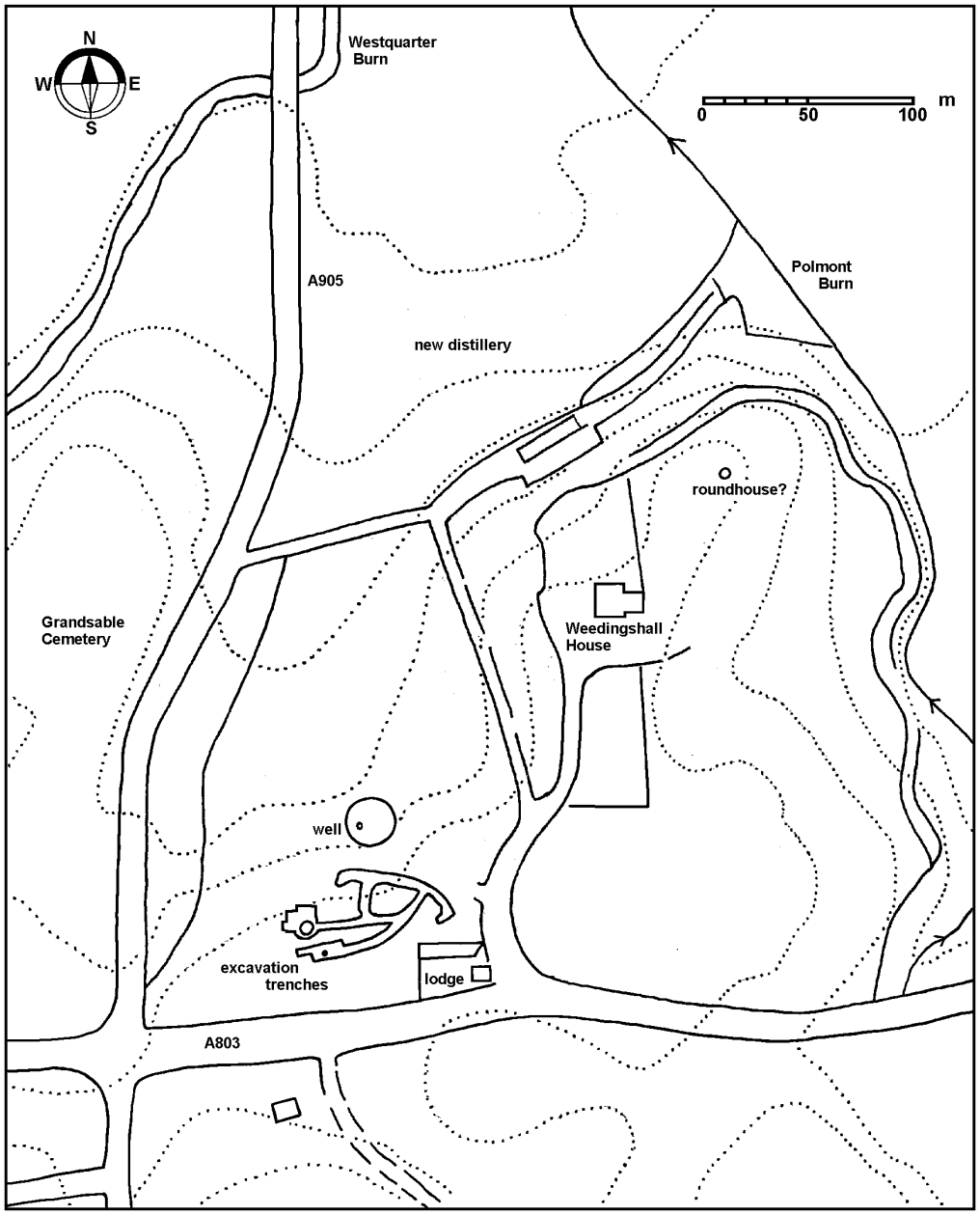
Excavation of a Neolithic Roundhouse at Weedingshall, Polmont, in 2002

Geoff B Bailey

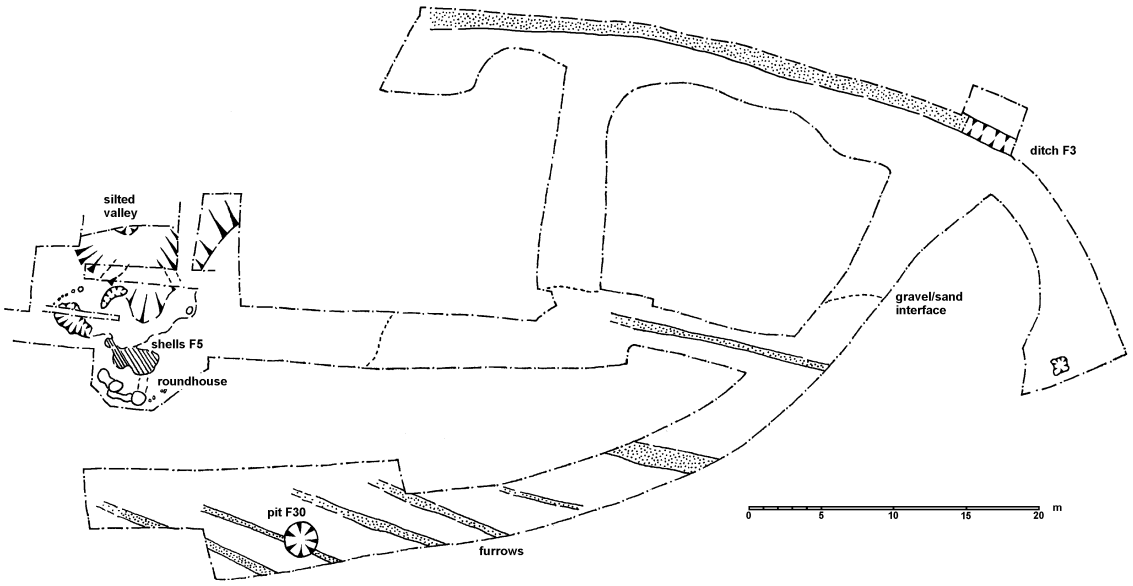
Illus: Pit F30 looking north with Weedingshall House to the back right. In the far centre is the Forth and the Kincardine Bridge.

In the three week period following 14 January 2002 Falkirk Museum undertook an excavation at Weedingshall, Polmont, in advance of an extension to Grandsable Cemetery (with breaks for snow storms and gales - particularly that on 28 January when five trees in the avenue to Weedingshall House were blown down). Cropmarks had been noted on aerial photographs taken by the RCAHMS, which suggested the existence of an Iron Age enclosure with at least two ditches. In the event, these cropmarks turned out to be a combination of late medieval field boundaries and the nature of the underlying geology. Some of the marks were created by water seeping out at the junctions of the interleaved bands of sand and gravel. However, three long trial trenches were machine dug along the upper contours of the field and two features of archaeological significance were observed. In the central trench a small patch of oyster shells was encountered and the trench was first expanded downhill to the north with the help of the machine to capture any eroded material and finally by hand to the south (NS 9246 7906).



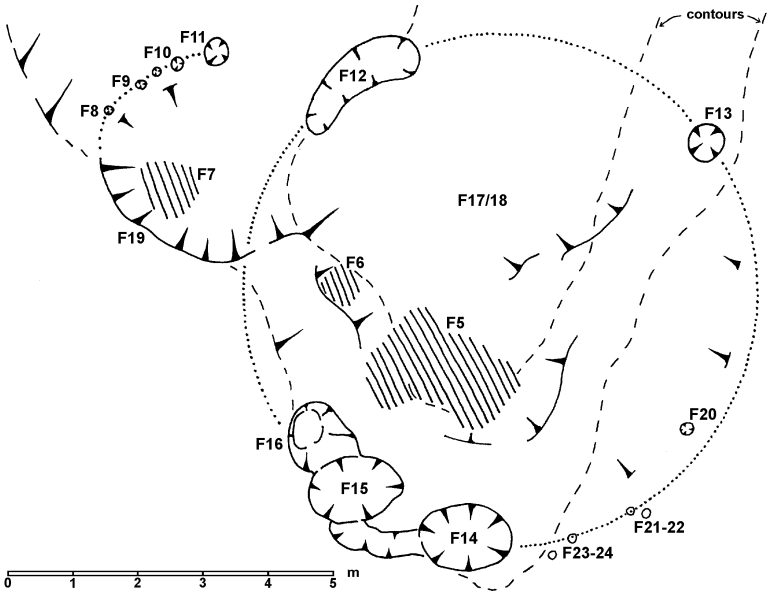
Illus: Map showing the location of the excavation trenches and the setting of the site. Contours at 5m intervals.

The site lies on a north-facing slope on the east side of the Westquarter Valley at a height of 36m OD. Here, near the mouth of the valley, there was a small dip in the hillside on the estate of Weedingshall. This dip accumulated a large quantity of hill-wash, from the upper levels of which came a fragment of a Bronze Age corded beaker. A few fragments of Neolithic pottery were found in the lower levels of the hill-wash, the depth of which varied from nothing at the top of the site to 1.4m at the lower end.



Illus: Plan of the excavation trenches showing all of the features found. Those stippled are thought to be late medieval.

Below the hill-wash two curving gullies only 0.1-0.3m deep were found (F12 and F14-16). Between them they formed about a quarter of the circumference of a circular enclosure 7.5m in diameter. The upper gulley (F14-16) was irregular, having various swellings as if for post settings. A further post-hole (F13) 0.28m deep was found on the opposite side of this circumference with possible stake holes (F21-24) also on the line. Slight scoops in the natural reflected this circular platform. Attached to the west side of the circular feature thus formed was a semi-circular extension, composed of a large post-hole (F11), stake holes (F8-10) and a curving bank (F19) created by cutting deeply into the natural hill slope. The foot of this cut contained dark sand which incorporated comminuted charcoal and a few oyster shells.



Illus: Plan of the Neolithic roundhouse showing feature numbers and the earlier contours. Hatched areas represent dumps of oyster shells.

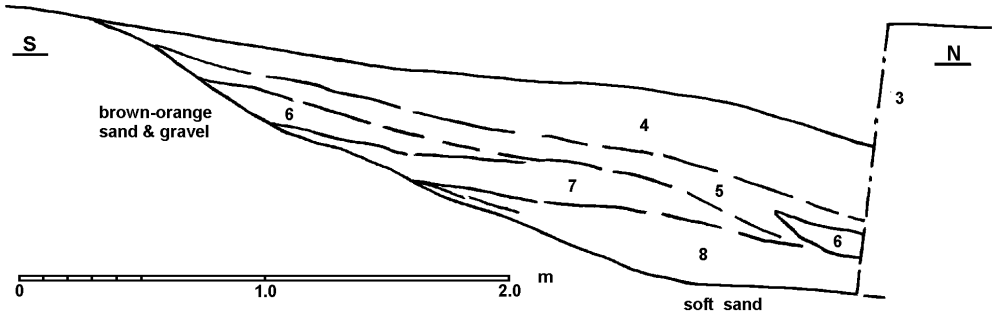
Illus: The terracing for the roundhouse looking ESE to Weedingshall Lodge.

In the southern part of the roundhouse, just off centre, a dump of oyster shells was placed in a shallow scoop. This midden incorporated much smaller quantities of muscle and periwinkle (it produced 6 large bin bags full of oyster shells). Three sherds of Neolithic pottery were found in amongst the shells. The total assemblage of pottery from the site comprises 72 sherds weighing 418g derived from a minimum of seven individual vessels, most of which date to the early Neolithic. The majority of this was found in the erosion layers to the north.

Illus: The Neolithic roundhouse looking east with post-holes F 8-11 in the foreground. The hand-dug extension is being started to the south.

Illus: Gulley (F14-16) in the foreground under excavation with the shell deposit (F12) in the centre.

The northern part of the interior of the circular enclosure had been levelled up by dumping material (F17) in a natural valley. This material incorporated a small amount of oyster shells, a hazel nutshell and Neolithic pottery. Radiocarbon dates of 4924 +- 45 BP and 5378 +- 25 BP were produced by the nutshell and an oyster shell. Below this levelling material a thin dark lens of silty sand covered a large area of the natural (F29). Further levelling was achieved by cutting back the natural deposits of sand and gravel on the south side of the site.



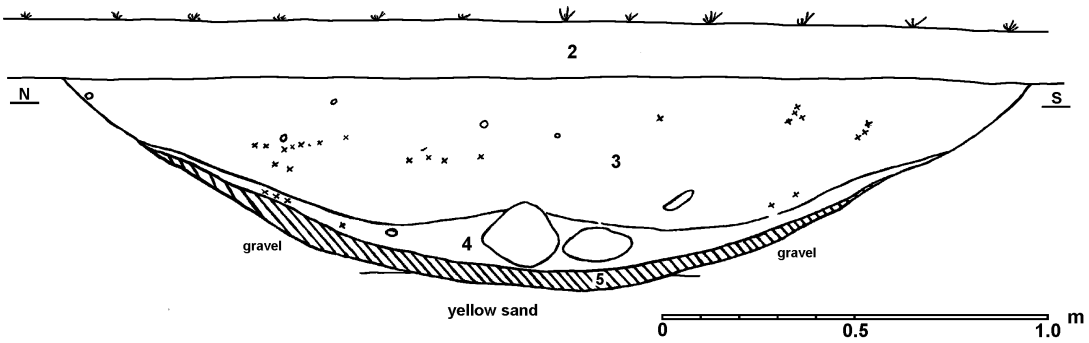
Illus: Section 2 through the soils immediately north of the roundhouse. 3 – dark orange-brown sand; 4 – red-orange silty sand; 5 – dark red/brown sand; 6 – purple-grey sand; 7 – soft off-white sand; 8 – pale orange silty sand.

To the north of the roundhouse a large amount of silt had accumulated in a shallow natural valley (Section 2). The silting started immediately outside the roundhouse and reached a depth of 0.6m after 2.4m, increasing to 0.8m after another 2m. Here a central erosion channel probably represented an old stream course. During the 2002 excavation the whole area filled with water on several occasions from the heavy rainfall.

Illus: The layers of silt in the valley below the roundhouse which lies on the extreme left.

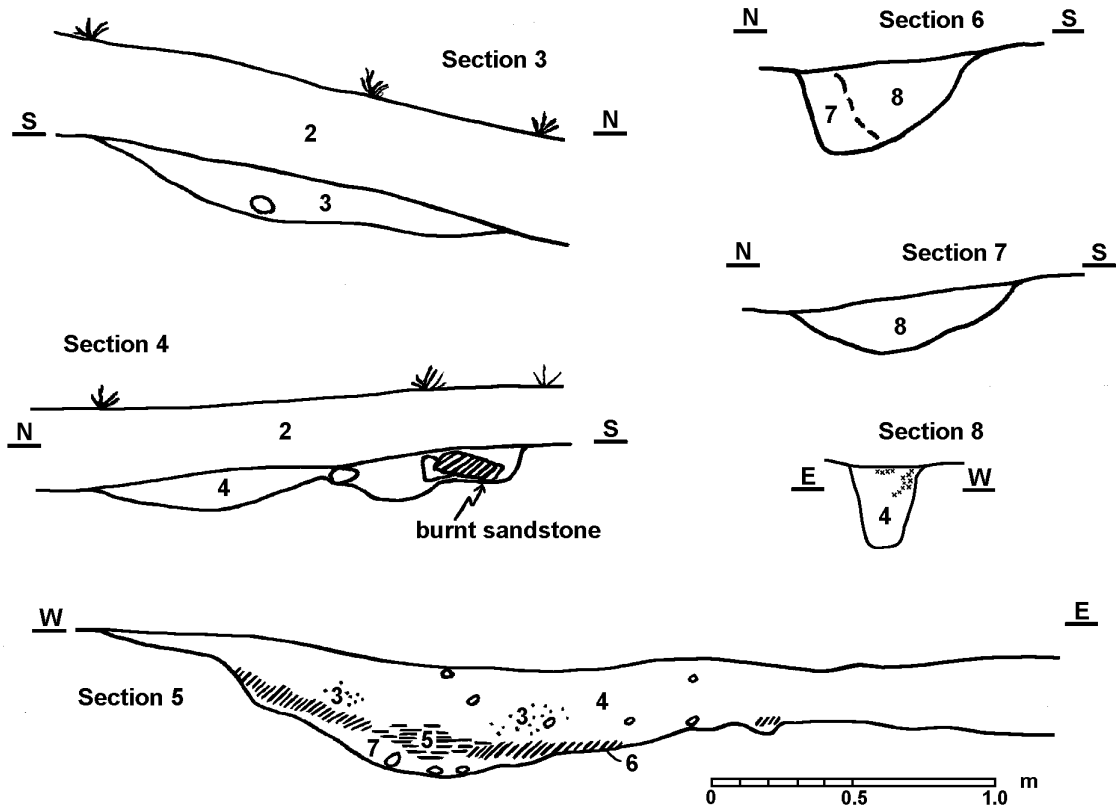
13m south-east of the enclosure, on the level ground above, a circular pit (F30), 2.5m in diameter, had been cut into the natural gravel. The upper fill was mixed and clearly represented deliberate backfill. The lower fill contained a layer of oak charcoal and the natural nearby had been oxidised. Three glacial cobbles, slightly oxidised, sat on the top of the charcoal. The red-orange sand layer over the charcoal deliberately rose in the centre to completely cover the stones as well. The pit was perfectly smooth forming a slice through a sphere. There was no stratigraphic link to the circular Neolithic structure and a radiocarbon date of 2430 +- 50 BP was obtained.

Illus: Circular pit (F30) looking south-east.



Illus: Section 5 across pit F30. 2 – topsoil; 3 – light brown sand with some charcoal; 4 – red-orange sand; 5 – black sand with much charcoal.

One of the first features to be found was the shallow slightly curving ditch F3 which formed the northern limit of the excavated area. It lay immediately below the topsoil on the higher ground at the south-east end of the site and was evidently relatively late in date. Seven parallel furrows between 2m and 7.5m apart and 0.5-1.5m broad occurred on the higher ground, one of them cutting pit F30 (see illus 1). These were part of the late medieval rig and furrow system. Their SE/NW alignment was similar to that of ditch F3 and it seems reasonable to assume that the ditch formed part of a field boundary.



Illus: Sections 3-8. 2 – topsoil; 3 – orange-brown sand; 4 – red-brown sand; 5 – oyster shells; 6 –black sandy silt; 7 - grey-brown silty sand; 8 – dark red-brown sand
Sections 3 & 4 across ditch F3. Section 5 across F19. Section s 6 & 7 across F15. Section 8 across F13.

Prehistoric Pottery

Catherine McGill

The assemblage (Table 1) comprises 72 sherds weighing 418g. These derive from a minimum number of seven individual vessels, most of which date to the early Neolithic. The analysis included a measurement of wear, as employed by Lelong (1993) and Swift (1996), which is measured on a scale of 1 (not worn) to 5 (very worn). This can aid in isolating residual elements in an assemblage.

vessel	fabric	rim	body	frags	total	weight (G)	Max thickness (mm)	Soot	Wear
V1	1	5	16	15	36	125	9	0	2
V2	2	3	18	0	21	110	12	0	3
V3	2	1	3	0	4	47	10	1	3
V4	2	0	4	0	4	70	10	0	2
V5	4	0	1	0	1	7	4	0	4.5
V6	1	1	2	0	3	11	4	0	2
V7	2	1	2	0	3	48	8	0	2

Table 1: summary of the prehistoric pottery assemblage.

The sherds were constructed from four fabrics (Table 2). Fabrics 1 to 3 are similar, differing principally in their tempers. Fabric 4 stands out in having an absence of rock inclusions and a high sand content.

Fabric	Description
1	Evenly fired (dark grey buff throughout, dark grey core in places), fairly hard, smooth fabric with uneven fracture. Few, poorly-sorted angular quartzite inclusions, up to 6mm across.
2	Unevenly fired (exterior orange to dark grey, core mid grey to black, interior buff). Fairly hard, gritty fabric with a hackly fracture. Frequent, well-sorted mixed grit and crushed shell inclusions, less than 1mm across. Occasional larger exceptions up to 3mm across.
3	Evenly fired (buff exterior, dark grey core, black interior). Hard, smooth fabric with an uneven fracture. Few, poorly-sorted sub-rounded basic dark igneous inclusions up to 4mm across.
4	Evenly fired (orange exterior, mid grey core and interior). Fairly hard, very sandy fabric with no visible inclusions and a fairly fine fracture.

Table 2: description of fabrics.

All of the sherds were handmade, although the specific methods of construction were not identifiable. No organic residues were apparent and only a single sherd displayed sooting, suggesting the vessels were not used for cooking.

Only five of the seven vessels are represented by rim sherds. Of these, four (Vessels 1, 3, 6 and 7) derive from forms of the fine, well-finished and frequently burnished Grimston-Lyle Hill type commonly dated to the earlier Neolithic period. Examples of parallels come from Bantaskine, Stirlingshire for Vessel 6 (Cowie 1993 illus. 7.1) and Easterton of Roseisle for Vessel 7 (Henshall 1983 fig.3.22). Vessel 2, which is coarser than the remainder of the assemblage, is less datable in

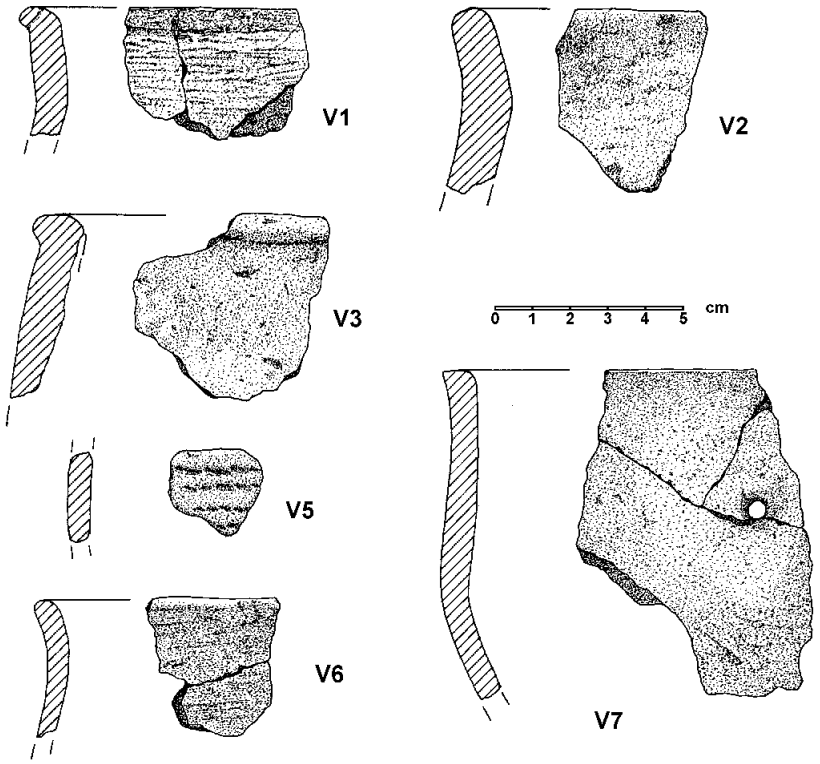
form. Parallels range in date from the late Neolithic find at Tentsmuir, Leuchars (Cowie 1993 illus. 4.13) to Iron Age examples from Clatchard Craig (Close-Brookes 1986 illus 21.22, 36). Potentially widening this range further, Cowie's study (1993) demonstrated that coarse Neolithic wares make an earlier appearance than previously recognised, meaning the possibility that Vessel 2 in fact co-existed with the early Neolithic material cannot be dismissed.

The single Vessel 5 sherd, which was very worn, appears to derive from a beaker decorated with parallel lines of cord impressions. This was retrieved from the hillwash overlying the roundhouse and is certainly residual.

All other sherds were barely worn and are likely to have been deposited in the immediate vicinity shortly after breakage. This includes a single sherd from the undatable Vessel 4 found in the same context as the Vessel 5 sherd. The former sherd was probably disturbed from underlying contexts. The other three sherds from Vessel 4 were recovered from the dark lens some of the hill-wash, associated with Vessel 6 and 7 sherds. The remainder of the assemblage came from the occupation layer underlying the roundhouse (Vessels 1 and 2) and the shell midden inside the roundhouse (Vessel 3).

None of the sherds can be seen to date the roundhouse itself. The material from the occupation layer pre-dating the roundhouse comprised the early Neolithic Vessel 1 and the not closely datable Vessel 2. It seems likely that all of the Neolithic material has been disturbed from this occupation layer and related contexts.

Catalogue



Illus: The pottery from Weedingshall, scale 1:2.

Make-up material below the roundhouse
Vessel 1 (WH02-17) - Fabric 1- 5 rim sherds, 16 body sherds, c15 small fragments, weighing 125g. Upright vessel with ridge c10mm below rim and pronounced external lip. Diameter unknown. Clear burnish marks on exterior, interior not treated in any way. Incidental striations appear intermittently. No visible decoration or residue. Shattered vessel, barely weathered at all, largely broken during excavation. Wear 2.
Vessel 2 (WH02-17)- Fabric 2- 3 rim sherds, 18 body sherds, weighing 110g. Coarse, thick vessel, slightly everted. Diameter unknown. Slight wet-smoothing interior and exterior, rim itself is slightly shiny but no actual burnish marks. Few impressed marks on exterior, probably incidental. No apparent decoration or residue. Wear 3. Uneven finish on interior.

Shell midden inside the roundhouse
Vessel 3 (WH02-05)- Fabric 2- 1 rim sherd and 3 body sherds weighing 47g. Inturning vessel with flattened rim and external lip. Unknown diameter. No surface treatment, decoration or residues apparent. The Interior doesn't survive in places. Wear 3.

Hill-wash overlying the roundhouse
Vessel 4 (WH02-04)- Fabric 3- 3 body sherds weighing 70g. Burnished interior and exterior and shiny black slip on interior. Even 9-10mm thickness, fairly coarse vessel. Wear 2.
Vessel 5 (WH02-04)- Fabric 4-1 body sherd weighing 7g. At least 4 parallel lines of cord-impressions, 3-4mm apart. Vessel c4mm thick, although the single sherd is very worn and it may originally have been thicker. Wear 4.5.

Dark lens under hill-wash
Vessel 4 (WH02-29)- Fabric 3- 1 body sherd weighing 20g. Burnished interior and exterior and shiny black slip on interior. Even thickness. Wear 2.
Vessel 6 (WH02-29)- Fabric 1- 1 rim sherd and 2 body sherds weighing 11g. The three sherds constitute only a tiny fraction of this vessel. It appears to have been slightly everted with a rounded rim forming a slight external lip. The vessel is very unevenly constructed. Roughly wet-smoothed in places. Wear 2.
Vessel 7 (WH02-29)- Fabric 2- 1 rim sherd, 2 body sherds weighing 48g. These three joining pieces represent an undecorated bowl with a slight external lip. Diameter unknown. The vessel was perforated, post-firing, 35mm below rim, perhaps to repair the vessel or allow it to be hung up. A very smooth, even finish, wet-smoothed on interior and exterior. Wear 2.

The Environmental samples

Dr Susan Ramsay

Fire Pit (F30)
Sample A - total volume of charcoal c500ml.
Over 300 fragments of charcoal (weighing 100.8g in total) were identified and all were *Quercus* (oak). A quick scan of the remaining charcoal suggested that the entire sample was composed of oak charcoal. Some fragments were relatively large, with more than 30 annual growth rings visible. No seeds or other charred plant material was identified from this sample.
It is unusual for a fire pit or hearth to contain only one type of charcoal and no other charred environmental remains.
Sample B.
Identical assemblage to Sample A. A total of 40 charcoal fragments were identified, weighing a total of 0.3g.

Shell deposit (F5)
Sample consisted of sand, gravel and very fragmented shells. Some very small fragments of coal were also noted. Very little charcoal was recovered from this sample.
Identifiable charcoal consisted of:
Prunoideae (cherry type) – 3 fragments (<0.05g total)
Quercus (oak) – 2 fragments (<0.05g)
No other plant remains were recovered from this sample.
This is not a big enough botanical assemblage from which to draw any valid conclusions.

Sub-floor (F17)
This sample consisted of sand, gravel and very fragmented shells. Some very small fragments of coal were also present. Very little charcoal was recovered from this sample.
Identifiable charcoal consisted of
Corylus (hazel) – 1 fragment (0.05g total)
Quercus (oak) – 5 fragments (0.05g total)
One fragment of Corylus avellana (hazel) nutshell (weighing 0.1g) was also identified. As before, this assemblage is not large enough for any further conclusions to be drawn.

In summary, it appears that the environmental evidence from Weedingshall may show the use of substantial oak posts and the use of locally available woods either for fuel or construction purposes. All the tree types identified (cherry type, oak and hazel) could have been found growing in the woodlands of this area at any time during the past 8-10,000 years. A single fragment of carbonised hazel nutshell may provide evidence for the consumption of hazelnuts by the inhabitants of this site, but could also have been brought onto the site with firewood.

Radiocarbon dates

1. Oak (quercus) charcoal from fire-pit F30
Laboratory code: GU-10616
2430 +- 50 BP
Calibrated range: 600-400 BC

2. Hazelnut shell from F17
Laboratory code: GU-10614
4925 +- 45 BP
Calibrated range: 3758-3741 BC

3. Oyster shell in F17
Laboratory code: GU-10615
5378 +- 25 BP
Calibrated range: 3818-3740 BC

Discussion

The roundhouse dwelling had been deliberately sited near the head of a small valley that provided easy access down to the Westquarter Burn and thence to the nearby stretch of coastline. The nearest known shell midden lies only 725m to the north-west at Mumrills. This was partially examined at the time of the construction of the Laurieston Bypass. A series of such middens extends along that contour with reports of shells at Pomont Park, Inchyra, Northbank, Polmont

Hill and eastwards. These supplied a rich and stable source of protein for the local population of the Mesolithic and Neolithic; a source which continued to be exploited into the Bronze Age.

The site had the great advantage of observation across a broad sweeping expanse of the carseland from the Polmont Burn right up to and beyond the River Carron with the littoral beyond. It was sheltered and well above the flood plains. Set back from the coast it provided a measure of security from attacks from the estuary. The gravel and sand was free-draining and so would have formed a good floor material. It was also easily worked for crops.

The silted up valley probably contained a small stream in the Neolithic emanating from a spring in the immediate vicinity. The interleaving of gravel and sand deposits in the area has a tendency to produce such effusions and was in part responsible for the crop marks that led to the site being investigated. At a much later date the well located in the circular wooded enclosure downhill to the north was fed by the same source. It appears on every edition of the Ordnance Survey maps and was given a stone surround as an estate feature.

The roundhouse would have had a timber frame represented by the surviving post-holes. These were slightest along the northern circumference suggesting some later erosion in that area that contributed to the mass of colluvial just down the slope. In segments the post-holes were connected by continuous curving trenches but this appears to have been for convenience of construction as well as a sign of some replacement of individual posts. The roundhouse was 7.5m in diameter with the curving arc of a lean-to on the west side. No evidence was found for an entrance though it is probable that it was adjacent to one of the large post-holes. As the stream and the oyster beds were to the north it is reasonable to suggest that it lay on that side. The "extension" formed by F8-11 and F19 may thus have functioned as a porch with the entrance between F11 and F12.

The initial date of the dwelling is indicated by the radiocarbon dates derived from material in the sub-floor deposits. The hazelnut shell probably provides the best source of dating as it would have been incorporated into this layer immediately at the time of its formation and would not have been around for a long period before that. It is, of course, impossible to say if the nut was used as a food substance. Its date was put at 2,974BC (+- 45). The oyster shell is more problematic as not only may it have been brought to the site by previous occupants, but it would also suffer from the Ocean Effect whereby there was a time lag in the changes of the proportions of C14 and C12. It provided a date of 3,438BC (+- 25), some 450 years earlier. This may be taken as an indication of the longevity of the site which was also reflected by the presence in the upper levels of colluvial of a corded beaker of the Bronze Age for which a date of around 2,200BC would be more suitable. Again, it is notable that many of the pieces are from the early Neolithic with some probably much later. However, if we take the calibrated date ranges with the two sigma variation for the hazel nutshell and the oyster shell there is a slight overlap in the region of 3740 BC.

The functional nature of the structure at Weedingshall is not known. The pottery may be said to be domestic in form – with one pot perforated for suspension. A function backed up by the deposition of a large quantity of food refuse and comminuted charcoal in the central pit. However, these same features could be interpreted as ceremonial. Neolithic pottery is very scarce in the Falkirk district and the 47 pieces from seven different vessels at Weedingshall represents the largest assemblage to date.

That the soils were favoured by the agricultural community is demonstrated by Pit 30. This had been very carefully dug to form part of a sphere with the three cobble placed at the centre and it

was remarkable that the charcoal should be entirely composed of oak. The significance of either of these unusual characteristics is not known. The heated stones may suggest that it was part of a cooking pit but the lack of plat debris tends to rue this out. Some early fire-pits have been interpreted as saunas and whilst this would suit the use of oak it is inconsistent with the smooth hemispherical base. The charcoal gave a radiocarbon date of 600-400 BC.

Other prehistoric sites are known in the area. A second possible roundhouse 75m to the north-east of Weedingshall House was recorded on aerial photographs before being removed by the construction of a children's home by Central Regional Council in 1989. The oval-shaped enclosure on the low-lying land at Rannoch Park, also known from aerial photographs may belong to this period but may be medieval. To the south-east we have Auchnacairny Acre at Parkhill which is first recorded in 1760 and which would appear to mean the "field of the cairns." It is not known if these were prehistoric features or later field clearance (Reid 2009, 303). Archaeological excavations have also shown that there was no surviving prehistoric material in the field to the north of the Weedingshall site. This work was undertaken by CFA ahead of the construction of the new distillery there. CFA also investigated the field to the east of the Polmont Burn and north of the A803 (NS 929 790), again without finding any remains.

The discovery of the Neolithic roundhouse at Weedingshall was a complete surprise and it remains the oldest known dwelling in the Falkirk district.

Acknowledgements

Philippa Ascough arranged for the radiocarbon dates of the oyster shell and hazelnut to be undertaken as part of a larger study that she was undertaking into the Marine Radiocarbon Reservoir Effects for the Mesolithic and Medieval Periods.

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