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Excavations to the West of Gogar Mains, Edinburgh

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1. ABSTRACT

This report records the results of the excavation of a multi-period site that was discovered within the construction corridor of the Edinburgh tram line. The site is located to the west of Gogar Mains and to the east of the Park and Ride car park by Edinburgh Airport. It was discovered during an archaeological evaluation in 2006 along the proposed tram route (Sneddon and Will 2006). Following this, an open area excavation uncovered a range of features and structures that date from the Neolithic and Bronze Age through to the late Iron Age and early medieval period. These features include a palisaded enclosure, two possible corn-drying kilns and a dense concentration of post-holes and pits (James 2008). The excavation was carried out by Glasgow University Archaeological Research Division (GUARD), while the post-excavation phase was undertaken by GUARD Archaeology Ltd on behalf of Edinburgh Tram Project for The City of Edinburgh Council. During the course of the tram construction programme a military pillbox next to the airport was recorded in advance of demolition (see Appendix).

2. INTRODUCTION

The archaeological excavation at Gogar Mains, Edinburgh (Illus 1 and 2), was conducted in advance of construction of the Edinburgh Tram Scheme linking Edinburgh Airport with the city centre and was commissioned by Transport Initiative Edinburgh (TIE) and The City of Edinburgh Council. The work was carried out between 25 February and 18 April 2008 on a slight knoll in undulating fields to the west of Gogar Mains (NGR: NT 1577 7276), which had been previously evaluated in 2006 (Sneddon and Will 2006).

3. ARCHAEOLOGICAL BACKGROUND

There are three known prehistoric archaeological sites in the immediate vicinity of Gogar Mains. Two cropmark sites were identified from aerial photographs: one a possible prehistoric settlement (NMRS NT 17SE 57) at NGR: NT 1652 7250 and the other was interpreted as a prehistoric fort (NMRS NT 17SE 56) at NGR: NT 1664 7253. The third site, a possible enclosure (NMRS NT 17SE 197) at NGR: NT 1685 7271 was located to the east of the present excavation close by Castle Gogar, which in its present form dates to the early 17th century (Reed 1999).

In addition, there is a wide range of known archaeological sites in the wider locality. To the north within the boundary of Edinburgh Airport is the 'Cat stane', with its early historic inscription and associated long-cist cemetery, as well as prehistoric

remains consisting of Neolithic pottery and flint tools. There are also references to another long-cist cemetery to the south within the grounds of the golf course on the south side of the A8. Further to the north is the Craigie Hill hillfort settlement thought to be early medieval, and at Newbridge roundabout there is the Huly Hill early Bronze Age mound, an Iron Age cart burial as well as a medieval settlement. Fragments of the same Roman milestone were recovered from Newbridge and Ingliston (RCAHMS CANMORE). Further prehistoric remains and structures including Beaker pottery were recovered in advance of the development of Maybury Park (Moloney and Lawson 2007) now called Edinburgh Park on the east side of the bypass east of the present site. Slightly further away at South Platt Hill, Ratho, various prehistoric features were recovered that included Neolithic and Bronze Age deposits as well as early historic domestic settlement (Smith 1995).

4. RESULTS OF THE FIELDWORK

Due to the undulating nature of the topography and the effects of ploughing, the topsoil (mid-brown silt with gravel and stones) varied in depth from 0.3m to 0.8m, the shallowest being at the top of the knoll and the deepest at the base of the undulations. The subsoil consisted of numerous bands of sands and gravels of varying colours, with seams of shattered coal outcropping, particularly on the summit.

The excavation trench measuring 95m by 25m was initially centred on the concentration of archaeological features revealed during the evaluation. Once the



Illus 2 Aerial view of site from north-east with Structures C and B in the foreground

topsoil was stripped, over 150 features were noted in the subsoil and all were investigated, although some turned out to be animal burrows or modern disturbance. The remaining features form seven discrete areas of activity, suggesting that the site was in use over a long time span (Illus 3).

The aims of the post-excavation programme were to attempt to date the different structures and features and to establish a chronological framework and phasing for the various structures (Table 1). Very few artefacts were recovered and many of the features did not contain botanical remains suitable for dating, therefore a number of them, mainly pits and post-holes, remain undated and cannot be linked to structures or phases of activity. Despite these limitations, a sequence of occupation was uncovered that spans several millennia, which is described from the earliest dated to the most recent.

5. NEOLITHIC PITS

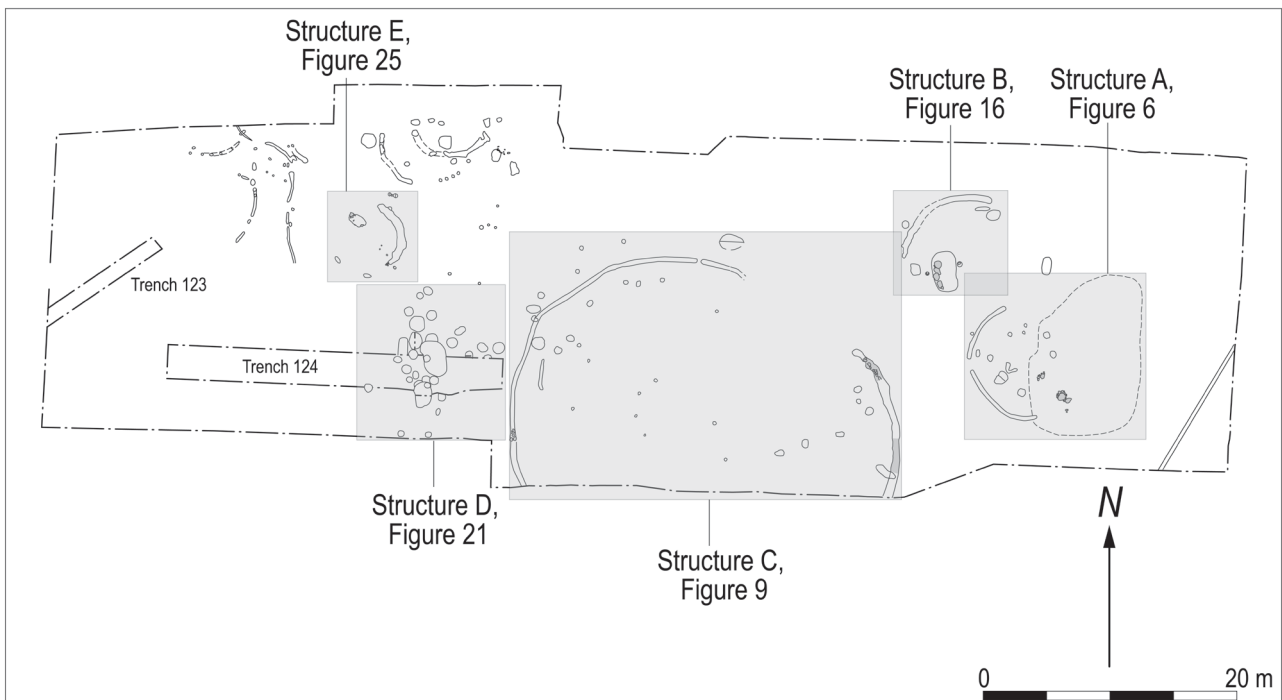
Evidence for Neolithic activity was confirmed by the presence of pottery and flint artefacts that were

recovered from several small pits or post-holes. Initially, three post-holes were interpreted as being of possible Neolithic date due to the presence of flint, pitchstone and pottery (Illus 4). The pits varied in size from 0.4m to 0.76m by 0.4m to 0.75m by 0.1m to 0.15m. Their age was confirmed by radiocarbon dates (Table 2) obtained from the botanical remains of mainly oak charcoal and hazel nutshell recovered from them: Contexts 1096 (SUERC 36366), 1242 (SUERC 36358) and 1250 (SUERC 36357). A Neolithic radiocarbon date was also obtained from a nearby pit, Context 1100 (SUERC 35907), that did not contain artefacts but had similar dimensions and a limited range of botanical remains. Four more pits (1247, 1251, 1273 and 1340) were identified with similar botanical remains, including the presence of hazel nutshell, which could be an indicator of Neolithic use (Illus 5). However, they remain undated. The four radiocarbon dates cover a wide date range in the Neolithic, from *c* 3880 to 2487 cal BC, which could suggest that there was intermittent or repeated use of the site over a long period of time.

Table 1 Site 1

Numbers of structures and features after excavation (features identified as animal burrows or of modern date have not been included in the table).

Structures	Number of features	Material suitable for C14	C14 dates	Features that contained artefacts
A	13	10	6	2
B	8	4	4	3
C	19	11	7	2
D	33	15	2	0
E	8	1	1	1
F	21	4	2	1
G	11	0	0	0
Others	6	3	0	0
Total	119	48	22	9



Illus 3 Site plan showing main structures and evaluation trenches

Table 2 Radiocarbon dates

Lab Code	Sample	Context	Description	Date BP (uncalibrated)	Calibrated 1-sigma	Calibrated 2-sigma	Delta 13 C%
SUERC-35900	Charcoal: <i>corylus avellum</i>	1254	A-layer/ hillwash?	3835 ± 30	2350BC–2270BC	2460BC–2190BC	–25.3%
SUERC-35924	Charcoal: <i>corylus</i>	1299	A-fill of Pit 1336	3730 ± 30	2200BC – 2160BC	2210BC–2030BC	–23.9%
SUERC-35926	Charcoal: <i>corylus</i>	1293	A-fill of Pit/ Post-hole 1313	3250 ± 30	1540BC–1490BC	1610BC–1440BC	–24.3%
SUERC-36367	Charcoal: <i>alnus</i>	1221	A-fill of Ring ditch 1316	2910 ± 30	1131BC–1041BC	1213 BC–1008BC	–26.0%
SUERC-36363	Charcoal: <i>betula</i>	1256	A-fill of Ring ditch 1324	3335 ± 35	1682BC–1606BC	1692BC–1523BC	–25.3%
SUERC-38363	Charcoal: <i>corylus</i>	1302	A-fill of Post-hole 1332	3300 ± 30	1612BC–1531BC	1642BC–1501BC	–24.4%
SUERC-35904	Charred grain: <i>hordeum vulgare</i> sl.	1166	B-upper fill of Corn -drying kiln 1167	1380 ± 30	635AD–670AD	605AD–685AD	–23.5%
SUERC-35899	Charred grain: <i>hordeum vulgare</i> var. <i>vulgare</i>	1283	B-middle fill of Corn-drying kiln 1167	1360 ± 30	645AD–675AD	610AD–710AD	–23.0%
SUERC-35925	Charcoal: <i>alnus</i>	1220	B-fill of Ring ditch 1330	1490 ± 30	545AD–605AD	530AD–650AD	–26.9%
SUERC-36368	Carbonised cereal grain: <i>hordeum vulgare</i> var. <i>vulgare</i>	1282	B-fill of Corn- drying kiln 1167	1290 ± 30	674AD–715AD	663AD–775AD	–22.3%
SUERC-35905	Charcoal: <i>corylus</i>	1267	Fill of Pit 1272	3175 ± 35	1465BC–1420BC	1520BC–1390BC	–25.0%
SUERC-35907	Charcoal: <i>alnus</i>	1004	Fill of Pit/Post-hole 1100	5070 ± 30	3880BC–3800BC	3960BC–3790BC	–26.5%
SUERC-36357	Charcoal: <i>corylus</i>	1169	Fill of Pit 1250	4065 ± 35	2635BC–2497BC	2696BC–2487BC	–25.2%

Table 2 *cont.*

Lab Code	Sample	Context	Description	Date BP (uncalibrated)	Calibrated 1-sigma	Calibrated 2-sigma	Delta 13 C%
SUERC-36358	Carbonised nutshell: <i>corylus avellana</i>	1157	Fill of Pit 1242	5010 ± 35	3804BC–3713BC	3822BC–3706BC	–24.0%
SUERC-36359	Charcoal: <i>corylus</i>	1001	C-fill of palisade slot	3180 ± 35	1494BC–1426BC	1518–1401BC	–24.5%
SUERC-36364	Charcoal: <i>betula</i>	1001	C-fill of palisade slot	2645 ± 30	826BC–797BC	847BC–784BC	–26.5%
SUERC-36365	Charcoal: <i>corylus</i>	1001	C-fill of palisade slot	2560 ± 30	800BC–756BC	805BC–747BC	–25.3%
SUERC-35909	Charred grain: <i>hordeum vulgare</i> sl.	1031	D-fill of Pit 1065	1460 ± 30	580AD–640AD	550AD–650AD	–23.0%
SUERC-36366	Carbonised nutshell: <i>corylus avellana</i>	1072	D-fill of Pit 1096	4880 ± 35	3695BC–3641BC	3554BC–3540BC	–23.4%
SUERC-35908	Charcoal: <i>corylus</i>	1026	E-fill of Curving ditch 1060	1435 ± 30	600AD–650AD	570AD–655AD	–29.3%
SUERC 35906	Charcoal: <i>betula</i>	1009	F-1009 fill of Curving ditch/Gully 1145	2530 ± 30	650BC–590BC	700BC–540BC	26.7%
SUERC-38364	Charcoal: grain	1018	F-fill of Post-hole 1077	1430 ± 30	606AD–648AD	574AD–657AD	–21.7%
SUERC-38365	Charcoal: <i>corylus</i>	1029	Upper fill of Pit 1243 uncovered during the watching brief	3695 ± 30	2134BC–2071BC	2146BC–2015BC	–23.5%



Illus 4 Shallow Pit 1250, Fill 1169, dated to the Neolithic

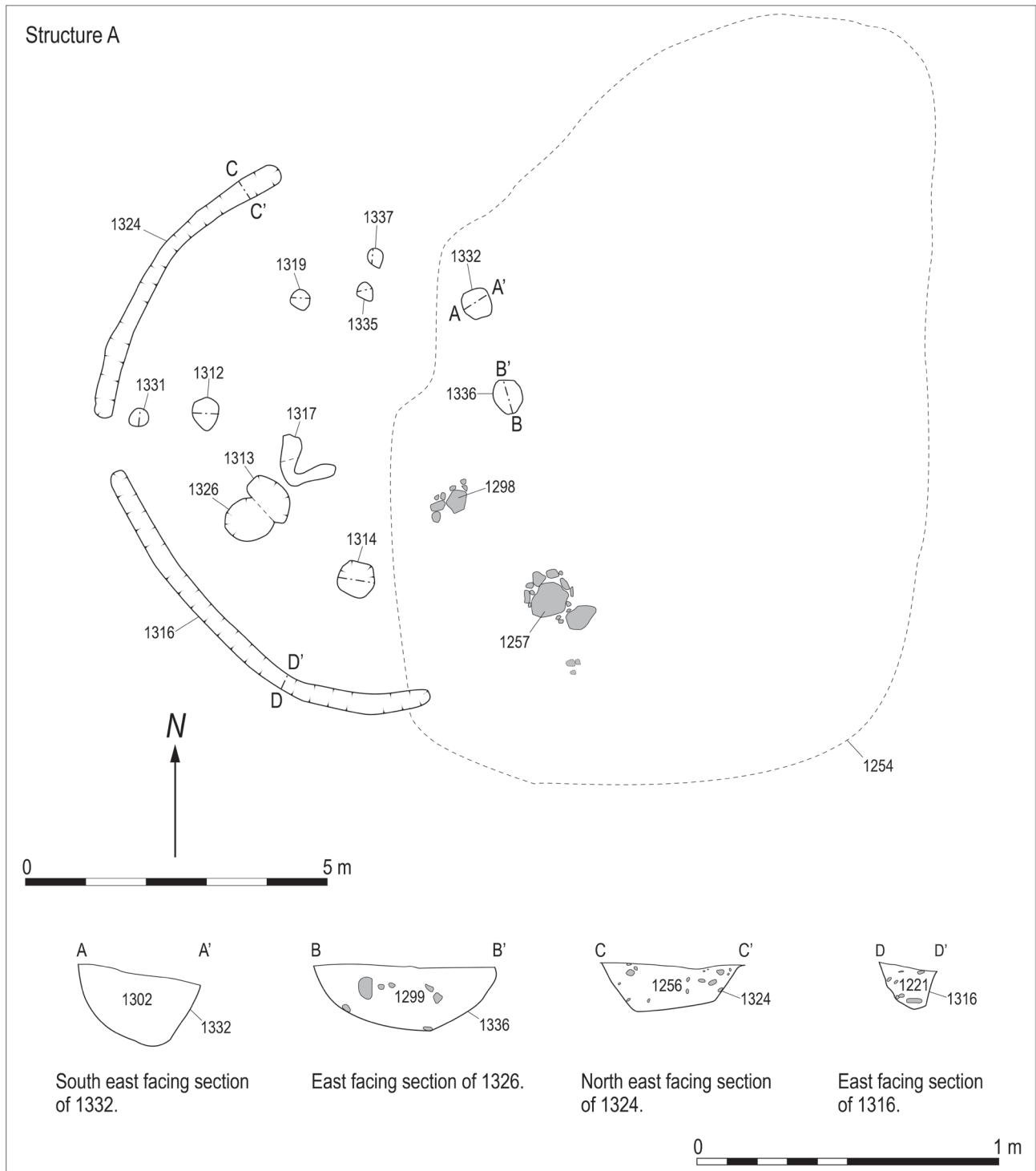


Illus 5 Pit 1247, Fill 1246, dated to the Neolithic

One of the pits (Context 1250 and Fill 1169) with a flint flake and a Neolithic radiocarbon date derived from hazel nutshell (Table 2, SUERC 36357) also contained four sherds of Iron Age pottery (see below). This highlights one of the problems of a site that was used over a long period of time, whose features may contain residual carbonised organic material or have later contamination.

5.1 Late Neolithic/early Bronze Age pit

After the excavations were completed a watching brief was maintained while the rest of the construction corridor was stripped of topsoil. During this work a small isolated pit (Context 1243) was located to the east of Structure A (see below). The round-based feature was 0.45m in diameter and 0.3m deep, with



Illus 6 Structure A, possible hut circle, plan and sections

steeply sloping sides. It had two fills: the upper (1029) contained fragments of prehistoric pottery and a flint tool, while the lower (1030) contained three large packing stones. Analysis has revealed that the pottery was a Beaker vessel, representing the only one of this type recovered from the investigations. A radiocarbon date obtained from charcoal recovered from the pit produced a date of 2146–2015 cal BC (Table 2, SUERC 38365). The flint tool is part of a scale-flaked knife and may be a sickle. Botanical remains included charcoal from alder, hazel, including a hazel nut, and cherry type (see specialist reports below).

5.2 Bronze Age – Structure A

Bronze Age use of the site is indicated by the remains of a probable hut circle at the east end of the trench. It comprised two segments of a shallow ring ditch (1316 and 1324) with rounded terminals that formed an entrance on the south-west side (Illus 6 and 7). The eastern side of the circle had been lost

due to severe plough damage. When complete, the ditch would have formed a circle with a diameter of 9m. The ring ditch, which contained no artefacts, was a maximum of 0.4m wide and 0.2m deep with steep sides and a slightly rounded base. Botanical remains consisted of small quantities of alder, birch, hazel, oak and one cereal grain. Taken as a whole the botanical remains are indicative of hearth waste rather than structural components.

Within the circle there were eleven small circular or sub-circular post-holes of similar size that formed an internal post-ring (1312, 1313, 1314, 1317, 1319, 1326, 1331, 1332, 1335, 1336 and 1337). These post-holes ranged in size from 0.3m by 0.3m by 0.15m to 0.8m by 0.4m by 0.4m. Two of the largest were oval in plan and these may have been double post-holes (1313 and 1317) or were an indication that posts had been replaced, for example Post-hole 1326 appeared to cut that of 1313. None of them, however, contained packing stones. Although the plant and charcoal remains from the post-holes was mainly hearth waste, both oak and



Illus 7 Structure A, possible hut circle during excavation



Illus 8 Structure A, possible hut circle, detail from aerial from north-east

willow were recovered, which may suggest wattle panels or walls were used as part of the structure. Interestingly, willow was not recovered from the fill of the ring ditch. Sitting on the surface of the subsoil and within the hut circle were two groups of small stones and boulders (1257) and (1298) that may have formed part of the structure of the hut. No artefacts were recovered from any of the internal features.

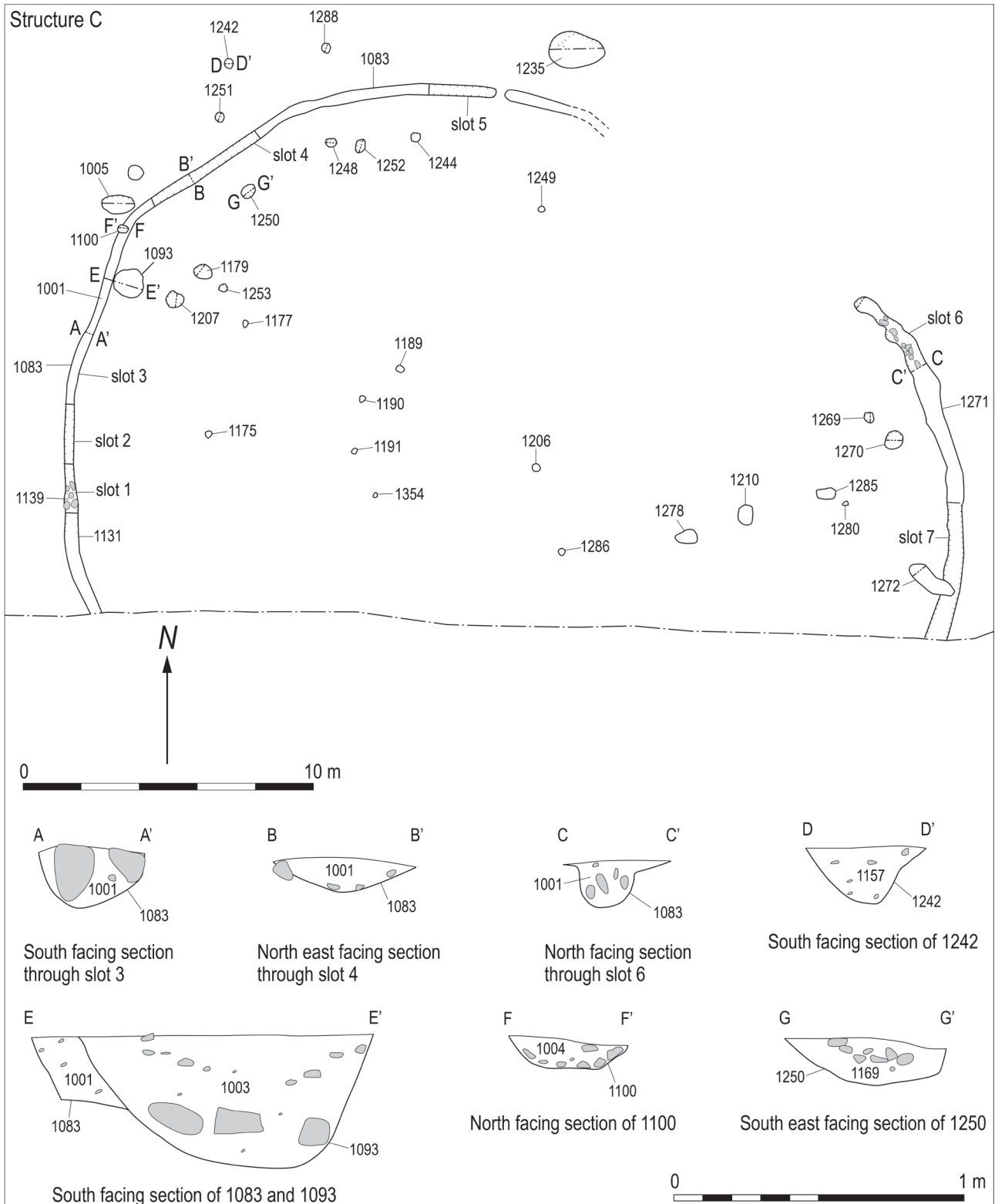
The hut platform had suffered from severe plough damage, particularly on its eastern side by the break of slope, which resulted in its incomplete survival (Illus 8). A layer of distinctive reddish-brown soil (1254) up to 100mm thick covered the truncated east side of the hut-circle, sealing the features on that side, and extended beyond them to the east. This layer contained charcoal and five sherds of late Bronze Age pottery indicative of domestic waste, and may have been the result of hillwash or ploughing.

Five radiocarbon dates (Table 2) were obtained from sealed deposits that formed the structure, the ring ditches (SUERC 36367, 36363 and 38363), a pit (SUERC 35924) and a post-hole (SUERC

35926), suggesting Bronze Age use for the hut circle from *c* 2210 to 1008 cal BC. Given the wide date range it may be that the site was re-used during the Bronze Age. A late Neolithic date (SUERC 35900) was obtained from hazel nutshell recovered from the covering layer (1254), suggesting mixing, re-deposition and residuality.

5.2.1 Structure C – palisaded enclosure (Illus 9)

This structure consists of a palisade trench forming approximately two-thirds of an enclosure 30m by 25m (the remaining third extended outside the construction corridor to the south and was not investigated). The palisade trench consisted of two sections: one in the east (1271, Fill 1001, Illus 10) was 12m long, and the largest section in the west and north was approximately 25m long (1083/1131, Fill 1001, Illus 11). The north terminal of section 1271 was rounded and there was a gap of *c* 12m before the other section 1083 was located. This may have been an entrance but it could not be confirmed, due to plough truncation in this area. Although the palisade trench formed an arc, it is slightly irregular



Illus 9 Structure C, palisade slot, plan and sections



Illus 10 Structure C, palisade, pre-excavation detail of slot and packing stones showing the eastern side



Illus 11 Structure C, palisade, pre-excavation detail of slot and packing stones showing the western side



Illus 12 Structure C, palisade, slot post-excavation eastern side



Illus 13 Structure C, palisade, slot post-excavation western side

and varied in width. This again may be the result of plough truncation removing the upper portions of the trench in some places and not in others. Seven slot trenches totalling 20m in length were excavated across the palisade trench (Illus 12 and 13), enabling its profile to be investigated, and to establish if there were any post-holes or features within it. The slot trenches demonstrated that while the average width of the palisade trench was 0.4m, its depth varied between 0.06m and 0.34m. This variation is probably due to plough truncation, as the shallowest sections were on the brow of the hill, where there was the least covering of topsoil. Despite the plough damage the palisade trench was consistent, with steep sides and a flat base. It was filled with brown sandy silt with frequent small stones and gravel. There were concentrations of larger stones up to 0.2m in length which may have been packing stones for posts, although no post-holes or depressions were noted below the stones. The concentrations of stones where they survived were approximately 0.4m apart. No artefacts were recovered from the fill of the palisade trench.

Four radiocarbon dates (Table 2) were obtained from the palisade enclosure: three from the trench itself (SUERC 36359, 36364 and 36365) and one from Pit 1272 (SUERC 35905) that was cut by the trench. The dates form two groups: one of the middle Bronze Age (1520–1390 cal BC) and the other of the late Bronze Age (847–784 cal BC). These dates could suggest that the palisade was re-used over a period of time and that the irregularities in the structure already mentioned could indicate different construction or occupation phases.

Cutting the inside of the palisade trench was an undated pit (1093). It was more substantial than the others, being 1m in diameter and 0.5m deep, with a number of stones approximately 0.2m in length, which could have been packing stones, in its fill. No artefacts were recovered from it and only small quantities of alder and hazel charcoal.

A number of post-holes were located inside the enclosure that may have formed additional support posts for the palisade. These, however, did not form a continuous line and there was a gap at the point where the possible entrance was located in the north-east. Three of the post-holes towards the north-west of the enclosure may relate to earlier Neolithic activity on-site. Four post-holes in the

south-east, while they did not appear to form a structure, may have marked a fence line, possibly to divide the interior for livestock. Traces of oak charcoal were recovered from their fills but they remain undated.

The only feature in the interior of the enclosure to contain any artefacts was Pit/Post-hole 1250, that produced Neolithic flints, Iron Age pottery and a Neolithic radiocarbon date (see section above on Neolithic pits).

Structure C represents a palisaded enclosure or enclosures of Bronze Age date that, from the radiocarbon evidence, appears to have been occupied twice. The palisade trench would have been the foundation for upright timbers that were held in place with large stones. Post-holes along the interior edge of the trench suggest that there may have been an internal supporting structure for the palisade, or internal fences to divide the interior into pens for livestock (Illus 14).

5.3 Iron Age Structure F – two possible hut circles (Illus 15)

Structure F lay to the north-west of the palisade enclosure at the brow of the hill and consisted of shallow features that included a curving gully (1145, Fill 1009) along with pits and post-holes. This area had suffered from disturbance from both animal burrows and from ploughing. Two separate sections of curving ditches were uncovered that could have overlapped; this would suggest two separate structures existed or the repair or rebuilding of one. The best surviving section of Gully 1145 was approximately 3.5m long and 0.7m wide, and only 0.1m deep. Its fill consisted of dark-brown sandy silt and small stones. There were no post-holes or other structural remains and no artefacts were recovered. However, oak and birch charcoal from the bulk soil samples produced a radiocarbon date (Table 2) of 700–540 cal BC (Context 1009, SUERC 35906). The gully did not survive on the west side but three post-holes appeared to follow the line of the curve. When complete the gully would have formed a circular feature with a diameter of *c* 6m. On the inside of the gully there were three post-holes and two shallow pits that did not form a regular pattern. Only a small amount of oak charcoal was recovered from two of these features.



Illus 14 Aerial view of excavation area from the east with Structures B and C in the foreground



Illus 15 Possible hut circle, Structure F, pre-excitation

To the west of the first gully there were the shallow remnants of what may have been a second gully (1061), which survived for a length of 3m, and was 0.25m wide with a maximum depth of 0.1m. A post-hole (1060) lay within the gully and several other small post-holes and stake-holes seemed to continue its curve. It was not possible to obtain a radiocarbon date for this gully as only a small amount of oak and unidentifiable charcoal was recovered from it. A fragment of a quern (SF4) was recovered from the fill of Post-hole 1060.

A small post-hole (1077) located between the two gullies contained a small fragment of daub (SF6), which may suggest that the stake-holes and post-holes supported a wattle and daub wall. A radiocarbon date (Table 2, SUERC 38364) derived from a burnt cereal grain produced a date of 574–657 cal AD, which would suggest that the features represent two different structures. The date and cereal grain suggest that the feature likely relates to the nearby corn-drying kilns of similar date. The remaining pits and post-holes did not form any coherent pattern, contained no artefacts, and only small quantities of charcoal were recovered from two of them.

Structure F represents the very fragmentary remains of two curving gullies, belonging to two separate hut circles or wind breaks. As the gullies did not cut one another, it is not possible to determine which is the earlier of the two, but the inner and more complete gully dates to the Iron Age. The radiocarbon date and Iron Age pottery recovered from elsewhere on the site provide the only evidence for Iron Age activity on the site.

5.4 Early historic period

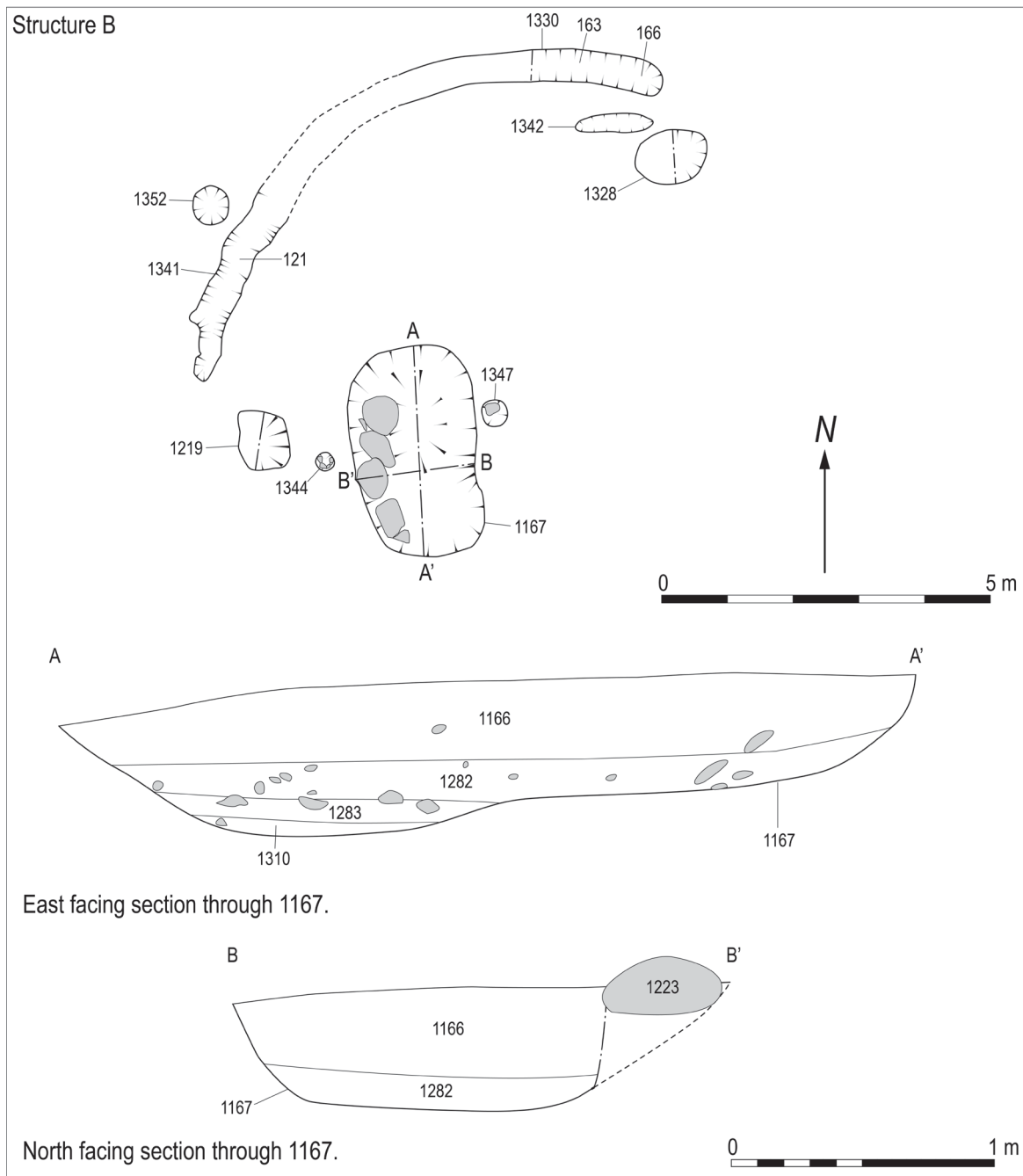
5.4.1 Structure B – corn-drying kiln and windbreak (Illus 16)

To the north-west of Structure A there was a large, oval-shaped pit (1167) with the remains of a gully surrounding it to the north (1330, Fill 1341), identified as a corn-drying kiln. The pit had steeply sloping sides with a rounded base and measured 3.6m by 2.3m with a maximum depth of 1.2m (Illus 17 and 18). There were four layers within the pit (1166, 1282, 1283 and 1310), which appeared to be very similar but with differing amounts of orange ash and charcoal. Layer 1283 contained the greatest amount of orange ash, while Layers 1282

and 1166 also contained fragments of burnt wood and charcoal. Five boulders (1223) of similar size (0.7m by 0.3m by 0.3m) lined the upper west side of the pit, but one appeared to be fire-cracked on its inner face (Illus 19). Two quern fragments (SF25 and SF26) were recovered from the upper fill (Layer 1282), along with a rim sherd of pottery (SF32). Two post-holes (1344 and 1347) were located on either side of Pit 1167 and may have supported part of the superstructure for it. The post-holes were approximately 0.3m in diameter, with packing stones for wooden posts. Ten cereal grains were recovered from the fill of one post-hole but charcoal was not recovered from either. To the west of Post-hole 1344 was a shallow scoop that appeared to contain burnt waste, possibly from the kiln, but unfortunately due to the poor state of preservation this could not be confirmed.

Analysis of the soil samples from the kiln pit recovered a large quantity of carbonised grain (*c* 6000 grains), along with charcoal from a number of tree species. Its oval shape and evidence of burning, along with the grain, confirmed that it was used for corn-drying. The line of stones on its west edge may be the remains of a foundation course for a stone or turf superstructure, or for a platform to support the grain. The two post-holes (1344 and 1347) positioned to either side of the pit, both with packing stones, may be further evidence for a superstructure. Three radiocarbon samples (Table 2, SUERC 35904, 35899 and 36368) were obtained from cereal grains from three layers within the kiln, and all produced dates in the range cal AD 605–775.

The ditch surrounding the kiln to the north was approximately 10m long, 0.5m wide and up to 0.25m deep, with rounded terminals filled with sandy silt with numerous small stones. It was interpreted in the field as a foundation for a possible windbreak, although no post-holes were observed within it. Although cereal grains and traces of charcoal indicative of kiln waste were recovered from its fill, it did include oak and willow, which indicated a wattle fence or windbreak. There was no evidence for the ditch on the south side of the corn-drying kiln, but if the ditch was intended to be open it may have functioned as a drain to divert water away from the kiln operations. A radiocarbon date (Table 2, SUERC 35925) from the fill of the ditch produced a date of cal AD 530–650 contemporary with the kiln.



Illus 16 Corn-drying kiln, Structure B, plan and sections

Two small pits or post-holes were associated with the ditch to the south (1328) of the east terminal and on the south-west side (1352) but no structural elements, artefacts or plant remains were recovered from these features.

5.4.2 Structure D – a second corn-drying kiln (Illus 20 and 21)

In the centre of the group of pits and post-holes to the west of the palisade enclosure was a large sub-

circular feature that consisted of two large inter-cutting pits (1058 and 1065, Illus 22), with steeply sloping sides and a flat base. The two pits appeared to be contemporary as the fills were very similar: the basal fill was dark-brown silty sand with charcoal (1031), 0.30m deep, while the upper fill of brown silty sand (1059) was 0.25m deep (Illus 23 and 24). A flat stone 0.3m by 0.3m was located in the base of the feature. The soil samples from the fills contained charcoal and over 700 carbonised cereal grains,



Illus 17 Corn-drying kiln, Structure B corn (1167), during excavation



Illus 18 General view of corn-drying kiln, Structure B, during excavation © John Lawson, City of Edinburgh Council



Illus 19 Corn-drying kiln, Structure B, excavated from south



Illus 20 Aerial view of the site from the north-west, with Structures C and D in the foreground

indicating that it too could be the remains of another corn-drying kiln. The botanical remains were similar to those recovered from Structure B and the radiocarbon date was also similar, *c* AD 550–650 (Table 2, SUERC 35909), which suggests that the kilns were contemporary or that they were only in use for a short time and then rebuilt. Fill 1031 contained a possibly worked stone (SF9), but no other finds were recovered from it.

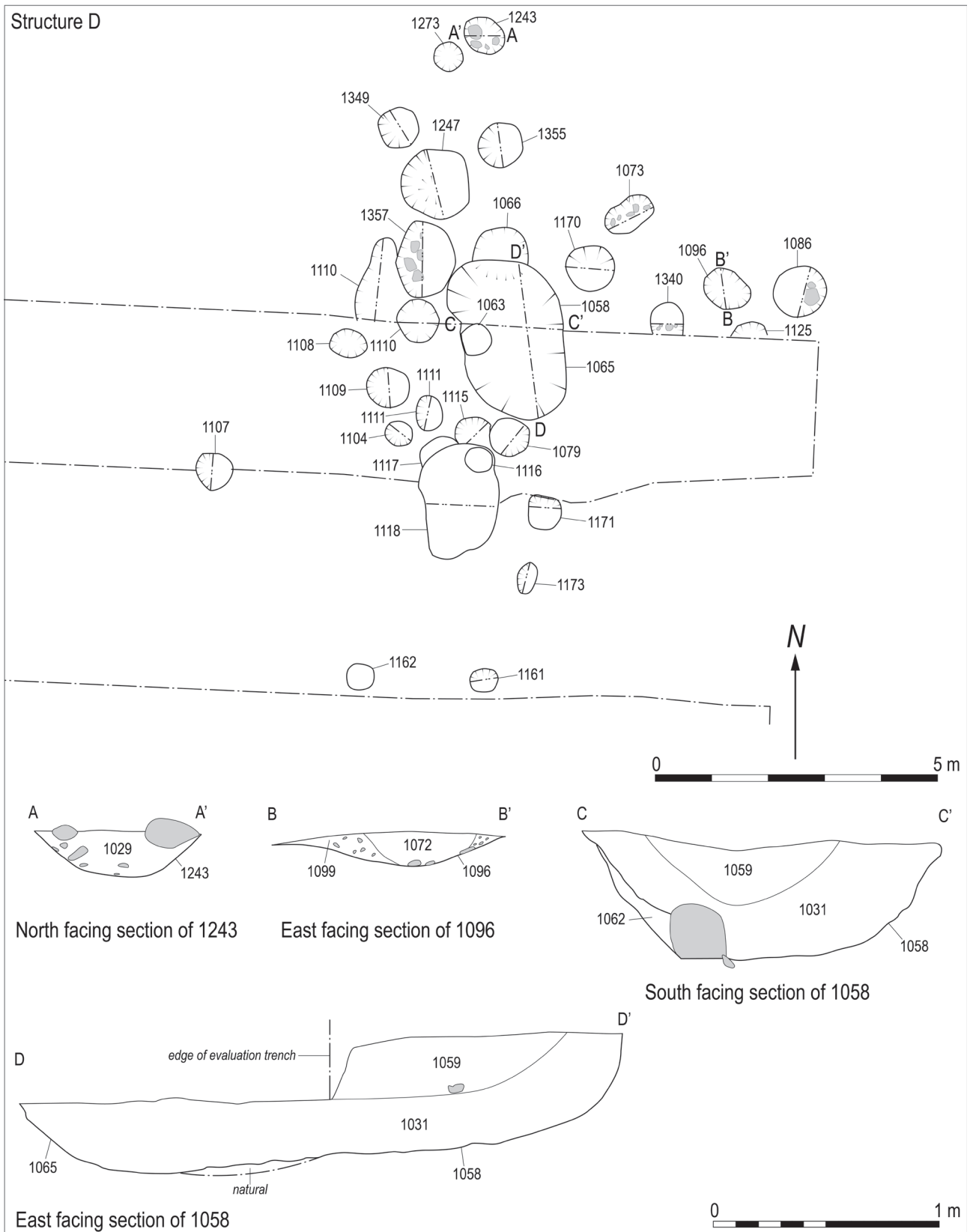
5.4.3 Corn-drying kiln or kiln waste

A small pit (1195, Fill 1196), located against the southern baulk of the trench approximately 7m south of Structure D, also contained a number of carbonised cereal grains. As this feature extended beyond the limits of the trench it was only partially excavated. The excavated portion appeared to be oval in plan, and 0.56m by 0.25m and up to 0.17m deep with sloping sides. No artefacts were recovered, but the botanical remains were similar to those recovered from the other corn-drying kilns, including the 43 cereal grains.

5.4.4 Structure E – curving ditch and pit (Illus 24 and 25)

Structure E lay to the north of Structure D and consisted of a substantial curving ditch (1060) and a large pit (1146). The ditch was approximately 5m long with rounded terminals, and was 0.8m wide and 0.3m deep, with steep sides and a flat base (Illus 26). The fill (1026) consisted of compact grey sand, which contained no finds. The botanical remains from the ditch were quite limited and consisted of small quantities of charcoal from birch, hazel and willow, along with one cereal grain. A radiocarbon date of *cal* AD 570–655 (Table 2, SUERC 35908) obtained from the fill would suggest that the ditch was contemporary with the corn-drying kilns.

Adjacent to the southern terminal of the ditch was a small post-hole (1087/1076) that contained a sherd of prehistoric pottery (SF5). Unfortunately, this undecorated body sherd had no diagnostic features to aid identification. Additionally, two shallow features, 1200 and 1198, were possibly the ephemeral remains of another length of ditch on the south and west sides, and other features that may be



Illus 21 Structure D, concentration of pits and evaluation trench, plan and sections



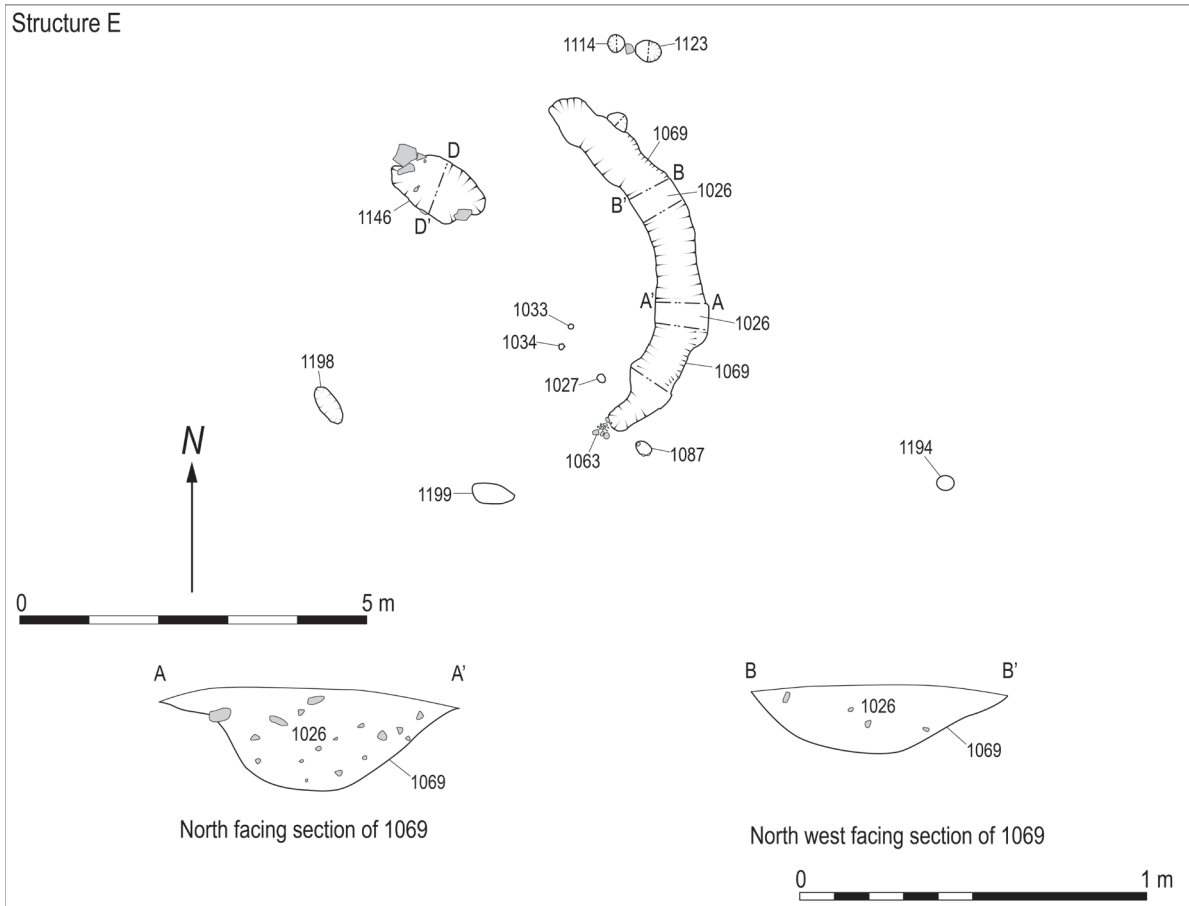
Illus 22 Structure D, concentration of pits, original evaluation trench from the west



Illus 23 Aerial view, Structure D, excavated features



Illus 24 Structure D, corn-drying kiln pits 1058 and 1065 during excavation showing edge of evaluation trench



Illus 25 Structure E, curving ditch and pits, plan and sections



Illus 26 Structure E, curving ditch or gully and pits, excavated

associated with this ditch included three small post- or stake-holes (1141, Fill 1133; 1142, Fill 1134; and 1027). No other artefacts or botanical remains were recovered from these features.

The large rectangular-shaped pit (1146) to the west of the ditch was 1.4m by 0.8m, and 0.3m deep. It had a U-shaped profile and was filled with brown silty loam (1049) with large stones positioned at either end of it. As several small fragments of unburnt bone (SF15) were found near the surface of its fill (1049), the remainder of the pit was 100 per cent sampled for the recovery of further remains. Unfortunately, the bone fragments were too small to identify to species and analysis of the soil samples did not produce any further bone or botanical remains. The only artefact was a fragment of modern glass. As there were numerous animal burrows in the immediate vicinity it is probable that the bones were from rabbit and the presence of glass would suggest that the pit is modern.

5.4.5 Structure G – windbreak/shelter

Adjacent to the north baulk at the western end of the site and to the west of Structure F was a curving line of six shallow post-holes and stake-holes. The four stake-holes ranged in size from 0.05m to 0.12m in diameter and 0.05m deep, and the possible post-holes were 0.2m in diameter and 0.05m deep. No artefacts or botanical remains were recovered and therefore this structure remains undated, but the stake-holes may have formed a wind break or shelter. No other features were identified in this area, which was heavily disturbed by animal burrows and plough truncation.

6. ADDITIONAL FEATURES

A large number of pits and post-holes could not be linked with any of the structures described above; this was particularly true of Structure D, where the remains of the corn-drying kiln were located within an extensive group of pits and post-holes that did not appear to form a coherent pattern. The features ranged in size from 0.35m by 0.25m by 0.04m to 2m by 1.6m by 0.5m. Apart from the high level of charcoal in the corn-drying kiln, the fills were similar: loose silty sand with some small stones, although some of the post-holes had evidence for packing stones. Eleven of the features contained

no botanical remains at all and only four of them contained artefacts, making it difficult to interpret or date the features. The lack of botanical remains and artefacts in small pits and post-holes was repeated across the site.

Within this group of features there was evidence for phasing: the corn-drying kiln 1058/1065 that was radiocarbon-dated to cal AD 550–650 (Table 2, SUERC 3599) had cut through an earlier pit (1066), while a later pit (1063) had cut into the fill of 1058/65; unfortunately these pits did not contain botanical remains suitable for radiocarbon dating, nor any artefacts that might have suggested a date for their use. Within the group, another pit already discussed (1252) contained both lithic artefacts and pottery, and produced a radiocarbon date of 3822–3706 cal BC (Table 2, SUERC 36358) from charcoal in its fill. Therefore these two dated features represent over 4500 years of activity. The lack of burnt cereal grains and charcoal from most of these features would suggest that they are not related to the corn-drying kiln and that they were already out of use before the corn-drying kiln was constructed.

7. RADIOCARBON DATES

In total, twenty-three dates were submitted in three batches for AMS dating to the Scottish Universities Environmental Research Centre (SUERC). These dates were derived from carbonised cereal grains or charcoal from shorter-lived species such as hazel (*Corylus*), alder (*Alnus*) or birch (*Betula*) obtained from bulk soil samples recovered during the excavation. The aim of the dating programme was to date features or structures and to provide information on phasing for the site, as the artefactual evidence suggested that the site had had several periods of occupation. The samples were taken from secure and sealed deposits, mainly pits or post-holes or slots, through linear features or from features that contained artefacts. Unfortunately, selection was hampered by a lack of suitable dating material, as many of the features contained very few or no botanical remains. Similarly there were few artefacts and there was little in the way of stratigraphic relationships or inter-cutting features that might represent different phases of occupation. The calibrated dates indicate that activity on the

Table 3 Summary of the assemblage

Area	Number of sherds	Weight (g)	Average sherd weight	Comment
1	3	17.3	5.7	Vessel 1 includes two rims of an Early Neolithic pot
1	6	258.6	43.1	Vessel 3, a Bronze Age cooking pot
1	4 + 2 bits	134.9	33.5	Vessel 4, an Iron Age decorated pot
1	3	35.1	12.7	Vessel 5, Iron Age
1	1	31.5	31.5	Vessel 6, prehistoric
1	4	9.3	n/a	Undifferentiated sherds with surfaces missing
1	1	2.1	–	Unburnt clay
2 W/b	11	41.6	3.7	Vessel 2 a Beaker vessel
124	1	0.5	n/a	Small fragment

site encompassed a long timescale, from the early Neolithic through to the Early Historic period.

8. ARTEFACTS

8.1 Prehistoric pottery

8.1.1 Introduction

A small assemblage of coarse pottery was retrieved from the excavation and subsequent watching brief. Thirty-four sherds, bits, crumbs and one piece of unburnt clay weighing a total of 530.9g were recovered. All sherds larger than 10mm were weighed, examined with a ×6 hand-lens and their attributes entered into a database (see archive).

The assemblage produced evidence for a variety of vessels from the early Neolithic through to the late Iron Age/early historic period (Table 3, Illus 27). Some of the pieces are small and largely without diagnostic attribute; their identification to a specific period is therefore tentative. In addition to the identified vessels, there were small sherds (without one or both surfaces) and crumbs, which have not been analysed further. A single piece of unburnt clay or daub is included within the assemblage.

A total of six vessels have been differentiated using a number of attributes rather than relying solely on fabric analysis. The clay matrix is very similar throughout the assemblage as much of it contains small amounts of fine to coarse temper, usually quartz sand, giving the pottery a generally sandy texture.

Quartz and other rocks were added to the clay but the most common mineral identified was that of feldspar, associated with intrusive volcanic activity (Cameron and Stephenson 1985). Subsequent glacial and recent geological activities may have led to the incorporation of quartz and other small rock fragments in the clayey subsoils, but the likely source of other minerals used in the manufacture of the pottery was local rock outcrops. These, together with quartz sand from the coast or the edges of waterways, provided the raw materials for the pottery.

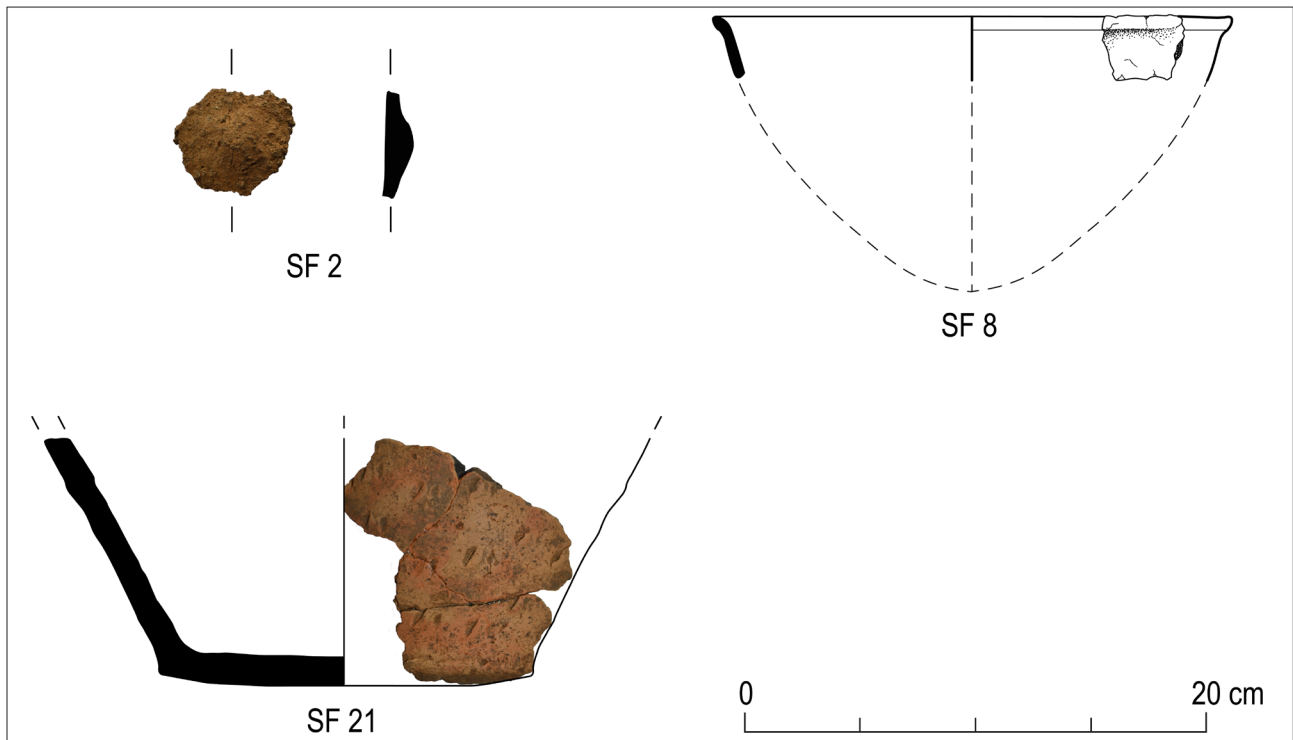
The pottery was produced locally using the raw materials to hand. Irrespective of this, the pottery forms, rim shapes and decorative designs are typical of much wider cultures. When manufactured, the vessels would not have looked out of place in settlements in northern Scotland or England, indicating the widespread social group and cultures to which the potters belonged. This small assemblage therefore has the potential to provide us with small insights into the activities of people over a long period of time in the Edinburgh area.

In this report the evidence is presented from the earliest vessel to the latest.

8.2 Vessels

8.2.1 Vessel 1 early Neolithic

► **Two sherds from Context 1071 (upper fill of Post-hole 1096), SF7 and SF8: total weight 11.8g**
Two sherds, which have rounded edges due to erosion and movement in the soil, are possibly



Illus 27 Neolithic and Iron Age pottery

the remains of a fine early Neolithic bowl *c* 7mm thick. The fabric contains both quartz and feldspar and has been hard-fired. Both pieces are plain but a thin fire-skin is all that is left of the finishing of the vessel's surface. Both pieces are probably from the neck of the vessel, the largest piece being a fragment of its slightly everted rim. Approximately 8 per cent survives of the rim, which may have had a diameter of 130mm. The pale red colour of the sherds indicates it was fired in oxidised conditions, producing a terracotta-coloured vessel. A number of similar forms of early Neolithic carinated vessels dated 3960–3710 cal BC at 2δ, were found during the archaeological excavations of Area 5 near Eweford on the A1 trunk road south-east of Edinburgh (see Sheridan in Lelong and MacGregor 2008). Four small body sherds were recovered from investigations at Maybury Park (now Edinburgh Park) near to the present site on the western edge of Edinburgh, which were dated similarly to 3950–3660 cal BC (Sheridan and McGill 2007). Undated examples have also been recovered from excavations nearby at the Catstane (Cowie 1977–8) and Ratho (Smith 1995).

► **A sherd from Context 1035 (fill of Post-hole 1131), sample 50a: weight 5.5g**

A separate rim sherd, representing 5 per cent of the pot rim, may indicate a second early vessel. It was dark in colour due to the reduced conditions experienced in the kiln or pit when it was fired. Although there is a difference in colour and the sherd is slightly thinner than that from Vessel 1, it is possible that they are both from the same pot but have experienced different firing or post-depositional conditions. The evidence from this sherd indicates the vessel was burnished during manufacture (see Ballin Smith forthcoming).

8.2.2 Vessel 2 Beaker

► **Nine sherds from Context 1029, SF2 and SF6, and surface find Sample 2: total weight 41.6g**

This small group of sherds was recovered from a small pit to the east of the main excavation, 3118, Area 2, during the watching brief, and is probably from one Beaker vessel. The largest sherd measures 50.5 by 40.3mm and is the majority of the base of the pot minus the basal edges where it joined the vessel walls. Its centre is slightly domed, possibly

as a result of deliberate action or because of finger-moulding, which may have flattened the remainder of the base when the vessel wall was added to it. Erosion of the sherd has removed the surface finish the vessel would have had, but it has also revealed the coarse grits, predominantly feldspar, which comprise 10–15 per cent of the clay matrix.

The remaining sherds are generally small, but three are decorated with two parallel incised lines each. The lines were probably made by a sharpened twig, and the incisions vary in depth. The decoration of two close parallel lines on the largest piece appears shallow, possibly because of surface erosion of the sherd.

These fragments are not sufficient to determine the overall pattern of the decoration or the exact shape of the Beaker vessel. However, the dating of Beaker vessels is wide, due to their introduction during the later Neolithic and their continued use into the early Bronze Age (see Gibson 2002). A radiocarbon date obtained from the fill of the pit containing the sherds gave a date of 2146–2015 BC (Table 2, SUERC 38365).

The vessel was found in an isolated small pit in an area *c* 25m east of Area 1 during a watching brief. As well as the pottery the pit also contained flint (see the section on the Lithic Artefacts below). Sherds indicating an undecorated Beaker vessel were recovered from Maybury Park, Edinburgh (see Sheridan and McGill 2007, 27–28).

8.2.3 Vessel 3 Bronze Age cooking pot

► **Six sherds from Context 1254 (possible hillwash/occupation deposits), SF27, SF28 and SF29: total weight 258.6g**

A third vessel is represented by six sherds which are 10.3–11.5mm in thickness, with the largest piece measuring 82mm by 85mm. This vessel is distinctive in that its outer surface is only roughly finished by smoothing, with finger-moulding barely disguised, and its internal surfaces are coated by carbonised food residues. No diagnostic piece such as the rim or base is present, but one sherd shows evidence of a slight bulge where the walls of the vessel joined the base, indicating that the lower portion of the pot was fairly straight-sided.

The manufacturing techniques used for this vessel are mostly reminiscent of later Bronze Age urns

(see Ballin Smith forthcoming), but the deposits of carbonised material on all the sherds suggest its use was as a cooking vessel rather than a container for human remains. A similar bucket-shaped pot of late Bronze Age date was recovered from Maybury Park, Edinburgh (Sheridan and McGill 2007, 27–29).

Radiocarbon analysis (Table 2, SUERC 35900) of the layer containing the pottery produced a date of 2460–2190 cal BC, which is notably older than the deposits in Structure A, sealed by the layer containing the pottery, which is considered to be later Bronze Age. The lack of abrasion on the sherds and the fact that six sherds were recovered would suggest they were buried in an occupation deposit.

8.2.4 Vessel 4 ?Iron Age decorated vessel

► **Four sherds and two fragments from Context 1169, fill of Post-hole 1250, SF21: total weight 134.9g**

These four adjoining sherds, *c* 11.5mm thick, form part of the lower portion of a decorated vessel (Illus 28). Despite the thickness of the sherds the fabric is light in weight due to the apparent visual sparseness of temper. The fabric is sandy to the touch and comprises quartz grains (sand) as well as the occasional piece of rounded quartz rock. Cracking of the vessel and the tendency towards lamination, as well as its lightness and vesicular quality, suggests that vegetable matter was added to the clay during manufacture. The techniques used in finishing the vessel surface are restricted to a probable slip, smoothing and decoration. The vessel is distinctive in that there is a clear and equal differentiation noted in section between the dark brown (reduced) interior and the pale orange (oxidised) exterior. This evidence indicates that the vessel was fired upside-down.

One sherd is part of the base edge and demonstrates the join between the vessel wall and its base, which is clearly visible as a thin and slight horizontal bulge of clay. This sherd was slightly angled down from the base edge towards the base proper. The basal edge measures *c* 140mm, and approximately 13 per cent of the circumference survives.

The decoration comprises a pinched design formed by the nails of the thumb and first finger of the potter's right hand. The thumb nail has been pressed into the surface of the pot to raise a small



Illus 28 Pottery, ?Iron Age decorated vessel

crescent-shaped piece of clay. The corresponding impression from the nail of the index finger is a small negative impression where the nail has dug, and the clay in between is slightly pinched together. The individual pinched motifs measure *c* 10mm in height by 11mm in width. The design has been executed as an all-over decoration in offset rows of motifs *c* 30mm apart (Illus 28).

The fabric, firing and decoration suggest an Iron Age date for this vessel. Similar motifs have been identified on other Iron Age pottery such as that from Staple Howe in east Yorkshire (Brewster 1963, 88, Fig. 46; 99, Fig. 52) and was part of a suite of finger tip, finger nail and finger-pinched designs common in northern Britain during this period (see Ross 1994; Bennell and Ballin Smith 2015).

These sherds were located in the fill of a post-hole in the north-western arc of Structure C, the palisaded enclosure, and relatively close to the enclosure trench. They were associated with lithic artefacts and a late Neolithic radiocarbon date (Table 2, SUERC 36357) of 2696–2487 cal BC. Given the decoration and the likelihood that these sherds are Iron Age in date, it would appear that they are intrusive material in a feature that is late Neolithic.

8.2.4 Vessel 5 ?Neolithic

► **Three sherds from Contexts 1035 (fill of Post-hole 1131), 1072 (fill of Post-hole 1096, Structure D) and 1157 (fill of Post-hole 1242), SF13, SF15 and Sample 50: total weight 35.1g**

These three sherds with visible grains of feldspar temper are probably all from the same vessel, which was *c* 12mm thick and probably substantial in size. The most informative sherd is 2600-13, which has a failed join where it and the clay of the adjoining slab or coil were not well moulded together. This point of weakness in its manufacture is likely to have resulted in the breakage of the vessel. This sherd has evidence of finger-moulding which was not entirely smoothed away and the vessel was probably slipped and burnished to mask the temper. With both use and erosion of the vessel surfaces, the temper is visible both internally and externally. It has been noted (Ballin Smith forthcoming) that temper could sometimes be added to the clay matrix during manufacture so that it deliberately showed on the surface of the vessel as a form of decoration, but in this case the temper was functional rather than decorative.

Although there are few diagnostic traits, it is presumed that this thick and coarse vessel was probably Neolithic in date. The radiocarbon date for the fill of Post-hole 1242 (Table 2, SUERC 36358) is 3822–3706 cal BC, which indicates early Neolithic activity, and the sherds were found in the vicinity of other pits that were dated to the Neolithic.

8.2.5 Vessel 6 – early historic

► **Rim sherd from Context 1282 (fill of Pit 1167 in Structure B, a corn-drying kiln), SF32, weight 31.5g**

This plain curved sherd was possibly from a bowl which was in excess of 18mm thick. Very little survives of the rim, which would have been simple and rounded, but the loss of the interior surface makes further assessment of the type of vessel difficult. The external surface is cracked, smoothed and with evidence of sooting and finger-moulding. The dating of this sherd is likely to be prehistoric/early historic.

The piece was found within one of the fills of a corn-drying kiln. The radiocarbon dates (Table

2, SUERC 35904) AD 605–685 cal and (Table 2, SUERC 35899) AD 610–710 cal) indicate an early historic period structure, possibly suggesting that this pottery could be Anglian, but given the lack of diagnostic features this cannot be confirmed.

8.2.6 Unfired clay

► **Clay fragment from Context 1018 (fill of Post-hole 1077 in Structure F) SF6: weight 2.1g**

A single fragment of unfired clay was found in Context 1018, the fill of a post-hole external to Structure F. This structure had a drip or construction gully and is likely to have had wattle and daub walls. This single piece of clay is evidence of the possible demolition and enlargement of Structure F.

► **Clay piece from Context 1282, fill of corn-drying kiln: weight 3g**

A small amount of unfired clay or daub (weighing 3g in total) was recovered from the fill of Structure B, the corn-drying kiln (Context 1282). The clay is an orange colour with very few inclusions and it survived as very small fragments less than 5mm in diameter. The recovery of the clay suggests that there may have been a clay floor or a clay and wattle superstructure to the kiln.

8.2.7 Conclusions

Although this assemblage is small, it is evidence of different phases of a long settlement history. The earliest activities, dated to the early Neolithic, are indicated by several fragments of an early Neolithic bowl (Vessel 1) that were recovered from two pits. The deposition of pottery from this period is reminiscent of activities at Ratho (Smith 1995) and sites along the A1 (Lelong and MacGregor 2008) but also at Laigh Newton, East Ayrshire (Ballin Smith 2011), where pottery was found in domestic pits.

A second Neolithic vessel (Vessel 5) was found distributed in features within the trench of the palisaded enclosure and to the west of it. Other pottery associated with the enclosure includes a slightly unusual decorated vessel (Vessel 4), which was found in a post-hole lying within the north-western arc. However, this pottery is identified as Iron Age in date and indicates the intrusion of later material into features of the earlier enclosure.

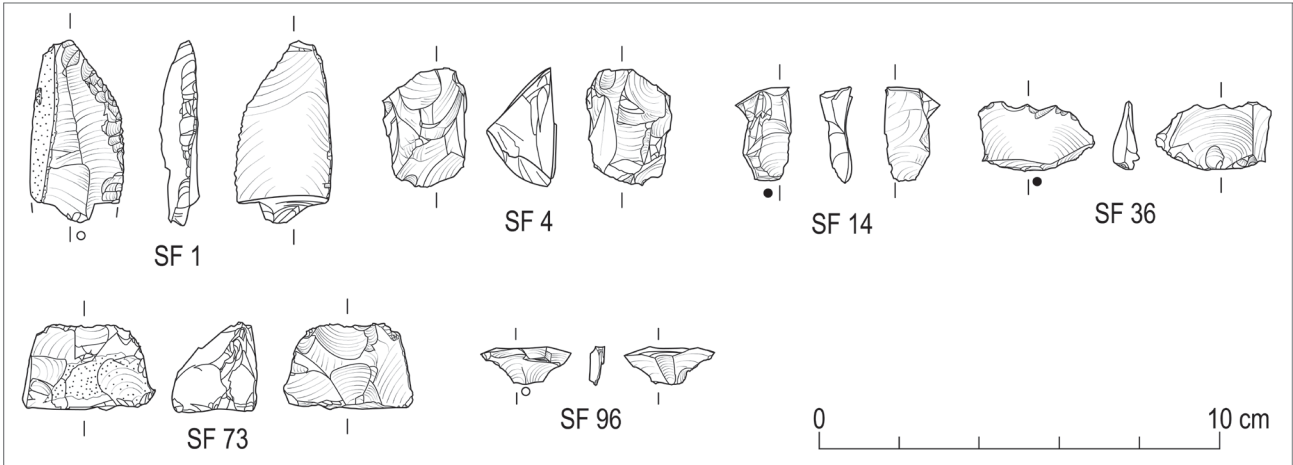
The late Neolithic/early Bronze Age is represented by a finely manufactured and decorated Beaker vessel (Vessel 2) found in a pit just east of the main excavation. It may be the case that settlement activities continued more or less in the same location, but with festivities, including the burial of the dead, in another. This might account for the general lack of urns and other burial pottery associated with this site. The reference to Laigh Newton (Ballin Smith 2011) is also pertinent here as Beaker pottery was found in a pit, with fragments of other late Neolithic vessels, and related to a large rectangular structure. However, a plain Beaker and a later Bronze Age vessel were found at nearby Maybury, on the outskirts of Edinburgh, in an assemblage with early Neolithic to Iron Age sherds similar to those from this site.

The history of the site continues with the identification of a possible late Bronze Age cooking pot (Vessel 3) in Structure A on the east side of the site. The location of sherds just outside the building suggests they are likely to be contemporary.

The presence of Vessel 4 indicates that Iron Age activities took place within the excavation trenches or beyond them. The fact that there is so little material of this date suggests that the settlement may be located beyond the limits of the main excavation. This to some extent is reinforced by the presence of corn-drying kilns. A small quantity of pottery was recovered from Structure B (Vessel 6) and although the pottery is considered to be prehistoric in character the early historic dates of the corn-drying pit indicate that the sherds are later and probably contemporary with the 7th–8th-century AD activities.

8.3 Lithic artefacts (Illus 29)

A small assemblage of 20 lithics was recovered from the excavation and watching brief as small finds and from bulk soil samples. The assemblage is dominated by quartz (10 pieces), some of which may be non-artefactual. The remaining lithics consist of five flints, four pieces of chert and a solitary flake in pitchstone (CAT 5). Three of the flints (CAT 2, 6, 9) are clearly exotic pieces, most likely 'imported' from north-east England, probably Yorkshire. Only two of the remaining pieces were implements (CAT 2 and CAT 6), the other pieces being debitage.



Illus 29 Illustrated flint

► **CAT 2 (Project 3118, Context 1029, Sample 1, dimensions 46 by 23 by 9mm. Illus 30)**

This is the distal half of a scale-flaked knife in Yorkshire flint based on a stout blade. It has well-executed semi-invasive retouch along its right lateral site, probably representing the knife’s cutting-edge. Use-wear analysis of scale-flaked and plano-convex knives from Overhowden Henge in the Scottish Borders (Ballin 2011) suggests that these tools may be a form of sickle, fulfilling the same purpose

as the curved single-piece sickles from southern England (Clark 1934). This was recovered during the subsequent watching brief in a small pit that also contained Beaker pottery with a radiocarbon date of 2146–2015 BC (Illus 29).

► **CAT 5 (SF14, Context 1072, dimensions 23 by 14 by 9mm. Illus 31)**

This is a flake of Arran pitchstone; it is almost certainly Neolithic. This raw material was obtained from Arran mainly during the early Neolithic period (and mainly the first half of that period), but some pieces from the Scottish mainland may be as late as the Impressed Ware period.

► **CAT 6 (SF36, Context 1255, dimensions 17 by 28 by 4mm)**

This is a small hard-hammer flake with use-wear along various edges. In addition, it has neat polish on the right corner of its faceted platform remnant. The polished area has the character of a rounded angle, suggesting that this flake was struck from the lateral edge/knapping seam of an abandoned polished flint axe head.

The lithic assemblage includes artefacts in quartz, local and Yorkshire flint, chert as well as pitchstone and pieces of debitage, most of which are of little use to the interpretation of the site. The most significant pieces are: one scale-flaked knife in Yorkshire flint, and a flake struck off an unfinished or broken polished flint axe head, also in Yorkshire flint, and the piece of Arran pitchstone. Most of the lithics appear to be Neolithic, most likely late Neolithic



Illus 30 Flint scale knife



Illus 31 Arran pitchstone

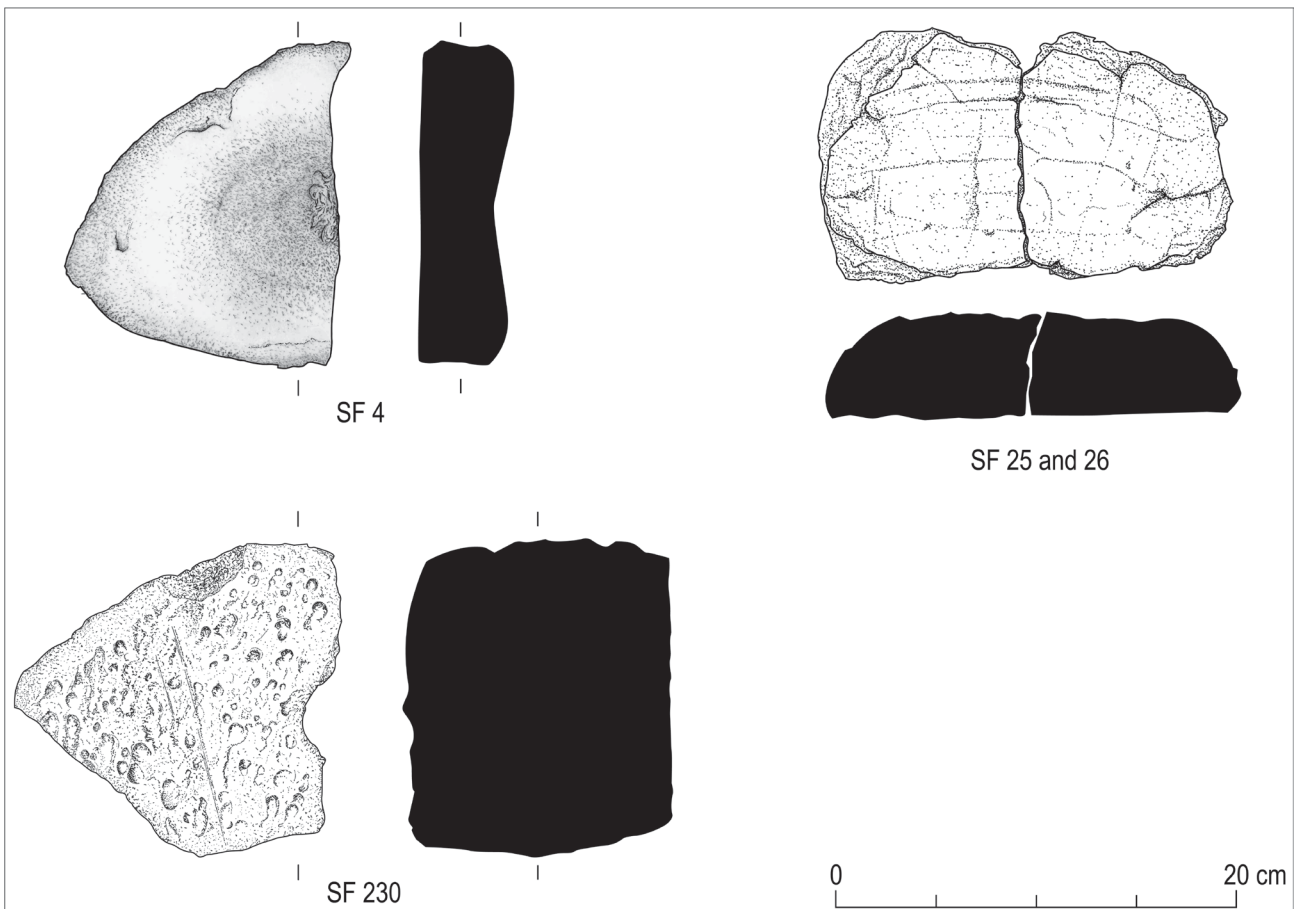
due to the presence of Yorkshire flint and Arran pitchstone and the artefact types of a scale-knife and polished flint axe head fragment.

8.4 Stone artefacts

A number of stone artefacts were recovered from the excavation.

► **Quern fragment (SF25 and SF26, Context 1166, dimensions 205mm by 120mm by 50mm: weight 1888g. Illus 32)**

Two conjoining fragments of a roughly shaped quern made from haematite-rich blond sandstone were recovered from the upper fill of the corn-drying kiln. The two fragments represent an upper stone from a rotary quern, as the edges have been chipped and rounded, and the top roughly levelled by chipping. The working surface has been worn smooth, with distinct striation marks through use



Illus 32 Coarse stone tools

surviving near the edges. There are some damaged areas on the upper surface.

► **Quern (SF4, Context 1060, dimensions 170mm by 130mm by 44mm: weight 1345g. Illus 32)**

This roughly shaped stone in sandstone was recovered from within an undated curving ditch of possible Iron Age or early historic date. It is a thick wedge of a quern that has broken at its long edge. The working surface is slightly concave where it has been worn smooth but there is evidence of the dressing of the surface by pecking. Some of the peck marks are shallow and almost worn away. The outer edges of the working surface are slightly rougher beyond the concave area. The upper surface of the stone is blackened by sooting or burning. This fragment may be from a rotary quern and is very similar to a quern recovered at Maybury Park (now Edinburgh Park) (Saville 2007).

► **Miniature quern (SF173, Context 1255, dimensions 40mm by 37mm by 12mm, diameter c180mm: weight 35g)**

A small fragment of what may be a miniature or 'toy' upper quern was recovered during the investigation of what turned out to be residual topsoil. It is made from a piece of basalt or similar igneous rock. The small fragment is curved, with a rounded edge to a flat and smooth working face. Its upper surface has a stepped profile forming a raised moulding round a central perforation, which is missing. A number of miniature querns have been recovered, mainly from the east of Scotland, and tend to date to the Iron Age (McLaren and Hunter 2008).

► **Quern/anvil (SF4, Context 1053, dimensions 170mm by 130mm by 44mm: weight 1345g. Illus 32)**

A fragment of pink/blond sandstone quern or anvil measuring. The piece has been split from a larger boulder: the lower surface is naturally roughly flat, and its sides naturally rounded to flat. The upper surface is smooth and concave, with smoothing around its edges. The stone is broken across the width, most likely due to being used as an anvil. An area of coarse pecking is noted at the centre of the broken edge. It is likely that the stone was initially used as a prehistoric quern with a stone rubber, possibly near a hearth, because of the sooting. The

area of pecking appears fresh and indicates a change of function for the stone.

► **Stone disc (SF10, unstratified, dimensions 75mm in diameter and 6mm thick: weight 71g)**

A roughly circular stone disc, probably split from a naturally rounded sandstone cobble. There is evidence that the edges have been trimmed to shape.

► **Worked stone (Context 1001, recovered from Soil Sample 113, dimensions 30mm by 24mm by 4mm: weight 3.3g)**

A small triangular-shaped fragment of limestone(?). Although broken and damaged its curved end may be chamfered.

► **Possible worked stone? (Context 1001, recovered from Soil Sample 165, dimensions 15mm by 15mm by 4mm: weight 1.1g)**

A small irregular fragment of stone, this has no apparent evidence of being worked except that the external surface is smooth and polished; possibly iron stone.

► **Unworked stone (1169, recovered from Soil Sample 96, dimensions 45mm by 20mm by 12mm thick, weight 10g)**

This is a small oval-shaped, thin fragment of stone with a smooth surface. It is a sliver of a pebble or cobble.

► **Unworked stone (1290, recovered from Soil Sample 152, dimensions 86mm by 40mm by 35mm: weight 167g)**

This fragment of stone of rhyolite/conglomerate has a curved side. It is a fragment of a larger cobble or stone. Although unworked, its outer curved surface is reddened from exposure to heat. It is a fragment of a fire-cracked stone, possibly heated on a hearth.

9. CARBONISED PLANT REMAINS

A total of 116 samples, representing 89 contexts, were processed by flotation or wet sieving for the recovery of carbonised remains, which were then examined using a binocular microscope at variable magnifications of $\times 4$ to $\times 45$. The testa characteristics of small seeds and the internal anatomical features of all charcoal fragments were

further identified at $\times 200$ magnification using the reflected light of a metallurgical microscope. Reference was made to Schweingruber (1990) and Cappers et al (2006) to aid identifications, and vascular plant nomenclature follows Stace (1997).

The majority of the carbonised material recorded from the features and structures appears to be domestic hearth waste that had become scattered over the site. The most notable finds were evidence for corn-drying kilns (Structure B and Structure D), with six-row barley being the dominant cereal type present. There was no botanical evidence for significant structural remains from any of these seven structures, and no evidence for any of them having been destroyed by fire.

The carbonised assemblage from Structure A is thought to represent scattered hearth waste from the occupation of the site. The fuel that was being utilised would have been available in the local woodlands during the prehistoric period, and a few cereal grains show that arable agriculture was being practised. The carbonised plant remains from the corn-drying kilns were very similar. The fills produced large quantities of carbonised grain, with the cereal assemblage dominated by six-row barley, including evidence for the hulled variety. A few grains of oats and wheat were probably just contaminants within the barley crop, rather than evidence for cultivation of a mixed cereal crop. Barley was the commonest cereal type grown in Scotland from the Neolithic to the medieval period, when oats began to dominate. Naked barley (*Hordeum vulgare* var. *nudum*) was generally grown in the Neolithic period, but was superseded by the hulled variety (*Hordeum vulgare* var. *vulgare*) from the Bronze Age onwards in Scotland (Bishop et al 2009). This is thought to be a response by Bronze Age farmers to climatic deterioration, because hulled barley is better protected from damp and fungal attack as a result of the grain being enclosed in its papery fused glumes, whereas the naked, free-threshing variety is prone to fungal infestation. The fuel used within the kiln did not appear to have been deliberately selected and was simply the wood that could be collected from the local area. Of note is the presence of significant quantities of heather-type charcoal within the waste material from the corn-drying kiln. The heather twigs could have originated from turves cut from

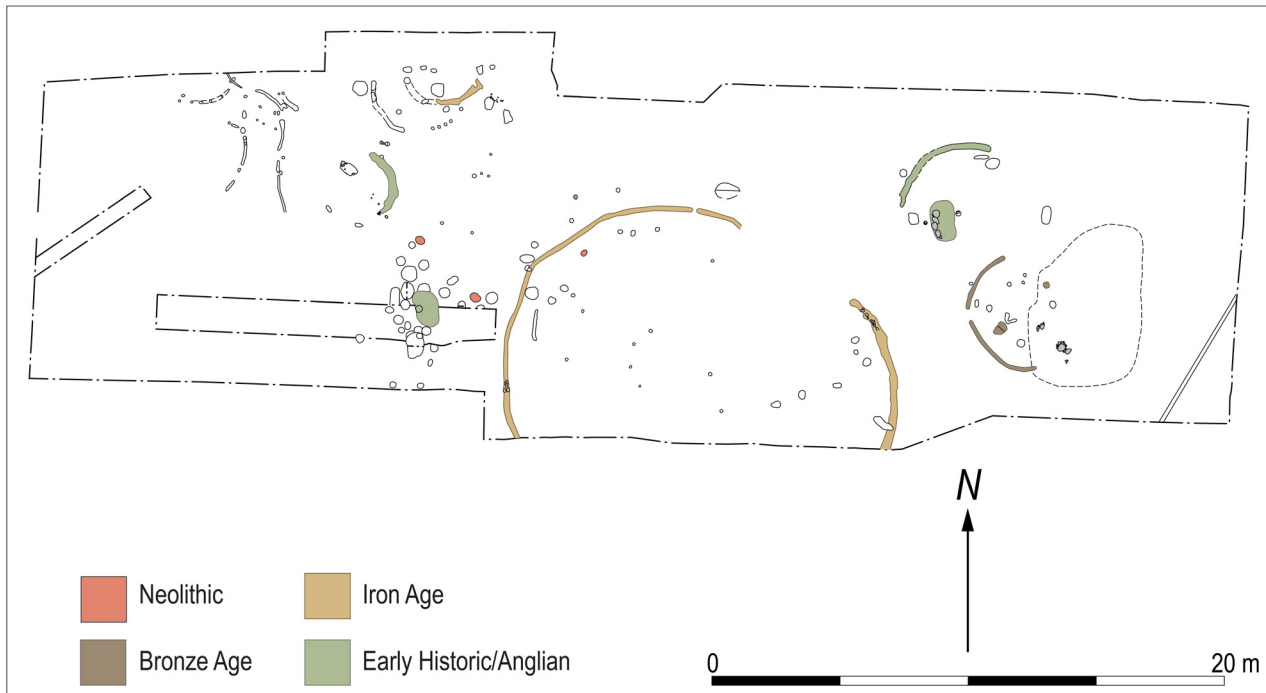
areas of heathland, since Fenton (1999) indicates that turf was a preferred fuel for corn-drying kilns as it burned with a slow, even heat and was less likely to create sparks that could set the grain alight. However, there was no additional evidence for burnt turf within the kiln waste and it may be that the heather was being used as a 'mat' on which to dry the grain, with wood being the kiln fuel. There was no evidence to suggest what the windbreak was made from, as the carbonised assemblage from the fill of the feature was simply scattered waste from the corn-drying kiln.

Structure C, a palisaded enclosure, produced little or no evidence for the structural components used for the palisade or internal features. The carbonised assemblages were indicative of hearth waste, and the common occurrence of oak confirmed by the radiocarbon evidence supports a prehistoric date, since oak became less common in the area after the end of the pre-Roman Iron Age (Ramsay and Dickson 1997).

10. DISCUSSION AND CONCLUSIONS

The range of features and structures combined with the botanical, artefactual and radiocarbon dates confirm a long period of use of the site from the Neolithic through to the early historic period (Illus 33). As has been mentioned previously, many of the pits and post-holes contained no artefacts and few, if any, botanical remains, making it difficult, if not impossible, to link features to particular phases of occupation. This was particularly true in areas with a high density of features. In addition, there was little in the way of stratigraphy in terms of inter-cutting pits and post-holes to aid phasing the features, as the various structures were mainly discrete features separated from the others.

Neolithic activity is represented by pits containing hazel nutshell, flint tools and pottery sherds from carinated bowls. Similar vessels have been recovered from archaeological excavations in the vicinity at the Catstane, Maybury Park and slightly further afield at South Hill, Ratho. Bronze Age occupation was in the shape of Structure A, a hut platform that comprised a ring ditch with internal post-holes and a palisaded enclosure. Part of Structure A was partially covered by a layer of hillwash that contained domestic



Illus 33 Phased trench plan

material and several sherds of Bronze Age pottery, although charcoal recovered from this layer gave a slightly earlier date than those from the post-holes within the hut platform. (The earlier dates are not surprising as the hillwash layer is down-slope from the group of pits that are Neolithic in date.) There was little artefactual evidence from the palisaded enclosure and the dating of the structure derives from radiocarbon dates obtained from the palisade slot. These dates suggest two phases of construction or use of the palisade. There was little evidence for structures within the palisade, although several post-holes may indicate an internal supporting structure, or fence lines indicative of pens for domestic animals.

Other Bronze Age material came from a small pit to the east of the hut platform that contained Beaker pottery and a flint blade. Due to its isolated location this feature may represent 'ritual' rather than domestic activity, with the pottery and flint tools deliberately placed in the fill rather than as accidental inclusion. Pits with similar inclusions of artefacts were excavated at Eweford on the A1 near Haddington (Lelong and MacGregor 2008).

The Iron Age is represented by two truncated possible hut circles or shelters. An associated

fragment of a miniature quern was recovered and these tend to be found in the east of Scotland during the Iron Age. The final phase of activity on-site consists of the remains of two corn-drying kilns that survived as oval pits containing considerable quantities of burnt and charred cereal grains. Despite the presence of the corn-drying kilns, very few features contained cereal grains. This reinforces the suggestion that these represent the last phase of occupation, and that all other features are earlier. Associated with the better-preserved kiln was a rim sherd of coarse pottery and two fragments from a rough quern.

While the archaeological investigations have provided evidence for occupation and use over a long period of time, it is surprising that little evidence for settlement from the Iron Age and Roman period was discovered, considering the nearby fort at Cramond and the discovery of a milestone at Ingliston and Ratho Station, as well as temporary camps to the west of the bypass south of Gogar.

The remains from the excavation give an insight into prehistoric activity in the area and support similar occupation and settlement evidence from the wider region. The early historic date for the corn-drying kilns provides direct evidence for



Illus 34 Site reconstruction with corn-drying kilns



Illus 35 Site reconstruction of palisaded enclosure

settlement and agriculture, as well as a domestic setting for the long-cist cemetery at Catstane to the north (Illus 34). There are references to another undated long-cist cemetery closer to the site but immediately to the south of the A8 near Gogar Golf Club, and similar dates were obtained from ditches representing field boundaries next to Gogar Church (Morrison et al 2009; Will et al forthcoming). These individual pieces of evidence combine to confirm sustained settlement and agriculture during the early historic period. The early historic dates coincide with the high point of Anglian settlement of the Lothians and covers the period between 603 and 685. The Northumbrian victory at the Battle of Degsastan in Liddesdale/Lauderdale in 603, which marked the rise of the Northumbrian kingdom, led to the annexation of Lothian following the siege Din Eidyn (Edinburgh) in 638. Following their defeat at Nechtansmere in Angus in 685, Anglian and Northumbrian influence diminished and they pulled back, probably south of the River Forth. The importance of the Lothians to the Angles is demonstrated by the establishment of a bishopric at Abercorn six miles to the north-west

of Gogar on the banks of the Forth. Although the bishopric was established in 681 with the arrival of Bishop Trumwine, it may have been short-lived, as it appears that he was withdrawn after the Battle of Nechtansmere in 685; however, the discovery of carved Anglian cross-shafts that date to the 8th or 9th centuries at Abercorn testify to the continued importance of the area to Northumbria. The evidence from Gogar adds to the growing archaeological evidence for Anglian settlement in southern Scotland and the Lothians.

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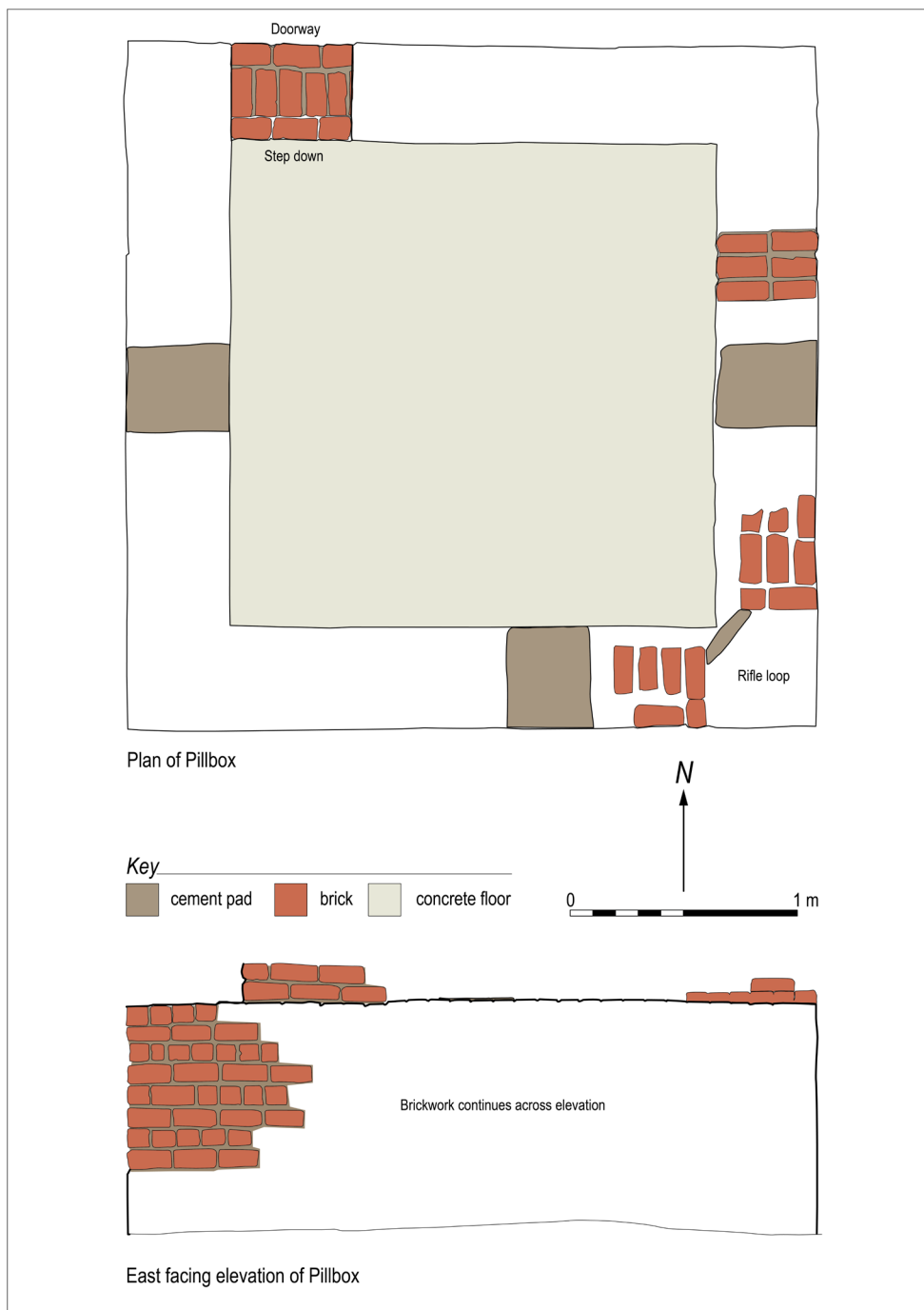
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APPENDIX

The pill box

A pill box was located on the south side of the Gogar Burn (NGR: NT 1536 7305, NMRS NT 17SE 70.13) close to the perimeter of Edinburgh Airport. As it was on the line of the tram route the pillbox was investigated and recorded prior to demolition. It was brick-built and roofless, although large slabs of

concrete which lay in the vicinity had probably once formed the roof. It was square in plan and measured 3.15m externally (Illus 36 and 37). The walls were 0.45m wide (four bricks width) and survived to a maximum height of 1.35m. The entrance was in the north-west corner and measured 0.55m in width (Illus 38). There was a step down (0.3m) from the threshold onto the flat, concrete floor. In the south-east corner there was a gap in the brickwork where a cement pad provided evidence of an embrasure



Illus 36 Pillbox plan and elevation



Illus 37 Pillbox elevation



Illus 38 Pillbox elevation and doorway



Illus 39 Pillbox detail of corner rifle opening



Illus 40 Pillbox detail of Prestongrange brick used in construction

or rifle loop (Illus 39). The bricks were marked 'PRESTON GRANGE' (Illus 40). This was one of the brickworks operated by the National Coal Board during the 20th century until it closed in the 1970s and became part of the Prestongrange Mining Museum. The surviving cement on the top of the east and west walls of the pill box suggested that there had been rifle loops or some other feature located here too. At the base of the infilling debris, a copper alloy bullet case was found (SF2). The case is from a .22 shell and probably relates to rabbit shooting

or pest control rather than military uses. Turnhouse Airport was used by the RAF during World War One but it was enlarged with new concrete runways in 1939. The pillbox probably dates to 1939 and was one of a series which guarded the perimeter of RAF Turnhouse during the Second World War. Although the roof was missing, it appears to fit the description of a Type 26 pill box, as these were 3m square, with one entrance and embrasures on each wall and with walls usually 0.4m thick (<http://www.pillbox-study-group.org.uk>).