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UiT Norges arktiske universitetsmuseum

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Cover photo: .Overview of boathouse and Trench 2 looking towards entrance. Photo: Stephen Wickler

The Holsneset boathouse site:

A research excavation report

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universitetsmuseum

Locality: Holsneset (Kuholmen)

ID. no.: 47548

Site type: boathouse

Excavation dates: August-September 2024

Area: 4.5 m2

Municipality, County: Vestvågøy, Nordland

GPS coordinates: 7558075.7N 442155.6Ø UTM 33N

Catalog number: Ts. 16468

Keywords: Vestvågøy-Lofoten, monumental boathouse, leidang system, medieval period pastoralism

Summary

This report provides an overview of results from research excavations by the author in 2024 at the Holsneset medieval boathouse site. The primary objective was to provide a chronological framework for the construction and use of what is arguably the largest archaeological boathouse structure in northern Norway. The Holsneset excavation is also a key case study within an overarching research project that explores the role of monumental boathouses along the main sailing route through northern Norway as an expression of maritime communication and power in the late Iron Age and medieval period.

Although the excavations in 2024 were limited to two parallel 4.5 x 0.5 m trenches extending across the boathouse floor, the results provide significant insights into boathouse construction that include floor and inner wall profiles. Surface features reveal two construction phases. In the first phase, radiocarbon dated by two samples with a collective age range of cal AD 1163-1229, the estimated internal length of the structure was c. 20 m with a vertical stone facing up to 1 m high along the interior wall. The parallel wall mounds from the original structure were extended towards the shoreline to construct a modified boathouse with an internal length of 39 m. The second phase boathouse extension utilized bedrock outcrops as a foundation for wall construction coupled with shell sand fill to build up new wall mounds. No reliable radiocarbon age estimates were obtained from this phase. The location, monumental dimensions and construction methods of the Holsneset boathouse strongly suggest that it was built and extended specifically for the leidang maritime defense system.

The initial excavation trench was placed towards the front of the original boathouse. The second trench was placed at the transition between the two structures where the entrance to the original boathouse overlaps with the extended boathouse. A stacked stone feature, c. 1 m wide and 15 cm high, was constructed at the center of the floor in the trench at the entrance to the original boathouse. This structure is interpreted as a keel support assisting the movement of large vessels in and out of the boathouse. Stone alignments were placed along both sides of this central structure. Similar alignments are also present in the trench placed further back in the original boathouse along a stone lined keel trench. The alignments in both trenches would have supported the hulls of large vessels on the poorly drained surface where the boathouse was built. Due to poor preservation conditions, the artifact assemblage was limited to highly corroded boat rivet fragments. No bone was preserved, and it was also difficult to collect sufficient charcoal for radiocarbon dating.

TABLE OF CONTENTS

INTRODUCTION AND BACKGROUND FOR RESEARCH INVESTIGATIONS

The *Points of Passage* boathouse research project

The research group Arctic Archaeology (ArcArc) at the Arctic University Museum of Norway (UM) initiated a research project in 2019 called *Points of Passage: Articulations of Dynamic Northern Realities*. A subtheme within the project explores the role of monumental boathouses along the main sailing route as an expression of maritime communication and power in the late Iron Age and medieval period. The term 'monumental' was used to describe exceptionally large boathouse structures with an internal length of at least 25 meters.

Four site locations in northern Norway with preserved boathouse remains of this size were selected for further investigation. The boathouse localities extend from Holsneset (Kuholmen) on Vestvågøy in Lofoten (ID 47548) northward to Sand on Tjeldøya along Tjeldsundet (ID 56739), Altevågen at Trondenes in Harstad (ID 68482), and Nergården on the island of Bjarkøy (ID 38824) (Fig. 1). Initial drone-based digital photogrammetry was undertaken to provide detailed 3D landscape models of individual structures. As the largest boathouse at Altevågen has already been excavated (Simonsen 1952; Matland 1995), no further investigations here were deemed necessary. Small-scale excavations were carried out at the two large boathouses at Sand as part of the project in 2019 and 2020. Excavations at Nergården on Bjarkøy (ID 38824) were undertaken over four field seasons with a duration of approximately one week each year from 2019-2022 (Wickler 2020, 2021, 2022, 2023). This report discusses the results from limited excavation in 2024 conducted by the author at the Holsneset boathouse site in Buksnesfjord, Lofoten.

Figure 1. Map showing boathouse research project site locations in northern Norway. The dashed line represents the main sailing route. Illustration: Arctic University Museum of Norway

The Iron Age and medieval maritime landscape of Buksnesfjord

Buksnesfjord is a fjord arm of Vestfjorden on the southwestern tip of the large island of Vestvågøy that cuts 7 km northward into the interior. It has a convoluted shoreline with numerous inlets, bays and smaller islands that were important for both Iron Age and medieval settlement. This is also currently one of the most densely populated areas in Lofoten. There are a number of archaeological site clusters near to the shoreline, particularly within inner Buksnesfjord (Fig. 2). These include a concentration of c. 60 graves on Holsøya dated to the early Iron Age (AD 300-600) c. 350 m southeast of the Holsneset site. Holsøya was purchased by Tromsø Museum in 1969 and extensive restoration of individual graves undertaken in 1972-1974. Four undated grave cairns have been recorded within the Holsneset locality northeast and southeast of the boathouse. These are assumed to be Iron Age features substantially older than the boathouse. The remains of a badly damaged courtyard site (ID 47534) are located c. 1.5 km to the north of Holsneset at a distance of 200 m from the shoreline. Only four of the original 14 house structures arranged in a circular pattern at this site remain intact. An assessment of the collective evidence by Storli (2006: 59-61), suggests that the main period of use extended from the 1st to 4th century in the Roman Iron Age with abandonment during the transition from the early to late Iron Age. However, a cooking pit date from AD 660-860 suggests the potential for continued use during the late Iron Age.

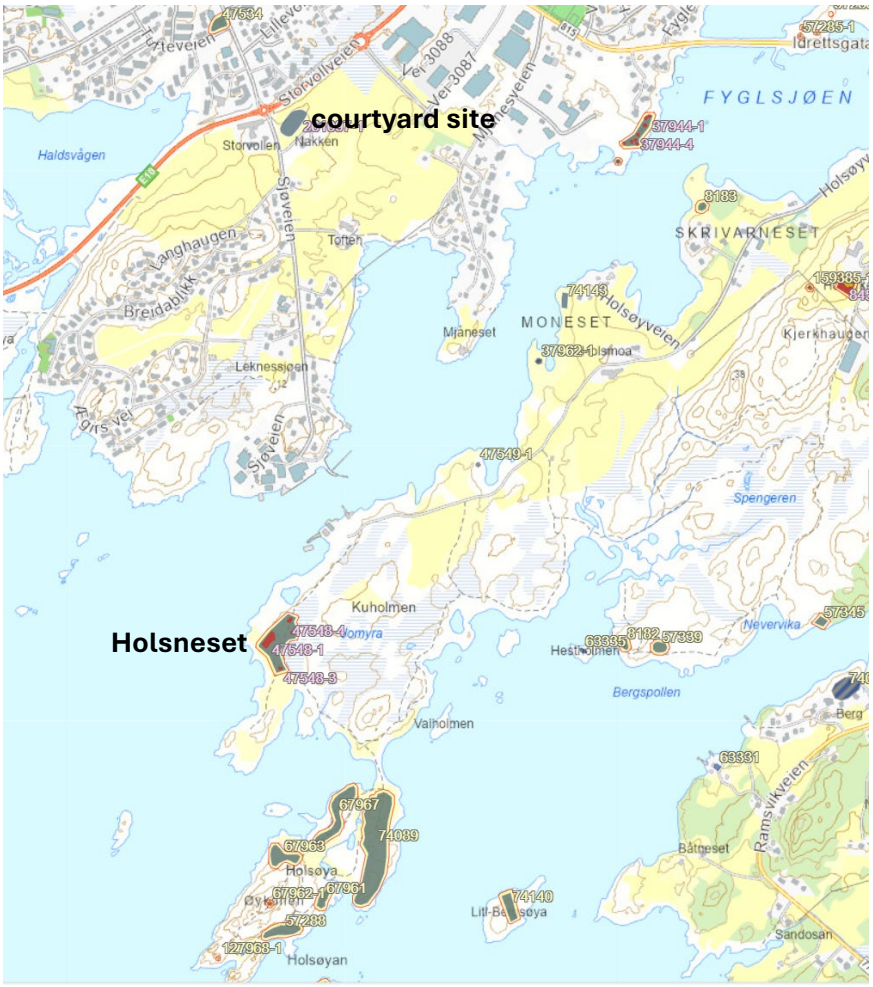

Figure 2. Map of inner Buksnesfjord showing the location of the Holsneset boathouse and other sites mentioned in the text. Illustration: Archaeological site database (Askeladden), Norwegian Directorate for Cultural Heritage.

A total of 54 boathouse structures extending from the early Iron Age to early modern period are recorded within Buksnesfjord in the national site database Askeladden. Nilsen (1998: 34-39) documented 26 boathouse sites in Buksnesfjord, extending from Storeidøya in the northwest to Ramsvik in the southeast. One of the densest boathouse clusters is located at Skrivarneset c. 500 m northeast of the Holsneset boathouse where nine structures were documented by Nilsen (ID 37944) and an additional six structures are registered in Askeladden at Hagsjøneset (ID 8183) where all but one are from the post-reformation period. This was the innermost accessible landing place for larger boats at the entrance to the tidal sandflats of Fyglesjøen where a number of local farmsteads had boathouses. A boathouse cluster at Storeidøya (ID 28063) was recently excavated by UM (Niemi 2022). Although four boathouses were recorded here by Nilsen (1998), preliminary excavation results suggest that only two structures are boathouses, most likely either medieval or post-medieval.

A maritime analysis of the Iron Age cultural landscape in Buksnesfjord (Fredriksen 2015, 2019) focused on grave distribution has proposed a north-south boat route through the center of Buksnesfjord with branches extending outward on both sides of Holsneset to Fyglesjøen to the north and Bergspollen to the south where four Iron Age boathouses are located at the entrance to a small inlet.

In her analysis of the Buksnesfjord data, Nilsen (1998) suggests that medieval and later boathouses have walls made of stone while those from the Iron Age are made of stone and turf, although there are exceptions. It is also stated that this appears to be the opposite of the main tendency elsewhere on Vestvågøy. Nearly half of the recorded structures are complex with multiple phases and walls shared with other boathouses. Only two of the Buksnesfjord boathouses had been radiocarbon dated prior to the Storeidøya excavations. These include a structure at Fygle dated to AD 250-495 and one at Ramsvik with overlapping age ranges extending from the 5th to 8th century.

The Holsneset (Kuholmen) boathouse (ID 47548)

The boathouse at Holsneset is monumental in size and described by Simonsen (1991) as the most impressive in all of northern Norway (Fig. 3). Previous documentation of the Holsneset boathouse associated with the boathouse research project prior to the 2024 excavation included digital photogrammetry in 2019 (Fig. 4) and a plan view of the boathouse structure drawn by the author in 2023 (Fig. 5). The boathouse opening faces southwest (210°) and lies 23 m from the turf edge at the high tide mark and 32 m from the seaweed belt in the intertidal zone. The boathouse opening is 1.3 m above the turf edge at the shoreline with a flat slightly sloping surface leading to the boathouse entrance. The internal dimensions of the structure along the estimated inner margin of the boathouse wall mound are c. 39 x 7.2-7.8 m and external dimensions along the outer margin of the wall mound are c. 43 x 20 m. The wall mound has a maximum width of 9 m and is up to 1.4 m high (Fig. 6).

Surface features indicate that the boathouse was constructed in two phases. In the first phase, the estimated internal length of the structure was c. 20 m with a vertical stone facing up to 1 m high along the interior of the wall mound. The floor area in this part of the structure is low lying and poorly drained with a thick sphagnum moss layer covering the surface. Moisture appears to be partially trapped by a low barrier of built up sediment at the transition to where the original structure was extended in the second use phase. Both of the parallel wall mounds from the original structure were extended towards the shoreline to create a modified boathouse with an internal length of 39 m. The second phase boathouse extension utilized bedrock outcrops now covered with turf as a foundation for wall extension construction. This gives the boathouse walls

from the second phase of construction an uneven appearance broken up by bedrock fissures. Unlike the initial boathouse structure, there are no stone facings along the interior wall.

Figure 3. Aerial drone photograph of Holsneset boathouse site looking southeast. Photo: Arctic University Museum of Norway.

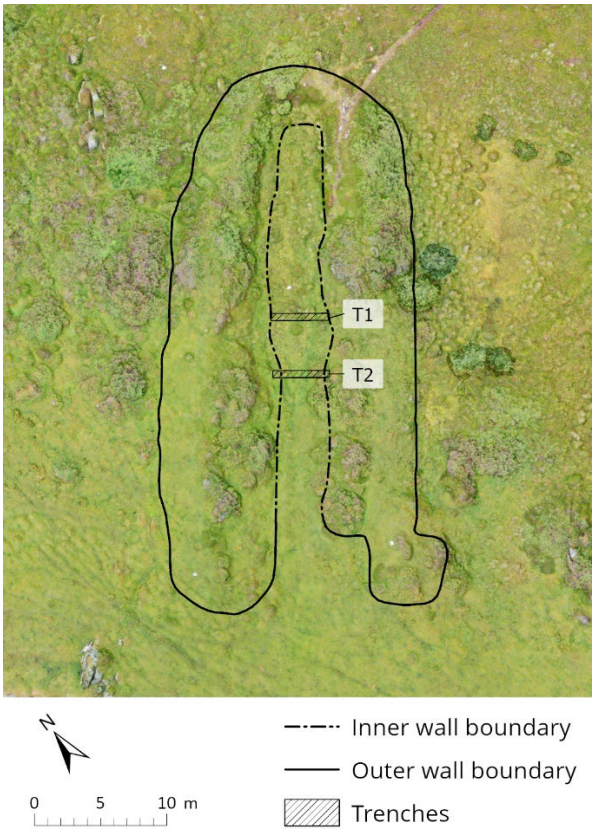

Figure 4. Photogrammetry of the Holsneset site area with an overlay of the boathouse structure and excavation units. Illustration: Stephen Wickler and Erik Kjellman, Arctic University Museum of Norway.

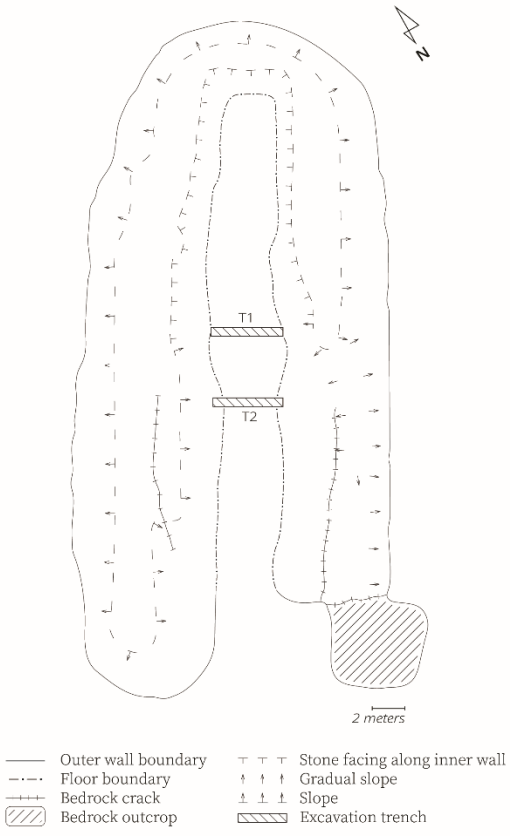

Figure 5. Plan view drawing of the Holsneset boathouse showing surface features and excavation trenches. Illustration: Stephen Wickler and Erik Kjellman, Arctic University Museum of Norway.

Figure 6. Overview of the Holsneset boathouse. Left: looking inward from the entrance (to north). Right: looking from the wall mound at the inner end towards the entrance (to south). Photo: Stephen Wickler, Arctic University Museum of Norway.

Systematic sampling with a soil probe along the centerline of the floor revealed a turf layer up to 60 cm thick and grass mixed with sphagnum moss on the surface within the inner half of the structure. This layer extended to basal gravel with no cultural evidence found in the probe. The turf layer diminishes to c. 20 cm at 17-18 m from the rear of the structure and less than 10 cm by 22 m from the rear where a mixture of sand and gravel occur just below the grass turf extending up to the boathouse entrance. No evidence of cultural activity such as charcoal flecking was seen in sediment recovered by the probe beyond 22 m from the inner end of the floor. This floor area is associated with the second construction phase and suggests less intensive and more short lived activity than the initial phase. The wall mound in the phase 1 structure has a steep inner profile with a stone facing in contrast to the second phase wall mound which is more diffuse and irregular with only a few stones placed along the interior.

HOLSNESET BOATHOUSE EXCAVATION

Limited research excavations were undertaken in 2024 at the Holsneset boathouse site by the author over a seven day period from August 26 to September 1. Assistance was also provided by archaeologist Ole-Andreas Sagmo from the Lofotr Viking Museum over several days. The Directorate for Cultural Heritage was oriented about the planned research excavation in January 2024. Excavation followed UM documentation standards.

The principal excavation objectives were to determine if there were two phases of construction and establish a radiocarbon chronology for boathouse use. This was considered a preliminary investigation to establish a foundation for potential extended future excavation. Based on earlier experience with limited boathouse excavations, it was decided to start with excavation of a 4.5 x 0.5 m trench perpendicular to the long axis of the structure across the floor. It was hoped that this would provide a profile of the floor stratigraphy and document the transition from the floor to inner walls. The initial trench (Trench 1) was placed where surface features suggested that the original entrance to the phase 1 structure may have been located at a distance of 15 m from the inner end of the boathouse floor. A second 4.5 x 0.5 m trench (Trench 2) was placed 4 m further out towards the boathouse opening from Trench 1 at a distance of 19 m from the inner end of the boathouse floor. Trench 2 was placed at the entrance to the original boathouse and documents a transitional zone between the first and second phases of boathouse construction (Fig. 7).

Excavation was carried out in natural stratigraphic units subdivided into 5 cm increments within layer boundaries when possible. Following removal of the upper grass turf layer with a shovel, all remaining excavation of sediments with cultural evidence was done by hand troweling. The excavated matrix within cultural deposits was water-sieved through 4 mm mesh. Material remaining in the sieve was bulk bagged for later lab sorting. Excavated finds were assigned catalog number Ts.16468.1-40 in the lab (Appendix 1).

Figure 7. Overview of the Holsneset boathouse and excavation trenches. Top: looking inward from the center of the structure to the northeast. Bottom: looking from the center of the structure towards the entrance to the southwest. Photo: Stephen Wickler, Arctic University Museum of Norway.

Trench 1 excavation

It became clear during excavation of Trench 1 that this location was within the original boathouse structure and could not document the transition between the two phases of boathouse construction. Excavation was made more difficult by the presence of standing water in the trench due to the waterlogged state of the inner boathouse floor worsened by heavy rain (Fig. 8).

Figure 8. View of Trench 1 following removal of turf layer with standing water (looking west). Photo: Stephen Wickler, Arctic University Museum of Norway.

Stratigraphic sequence description

Layer 1 (0-10/20 cm bs): Turf layer with grass and sphagnum moss. Dark brown slightly sticky fine silt. Turf with variable thickness ranging from 10 cm at the western end of the trench to 20 cm in the eastern half of the trench (Fig. 9).

Layer 2 (10/20 – 22/30 cm bs): Dark silt mixed with sand and fragments of decomposing bedrock. Cultural deposit with very low number of finds. Average thickness of 10 cm extending to 20 cm in center of floor where stone lined keel trench is located.

Layer 3 (c. 20 cm bs): Compact culturally sterile basal matrix of gravel mixed with some silt. Difficult to excavate and document due to standing water in trench.

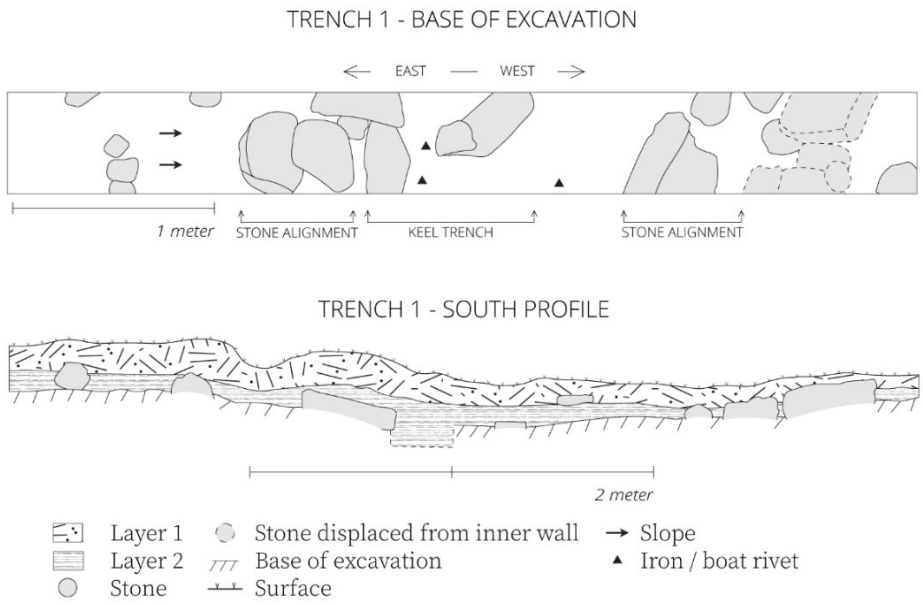

Figure 9. Trench 1 south profile and plan view at base of excavation. Illustration: Stephen Wickler and Erik Kjellman, Arctic University Museum of Norway.

Small sediment samples were collected from the three strata (Ts. 16468.5-7). The stratigraphic sequence is straightforward with an upper turf layer (Layer 1) above a thin cultural deposit with few finds (Layer 2). A concentration of stones up to 50 cm in diameter at the center of the floor are interpreted as a stone lined keel trench feature (Fig. 10). Additional large stones up to 40 cm in diameter, including several placed at a downward angle towards the keel trench, are interpreted as stone alignments constructed along both sides of the keel trench (Fig. 11). A 30 cm wide section of the cultural deposit within the keel trench was excavated an additional 10 cm below the general base of excavation. Rapid accumulation of standing water in the trench made further excavation difficult. The waterlogged condition of the central floor area may explain why the stone lining in the keel trench and adjacent stone alignments were necessary to support the keel and lower hull of large vessels within the boathouse.

Figure 10. Trench 1 close-up view of stone lined keel trench in center of floor (looking south). Photo: Stephen Wickler, Arctic University Museum of Norway.

A majority of the artifacts were located in the central keel trench area including two boat rivet heads, one with a diameter of 3 x 2 cm, and a number of small unidentifiable iron fragments at a depth of 30 cm bs. Preservation was extremely poor and traces of other potential metal objects observed during excavation could not be recovered. An unworked piece of pumice was also found. A large boat rivet head from the same area was found in the sieve. The only finds outside of the keel trench area were fragments of a possible boat rivet c. 50 cm further west. No other artifacts were recovered from the trench. A concentration of 20-40 cm diameter stones extending from the cultural deposit up into the turf layer were clustered at the western end of the trench. These are interpreted as stones displaced from a stone facing along the inside of the boathouse wall mound (Fig. 12). The bleached appearance of the stones within the upper turf demonstrates their secondary context. The base of the cultural deposit in the eastern half of the trench slopes gently upward but the trench does not extend to the edge of the eastern wall mound. Therefore, the trench was unable to provide specific information on the transition between the floor and wall mounds.

Preservation of organic remains in Trench 1 was extremely poor with no bone or shell recovered and a minimal amount of charcoal flecking observed. Two charcoal samples were collected from the sieve but only one, from the western half of the trench, had sufficient material for radiocarbon dating.

Figure 11 (left). View of Trench 1 at base of excavation showing stone lined keel trench in center of floor (looking west). Photo: Stephen Wickler, Arctic University Museum of Norway.
Figure 12 (right). Stones at the western end of Trench 1 likely displaced from a stone facing along the inner wall mound (looking east). Photo: Stephen Wickler, Arctic University Museum of Norway.

Trench 2 excavation

Trench 2 was a 4.5 x 0.5 m unit placed 4 m from Trench 1 towards the boathouse opening at a distance of 19 m from the inner end of the boathouse floor (Fig. 13). This trench documents a transitional zone between the first and second phases of boathouse construction with construction details from both boathouse structures present. This trench location was somewhat better drained than Trench 1 although standing water still accumulated at the base of the trench. This supports the assertion that it lies beyond the elevated barrier between the two boathouse construction phases at a slightly higher level than the inner floor area. The thin turf layer overlying a mixture of sand and gravel also provides improved drainage. However, it is still low-lying and poorly drained.

Figure 13. View of Trench 2 location looking towards the boathouse entrance. Photo: Stephen Wickler, Arctic University Museum of Norway.

Stratigraphic sequence description

Layer 1 (0-6/14 cm bs): Thin grass turf layer with average thickness of 8 cm. Dark grey to black silt. Some charcoal flecking present in this layer above the wall mound fill at the western end of trench (see Fig. 14 and Fig. 15).

Layer 2A (6/8 – 20/28 cm bs): Average thickness 20 cm. Dark brown silty sand mixed with gravel. Upper cultural deposit with finds concentrated at the center of the floor together with charcoal flecking (Fig. 16). A lens of fine grey silt mixed with some clay that extends across the trench slightly east of the center of the floor may be associated with a hearth or similar feature. This stratum overlies the Layer 3 fill in the western wall mound supporting an association with the second phase of boathouse construction.

Layer 2B (20/28 – 34/40 cm bs): Average thickness 14 cm. Dark grey silt with more sand and less gravel than Layer 2A. Lower cultural deposit with a stacked stone structure in the center of the floor interpreted as a keel support (Fig. 17). Scattered charcoal flecking in the form of a fine powder adhering to gravel and stones but lacking fragments suitable for radiocarbon dating. Charcoal is most concentrated in the western half of the trench and extends under the western wall fill layer demonstrating an association with the initial boathouse construction phase.

Layer 3 (10/20 – 40/78 cm bs): Shell sand fill used to construct both western and eastern wall mounds in the second boathouse construction phase. Maximum thickness in west wall 66 cm and east wall 46 cm. Numerous thin bands of fine to coarse fill with variable amounts of marine shell, small rock fragments and silt mixed with shell sand from different dumping episodes in the western wall. More homogenous fill in eastern wall with faint silt bands.

Layer 4 (40/80 – 48/86 cm bs): Basal sterile dark grey to black moist silt mixed with gravel. Found below Layer 3 wall mound fill. Scattered stones from 20-30 cm in diameter are present in this layer under the sand fill in the eastern wall.

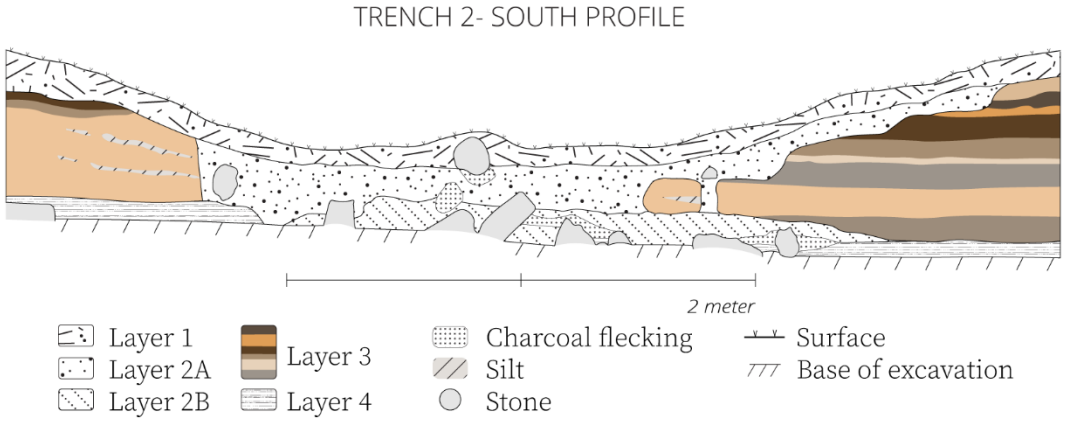

Figure 14. Trench 2 south face profile. Illustration: Stephen Wickler and Erik Kjellman, Arctic University Museum of Norway.

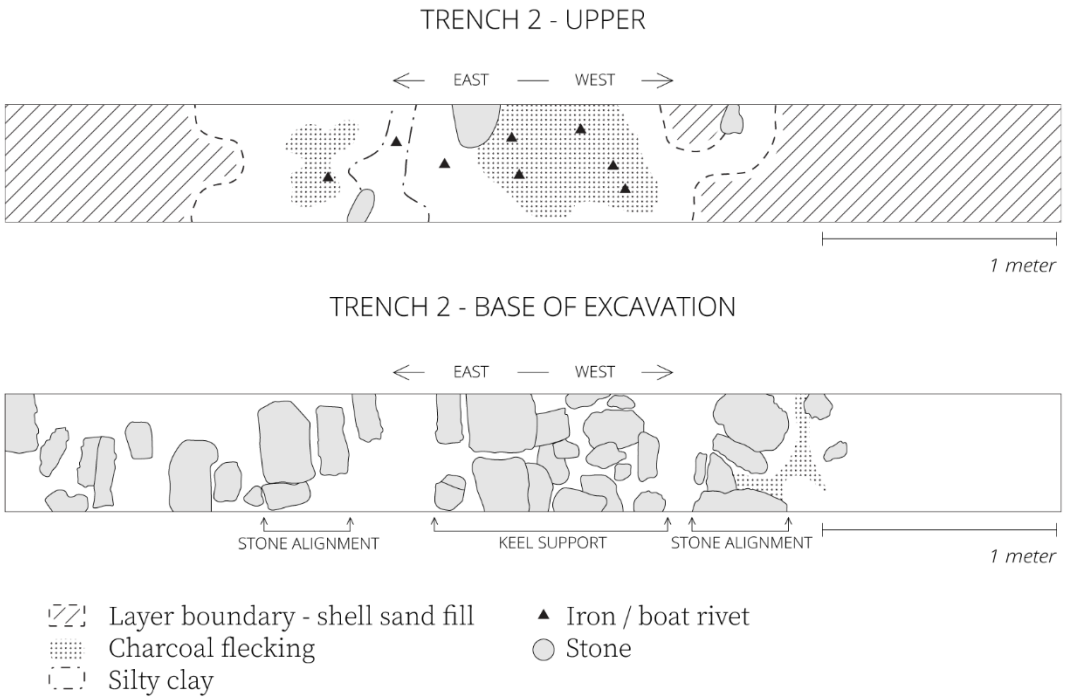

Figure 15. Trench 2 plan view drawing of upper cultural deposit (Layer 2A) and lower cultural deposit (Layer 2B) at the base of excavation. Illustration: Stephen Wickler and Erik Kjellman, Arctic University Museum of Norway.

Figure 16 (left). View of Trench 2 showing shell sand wall fill and upper cultural deposit (Layer 2A). Yellow wooden markers at artifact locations (looking east).
Figure 17 (right). View of Trench 2 at base of excavation showing stacked stone keel support feature in center of floor with stone alignments along both sides (looking east).

Eleven small sediment samples were collected from the stratigraphic sequence in the south profile (Ts. 16468.23-32). The stratigraphy in Trench 2 is more complex than in Trench 1 and documents both phases of boathouse construction. The turf layer is much thinner, and the construction of both western and eastern wall mounds up to 66 cm thick using shell sand fill (Layer 3) is associated with extension of the wall mounds in the second boathouse phase (Fig.18). The cultural deposit is divided into an upper component (Layer 2A) interpreted as reflecting use during the second boathouse phase and a lower component (Layer 2B) associated with the initial boathouse structure. Layer 2B extends under the Layer 3 western wall fill supporting the conclusion that it is associated with the first boathouse phase. The basal Layer 4 stratum was only documented below the Layer 3 fill layer but most likely also extends beneath

the Layer 2B cultural deposit in the floor area where excavation down to this layer was difficult due to the presence of numerous tightly packed stones extending below the base of excavation.

Figure 18. View of shell sand fill profiles in western (left) and eastern (right) walls. Photo: Stephen Wickler, Arctic University Museum of Norway.

A substantial stone structure c. 1 m wide and 15 cm high (20-35 cm bs) was present at the center of the floor constructed of tightly stacked stones ranging from 10-30 cm in diameter (Fig.19). This is interpreted as a feature located at the entrance to the initial boathouse that provided keel support for large vessels being moved in and out of the structure. It is located in the same position on the central floor as the stone lined keel trench in Trench 1. Alignments of stones up to 40 cm in diameter were intentionally placed on both sides of this feature. The stone alignment c. 20 cm west of the keel support is more well defined than that on the eastern side which is diffuse and varies from 20-75 cm in width. These alignments are similar to those in Trench 1 along both sides of the keel trench and served as hull support for large vessels being moved in and out of the boathouse. The presence of a stacked stone structure and stone alignments along the central boathouse floor has not been encountered in other boathouses excavated by the author or any other known boathouse structures. It is interpreted as a necessary measure to prevent large vessels from sinking into the low-lying and poorly drained surface of the floor where this boathouse was constructed. These stone structures are clearly associated with the initial phase of boathouse construction.

Figure 19. View of central floor area in Trench 2 at the base of Layer 2A where the upper surface of the keel support structure is visible (top) and base of Layer 2B where the entire construction is exposed (bottom) (looking south). Photo: Stephen Wickler, Arctic University Museum of Norway.

Boat rivets and other finds

As with Trench 1, preservation conditions were extremely poor and artifacts were limited to heavily corroded boat rivets and small iron fragments that most likely also represent boat rivets. Most finds originated from the upper Layer 2A cultural deposit, and the larger fragments were plotted on the plan drawing. Smaller fragments were found in the sieve. Two boat rivet heads with shaft fragments were found in the central floor area. These had dimensions of 3 x 2.5 cm (Ts. 16468.16) and 2.5 x 2 cm (Ts. 16468.11) and were found at a depth of 10-16 cm bs. Smaller iron fragments that are most likely also from boat rivets were found in seven locations spread across the floor. Charcoal flecking was visible over an c. 80 cm wide area of the central floor. Most

of the charcoal was in the form of a fine powder adhering to gravel and stones with no pieces suitable for dating recovered.

Finds from the lower cultural deposit (Layer 2B) were similar to Layer 2A with pieces of heavily corroded iron adhering to gravel along with a thin coating of charcoal powder extending to a depth of c. 35 cm bs. Unlike layer 2A, a sufficient quantity of charcoal fragments were recovered to enable two charcoal samples to be radiocarbon dated. Several small, rounded pieces and a number of angular broken fragments of pumice were also present. These were naturally occurring in the sediment with no evidence of modification. A single burnt bivalve shell fragment was also recovered from the sieve. No other faunal remains associated with cultural activity were found.

Two bands of shell sand fill (Layer 3) from the western wall mound containing a mixture of silt, small stone fragments, coralline algae (N. *rugl*) and marine shells were water-sieved, and samples collected. The upper sample was from 14-19 cm bs and the lower sample from c. 28 cm bs. A majority of the shells were small individuals of the common flat periwinkle that live on seaweed (brown algae) and are commonly washed up in the intertidal zone (Watson and Norton 1987). A limited number of other mollusk species including several periwinkle species, limpets, common whelk, mussel (*Mytilus* sp.) and clam (*Arctica islandica*) were also identified. A few small non-cultural fragments of fish bone were also present in the fill. The shell sand fill could have been easily collected along the shoreline near the boathouse site and would have been an expedient source of fill material for building up the walls of the phase 2 extended boathouse.

RADIOCARBON DATES AND BOATHOUSE CHRONOLOGY

Three charcoal samples of short-lived tree species (Appendix 2, Kirchhefer 2024) from the Holsneset excavation were submitted to the NTNU dating laboratory in Trondheim with results presented in Table 1.

Table 1. Radiocarbon dates from the Holsneset boathouse.

Context	Cat. no. (Ts.)	Lab. no.	Sample (mg)	Species*	^{14}C age (BP)	d^{13}C	Cal. ^{14}C age AD/BC (2 σ)
Trench 1							
Layer 2 cultural deposit, western floor	16468.33	TRa-25303	30	birch	2295 ± 10	-26.0	401(72.6%)363 BC
Trench 2							
Layer 2B lower cultural deposit, western floor	16468.37	TRa-25304	50	willow (*Salix sp.*)	850 ± 15	-24.6	1163(93.5%)1229 AD
Layer 2B lower cultural deposit, eastern floor	16468.40	TRa-25305	60	birch	860 ± 10	-29.6	1166(95.4%)1220 AD
Layer 3, ca. 28 cm bs, shell sand fill in western wall	16468.20	TRa-25306	660	marine shell (*Littorina obtusata*)	2665 ± 25	-25.2	841(78.8%)792 BC Marine20 ΔR 71 ± 21 (Mangerud et al. 1975) 337 BC (95.4%) 5 AD

* AMS – charcoal /carbonized material. Calibrated with OxCal v4.4.4.

Only one of the two charcoal samples collected from the cultural deposit in Trench 1, representing the initial phase of boathouse use, had sufficient charcoal from short lived species for dating. Sample Ts. 16468.34 was limited to coniferous charcoal (80 mg). Sample Ts. 16468.33 had sufficient deciduous charcoal from birch (30 mg) for dating. Unfortunately, the dated sample produced an age range of cal 401-363 BC, which is far too early for boathouse use and most

likely represents old carbon from the site surface potentially associated with earlier human activity. The date, which is from the Pre-Roman Iron Age, is also likely to predate the burial cairns in the vicinity of the boathouse, although this cannot be ruled out completely.

Two reliable radiocarbon dates were obtained from the lower cultural deposit (Layer 2B) in Trench 2. A sample from the western part of the floor (Ts. 16468.37) was dated to cal AD 1163-1229 and a date of cal AD 1166-1220 (Ts. 16468.40) was obtained from the eastern floor area. The dates are statistically identical and confirm that the initial phase of boathouse use took place in the late 12th to early 13th century.

As there was insufficient charcoal for a radiocarbon date from the upper cultural deposit in Trench 2 (Layer 2A), a single periwinkle shell (*Littorina obtusata*) from a band of shell sand fill in the western wall at a depth of 28 cm bs (Fig. 20) was submitted as an experiment to test a potential means of dating the final boathouse phase. It was hoped that intact periwinkle shells in fill from the beach might represent individuals that had died fairly recently. The resulting age range of cal 841-792 BC did not support the anticipated outcome. The original date was corrected for marine reservoir effect using a Δ *R* value of 71 ± 21 recommended for mollusks from northern Norway by Mangerud et al. (2006: 3243). The corrected age range of 337 BC – AD 5 is still substantially earlier than the anticipated date and confirms that old shells were used in the wall fill (Fig. 21).

Figure 20. Water-sieved sample of marine shells from a fill band at a depth of c. 28 cm in the western wall mound, Trench 2. Photo: Mari Karlstad, Arctic University Museum of Norway.

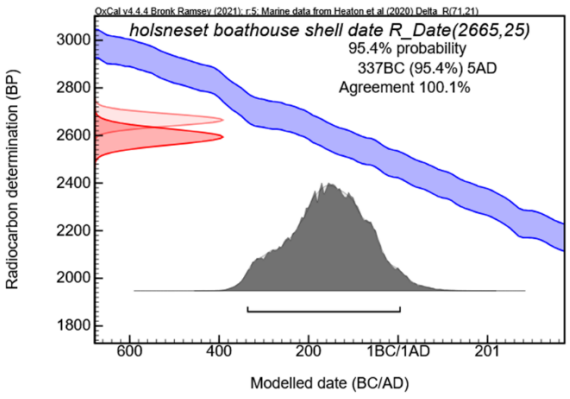

Figure 21. Graph of marine reservoir corrected age range for the marine shell radiocarbon date from boathouse wall fill (Oxcal 4.4.4, Marine20).

DISCUSSION AND CONCLUSIONS

This field report presents the results from a research excavation undertaken by the author in 2024 at the Holsneset boathouse site. A principal objective of the investigations was to provide a chronological framework for the construction and use of what is arguably the largest boathouse structure in northern Norway. The Holsneset excavation is also a key case study for an overarching research project that explores the role of monumental boathouses along the main sailing route through northern Norway as an expression of maritime communication and power in the late Iron Age and medieval period.

Although the excavation in 2024 was limited in scope with only two parallel 4.5 x 0.5 m trenches extending across the boathouse floor, the results provide significant insights into boathouse construction that include floor profiles and the floor to inner wall transitions. There is clear evidence from the site surface strongly suggesting that the boathouse was constructed in two distinct phases. In the first phase, the estimated internal length of the structure was c. 20 m with a vertical stone facing up to 1 m high along the wall interior. Both of the parallel wall mounds from the first structure were extended towards the shoreline to construct a modified boathouse nearly twice as long as the original with an internal length of 39 m. The second phase boathouse extension utilized bedrock outcrops as a foundation for wall extension construction coupled with shell sand fill to build up new walls. The geographical location, monumental dimensions and construction methods for the boathouse at Holsneset suggest relatively short term use, potentially controlled by an external agent. It is considered likely that this was a *leidang* boathouse whose construction was dictated by royal edict rather than local need.

Radiocarbon dates confirm that the boathouse was originally constructed in the early high medieval period. Unfortunately, radiocarbon dates are lacking for the second use phase when the structure was extended to an exterior length of 44 m and an interior floor length of 39 m. However, the modified structure does not appear to have been in use for long as indicated by multiple strands of evidence. No evidence of a cultural deposit was found in systematic soil probe testing. Extension of the wall mounds was characterized by a time saving and expedient approach involving the use of existing bedrock features as a foundation and readily accessible shell sand for rapid wall construction. This supports the argument that boathouse extension was also dictated by the *leidang*. It is unlikely that the boathouse was in use beyond the 14th century when this naval defense system was substantially diminished in size and importance.

There are striking parallels between the Holsneset boathouse and the monumental boathouse at Sand on Tjeldøya that was extended from a 20 m long Viking Age structure built in the 10th century to a total length of c. 40 m in the 12th century. It has also been argued that the boathouse extension was linked to use within the *leidang* system.

Courtyard sites and *leidang* boathouses

Courtyard sites (N. *tunanlegg*) are an Iron Age site type found exclusively in Norway. Approximately 31 of these sites have been recorded along the coast from Lista in Agder, Southern Norway to Bjarkøy in the north. The sites are characterized by a cluster of house remains arranged radially around a central circular or oval courtyard with entrances facing inward. Site use dates back to the 2nd and 3rd centuries in the Roman Iron Age. Many were still in use up until the late Viking Age and a few as late as the 11th century. There is currently widespread scholarly agreement that courtyard sites are places of socio-political activity that should be seen as assembly locations related to the *thing* system (Storli 2006, 2010; Iversen

2015, 2019). Most sites are located in marginal environments that suggest an intentional emphasis on neutral meeting locations.

The monumental boathouse at Holsneset in Buksnesfjord is located 1.5 km south of the Leknes courtyard site constructed in the midst of a bog landscape between five central Iron Age farmsteads. The site had a main use phase from AD 120-390, although there is also evidence for continued use extending into the late Iron Age. Several of the other monumental boathouses in the *Points of Passage* research project are also located in close proximity to courtyard sites. These include the boathouse site at Sand located along the main sailing route through Tjeldsundet where a courtyard site was recently excavated at Rødskjær 9.8 km north of Sand. The Nergården boathouse site on Bjarkøy is located 1 km from the remnants of a courtyard site at Sandmælen. This courtyard site had a main period of use from AD 500-700 and Iversen (2015: 12) argues that it functioned as an assembly site or *thing* in use up until c. AD 900. Expansion of the Viking Age boathouse at Nergården in the 11th century may also be associated with secondary *leidang* use.

There is a close relationship between courtyard sites as regional assembly locations in the northern province of Hålogaland and the *leidang*, a naval defense system whose existence in the late 12th century is well documented. The King made an agreement with free farmers who had to equip a conscripted warship. The coast of Norway was divided into ship-districts known as *skipreide*. Each district was required to provide a longship with 40 pairs of oars along with a crew and provisions. The King had command over the fleet. During the medieval period, Hålogaland was divided into 13 ship-districts. The northern part of Hålogaland supplied six ships and the southern part seven ships with the boundary drawn between Lofoten and Vesterålen (Iversen 2015: 7).

Although the potential linkages between these monumental boathouses and *leidang* use remain speculative, it is clear that they represent expressions of maritime power that were entangled in the evolving *thing* system and *leidang* ship-districts in the north. The Holsneset boathouse is isolated rather than being part of a boathouse cluster which is most common. It also appears to be situated in a more marginal and potentially politically neutral location resembling courtyard site locations.

The collective evidence from Holsneset provides a fitting case study for the *Points of Passage* boathouse research project that can be compared with the results of excavations in other monumental boathouse structures. A number of close parallels have already been confirmed between multiple boathouse sites that contribute to an enhanced understanding of maritime communication and power in the north during the Viking Age and medieval period.

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Appendix 1: Finds catalog from Holsneset (Ts.16468.1-40)

Katalog UiT Norges arktiske universitetsmuseum 10.01.2025

Ts16468/1-40

Funnkategori: nausttuft. Periode: jernalder.
Framkommet ved: Arkeologisk utgravning.
Lokalitetsnavn: Holsneset-Kuholmshaugen.
Fylke: Nordland. Kommune: Vestvågøy.
Gård: Leirosen Nordre av Hol 68/10.

LokalitetsID: 47548.
Funnomstendighet: Gjenstander funnet i forbindelse med ArcArc sin undersøkelse av et stornaust på Holsneset (Kuholmshaugen i Askeladden) på Vestvågøy kommune som ble gjennomført av S. Wickler over seks dager i august 2024. Inngår i ArcArc sitt prosjekt PopArt (Points of Passage – Articulations of Dynamic Northern Realities). Naustuften på Holsneset ligger 23 m fra gresskanten ved flomålet og 32 m fra tangbelte i fjæra. Naustet har indremål på 39 x 7,2-7,8 m og ytremål på 43 x 20 m. Veggvollene har et maksimum bredde på 9 m og er opptil 1,4 m høye. Det ble utgravd to 4,5 x 0,5 m sjakter på gulvet mellom langvollene. Sjakt 1 ble plassert 16,5 m fra bakenden av gulvet og sjakt 2 var 21 m fra bakenden.
Funnet av: Stephen Wickler.
Katalogisert av: Bente Richardsen Isaksen.

1) Nagle av jern
Form: båtnagle. **Gjenstandsdel:** hode.
Antall: 1. **Antall fragmenter:** 3.
Mål: L: 3 cm. **D:** 4 cm.
Funnr.: 1. **Funnkontekst:** nausttuft - kulturlag gulv - funnet i såld.

2) av jern
Antall: 1. **Antall fragmenter:** 8.
Funnr.: 17. **Funnkontekst:** nausttuft - kulturlag, 23 cm bs.

3) Nagle av jern
Form: båtnagle. **Gjenstandsdel:** hode.
Antall: 1. **Antall fragmenter:** 9.
Gjenstandsbeskrivelse: båtnagle hodefragment - mange små fragmenter.
Mål: D: 4 cm.
Funnr.: 18. **Funnkontekst:** nausttuft - bunnen av kulturlag på gulv i østlig steinkonsentrasjon, 30 cm bs.

4) av pimpstein
Gjenstandsbeskrivelse: pimpstein uten bruksspor.
Funnr.: 19. **Funnkontekst:** nausttuft - kulturlag på gulv i østlig steinkonsentrasjon, 28 cm bs.

5) av jord/jordprøve
Gjenstandsdel: hode.
Gjenstandsbeskrivelse: Jordprøve fra torvlag (lag 1).
Funnkontekst: nausttuft.

6) av jord/jordprøve
Gjenstandsbeskrivelse: Jordprøve fra kulturlag.
Funnkontekst: nausttuft - jordprøve fra kulturlag.

7) Prøve, annet av jord/jordprøve
Gjenstandsbeskrivelse: jordprøve - sterilt bunnlag.

Funnkontekst: nausttuft - jordprøve steril bunn.

8) Nagle av jern
Antall: 1. **Antall fragmenter:** 3.
Gjenstandsbeskrivelse: fragmenter av sannsynlig båtnagle.
Funnr.: 4. **Funnkontekst:** nausttuft - kulturlag - gulv vestlig del .

9) av bein/fiskebein
Antall fragmenter: 7.
Gjenstandsbeskrivelse: bein (fisk) i skjellsandfyllmasse - vestlig veggvoll (naturlig, ikke kultur).
Funnr.: 4. **Funnkontekst:** nausttuft - fyll i veggvoll.

10) Nagle av skjell/brent
Antall fragmenter: 1.
Gjenstandsbeskrivelse: brent skjellfragment funnet i såld.
Funnr.: 7. **Funnkontekst:** nausttuft - nedre kulturlag i gulvet, vestlig del.

11) Nagle av jern
Form: båtnagle. **Gjenstandsdel:** hode.
Antall: 1.
Gjenstandsbeskrivelse: båtnagle hode .
Mål: D: 3 cm.
Funnr.: 8. **Funnkontekst:** nausttuft - nedre kulturlag i gulvet, vestlig del.

12) av jern
Antall fragmenter: 2.
Gjenstandsbeskrivelse: jernfragmenter - fra båtnagle?.
Funnr.: 9. **Funnkontekst:** nausttuft - kulturlag gulv østlig, 10 cm bs .

13) Nagle av jern
Antall fragmenter: 8+.
Gjenstandsbeskrivelse: små jernfragmenter blandet med trekull - konkresjon (tatt ut av såld).
Funnr.: 10. **Funnkontekst:** nausttuft - nedre kulturlag gulv .

14) av pimpstein
Gjenstandsbeskrivelse: pimpstein uten brukspor - funnet i såld.
Funnr.: 10. **Funnkontekst:** nausttuft - nedre kulturlag gulv .

15) Nagle av skjell/1 frag. og 1 hel
Gjenstandsbeskrivelse: 1 liten snegl (grisetangsnegl) og vannrullet fragment av bivalve - funnet i såld .
Funnkontekst: nausttuft - nedre kulturlag gulv .

16) Nagle av jern
Form: båtnagle. **Gjenstandsdel:** hode.
Antall: 1.
Gjenstandsbeskrivelse: jernklump antatt å være båtnagle hode.
Mål: D: 3 cm.
Funnr.: 11. **Funnkontekst:** nausttuft - nedre kulturlag gulv .

17) av skjell/blandet med kalkalgae
Gjenstandsbeskrivelse: småskjell (mest snegler) blandet med småstein og kalkalgae.
Funnr.: 12. **Funnkontekst:** nausttuft - skjell fra siltbånd i skjellsand fyll fra vest veggvoll , 14-19 cm bs.

18) av bein/fiskebein
Gjenstandsbeskrivelse: fiskebein i overgang fra skjellsand fyll til sterilt bunnlag (lag 3) under vest veggvoll.

Funnr.: 13. **Funnkontekst:** nausttuft - overgang fra skjellsand fyll til sterilt bunnlag under vest veggvoll.

19) av trekull/blandet med stein
Gjenstandsbeskrivelse: tynt lag med trekull festet til stein fra såldet.
Funnr.: 14. **Funnkontekst:** nausttuft - nedre kulturlag i midten av gulvet, 30-35 cm bs.

20) av skjell/blandet med småstein
Gjenstandsbeskrivelse: skjellprøve fra skjellsand fyll bånd i vest veggvoll (lag 3) - til C14 datering.
Mål: D: 3 cm.
Funnr.: 15. **Funnkontekst:** nausttuft - skjellsand bånd med silt i skjellsand fyll i vest veggvoll.

21) av jern/konkresjon festet til steiner
Gjenstandsbeskrivelse: jernkonkresjon festet til steiner funnet sammen med pimpstein fragmenter i nedre kulturlag .
Funnr.: 20. **Funnkontekst:** nausttuft - indre kant av steinsamling i nedre kulturlag østlig gulv, 26-58 cm bs .

22) Nagle av jord/jordprøve
Gjenstandsbeskrivelse: torvlag - midten av sjakt.
Funnr.: JP1. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil .

23) av jord/jordprøve
Gjenstandsbeskrivelse: lag 1 torv jordprøve .
Funnr.: JP2. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil vest end.

24) Prøve, annet av jord/jordprøve
Gjenstandsbeskrivelse: jordprøve fra øvre kulturlag i midten av gulvet.
Funnr.: JP3. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil midten.

25) av jord/jordprøve
Gjenstandsbeskrivelse: jordprøve - nedre kulturlag i midten av gulvet.
Funnr.: JP4. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil .

26) av jord/jordprøve
Gjenstandsbeskrivelse: jordprøve fra øvre kulturlag vestlig del av gulvet.
Funnr.: JP5. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil vest end av gulvet.

27) Prøve, annet av jord/jordprøve
Gjenstandsbeskrivelse: sterilt bunnlag under østlig veggvoll.
Funnr.: JP6. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil østlig veggvoll.

28) av jord/jordprøve
Gjenstandsbeskrivelse: jordprøve - sterilt bunnlag under v. veggvoll.
Funnr.: JP7. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil vestlig veggvoll.

29) Prøve, annet av jord/jordprøve
Funnr.: JP8. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil under vestlig veggvoll.

30) Prøve, annet av skjell/skjellsand blandet med silt
Gjenstandsbeskrivelse: bånd av skjellsand blandet med silt -fyllag i v. veggvoll .
Funnr.: JP9. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil skjellsand fyll vestlig veggvoll.

31) Prøve, annet av skjell/skjellsand blandet med silt
Gjenstandsbeskrivelse: jordprøve av nedre skjellsand bånd blandet med silt i v. veggvoll.
Funnr.: JP10. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 sørprofil nedre skjellsand fyll vestlig veggvoll.

32) Prøve, annet av jord/leire og silt linse
Funnr.: JP11. **Funnkontekst:** nausttuft - jordprøve fra sjakt 2 gulv - linse av leire med silt på østlig gulvet.

33) Prøve, kull av trekull/trekullprøve
Gjenstandsbeskrivelse: trekullprøve, sjakt 1, kulturlag, lag 2 (0,22 g) - C14 datering 30 mg .
Vekt: 0,22 g.
Funnr.: 2. **Funnkontekst:** nausttuft - kulturlag, gulv vestlig halvdel.

34) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve - kun bartre.
Vekt: 0,10 g.
Funnr.: 16. **Funnkontekst:** nausttuft - nedre kulturlag, gulv østlig del.

35) Prøve, kull av trekull/jordprøve
Gjenstandsbeskrivelse: trekullprøve - løvtre 20 mg.
Vekt: 0,02 g.
Funnr.: 3. **Funnkontekst:** nausttuft - kulturlag, gulv østlig halvdel.

36) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve, ikke egnet til C14 datering.
Vekt: 0,22 g.
Funnr.: 4. **Funnkontekst:** nausttuft - kulturlag, gulv vestlig del.

37) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve - 1 løvtre (50 mg) egnet til C14 datering.
Vekt: 0,24 g.
Funnr.: 7. **Funnkontekst:** nausttuft - nedre kulturlag, gulv vestlig del.

38) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve - kun bartre ikke egnet til C14 datering.
Vekt: 0,35 g.
Funnr.: 10. **Funnkontekst:** nausttuft - nedre kulturlag, gulv .

39) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve - ingen trekull identifisert, bare konkresjoner med sand.
Vekt: 0,67 g.
Funnr.: 14. **Funnkontekst:** nausttuft - nedre kulturlag gulv, 30-35 cm .

40) Prøve, kull av trekull
Gjenstandsbeskrivelse: trekullprøve - løvtre (bjørk) 0,12 g egnet til C14 datering.
Vekt: 1,00 g.
Funnr.: 20. **Funnkontekst:** nausttuft - kulturlag østlig gulv, 26-38 cm bs.

Appendix 2

Artsbestemmelse av arkeologisk trekull fra stornaustet på Holsneset, Vestvågøy

Oppdragsgiver:	Norges arktiske universitetsmuseum, Lars Thørings veg 10, 9006 Tromsø
Kontakt:	arkeolog Stephen Wickler
Rapport dato:	11.12.2024
Utarbeidet ved:	Andreas J. Kirchhefer, dr. scient., Skogåsvegen 6, 9011 Tromsø. Epost: post@dendro.no, mob.: 995 30 332. Org.-nr.: 994 482 181 MVA.

RESULTATER

I alt fire og eventuelt fem av de åtte prøvene inneholdt tilstrekkelige mengder trekull med forventet lav egenalder som skal være godt egnet til radiokarbondatering. Hos materiale som foreslås til datering dreier det seg om trekull av kortlevd løvtre (prøve 2, 5, 7 og 20), derav muligens/trolig både bjørk (*Betula* sp., prøve 2 og 20) og vier/selje (*Salix* sp., prøve 7).

Mengden trekull i prøve 5 er lite (rundt 0,01 g?), men kan være tilstrekkelig til en AMS-datering.

Prøve 6 inneholdt et fragment av kvist eller rot, der veden ikke er forkullet. Cellene er kollapset, men ligner på løvtre. Overflaten er vanskelig å tolke. Denne kan være svidd eller mørknet av andre årsaker. Det er usikkert om kvisten/rota representerer kulturlaget eller kan være yngre.

Prøvene nr. 10 til 16 inneholdt utelukkende bartre, sannsynligvis furu (*Pinus sylvestris*) samt noen mørke konkresjoner bestående av humus (prøve 16) eller sand («slagglignende», prøve nr. 10 og 14). Også i prøvene 4, 7 og 20 var det noe bartre. Dette materialet foreslås forkastet. Prøvene 2 og 7 inneholdt fragmenter av bein.

Nr.	Kontekst	g (tot)	n	Treslag (dat)	g (dat)	Kommentar
2	sjakt 1, gulv vestlig halvdel	0,22	5	2 løvtre	na	2 løvtre, trolig bjørk, forkastet: 1 bein
4	sjakt 2, gulv vestlig halvdel	0,22	6	?	?	usikker: 1 uforkullet kvist/rot (trolig løvtre) 0,05 g, forkastet: 5x bartre
5	sjakt 2, gulv østlig halvdel	na	3	3 løvtre	na	3x kortlevd løvtre (smuldrende og smått)
7	sjakt 2, gulv vestlig halvdel	0,24	3	1 løvtre	0,05	1 løvtre, trolig vier/selje (*salix*), forkastet: 1 bartre (0,02 g), 1 bein (0,17 g)
10	sjakt 2, nedre kull-lag gulv	0,33	9	-	-	forkastet: 8 bartre, 1 mørk konkresjon med sand
14	sjakt 2, nedre kulturlag gulv	0,63	12	-	-	forkastet: 3 mørke konkresjoner med sand kastet: 9 stk. grus
16	sjakt 1, nedre kull-lag gulv	0,08	6	-	-	forkastet: 3 bartre, 3 humuskonkresjoner
20	sjakt 2, nedre kulturlag gulv	1,00	5	1 løvtre	0,12	1 kvist av løvtre (muligens bjørk) ∅ 13 mm, reserve: 2 kortlevd løvtre (innsatt med "oker"), forkastet: 2 bartre

g = vekt (g), n = antall fragmenter, dat = foreslått til datering,
na = ikke utslag på vekta (kan være rundt 0,01-0,02 g), indet. = ikke mulig å artsbestemme.

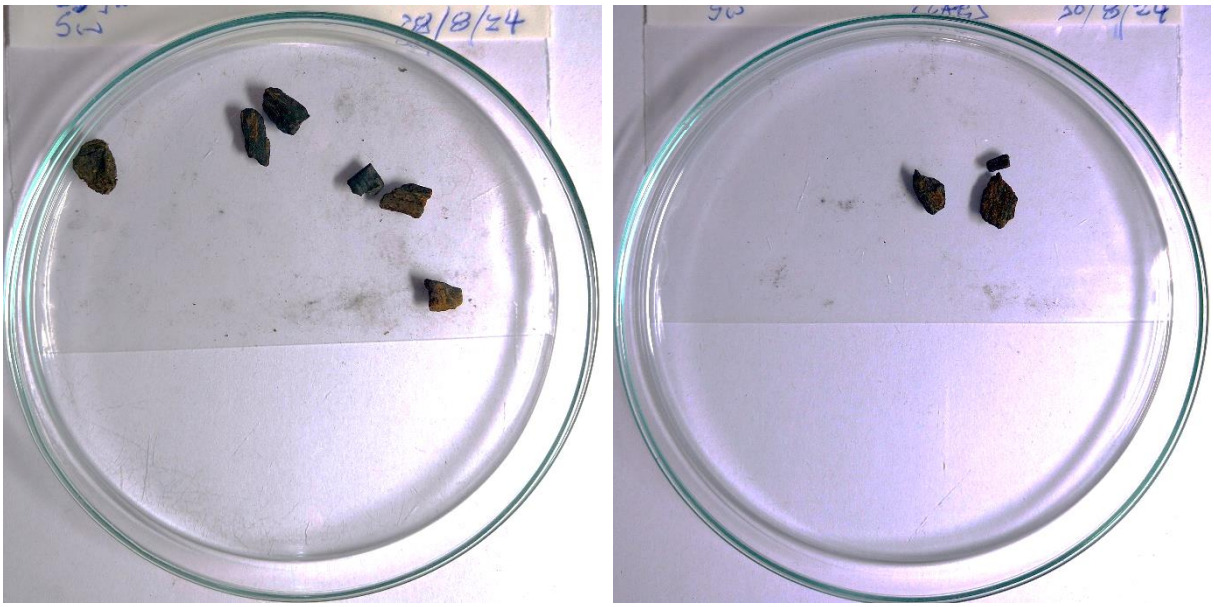

Foto: Trekullprøve 4 (venstre) og 7 (høyre). Petriskål 10 cm.

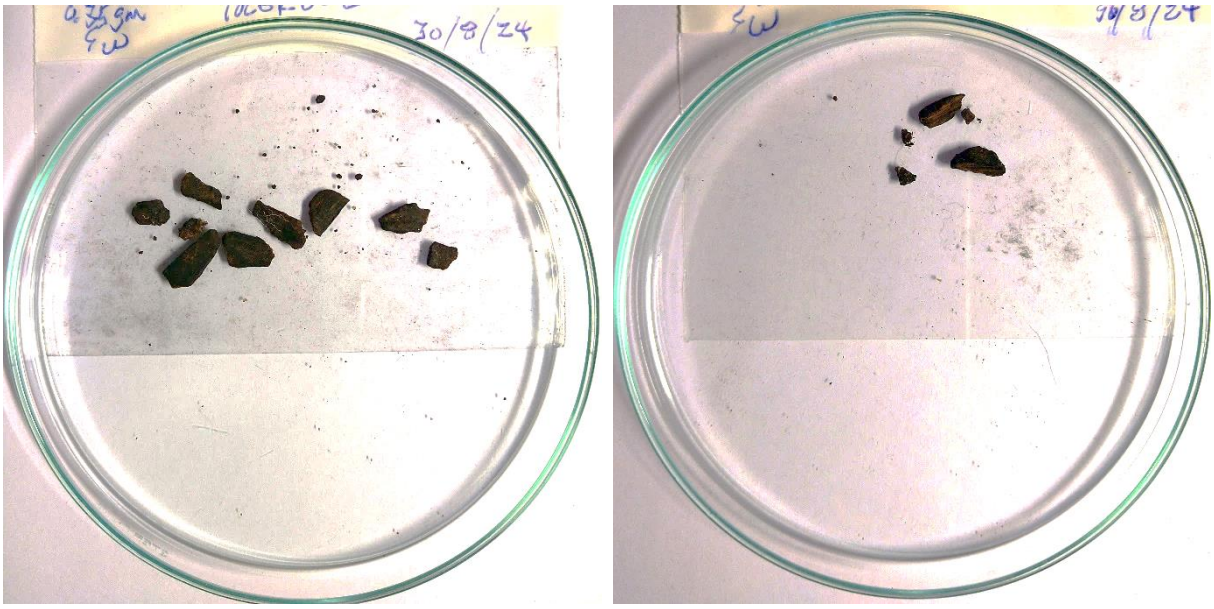

Foto: Trekullprøve 10 (venstre) og 16 (høyre). Petriskål 10 cm.

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