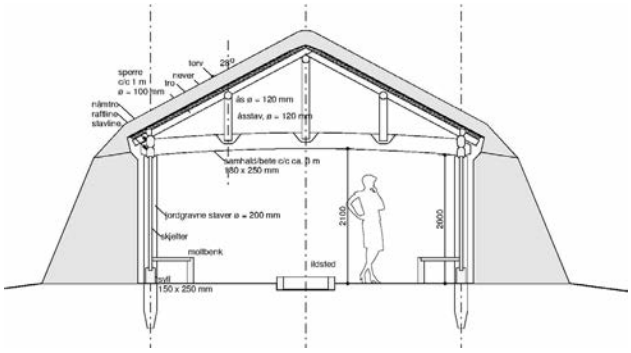


Fig. 14 Borg, high and low models, steep pitch with wood shingles, low pitch with turf

Fig. 15 Trondenes Almenningr, site plan of 2016, museum building in grey in the centre of this site plan, stave church in the southernmost part of the green area, the årestue to the left of the church (drawing architect Jim Myrstad)



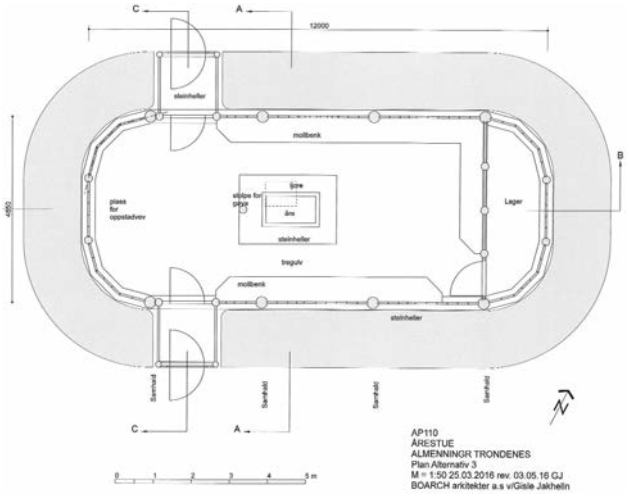


Fig. 16 a–b Reconstruction of an årestue of 1200 to be built at Trondenes Almenningr, section and plan (drawing Gisle Jakhelln 2016)

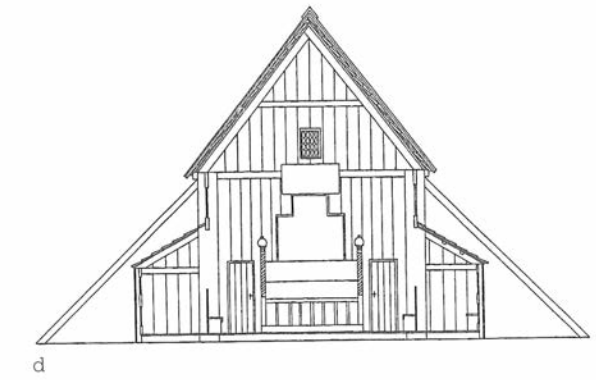


Fig. 17 Hólum Cathedral, Iceland, 1704, stave church (from Hördur Águstsson 1998, p. 203)

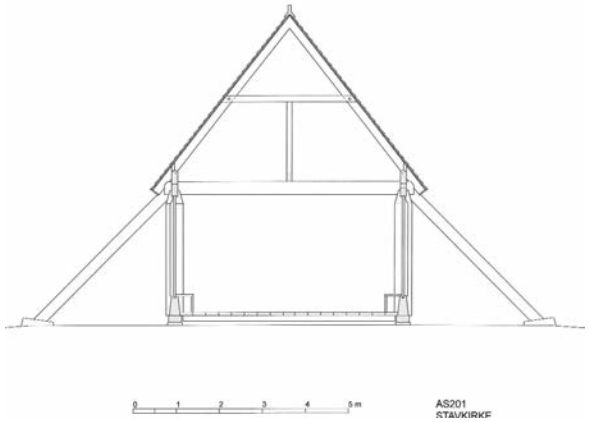


Fig. 18 Trondenes Almenningr, stave church reconstruction of 2016, cross section (drawing Gisle Jakhelln)

Reconstructions at Trondenes Museum

Trondenes Museum is now erecting the first of several buildings planned on the *Almenningr* site to show life in the Middle Ages, i.e. around 1200 (Fig. 15). A house with an open hearth is the first to be constructed. The next will be a stave church, to be built in 2017. The reconstruction of the open hearth building, *årestue*, is based on an excavation showing the posts secured in the ground. The building will have standing posts, turf walls and a turf roof (Fig. 16). The structural system is in many ways similar to the longhouse at Borg, but simpler. The principal members are the corner posts and the intermediate posts, the arcade plate on top of the posts and the tie beams. The roof is carried by rafters resting on purlins. There is no bracing. Stability relies on the sturdy joints and friction between the members. It must be said that the turf walls and the low roof pitch reduce the wind forces – i.e. the horizontal forces. The main construction is based on ancient Northern Norwegian constructions, the *stavline* (stave line).

Reconstruction of a North Norwegian stave church

The section of the Möre-type stave churches shows similar elements to those that I used in the Trondenes *årestue*, apart from a different roof structure. My proposal for a North Norwegian stave church is based on what has been found in the written sources. These indicate strongly that the buildings were of the Möre type with external buttresses. The basic structure of the Möre-type stave churches is the free corner posts, the intermediate posts and the transversal tie-beams. External buttresses are used for the gable walls and for the long walls. Hördur Águstsson has shown that there was a similar use of external buttresses in Iceland, at the Hólum Cathedral, erected in 1704 (Fig. 17).

My proposal for the reconstruction at Trondenes is based on the excavation at Mjölvik, on which I shall comment later. The church room is a small rectangle, 6.7 × 4.8 m. The principal structural elements are the corner posts and intermediate posts (Figs. 18, 19, 20, 21). Buttresses are used to brace the gable walls in the same way as we have seen at Rödven and Kvernes. The entrance is on the south wall.

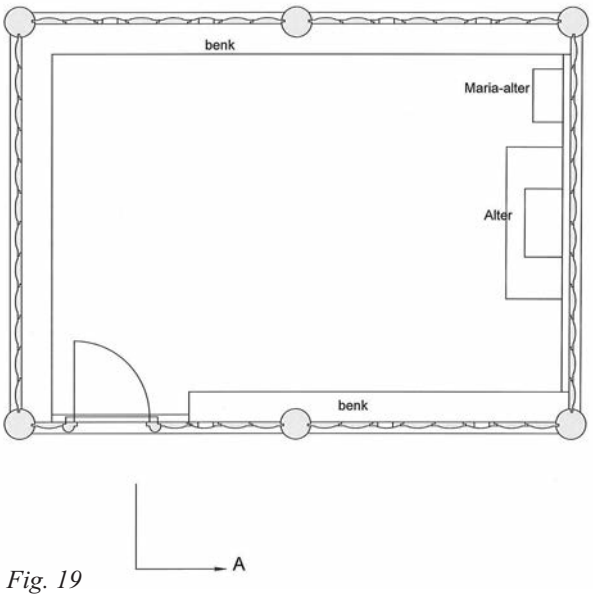


Fig. 19

We know that churches were built without a chancel and with a narrow chancel. I have chosen the alternative with added narrow chancel. The chancel added to the main structure braces the eastern gable (Fig. 22).

The two northernmost sites of medieval churches, Mjölvik and Loppa, (see Fig. 5) have been excavated. These two sites both show small churches which most probably had turf walls and possibly turf roofs. The excavation of 1951–53 at Mjölvik shows a small rectangular church with the altar in a single room, 6.7 × 4.8 m and an added porch of 1.9 × 2.2 m, internal dimensions. There were turf walls on the north and south sides, and a stone wall on the east side. Inside, the walls were of wood.

My alternative proposal for a North Norwegian stave church, if built with turf walls, has the same basic plan as the free standing, un-braced Möre-type church (Fig. 24). However,

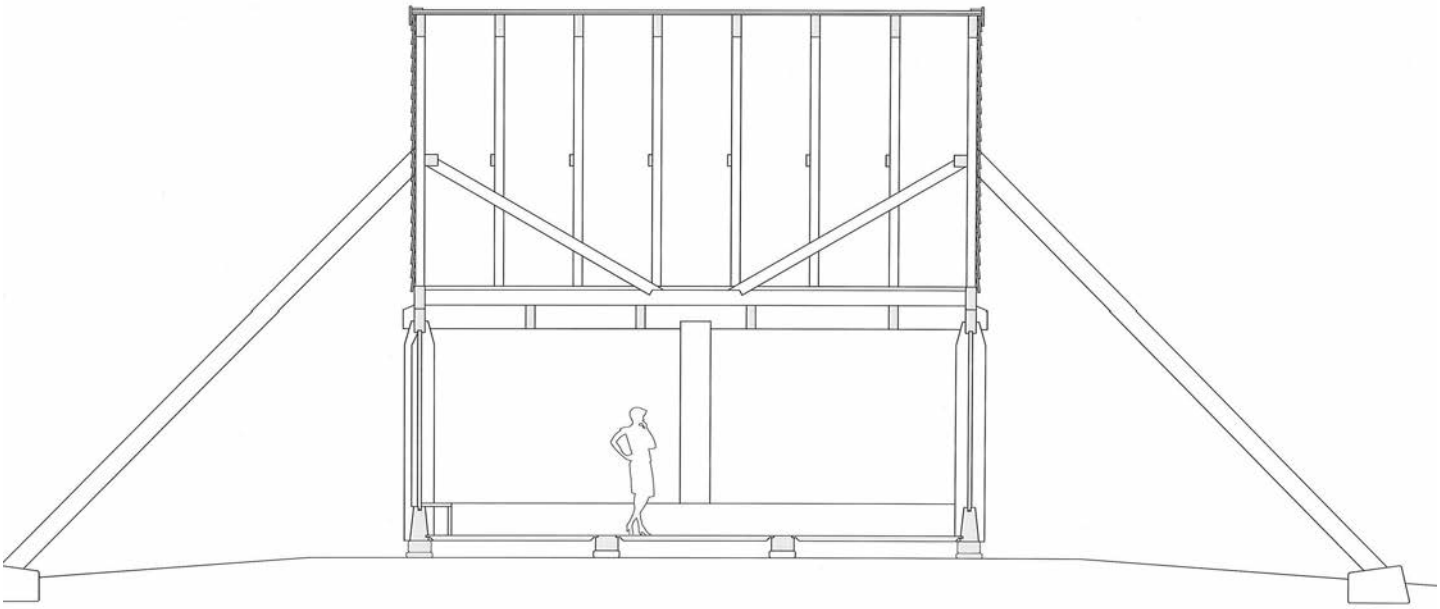


Fig. 20

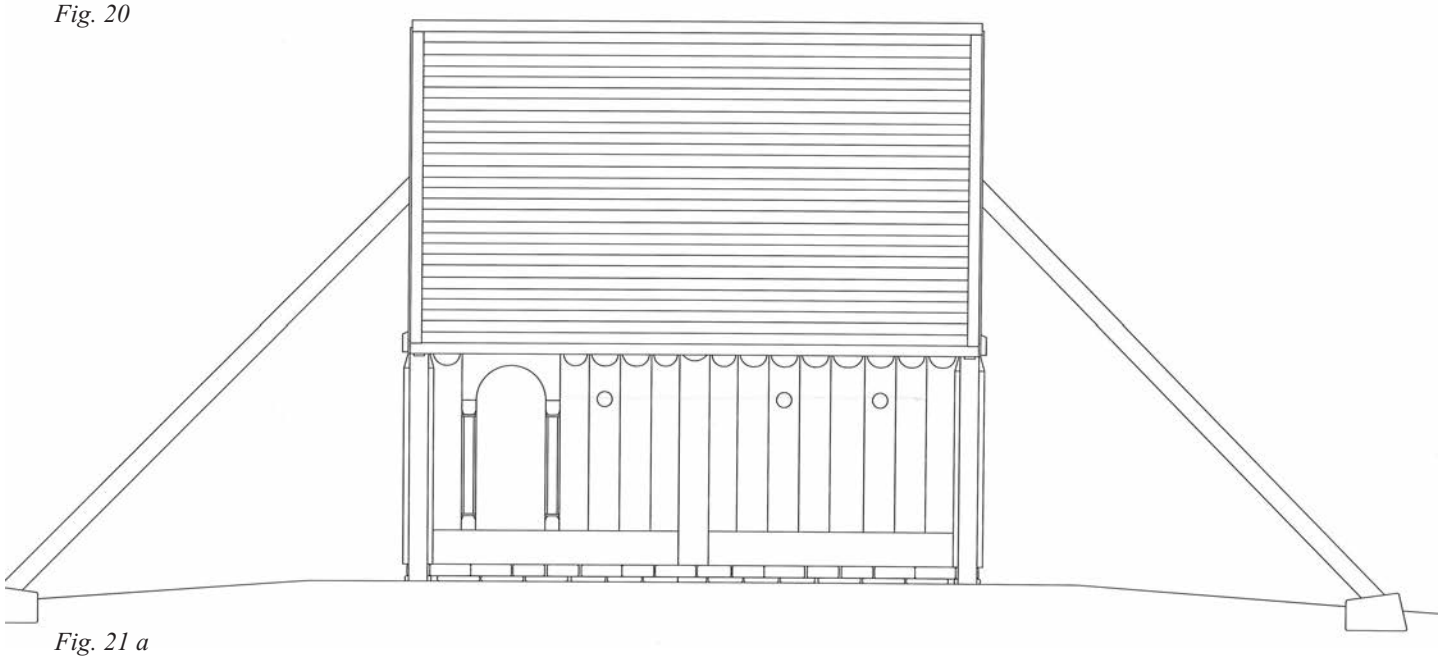


Fig. 21 a

in this alternative I have put the entrance door on the western wall, as in Mjölvik. The timber structure is the same as the stave church proposal (without turf walls). The roof construction is also the same, the roof pitch, however, is lowered to suit the turf covering.
Viðimyri church (Fig. 25) at Skagafjørður in Iceland shows the typical turf church in Iceland.

Three alternative churches

We now have three alternatives for the North Norwegian stave church. For Trondenes, as being part of the museum's presentation, I would recommend alternative 2, i.e. an exposed wooden structure with buttresses (without turf walls or turf roof covering) and with an added chancel.

Conclusion

A reconstruction of this type of stave church built in Northern Norway will improve our understanding of the particular historical identity of Northern Norway. The three remaining churches of the Möre type on the north-western coast of Western Norway represent the southernmost outpost of a much larger area for this type of stave churche, i.e. Northern Norway – and Iceland.
The reconstruction at Trondenes will be a contribution to the scientific discussion and understanding of stave churches in Denmark, Sweden, Norway and Iceland. The discussion shall also examine the importance of architectural expression within a bishopric – Northern Norway, Möre and Iceland all being part of the bishopric of Nidaros – or if the craftsmen had the upper hand in the design of churches.

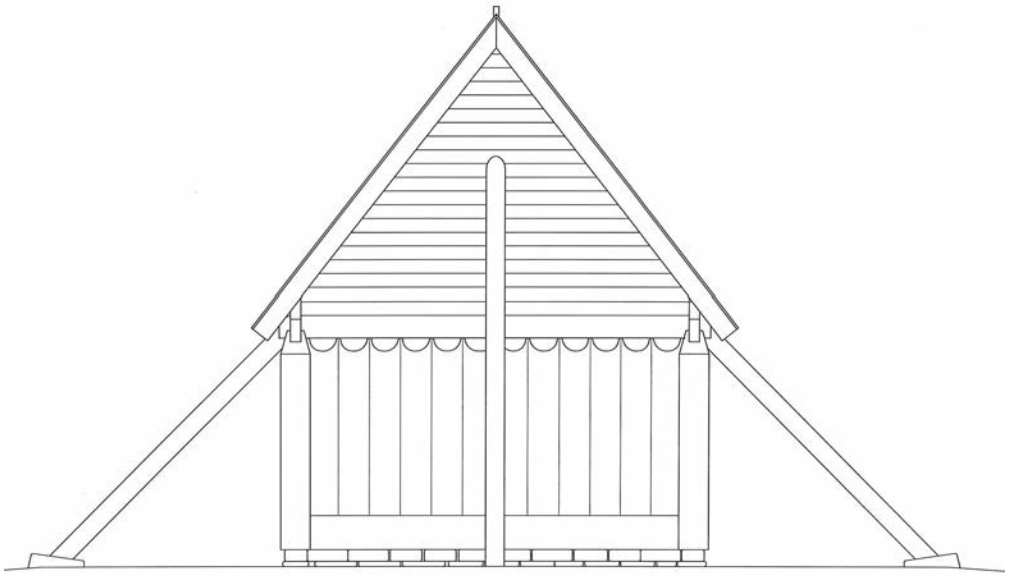


Fig. 21 b

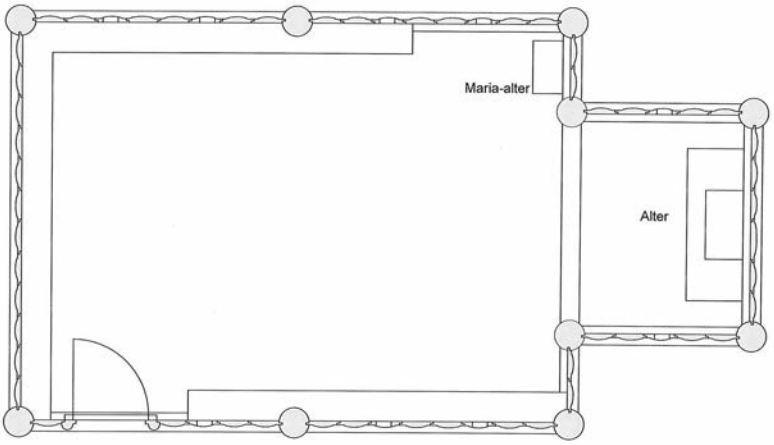


Fig. 22

Fig. 19 Trondenes Almenningr, stave church reconstruction, 2016 (drawing Gisle Jakhelln)
Fig. 20 Trondenes Almenningr, stave church reconstruction, longitudal section, 2016 (drawing Gisle Jakhelln)
Fig. 21 a–b Trondenes Almenningr, stave church reconstruction, elevations, 2016 (drawing Gisle Jakhelln)
Fig. 22 Trondenes Almenningr, stave church reconstruction, with chancel added, 2016 (drawing Gisle Jakhelln)

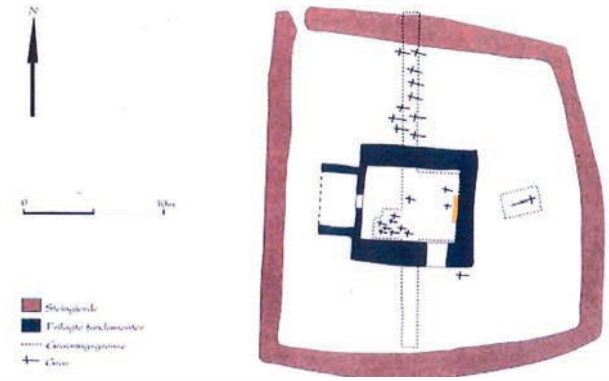


Fig. 23 Mjølvik, Kirkeværet, the church with turf walls, 1450–1475 (from Trædal 2008, p. 409)

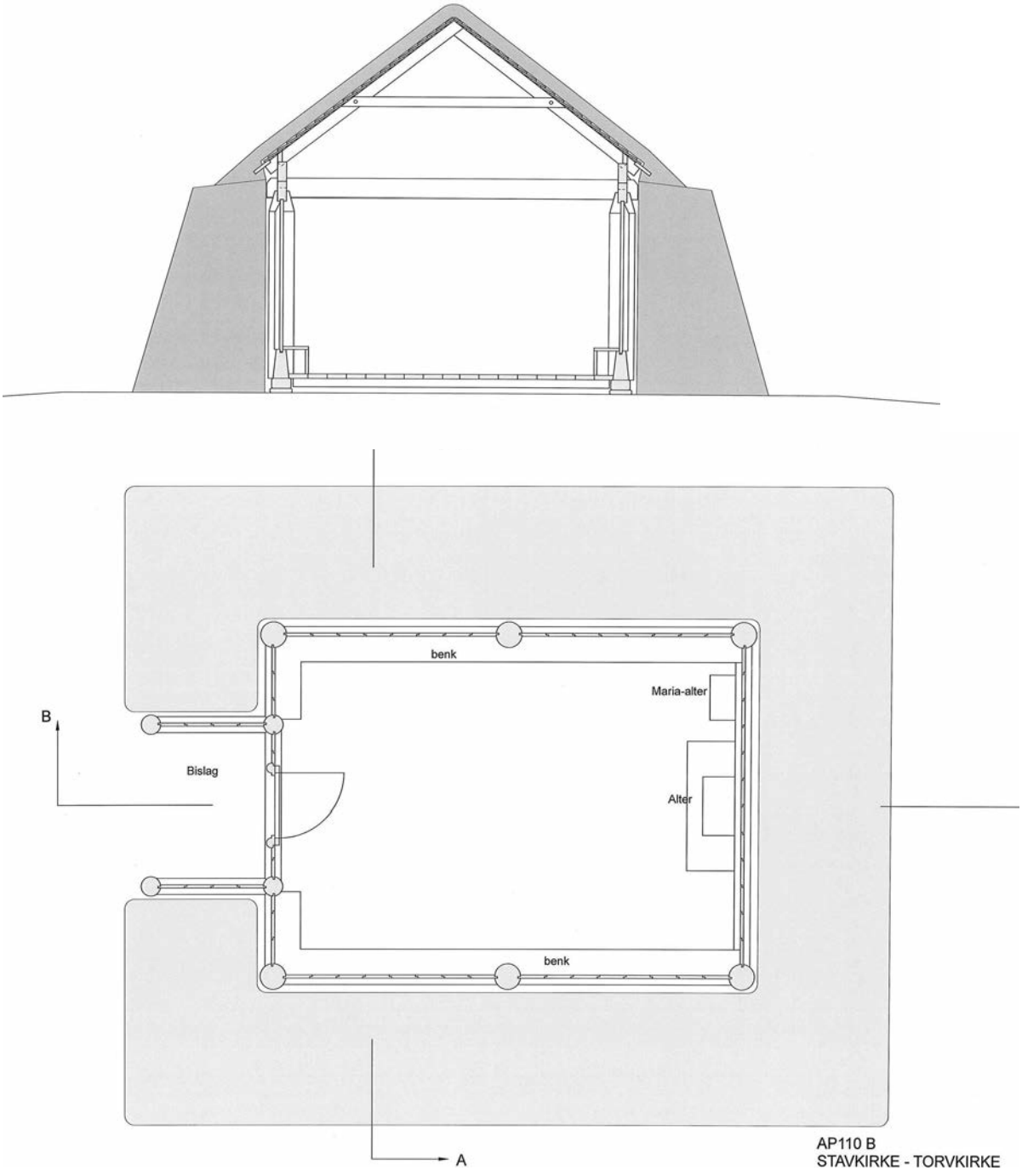


Fig. 24 a–b Trondenes Almenningr, stave church with turf walls, reconstruction, 2016 (Gisle Jakhelln)

Fig. 25 Vidimyri kirke, Skagafjördur, Iceland (photo: Edda)

References

Ágústsson, Hörður 1998: *Íslensk byggingararfleifð I. Ágrip af húsagerðarsögu 1750-1940.* Húsafriðunarnefnd ríkisins. Reykjavik. 2. prentun 2000.

Anker, Leif 2005: *Kirker i Norge. Middelalder i tre – Stavkirker*. Arfo.

Dietrichson, L. 1888: *Sammenlignende Fortegnelse over Norges Kirkebygninger i Middelalderen og Nutiden*. Kristiania.

Ekroll, Øystein 1994: Guds hus i stein og tre. In: Berglund, Birgitta: *Helgeland historie, bind 2. Fra middelalderens begynnelse ca. 1030 til reformasjonen 1537*.

Ekroll, Øystein 2012: *Sunmørskyrkjene. Historie, kunst og arkitektur*.

Hutchinson, Alan Rose Maclean 1997: *Disse tider, disse skikker: Træna, Lurøy, Rødøy, Meløy: I fellesprestegjeldets dager 1500-1800*.

Jacobsen, Kjell 1994: Busettinga i innlandsbygdene. In: Berglund, Birgitta: *Helgeland historie, bind 2. Fra middelalderens begynnelse ca. 1030 til reformasjonen 1537*.

Lind, Keth 2003: «Yttervær på Loppa øy» i Karlsøy og verden utenfor. Kulturhistoriske perspektiver på nordnorske steder. In: Hauan, Marit Anne, E. Niemi, H.A. Wold og K. Zachariassen (red.): *Festskrift til professor Håvard Dahl Bratrein på 70-årsdagen 13.02.2003*. (Tromsø Museums Skrifter Xxx).

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Seip, Elisabeth 2000. A stave church rises on Iceland. In: Seip, Elisabeth (ed.): *A Stave Church for Iceland*, Oslo,pp. 36–47.

Simonsen, Povl 1980: *Fiskerbonden i Nord-Troms 1300-1700 belyst ved tuftegravinger*. (Publikasjon nr. 1 fra Helgøyprosjektet.) Tromsø.

Storsletten, Ola 1997: *En arv i tre. De norske stavkirkene*. Oslo.

Storsletten, Ola 1997: De norske stavkirkene av Møre-typen. In: Árnadóttir, Lilja og Ketil Kiran (red.): *Kirkja og kirkjuskruð. Kirker og kirkekunst på Island og i Norge i middelalderen*, pp. 42–52.

Trædal, Vidar, 2008: *Kirkesteder og kirkebygninger i Troms og Finnmark før 1800*. (Avhandling levert for graden philosophiae doctor. Universitetet i Tromsø.)

Notes

[1] Dietrichson 1988, Ekroll 1994, Ekroll 2012, Hutchinson 1997, Jacobsen 1994, Lind 2003, Simonsen 1980.

[2] Seip 2000, p. 38.

[3] Möre County is situated west of Trondheim, near the city of Kristiansund, see Fig. 4.

[4] Borg is situated on the Lofoten Islands, Nordland County, west of the city of Bodö, marked with arrow in Fig. 1.