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ARO28: What pits and postholes can tell us: recent finds from Balvenie and Newton Mearns

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ARO28: What pits and postholes can tell us: recent finds from Balvenie and Newton Mearns

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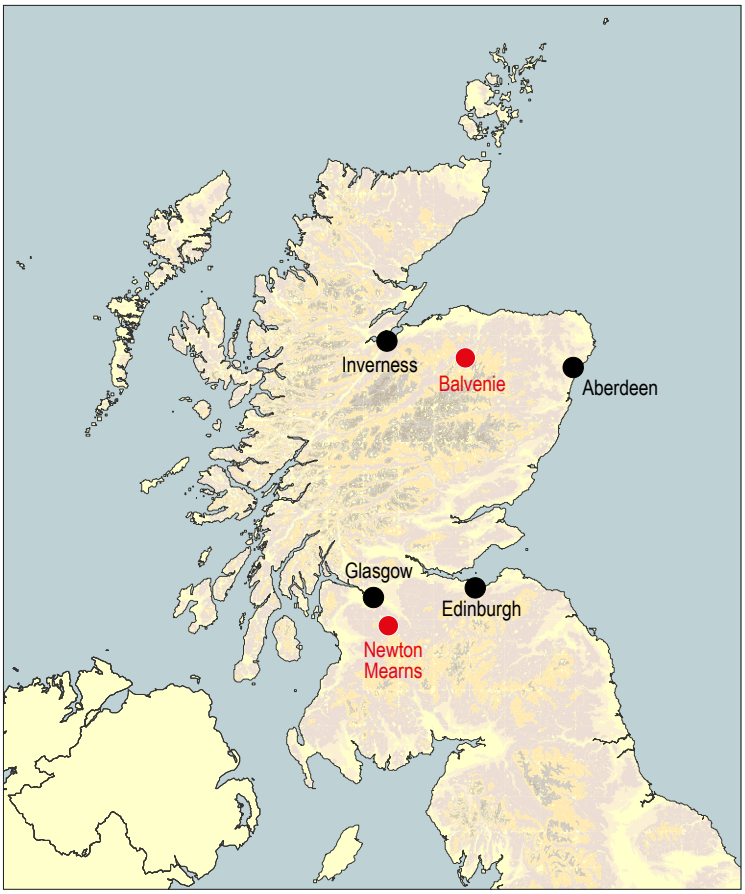

Figure 1: Location map of Balvenie and Newton Mearns.

Foreword

A number of pits and postholes were discovered during archaeological interventions by GUARD Archaeology Ltd in advance of development at Balvenie Distillery, Dufftown, Moray (2014), and at Newton Mearns, East Renfrewshire (2012). None of the features was identified as being directly connected with other settlement remains, and associated material culture was rare. However, these features reflect activities during the Bronze Age to Iron Age periods.

The sites and their findings are described separately, but the discussion brings their results into a wider perspective.

The pits and postholes at Balvenie

by Warren Bailie

Introduction

An archaeological watching brief and subsequent excavation was carried out by GUARD Archaeology Ltd for Barr Construction on behalf of William Grant and Sons Distillers Ltd., on a site proposed for the construction of new warehousing unit for the Balvenie Distillery, Dufftown, Moray lying at c. 186 m OD.

During the course of the watching brief in June and July 2014 a series of discreet archaeological features, which included pits, postholes and large deposits were encountered across the hillside of the development area, were subsequently excavated.

The distillery is situated due north of Dufftown, on the west bank of the River Fiddich, Moray (Figure 1). The development area, centred on NGR: NJ 3208 4252 lies immediately north of Balvenie House, the distillery warehouses No. 43-46 flank its eastern boundary with the River Fiddich beyond them, and the Dufftown and Keith Railway line (SMR: NJ34SW0014) forms its western extent.

The development area is one of a gently rolling upland landscape which was under agriculture and is bordered by trees and scrub vegetation. Much of the surrounding area is dominated by pasture and bonded warehouses of the distillery.

The subsoil consists of alluvium and river terrace deposits of gravel, sand, silt and clay, while the solid geology consists of Mortlach Graphite Schist formation graphitic pelite (British Geological Survey 2017).

Archaeological background

A review of desk-based resources for the development area suggested that no known archaeological sites were present within it although several sites of cultural heritage significance exist within a 0.5 km radius of it. Tullich House (B-Listed) was built in the style of William Robertson (1830-40) and lies a short distance to the east (HES Ref: 15866). Tullich or Tulloch is also noted in Canmore and the SMR as the possible site of an early tower house or manor associated with the Leslies of Kininvie. A possible chapel and well associated with St Wallach or St. Bean, both of whom were active in the eighth century AD, lie to the south-west (NRHE: NJ34SW 7; SMR: NJ34SW0020). The settlement name Balvenie is thought to derive from 'Bean's Stead' (Jervise 1875-9),

The development site lies 1.6 km NNW of the Scheduled Monument of Balvenie Castle (SAM 90028), a thirteenth century curtain walled castle that originally was the stronghold of the Comyn family but was later remodelled by the Black Douglases in the fifteenth century, and again by the Earl of Atholl in 1550 (Tabraham 2005). Other potential sites of interest include the recovery of a prehistoric three-knobbed carved stone ball due west of the site at Buchromb (NRHE: NJ34SW 15), and the note of a large possible prehistoric kerbed cairn also at Buchromb (Canmore ID: 16870, SMR: NJ34SW0006), 1.6 km north-west from the development. More modern remains, include the type-24 pillbox that lies adjacent to the main road to the south-west (NRHE: NJ34SW 47), and two buildings and associated enclosures (SMR: NJ34SW0055) noted on the 1847 OS map of the area to the north of the site at Midtown of Buchromb.

Results of the fieldwork

A series of seven areas of archaeological potential were discovered during the watching brief of the ground-works, located predominantly on the west side of the development. The eastern portion was largely devoid of any archaeological features due to extensive recent disturbance. The south and central portions of the development area appear to have been disturbed by heavy machinery and detritus from construction works. A large amount of topsoil and imported material was stored on the site creating an overburden of up to 1.5 m deep along the western boundary. The eastern half of the development area had been disturbed and excavated to a substantial depth at an earlier date, and in doing so, not only removed rubble and debris stored there, but also the topsoil and the subsoil (Figure 2).

From the investigations, only three of the seven potentially interesting areas proved to have archaeological features (see Figure 2). These comprised a large area of organic and charcoal-rich deposits towards the northern part of the site (Area 2), a group of three postholes in the south-west (Area 4) and four large pits forming an arc in the central area (Area 5). These areas are described below but only Areas 4 and 5 were commissioned for post-excavation analysis (see Discussion).

Area 2

This area contained a series of large organic deposits, with some charcoal, that extended across the periphery of the investigated area under a 1.2 m thickness of topsoil and overburden. A series of small trenches and sections were dug across these deposits to determine their extent and depth. However, no material culture was encountered associated with them except for one piece of fossilised wood SF 001. The deposits did not display any clear shape or form and it is not known if they originated from human activity upslope and to the west of the development boundary. It was considered that they could have been remnants of activity truncated by recent ground-works but no further archaeological work was proposed for them.

Area 4

Three postholes (007, 008 and 045) were located in the south-west corner of the site (Figure 3) on fairly level ground. The most northerly and the largest (007) of the three was sub-circular in form. It measured 0.4 m by 0.3 m in plan, was c. 0.39 m deep, and had two fills. Its basal fill (005) displayed significant quantities of charcoal in its dark grey-brown soil matrix, and its upper

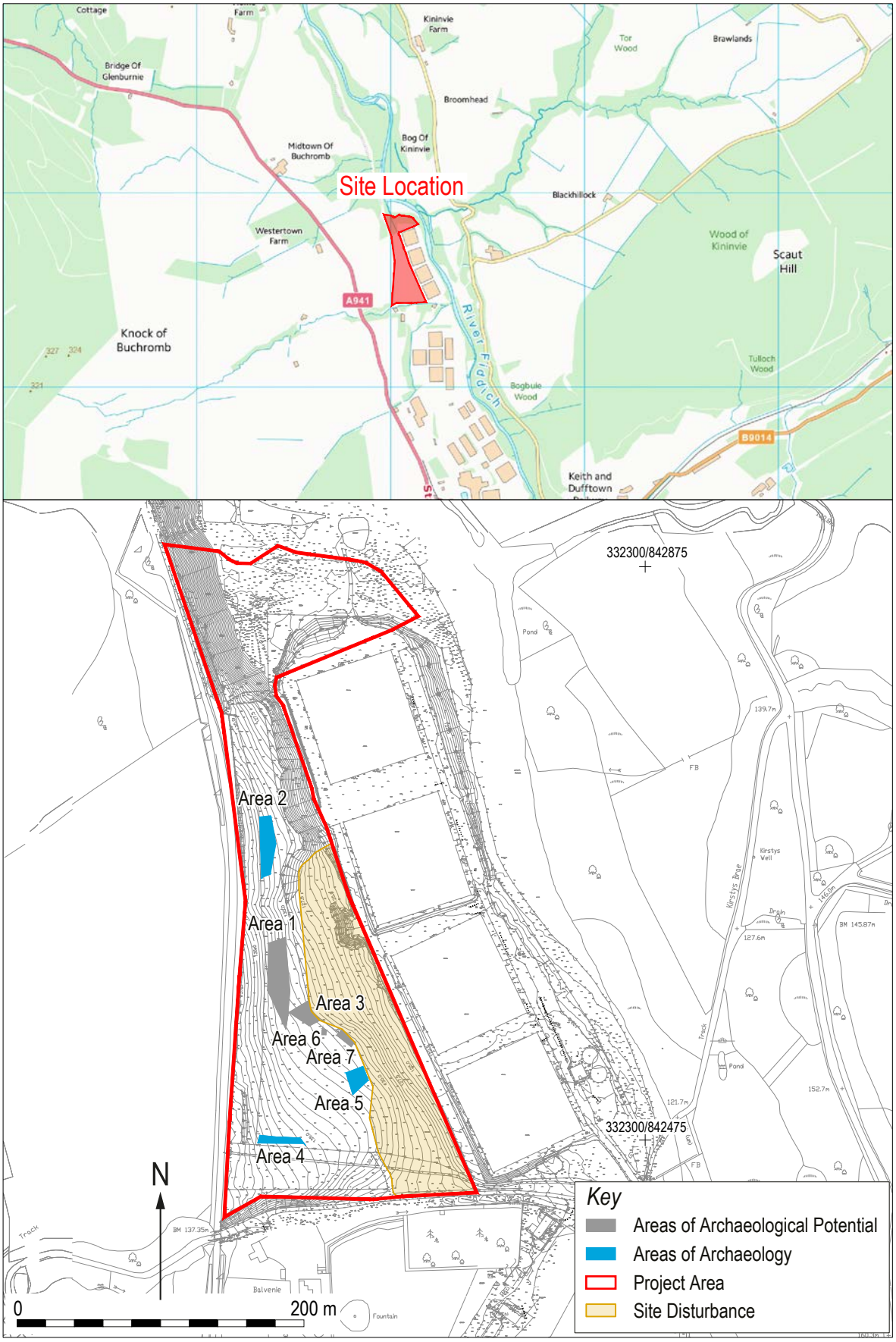

Figure 2: Location of archaeological areas at Balvenie.

fill (006) consisted of lighter grey-brown silt with some charcoal flecks. The presence of stones visible at one side of the feature may have been the remains of packing stones but it was devoid of any material cultural evidence.

To the west and slightly south of the latter was another posthole (045). It too was sub-circular in plan with a diameter of 0.30 m and a maximum depth of 0.43 m. It also had two fills (044 and 046), which were dark grey-brown organic silts with charcoal flecks. Like posthole (007), it had a number of large packing stones resting against the side of the feature, and no material cultural evidence (Figure 3).

The third post-hole (008), although circular in shape, was smaller than the other two at only 0.25 m in diameter by 0.12 m maximum depth. In contrast to the other postholes, a significant amount of charcoal was present within its fill (004), but both packing stones and material cultural evidence were absent.

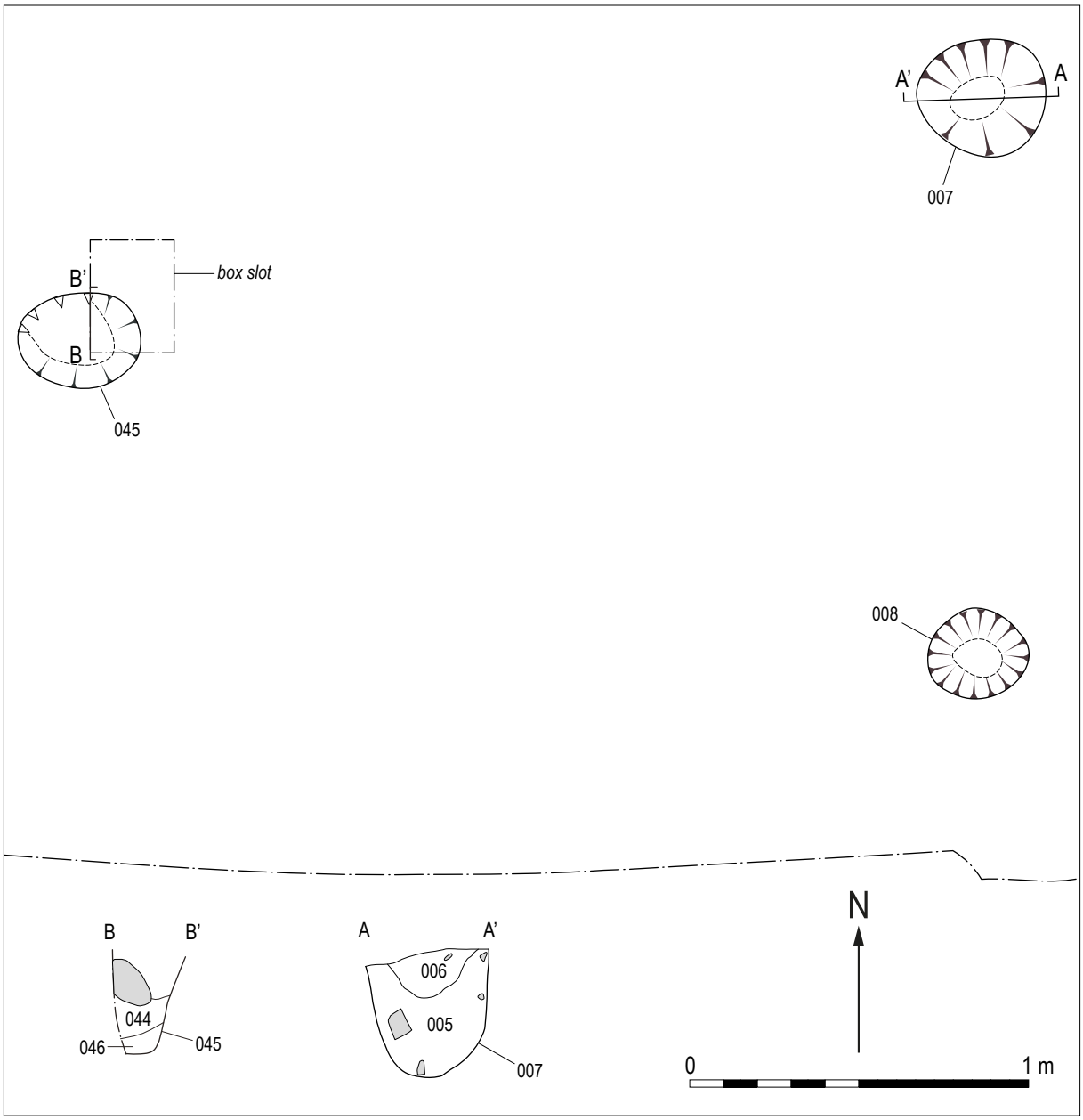

Figure 3: Area 4 postholes with sections, Balvenie.

Area 5

A series of pits were identified in the central portion of this area cutting across the slope of the land in an arc (Plate 1). The pits (025, 026, 032 and 038) were 50% excavated using quadrants, which revealed similarities in their fills (Figure 4). No material cultural evidence was recovered from any of the four features.

The sub-oval pit (032) was the most northerly in the arc and appeared to be heavily truncated by previous ground-works in the area. It was situated close to the eastern slope edge where the subsoil had been removed. It measured 2.6 m in diameter by only 100 mm in depth and its fill consisted of organic-rich grey-brown silt (033) with charcoal flecks.

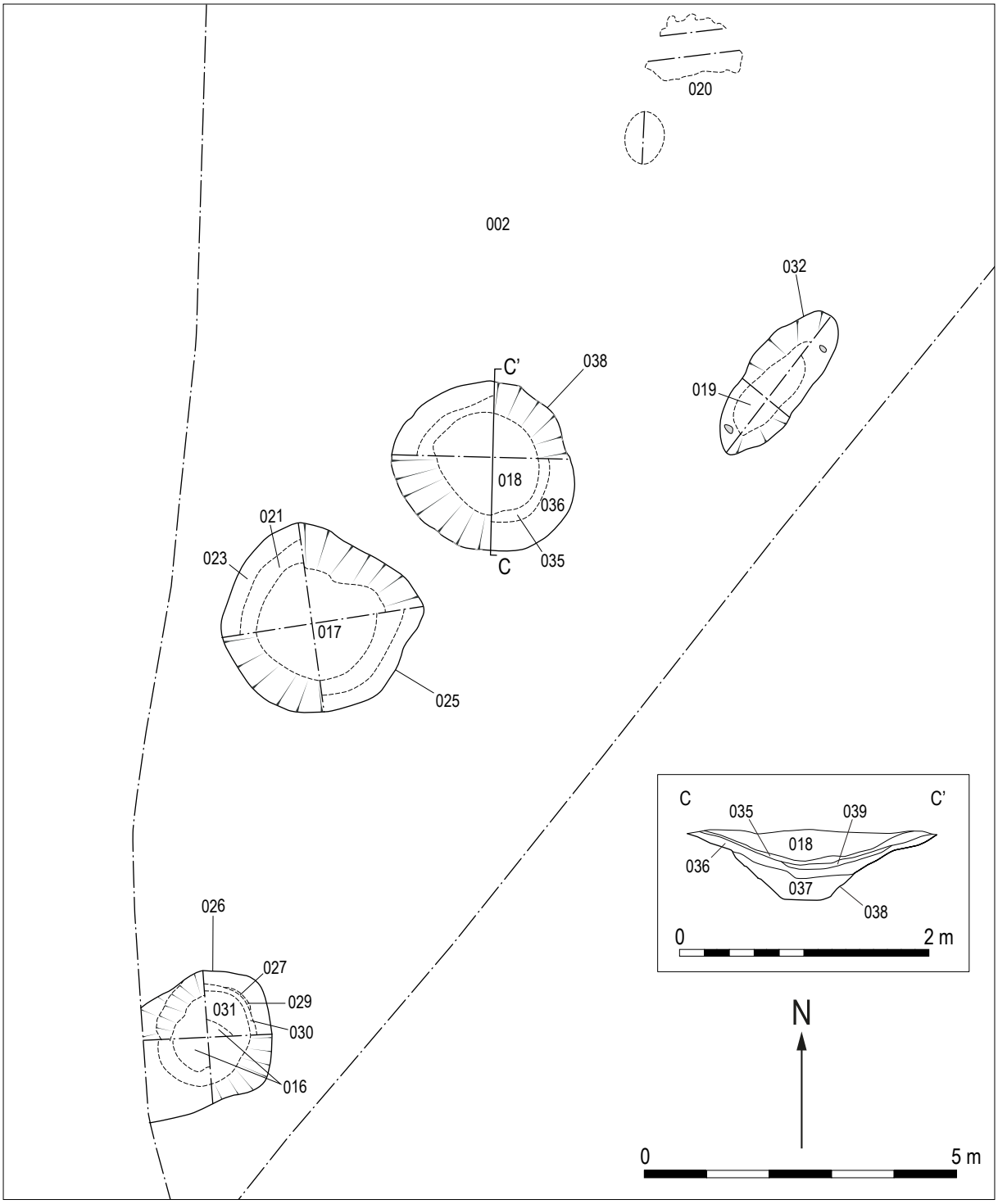

Figure 4: Area 5 pits, Balvenie.

Plate 1: Area 5 showing arc of pits, Balvenie

South-west of the latter was a pit (038) that measured 2.75 m in diameter with a maximum depth of 0.58 m. Its lower fills (037 and 035) consisted of dark organic-rich silts, above which was a band of clay and sand (039). The uppermost fills comprised a series of relatively sterile natural silts (36).

To the immediate south-west of the latter was a circular pit (025), measuring in 3.4 m diameter and with a maximum depth of 0.55 m. Its lower fills (022 and 023) consisted of dark grey-brown organic silts with charcoal fragments, and its upper fills (021 and 017) were formed of natural silting events from the sand, silt and gravel subsoil surrounding the feature (Figure 4).

The southernmost pit (026) was sub-circular in shape, and measured c. 2.15 m in diameter by c. 0.32 m in depth. Its lower fills consisted of dark grey-brown organic charcoal-rich silts (028 and 029), and the upper fills were a series of natural sand, silt and gravel layers (016, 027, 030 and 031).

The organic samples[1]

By Susan Ramsay

Analysis

Area 4

Posthole (007) contained two fills but only its lower fill (005) was examined for the presence of carbonised plant remains. The carbonised assemblage was very diverse, with charcoal of birch, alder, hazel and oak, together with carbonised cereal grain of oats and barley. There were also a number of indeterminate cereal grains, which suggests either multiple or intense periods of heating or redeposition of these grains.

To the south-west of posthole (007) was a similar posthole (045), which contained two distinct fills (044 and 046). The carbonised assemblage from fill (044) was very similar in nature to that recorded from the lower fill (005) of posthole (007). The charcoal consisted of birch, alder, oak, hazel and willow, together with carbonised cereal grains. The cereal grains were very poorly preserved but some were identifiable as barley.

Area 5

A number of pits were located in the central part of the site. The primary fill (037) of pit (038) produced only traces of alder charcoal, but above this (035) had a diverse carbonised assemblage with alder, birch, hazel and oak charcoal, together with a single fragment of hazel nutshell. Above fill (035) was a clay interface (039) that had traces of alder and birch charcoal. Above the clay interface was a further band of sand and clay (036) with traces of birch, hazel and oak charcoal, together with fragments of hazel nutshell (see Table 1).

Results of the analysis

The carbonised plant remains from the posthole fills in Area 4 are not indicative of posts burnt in situ but are more likely to be the remains of hearth waste or midden deposits. This carbonised material may have been deliberately used as post-packing or have accidentally become incorporated into the posthole fills, but is not indicative of any particular time period. The presence of oat grains may suggest a medieval or later date but they could equally well just be from 'weeds' within a barley crop, and so could date to any time from the Neolithic onwards.

The carbonised remains from pit 038 in Area 5 also suggest the remains of hearth waste or midden material, although no carbonised cereals were located in these fills. The presence of carbonised hazel nutshell fragments may suggest a prehistoric date for the fills, but the quantities of nutshell involved are very small to be certain about this.

1 The full botanical analysis forms part of the site archive.

	Context	005	035	036	037	039	044
	Sample	001	003	004	005	006	009
	Description	Lower fill of posthole 007	An organic peat band	A sterile band of sand and clay	The earliest deposit in pit 038	Clay interface between 035 & 036	Charcoal rich fill of post hole 045
Volume of charcoal 2-4 mm		15 ml	2.5 ml	<2.5 ml	<2.5 ml	<2.5 ml	150 ml
Volume of charcoal >4 mm		15 ml	5 ml	<2.5 ml	<2.5 ml	<2.5 ml	80 ml
% charcoal > 4 mm identified		100%	100%	100%	100%	100%	50%
Charcoal	Common name						
Alnus cf glutinosa	alder	8 (0.37g)	7 (0.39g)	-	3 (0.04g)	6 (0.09g)	15 (2.19g)
Betula spp	birch	32 (1.63g)	4 (0.17g)	1 (0.02g)	-	1 (0.02g)	23 (6.31g)
Corylus cf avellana	hazel	2 (0.06g)	1 (0.01g)	1 (0.02g)	-	-	7 (0.55g)
Quercus spp	oak	2 (0.08g)	1 (0.02g0	1 (0.01g)	-	-	11 (1.31g)
Salix spp	willow	-	-	-	-	-	1 (0.10g)
Indet charcoal	indet charcoal	-	1 (0.03g)	1 (0.01g)	-	-	-
Cereals							
Avena spp	oats	4	-	-	-	-	-
Hordeum vulgare sl	barley	-	-	-	-	-	5
cf Hordeum vulgare sl	cf barley	15	-	-	-	-	23
Cereal indt	indet charcoal	23	-	-	-	-	62
Carbonised seeds							
Corylus avellanda nutshell frag	hazel nutshell frag	-	1 (0.02g)	3 (0.02g)	-	-	-

Table 1: Plant remains from the samples, Balvenie

Radiocarbon dating of the features

A sample of charcoal from three features was used for dating the activities there (Table 2): one pit from Area 5 and two from postholes in Area 4. The basal fill (037) of pit (038) in Area 5 was dated using alder charcoal to producing a date range of c. 2573–2348 cal BC (SUERC 57758) indicating this deposit is from the early Bronze Age (ScARF 2012a). Birch charcoal from the basal fill (005) of posthole (007) in Area 4 produced a date range in the middle Iron Age of 195–41 cal BC (SUERC 57757). Alder charcoal from the fill (044) of the second posthole (045) in Area 4 produced a date range of 172 cal BC–1 cal AD (SUERC 57759), also placing it in the middle Iron Age period (ScARF 2012b).

Lab Code	Sample No.	Description of sample	Context	∂13C	Radiocarbon Age BP	95.4% probability	
Balvenie							
SUERC-57757	001	Charcoal : Betula	Lowest fill (005) of pit 007, Area 4	−27.4‰	2088 ± 30	195–41 cal BC	MIA
SUERC-57758	005	Charcoal : Alnus cf glutinosa	Lowest pit fill (037) of pit 038, Area 5	−27.0 ‰	3963 ± 30	2573–2512 cal BC 2506–2432 cal BC 2424–2401 cal BC 2381–2348 cal BC	EBA
SUERC-57759	009	Charcoal : Alnus cf glutinosa	Fill (044) of pit 045, Area 4	−28.0 ‰	2067 ± 30	172 cal BC–1 cal AD	MIA
Newton Mearns							
SUERC-41336	001	Charcoal: Corylus	Primary pit fill (004) of pit 003	−27.1‰	3895±35	2474–2286 cal BC	EBA

Table 2: Radiocarbon dates. Balvenie (upper part of table) and Newton Mearns (lower part of table).

A pit in the uplands of East Renfrewshire

by Maureen C. Kilpatrick

Introduction

During the early spring of 2012 a programme of archaeological work was carried out by GUARD Archaeology Ltd on behalf of Stewart Milne Homes on an area proposed for development at Ayr Road, Newton Mearns, East Renfrewshire (Figure 1 and 5). This work comprised an initial desk-based assessment of the known archaeological sites within the area, and was followed by an evaluation and a limited excavation (Plate 2) of the proposed development site. The evaluation comprised the machine excavation of 36 linear trenches across the site, which accounted for 8% of the total area under investigation (2698 m²). Only one feature of archaeological interest was uncovered during this phase of work. It was excavated and then subject to post-excavation analysis.

Plate 2: Location of the pit, Newton Mearns

Archaeological and historical background

The area of investigation comprised a roughly rectangular-shaped piece of ground to the immediate south of the A77 road on the south-western outskirts of the town of Newton Mearns, East Renfrewshire (NGR: NS 5309 5513) at a height of c. 145 m OD. Despite the relatively small size of the study area that covered a single field, the topography varied sharply, ranging from a steep, north-facing slope in the southern half to a naturally sunken area in the eastern and central areas of the site, which were wet and marshy underfoot and covered with scrubby grass and peat. Several drainage channels had been cut through the peat deposits at the eastern end of the area that drained into a culvert. A further small culvert was also identified in the western boundary wall, which openly drained into the field, adding to the wet conditions on site. The western half of the site contained several natural mounds, while the northern part where the pit was discovered was also an area of raised ground adjacent to the A77 road (Figure 5).

The landscape surrounding the site has both urban and rural characteristics with the expanding town of Newton Mearns located to the immediate north and east, while fields and open moorland remain to the west and south. This area comprises predominantly open upland farmland, which contrasts sharply with the lower lying city of Glasgow and its suburbs which are located further to the north. The underlying drift geology is not recorded, but the solid geology consists of Carboniferous igneous rock formations predominantly basalts (British Geological Survey 1:50,000, http://www.bgs.ac.uk).

Only a few sites of prehistoric date are known within the area and these are predominantly located within a radius of 3.5 km. The nearest is 750 m to the north at West Acres, where in 2002 an early to middle Bronze Age ring-grooved roundhouse, with multiple palisaded enclosures (Figure 6) was uncovered (Toolis 2005). Most of the known prehistoric sites generally comprise individual find spots, and include a Neolithic polished stone axe at Capelrig Burn (WoSAS pin 8364) to the north-west of the site, an unfinished class I axe hammer at Mearns (WoSAS pin 8354) and the Newton Mearns stone axe (WoSAS pin 8317), both located to the north-east of the site. Several undated pieces of possible burnt flint were also found at the top of a knoll at Mearnskirk Hospital (WoSAS 40082) to the south-west. Possible prehistoric burial cairns are also known within the wider locale and include Glanderston Cairn (WoSAS pin 55775), a possible cairn at Ryat Linn (WoSAS pin 8357) and another at Bonnyton Moor (WoSAS pin 40137). Other possible prehistoric cairns, thought to be within the locale of West Acres, were discounted as natural in origin during fieldwork investigations (Connolly 2000, 32).

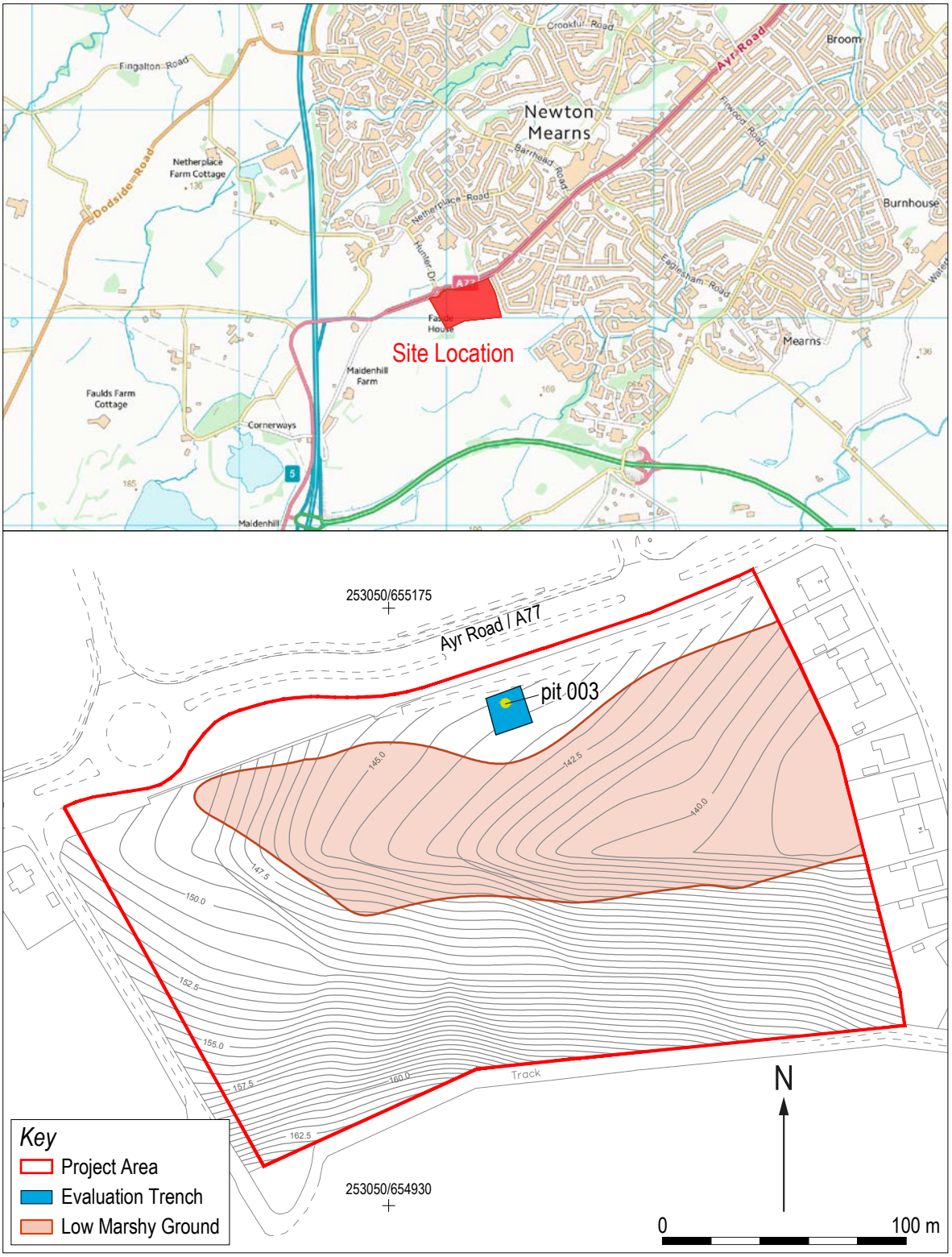

Figure 5: Location of pit, Newton Mearns.

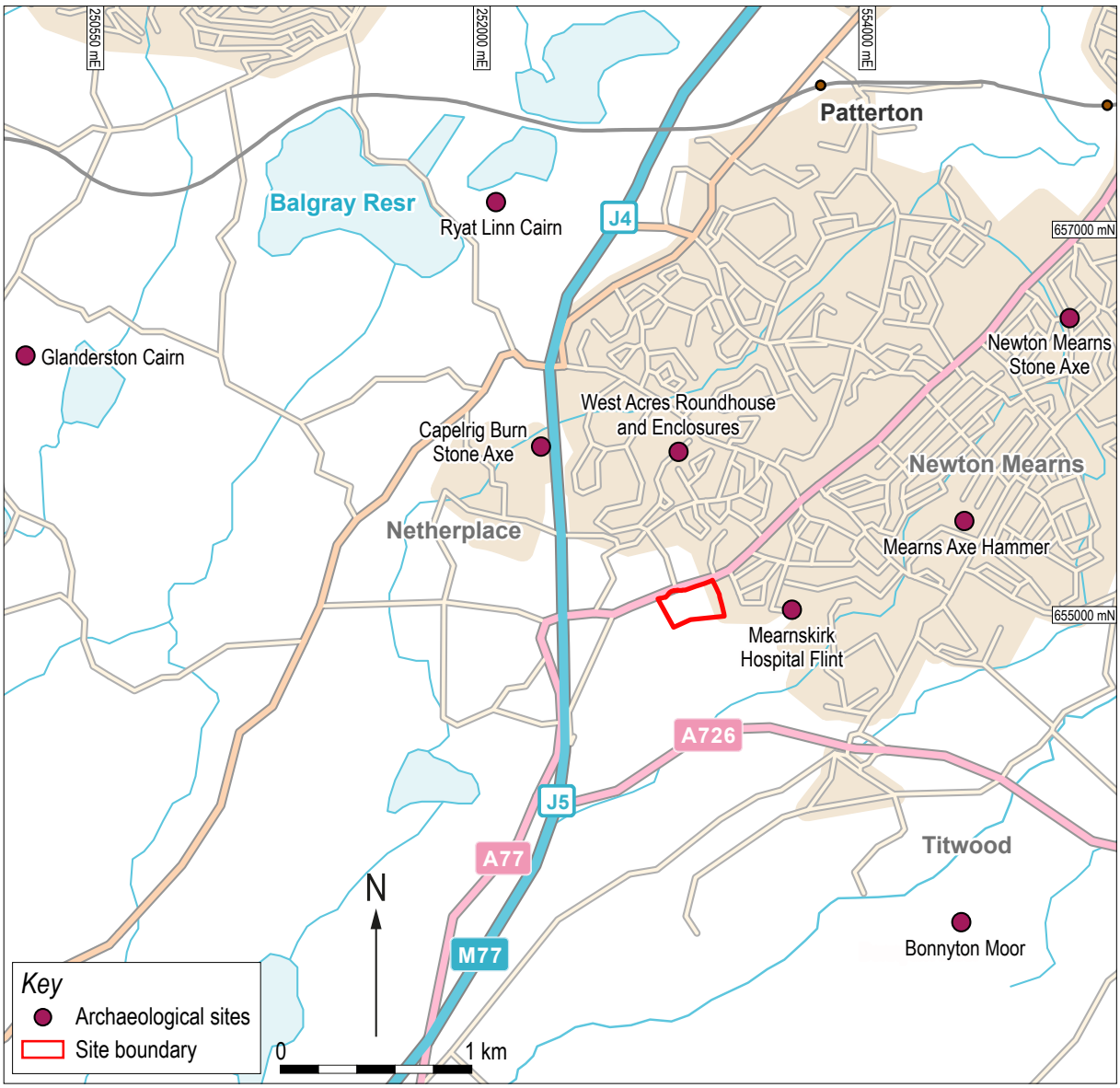

Figure 6: Sites near Newton Mearns, mentioned in the text.

The early Bronze Age pit

A pit (003) was located on a raised area of ground in the north-eastern part of the site adjacent to the A77 road. It was probably deliberately located there as the ground conditions were drier than the low-lying boggy areas to the south and east.

The pit, orientated ESE/WSW was dug into the clay-silt subsoil (002) and was located beneath a 0.30 m to 0.45 m depth of turf and topsoil (001) (Figure 7). It measured 1.24 m by 0.61 m, with a depth of 0.20 m to its flat base (Plates 3 and 4). It was filled with charcoal-rich sandy-silt (004), a large number of cobbles.

During the excavation several finds were retrieved from the pit fill. They included a possible quern fragment, which was found in the north-east side of the pit, and several small fragments of unburnt and clay or daub (Ballin Smith below). A small body sherd of white earthenware pottery recovered from the WSW side of the pit fill (see Will below), was interpreted as an intrusive element that had probably entered the pit through animal and plant activity.

The charcoal fragments were identified as oak, hazel and willow (deciduous tree species) with oak dominant (see Ramsay below). A fragment of hazel charcoal was radiocarbon dated and provided a date of 2474-2286 cal BC within the early Bronze Age period for the pit fill.

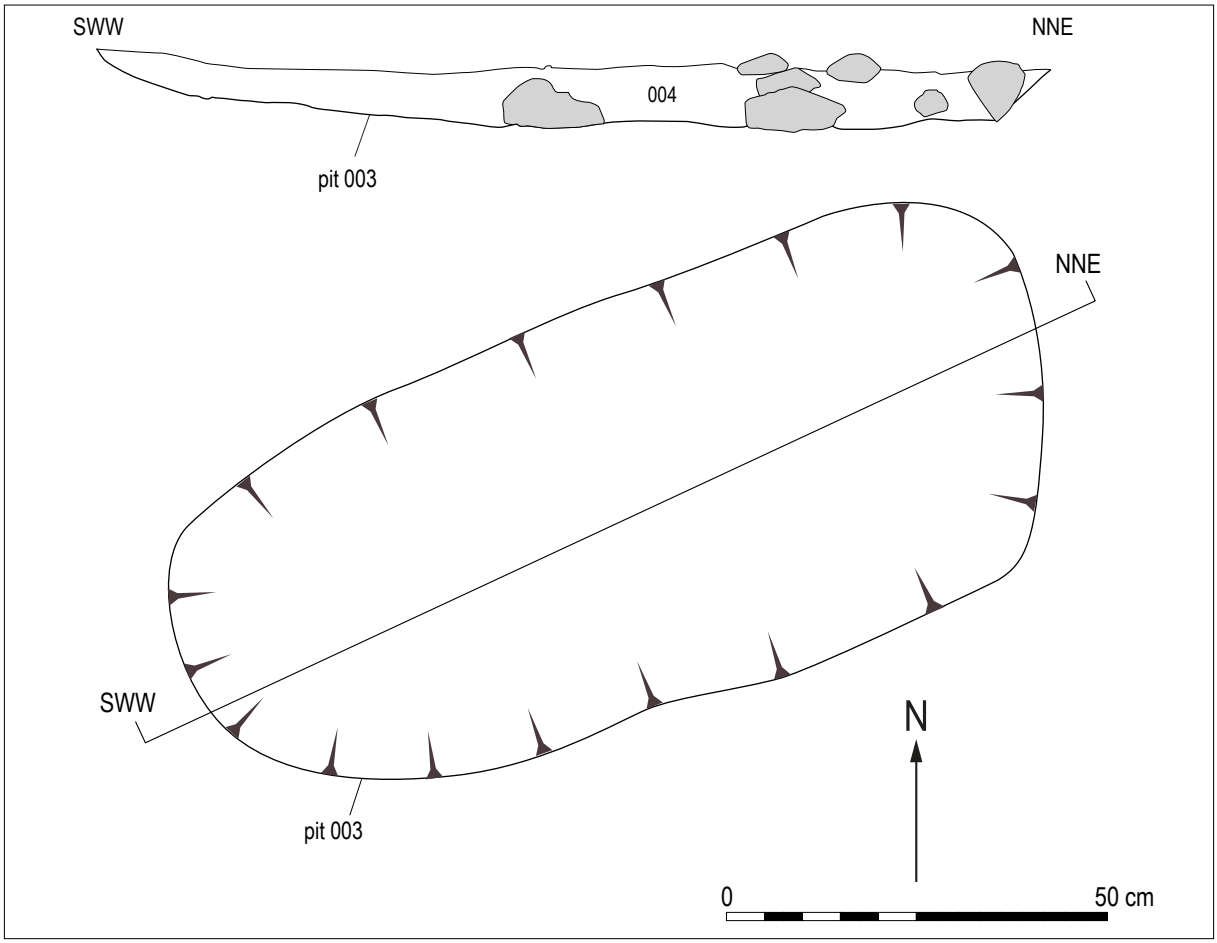

Figure 7: Details of pit, Newton Mearns.

Plate 3: Pit 003, Newton Mearns.

Plate 4: Section through Pit 003, Newton Mearns.

The quern and unfired clay/daub

by Beverley Ballin Smith

The quern

SF 2 is a basalt chunk, a fragment of a larger stone, likely to have been a glacial erratic derived from the sand and gravel subsoil around Newton Mearns. The stone, found in the side of the pit (003), measures c. 260 by 115 by 90 mm and weighs approximately 2 kg. Its external colour is pink to red caused by burning, possibly at high temperatures. Its appearance is slightly vesicular as some of the crystals in the basalt have weathered out of its surfaces. However, one face of the stone is roughly flat to slightly undulating, with possibly smoothed areas suggesting that it may have functioned as a quern. This surface is less burnt than others and possibly faced the side of the pit. Both burning and weathering have removed surface detail, but this stone is tentatively identified as a fragment of quern.

Unfired clay/daub

During the processing of soil samples from context 004, the fill of the pit (003), a number of small fragments of unfired clay were found. Most are smaller than 5 by 5 mm but the largest piece measures 25 by 14 by 10 mm. Together they weigh a total of 8.6 g. The largest piece comprises clay with occasional small angular and rounded fragments of coal. Its shape is irregular but rounded, with one flat and smooth surface and one slightly hollowed. It is burnt and weathered.

This piece indicates that there was probably a wattle and daub structure in the vicinity of the pit, possibly associated with it, or close enough that the debris from it became incorporated into the pit fill.

The botanical remains

by Susan Ramsay

Charcoal samples from the fill (004) of pit (003) (Table 3) contained very similar charcoal assemblages. They were dominated by oak charcoal, with lesser amounts of hazel and willow charcoal also present. Without any associated features it is difficult to determine what this pit may have been used for or how old it might be. However, this combination of charcoal types is often associated with structures that consisted of an oak frame with wattle panels. The predominance of oak is also an indication of a prehistoric structure, since oak would have been dominant within the local woodlands throughout the prehistoric period, but became less common from the Iron Age onwards.

	Context	3	4
	Sample	1	1
	Vol charcoal >4mm	100ml	300ml
	% charcoal identified	25%	20%
Charcoal	Common name		
Corylus	hazel	12 (1.37 g)	8 (2.66 g)
Quercus	oak	59 (5.47 g)	106 (11.71 g)
Salix	willow	5 (0.53 g)	4 (0.54 g)

Table 3: Botanical remains from the pit sample, Newton Mearns

Radiocarbon dates

One sample of corylus (hazel) charcoal was submitted to the Scottish Universities Environmental Research Centre (SUERC) for AMS radiocarbon dating (Table 2). This date revealed that activity at the site is most likely dated to the early Bronze Age period (late 3rd millennium BC).

General discussion

By Warren Bailie and Maureen Kilpatrick

Isolated pits/postholes and groups of pits are relatively common on archaeological sites, and in some cases may be the only evidence of early settlement, but interpretation of such sites can be difficult (Thomas 2012). The postholes and pits from the two archaeological interventions discussed here were found in the lower contours of their respective upland areas, but were generally located above 120 m OD.

The Balvenie pits and postholes

Given the similarities between their form and fills, the arc of pits in the hillside Area 5 at Balvenie could be considered as a group of contemporary features with their likely origin reflecting activities in the early Bronze Age period. The reason for the location of this group of pits remains uncertain but it is not unreasonable to consider them storage or refuse pits. The botanical material identified from their fills suggests that hearth waste is present as well as small quantities of hazel nutshell. If these features had formed a complete ring it would have measured approximately 10 m in diameter, and would have suggested a structural function instead of one of ancillary refuse or storage. However, with the survival of limited remains and the level of truncation to the immediate surrounding area, it is not possible to be conclusive on the full extent and nature of the archaeological features that once existed here.

In contrast to the pits in Area 5, it is not possible, to make firm inferences about any structural pattern based on the three postholes in Area 4. They may be part of a domestic or storage structure dating to the middle Iron Age that could be preserved south of the investigated area. The excavated features survived due to them being deeply cut with two of the postholes attaining depths of c. 40 m. The material recovered and identified from their fills included hearth waste but also suggests that the cultivation and processing of barley occurred on the site, with oats possibly as a weed.

The landscape around the warehouse development is not noted for its prehistoric archaeology and there are limitations in identifying further sites and monuments with a potential association with the Bronze Age

and Iron Age activities established from the radiocarbon dating. The Bronze Age date for some of the pits could be representative of other contemporary activities to the north-west at Buchromb (Canmore ID: 16870, NJ34SW0006), where there is a possible large kerbed cairn on the west bank of the River Fiddich. This cairn is likely to be early Bronze Age in date, as the results of investigations published on the Clava Cairns, Inverness by Bradley (2000) indicate.

The Newton Mearns pit

It is rare to describe a single pit, attributed to the early Bronze Age, as a significant find, but in the context of the upland areas of Renfrewshire it is as very few early prehistoric sites or monuments have been identified there.

The late 3rd millennium BC date of the Newton Mearns pit and the presence of clay/daub within it, along with the remains of burnt oak wood with lesser amounts of hazel and willow suggests, as both Ballin Smith and Ramsay have already inferred, that a possible contemporary structure may have been located close to the pit. However, it may not have been large and could easily have been a wattle hurdle constructed of hazel and willow with an oak post support, or a simple wattle constructed oven.

According to Alexander and McCrae (2012, 43) early Bronze Age settlement evidence within Renfrewshire is scanty, with most known settlement probably dating to the middle Bronze Age period or later. The possible reasons for this under representation are two-fold, and are probably due to the poor environmental conditions in this upland area at the time, and a low population density. However, it could also be suggested that due to the relatively rural nature of the area, and the lack of intrusive modern archaeological investigation, sites have not been discovered and could be preserved under later peat bogs (Alexander and McCrae 2012, 47), which makes this find noteworthy.

It has been postulated that the poor agricultural quality of the upland soils would not have attracted settlement and certainly not continuous settlement (Toolis 2005, 497). The fact that there was no evidence for crop cultivation or processing, despite the evidence of a possible quern fragment and limited structural remains, may also support Toolis's hypothesis of seasonal occupation and that cereal production was not a primary concern in the immediate area (Toolis 2005).

The nearest recorded site to the pit is West Acres where in 2002 a ring groove roundhouse with multiple palisade curvilinear enclosures was excavated in advance of housing development. Radiocarbon dating of that site provided early to middle Bronze Age dates ranging from 1700 to 1100 cal BC, indicating it was at least 500 years later than the present pit. Toolis (2005) interpreted the West Acres site as domestic in function although it was noted there was little evidence for crop cultivation or processing. The palisade enclosures were interpreted as evidence for animal stock management leading to the suggestion that the site may only have been seasonally occupied.

Conclusions

These two sites indicate that later prehistoric material can be found, in upland areas, even when significant changes to the landscape have occurred. The alteration of the local topography at Balvenie, by deep modern truncation, left the majority of the development area completely devoid of any archaeological remains or material culture. This was a result of disturbance by the construction of the nineteenth century railway line and from later use of this area for stockpiling material from other ground-works in the middle to late twentieth century. This latter event indirectly protected areas 4 and 5 from further disturbance, but the reshaping of the hill slope on the east side of the development site led to removal of the subsoil and any archaeological features that it contained.

The pits and postholes that survived indicated that the landscape had been topographically different when used by both Bronze Age and Iron Age communities. The evidence indicates the seasonal gathering of hazel nuts for food, the possible cultivation of cereal crops, and certainly the processing of barley and even oats. It seems that barley has a long tradition of cultivation and use in this area and that Glenfiddich (the Valley of the Deer) barley still plays a major role in the local economy. The modern processing of barley with water from the River Fiddich, produces whisky for national and international markets.

The discovery of a pit with material cultural evidence in an area of rough grazing in Newton Mearns increases the sparse number of known prehistoric sites in this area. It is unlikely the area suffered the scale of landscape changes, seen at Balvenie, but changes will have taken place in vegetation cover and in the use of the land. The pit, together with the presence and of clay/daub and a possible quern fragment, indicates that the landscape was settled and used during the early Bronze Age, with nearby hazel, oak and willow woodland. The pit produced one of the earliest radiocarbon dates obtained from this area, and as such is significant. Its presence suggests contemporary settlement may be preserved close by, where the processing of grain could have taken place. Whether that grain was produced locally or brought in from further afield, is not known.

Through these two limited views of the past, our knowledge of human activities in these upland areas is increased. Even though the material cultural remains were sparse, the environmental evidence provided not only radiocarbon dates, but suggested views of the landscape which are different from todays, and with exploitation of its resources by people for food and shelter.

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