



Shetland's Year of Architecture and Place 2010

The wheelhouse at Old Scatness

Barbara Dinnage outlines the history behind her favourite Shetland building.

My favourite house in Shetland is a circular stone building with turf roof, sitting at the edge of the Scatness Iron Age village site in Dunrossness. It was built ten years ago, and is based on one of the late Iron Age wheelhouses constructed sometime between 410 and 550AD. In the Scatness archaeological reports it is referred to as Structure Six – a building that appears to have been in use for about 500 years.

Wheelhouses are so called as they are circular buildings, with an open central hearth area. This central area is surrounded by radial walls forming piers, built in to the outside walls, which on a plan resemble the hub spokes and rim of a wheel.

This detached reconstruction sits out of its historical context. The original wheelhouse was built inside part of an older structure; it may have been semi-subterranean and, being part of a village, was surrounded by other buildings and possibly rubble from previous constructions.

There are believed to be around 62 wheelhouses in Scotland. Half of these are in the two parishes of North Uist in the Western Isles and Dunrossness in Shetland. The rest are peppered around the North Atlantic coast of Scotland. The Western Isles wheelhouses are thought to be older than the late Iron Age ones here in Shetland. About three quarters of Scotland's wheelhouses are associated with brochs.

The area around Scatness has been in use since Neolithic times, and the broch was the first significant

building found on the site. It was built around 400-200 BC, followed some time after by the roundhouses. These formed a small village around the broch. In the late Iron Age the two smaller wheelhouses evolved from the roundhouse shape, some time between 50 and 500AD, and the design was clearly comfortable and functional enough to have remained the house style for hundreds of years. There are a few wheelhouses at nearby Jarlshof too. There may well have been more buildings at Scatness – it is likely that one side of the Iron Age village disappeared when a new access road into Sumburgh Airport was built in the 1970s, first revealing the north side of the broch.

The long period of occupation at Jarlshof and Old Scatness has enabled archaeologists to accurately establish the chronology of the buildings as broch, roundhouse, then wheelhouse. Hamilton's excavations at Jarlshof in 1956 first established this sequence, and this has been largely confirmed by the work at Scatness. Both settlements have a broch at the centre and both have wheelhouses that remained the principal dwelling house throughout the post-broch period.

The evolution from roundhouse to wheelhouse at Scatness can be observed by looking closely at the well-preserved wheelhouse known as Structure 11. This is a significant building and was apparently in use for around 1000 years. It started life in the first century AD as a roundhouse, had fairly narrow internal piers which would, by way of beams and slabs above, have supported the roof. In the late Iron Age some of these piers were



The replica wheelhouse at Old Scatness.

removed and rebuilt in slightly different places. These new piers were wedge shaped with orthostats, or vertical stone slabs, at the ends facing towards the centre of the building. Thus six cells were formed around the perimeter walls. The central hearth was surrounded by a horseshoe shaped kerb, a feature found in all the Iron Age structures at Scatness. There is an aumbry, or small cupboard, built in one of the piers. There is also a small circular extension which contained a hearth. Probably the most exciting find though was the carving of the brown bear on a flat stone slab, found face down near one of the piers. This could have been one of the orthostats, in which case it may have been seen when first entering the building. However, this Pictish symbol stone is now housed safely in the Shetland Museum.

The smaller wheelhouse is Structure Six, on which the replica is based, and was built in the late Iron Age. Its six wedge-shaped piers were integrated with the outside walls right from the start, forming five cells, an entrance passage and a central fireplace. The building is about 5.5m in diameter and was in use well into Viking times.

The reduction in size from the somewhat monumental roundhouse to the wheelhouse may indicate a change in lifestyle from communal extended family living to smaller family groups. Or perhaps it was just more economic to roof a smaller structure. The supply of wood or lack of it may have influenced this change. The technique of corbelling stone in this post-broch / late Iron Age period is very apparent in the wheelhouse construction.

Both wheelhouses have evidence suggesting their later use may have been for craft-working and metal-working because loom weights, spindle whorls and some metal remains have been found. The last use for Structure Six is thought to have been for food preparation and perhaps as a smokehouse; indeed, if you sit in the replica wheelhouse for long enough it is not difficult to imagine the smokehouse idea.

Bones found in the middens tell us that the Iron Age residents would have eaten eider ducks and small shore fish; later on, in Viking times, when they took boats out and went fishing, they are known to have eaten larger fish like cod and extended their diet to include more sea birds. They used clay pots and also vessels made from soapstone. Many fragments of pottery have been found which had soapstone mixed in with the clay, but it is not known where the clay came from so if anyone is reading this and has a source of local clay then please take some along to the site for experimentation.

The replica wheelhouse was built to research further the building techniques. Six central orthostats sit on flagstone base plates and help set out the shape of the building. When the stonework is up to the height of the top of the orthostats the corbelling begins. The piers gradually widen and close in above your head to form the side rooms or cells, with a stone lintel to bridge the final gap. This corbelling significantly reduces the span of the roof and at the same time stabilises the wall head. It took nearly 92 cubic metres of stone weighing 183 tonnes, and 780 man-hours to build this replica wheelhouse. It has a conical timber roof with a turf covering. This is the most likely roof construction and no evidence exists to suggest an alternative.

Try sitting in the wheelhouse on one of the wooden benches covered with sheepskins and heather mattresses, it is a rather special experience. There are no windows to look out – all you can see outside is the grass and sky through the open doorway and the glow of the

peat fire in the central hearth. It is dark inside, but your eyes will soon become accustomed to the low light from the glow of the oil lamps, carved from soapstone with wicks made from floss. When the sun shines, a small shaft of light will appear from time to time through the smoke hole in the top of the roof. Put your feet up, lean back against the stonework and make yourself at home. Listen to the crackle of the fire in one ear, and the gentle ebbing and flowing of the tide in the other. It feels truly timeless. ■



Inside the wheelhouse.

Barbara Dinnage worked as an architect for the SIC for 21 years before taking early retirement in 2007. She has been working for the last two summers with the living history team at Old Scatness Iron Age Village, and says it's the best job she has ever had.

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