

Neolithic Roofing at the Ness of Brodgar

Neil C Ackerman, Orkney College UHI

12001578@uhi.ac.uk

Background

This project looked at the roofing flagstones from the Ness of Brodgar. This is the first evidence for Neolithic roofing of this kind on Orkney. Previously, roofs have generally been assumed to be made from organic materials, such as turf or thatch. While stone roofing has been suggested as a potential on a few occasions, this is first time a collapsed flagstone roof has been identified. The majority of flagstones come from Structure 8, providing a detailed sample to study further. This evidence provides a unique opportunity to gain insight into a poorly understood aspect of Neolithic construction.

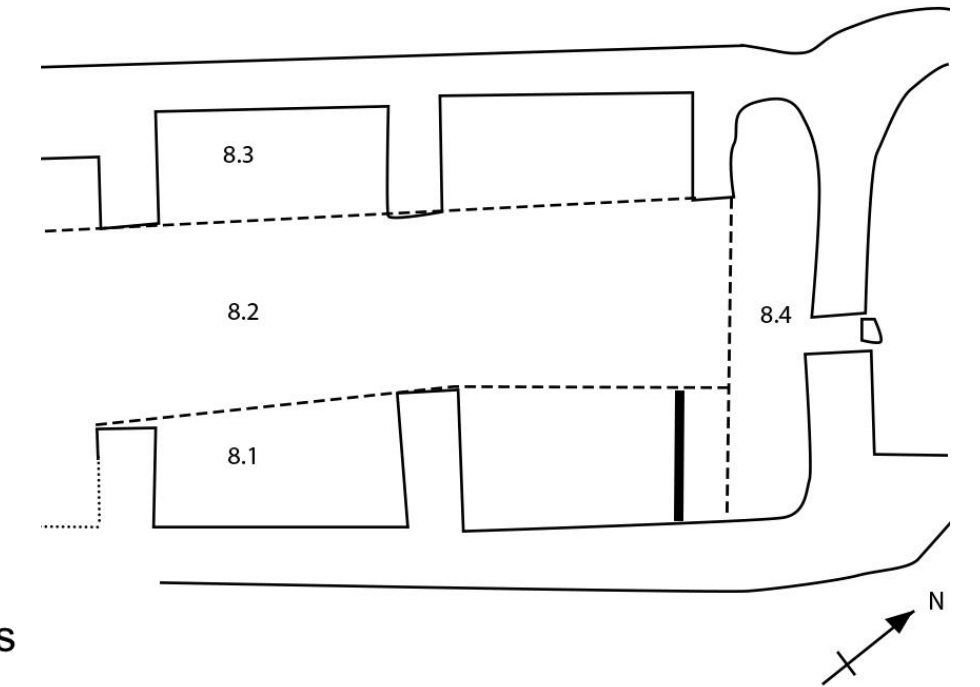
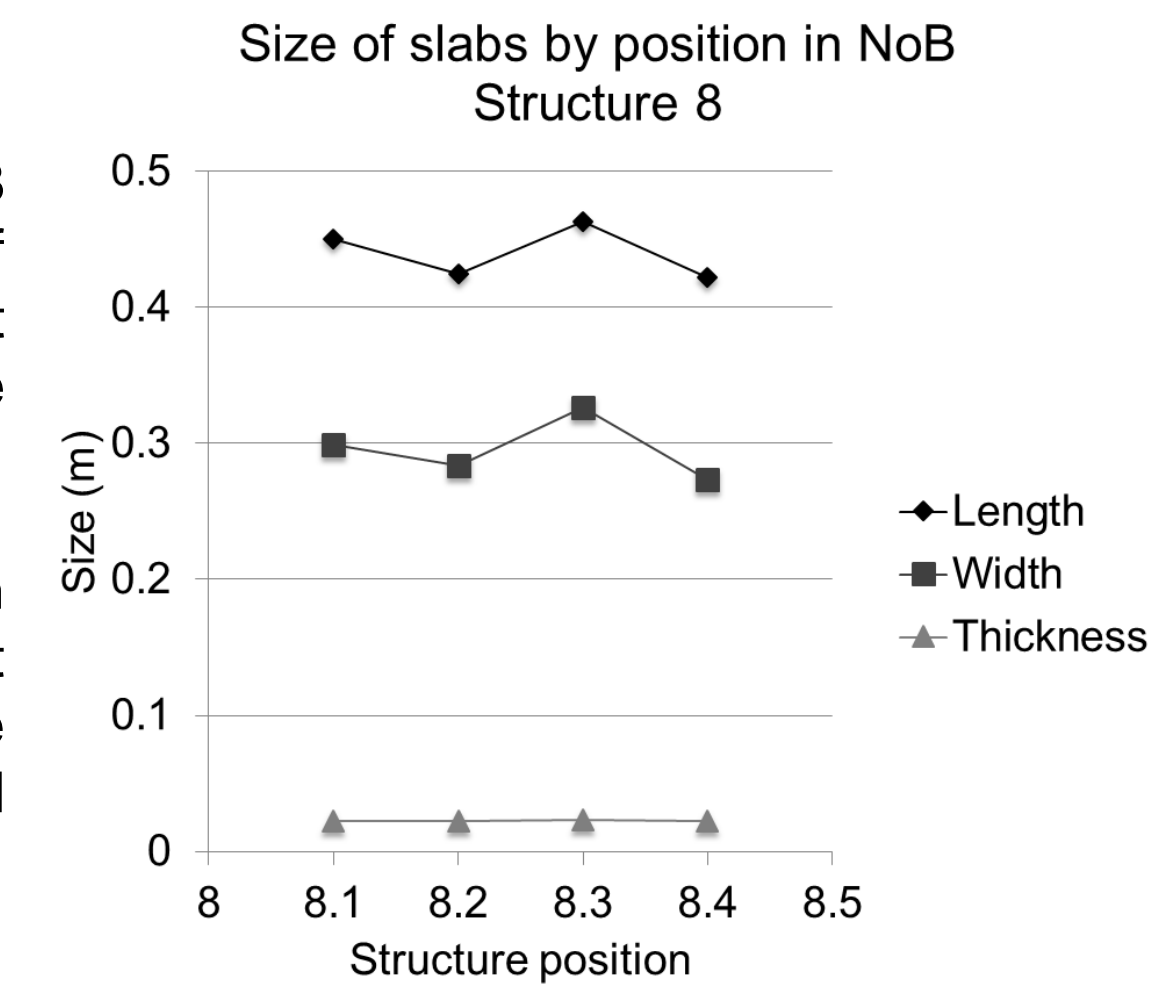


One of the flagstones from the Ness of Brodgar

Construction and Collapse

The distribution of the flagstones from the roof in Structure 8 gives hints towards the construction methodology. The size of the flagstones reduces towards the centre of the structure, but are smallest at the end wall suggesting the roof follows the curve of the wall.

As well as showing the way the roof was built, the distribution of the flagstones also shows how it collapsed. They are not found vertically against the walls as they would likely be if the roof had deteriorated over time. Rather, they are spread across the structure with 89% lying at $\leq 45^\circ$.



Sketch plan of Structure 8 showing divisions used to understand the size by position (not to scale)

Structural Understanding

Understanding the roof furthers our understanding of the structures as a whole. The internal piers in the building could serve to shorten the unsupported span of the roof frame significantly. It also gives a possible explanation for the failure of the south west wall from Structure 12. The significant outward thrust of a roof of this size could easily cause a collapse like this if not properly countered. The shortening of Structure 1 could also be a response to a roof collapse, with the later wall being built directly on top of the collapsed material. Shortening the structure would provide less of a weight to support.



The rebuilt south west wall of structure 12



A modern flagstone roof on Hoy

Weatherproofing

Large amounts of compact white clay were found with the flagstones when they were excavated. This could serve as a caulking material, as well as keeping the flagstones together. An internal covering is also highly likely, as there is no evidence of direct exposure to the smoke and soot from the internal hearths. A seamer method (like the one shown on the right) was used to cover the gaps between flagstones and reduce the amount of moisture getting into the structure.

Suggested Models

By looking at historical use of flagstone in roofing, and evidence from the Neolithic flagstones, three models are suggested:

- Uncovered flagstone roof
- Covered flagstone roof
- Partial flagstone roof



Bothy in Rackwick showing suggested models a) to the left and b) to the right



Reconstruction flagstone roof showing seamer method



For more information:

call: 01856 569345

email: ENQORCA@uhi.ac.uk

visit: www.uhi.ac.uk/en/archaeology-institute