

Project Code: DPSE07
Contract no. CAM/01254'A'
Date of report: 22 April 2008
Client: Stirling Council Corporate Asset Management

**Doune Roman fort - evidence from an excavation on the site
of an extension to Doune Primary School:
Data Structure Report**

Paul Masser

Project summary sheet

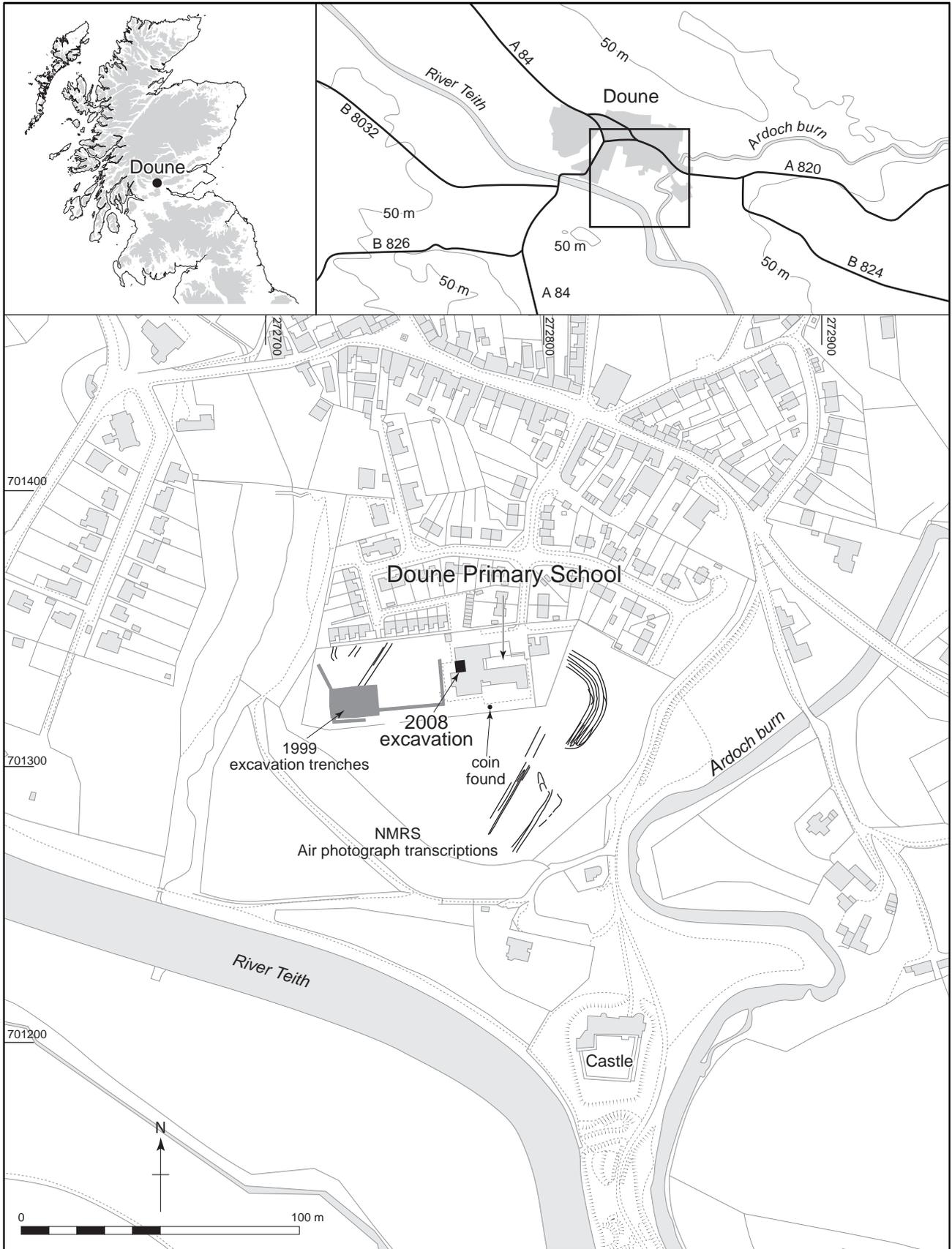
<i>Client</i>	STIRLING COUNCIL CORPORATE ASSET MANAGEMENT
<i>National Grid Reference</i>	NN 7277 0134
<i>Address</i>	DOUNE PRIMARY SCHOOL, CASTLEHILL, DOUNE, STIRLING
<i>Parish</i>	KILMADOCK
<i>Council</i>	STIRLING
<i>Planning Application No</i>	N/A
<i>NMRS No</i>	NN70 SW36
<i>SMR No</i>	N/A
<i>HB/SAM No</i>	N/A
<i>Listing Category</i>	CATEGORY
<i>Project Manager</i>	ANDREA SMITH
<i>Text</i>	PAUL MASSER
<i>Illustrations</i>	TOM SMALL, ANNA FARAS-PAGOWSKA
<i>Fieldwork</i>	PAUL MASSER, MIKAEL SIMONSSON, HÅKAN ERICSSON
<i>Specialists</i>	JULIE LOCHRIE, SCOTT TIMPANY, DAVIE MASSON
<i>Schedule</i>	
<i>Fieldwork</i>	7-22 FEB 2008
<i>Report</i>	28 MAY 2008

Signed off by:.....

Date:.....

CONTENTS

INTRODUCTION	5
Project background	5
Site description	5
Archaeological background	5
METHOD	5
RESULTS	6
The excavation	6
<i>Natural geology and subsoil</i>	6
<i>Timber building foundations covering the NE part of the area</i>	7
<i>Foundation trenches 7 and 49 - an earlier phase building?</i>	9
<i>Foundation trench 56</i>	9
<i>Modern features and implications for archaeological preservation</i>	9
<i>Chance find of a Roman coin</i>	9
The Finds (Julie Lochrie)	9
<i>Discussion</i>	10
Environmental Samples	10
<i>Method</i>	10
<i>Results</i>	10
<i>Discussion</i>	10
DISCUSSION	11
ACKNOWLEDGEMENTS	11
REFERENCES	12
APPENDIX 1: CONTEXT DESCRIPTIONS	13
APPENDIX 2: DRAWING REGISTER	15
APPENDIX 3: PHOTOGRAPHIC REGISTER	16
APPENDIX 4: FINDS LIST	18



Illus 1
Doune Primary School Extension: excavation location

DOUNE ROMAN FORT - EVIDENCE FROM AN EXCAVATION ON THE SITE OF AN EXTENSION TO DOUNE PRIMARY SCHOOL

by Paul Masser

A 10 x 8.5 m area was excavated in advance of construction of an extension to Doune Primary School, which lies within the interior of the Roman fort. Foundations of a timber building were partially revealed, which is provisionally interpreted as a barracks block. A layer of burnt material overlying the foundation trenches, which may relate to the destruction of the building, produced a small finds assemblage which appears consistent with the Flavian date previously assigned to the fort at Doune. Two other foundation trenches on a different alignment are thought to represent an earlier phase of buildings associated with the fort.

INTRODUCTION

Project background

Stirling Council Corporate Services are proposing to extend Doune Primary School by building a new classroom immediately to the west of the existing building. Since the area affected by the development is within a Roman fort, previously recognised from aerial photographs and earlier phases of excavation, planning consent was granted on condition that an archaeological excavation was carried out in advance. Headland Archaeology was appointed to carry out the excavation. Fieldwork was carried out by a team of three archaeologists, between 7 and 22 February 2008.

Site description

The town of Doune is situated above the NE banks of the River Teith, just above its confluence with the Ardoch Burn. Doune Primary School is a post-war building situated on the south side of the town, with paved playground areas immediately to the south and west, and playing fields adjoining to the west.

The area of the excavation, corresponding to the footprint of the new classroom, covered an area 10 x 8.5 m wide, surrounded on three sides by the existing building, and open to the playground on the west side. An additional trench 6 x 1.3 m wide was excavated to the west of this area, against the south wall, where an access ramp for the new classroom is to be built.

Before excavation, this area was covered by concrete paving slabs and tarmac. The paved/tarmac area had been levelled in the past and was considerably lower than the grassed playing fields to the west.

Archaeological background

The significance of the Roman fort at Doune has been discussed by Maxwell (1984). Doune falls into the same category as the Flavian forts at Malling, Bo-chastle and Ardoch all of which appear to have been

capable of accommodating garrisons of considerable strength. Doune's primary function would have been to guard a crossing of the river Teith. The fort would have functioned as a 'route blocker' fulfilling the same kind of function as the forts usually identified as composing the 'outer line' of the Flavian frontier from Stracathro to Drumquhassle.

The site was identified from aerial photographs in 1983. A 'parrots beak' was evident on the aerial photograph indicating the position of one of the entrances. The intervallum way was identified on later photographs. A small scale investigation was carried out in 1984 by Gordon Maxwell who identified a number of beam slots associated with buildings within the fort. Pottery associated with these dated to the 1st century AD (G Maxwell pers comm).

An archaeological excavation was undertaken by Headland Archaeology Ltd in 1999 in advance of construction of a nursery at the school (Moloney forthcoming). The intervallum way was identified in the form of a gravel built road immediately inside the defences which survived as three parallel ditches. The complete ground plans of two buildings which may represent a hospital block were recovered as well as the partial foundations of several other buildings of unknown function, possibly barracks or stores. Several large pits were also identified and excavated and it is likely that these formed part of the demolition of the fort once it went out of commission. Five bread ovens were identified built into the back of the rampart. The badly disturbed remains of a furnace were located adjacent to the bread ovens. Pottery associated with the investigated features dates to the 1st century AD. This conforms with the Flavian date previously attributed to the site.

METHOD

Following removal of paving slabs and tarmac from the excavation area, underlying sand and gravel levelling deposits were removed under archaeological supervision, using a tracked mini-digger equipped with a 1.2 m flat-bladed bucket. This exposed a remnant topsoil layer which contained modern material and appeared to have been disturbed and compacted mechanically, presumably during construction of

the school. This layer (Context 4) was then removed by machine, until features cut into undisturbed subsoil became visible. The area was then hand-cleaned and all further excavation was carried out by hand. Initially, all pits and postholes were half-sectioned or excavated in opposing quadrants, and 1 metre sections were excavated across all linear features, removing approximately half the deposits. Following recording, the remaining deposits in the features were also excavated by hand.

A 1:50 scale hand-drawn plan of the excavated area was prepared as work progressed, and relevant sections were drawn at scale 1:10. A list of plans is given in Appendix 2. The plan included elements of the existing school building sufficient to relate it accurately to Ordnance Survey mapping, and levels were taken in relation to OS datum. All cuts, deposits and other stratigraphic elements were assigned individual context numbers and recorded on standard Headland Archaeology context sheets. Context descriptions are given in Appendix 1. A separate sequence of numbers was assigned to the deposits within each excavated section. A full photographic record was made, using colour slide and black and white print film and digital formats. The photographs have been catalogued and numbered (Appendix 3) and a selection of digital photographs included in this report.

All finds were retained, with the exception of mod-

ern material from the topsoil and levelling deposits (Contexts 1-4). Small find numbers were assigned to items of special interest, or where more detailed locational information was required in addition to the context number. The finds have been cleaned, and have been catalogued and assessed by Julie Lochrie (below). 27 bulk soil samples were taken from a representative range of deposits, of which 7 have been processed and assessed by Scott Timpany and Davie Masson. The remainder have been retained for future processing.

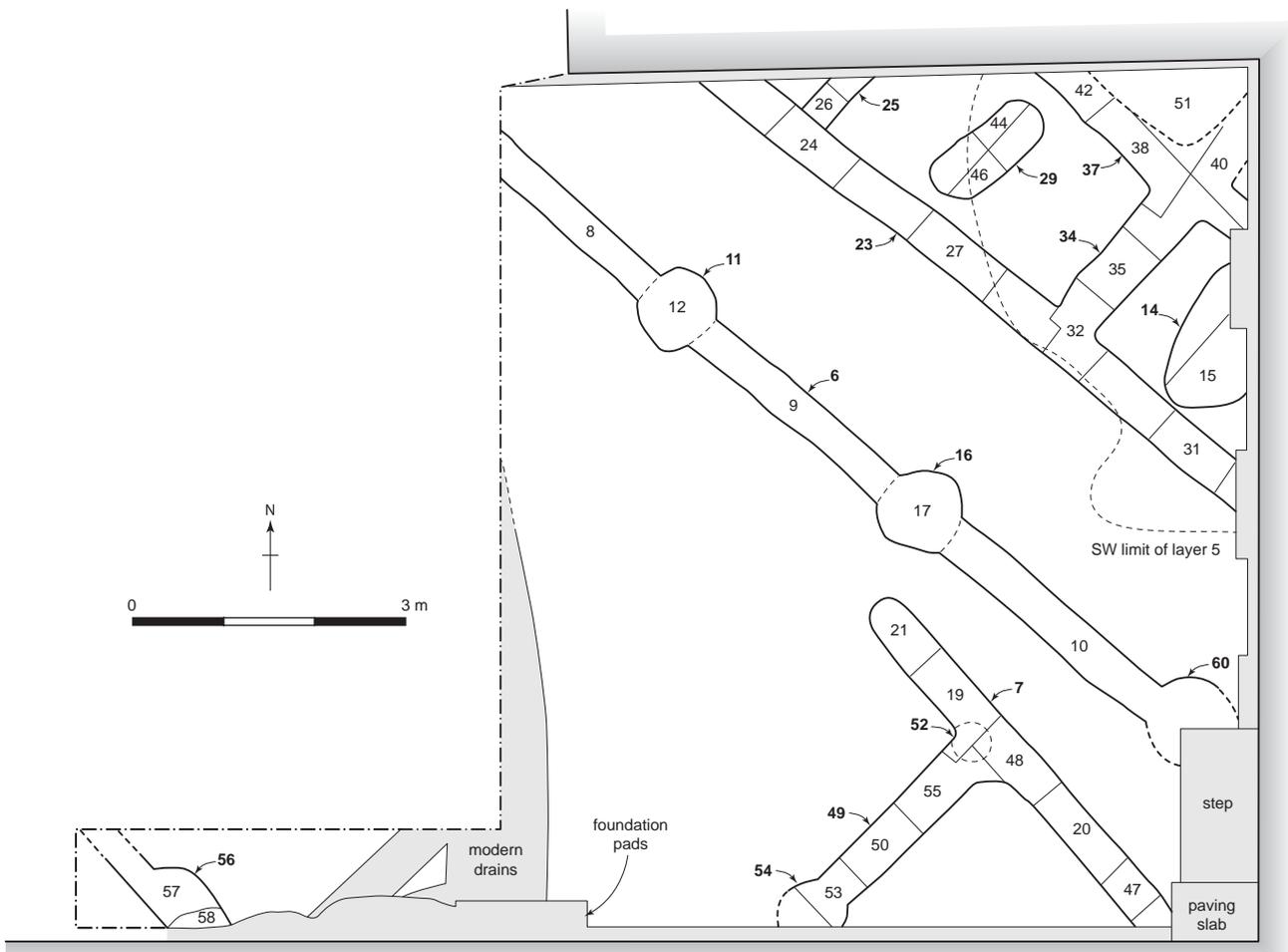
Following the completion of the investigation, the excavated area was backfilled, levelled and compacted using the mini-digger, although the paving has not been reinstated.

RESULTS

The excavation

Natural geology and subsoil

The surface of the subsoil into which the features were cut was found to slope down slightly towards the NE corner of the excavated area, where it was reached at around 38.0 m OD, about 0.15 m lower than in the SW. The drift geology consists of fluvio-glacial sands and gravels; three distinct horizons



Illus 2
Doune Primary School Extension: trench plan

were observed, of which the lowest, reached in some of the features at a depth of 0.3-0.5 m, consisted of coarse sandy gravel. Overlying this was a layer of pale yellow sandy silt, which was overlain in turn by a darker, reddish-brown sandy silt deposit, 0.15-0.3 m thick.

The visibility of features that had been backfilled with redeposited subsoil varied according to their depth and consequently whether the two lower subsoil layers had been disturbed. Deeper features contained paler and coarser material dug out from lower levels, that contrasted with the surface of the subsoil; whereas the shallower features which penetrated only the upper subsoil horizon were much more difficult to see.

Timber building foundations covering the NE part of the area

A deep, narrow trench (Context 23) crossed the NE corner of the excavation area. Two more trenches with similar dimensions (Contexts 25 and 34) abutted Context 23, spaced 3.7 m apart, extending off to the NE beyond the limit of excavation. A fourth trench (Context 37) crossed Context 34, parallel with Context 23. The edges of 34 and 37 in the extreme NE corner of the area were particularly unclear, possibly because they were cut into the fill of an earlier feature (Context 51), but within the limitations of the excavation area it was impossible to define this feature or determine whether it was archaeological.

These trenches are interpreted as beamslots for sleeper beams that would have formed the foundations of part of a timber building. No trace of individual postholes was seen within them, and all four had been backfilled with redeposited subsoil. This material (Contexts 24, 26, 27, 31, 32, 33, 36, 39, 41 and 43) was homogeneous and no distinction could be seen between the fills of the individual cuts, suggesting they had all been backfilled at the same time. This deposit appeared to be largely sterile, with no charred material visible within it, and the only finds recovered were a quantity of iron nails from Contexts 33 and 36 which may be intrusive from the overlying deposits (Contexts 32 and 35). Overlying the backfill deposit in the tops of beamslots 34 and 37 was a layer of dark, charcoal-rich silt (Contexts 32, 35, 38, 40 and 42), which was nowhere more than 0.1 m thick. This material contained more nails and an iron bar.

A steep-sided, sub-rectangular pit, Context 29, was located exactly at the centre of the rectangular area defined by trenches 23, 25, 34 and 37. Another pit, Context 14, of similar depth but larger and more oval in plan, was located in a similar position to the SE of trench 34. Both contained very similar sequences of deposits. The base of pit 29 contained a blackish silt deposit with very high concentrations of charcoal (Contexts 28 and 45), which appeared to have been introduced soon after the pit was dug, since there was no sign of a primary weathering deposit. Overlying this was a slightly paler silt deposit,



Illus 3

Photo of Section 13 across foundation trench 23, facing SE



Illus 4

Photo of features revealed in NE corner of site following removal of Context 5



Illus 3

Photo of pit 29, with opposing quadrants excavated, facing NE

with lesser (though still appreciable) quantities of charred material, Contexts 44 and 46. The base of pit 14 contained a basal deposit (Context 18) which was also very charcoal-rich, and an upper fill (Context 15) with rather less charcoal. The upper deposits in the pits and the foundation trenches were very similar in composition, suggesting that they may have been deposited at the same time. Both pits contained quantities of iron nails and other objects, including a bar and a possible bolt; fragments of daub; and sherds of pottery including samian ware and Roman greywares, all of which were particularly abundant in the lower fills.

A dark brown loamy soil layer (Context 5), up to 0.2 m thick, overlay the features in the north-east corner. This deposit produced a number of finds including a copper object, probably an item of jewellery; a fired clay slingshot; pottery; iron nails; and a small flake of worked pitchstone. This material all appears to be 1st century AD in date, with the exception of the pitchstone flake which may be earlier. This deposit is therefore interpreted as a buried soil, filling the slight hollow to the NE of the area, that has escaped disturbance since the Roman period.

Another foundation trench, Context 6, was located parallel with Context 23 and 2.5 m to the SW, punctuated by three postholes, Contexts 11, 16 and 60. Context 6 was considerably shallower than the features to the NE, only 0.25 m deep, and was back-filled with a deposit (Contexts 8, 9 and 30) that towards the base was barely distinguishable from the surrounding subsoil. The upper part of the fill was darker and contained some charcoal, however, and this layer was distinct enough at the SE end to be recognised as a separate context, 10, overlying Context 30. It was necessary to widen the slots excavated across this feature into box-sections to define the edges of the cut.

Postholes 11 and 16 were both 0.8 m in diameter and 0.6 m deep, and contained mixed deposits of redeposited gravel and silt (Contexts 13 and 22), overlying which were darker, more silty deposits with charcoal inclusions (Contexts 12 and 17), indistinguishable from the material infilling the top of the adjacent foundation trench (Context 10). No post-pipes could be distinguished, which suggests the posts had been removed. A third posthole, Context 60, was recognised at the SE end of foundation trench 6, containing a dark silty deposit (Context 59) that was effectively a continuation of Context 10; due to its proximity to the limit of excavation, however, this feature could not be excavated. Postholes 11 and 16 were exactly opposite the foundation trenches 25 and 34; this, along with the precise alignment of 6 with 23 and the identical spacing between 6 and 23, and between 23 and 37, strongly suggests they all formed part of the same building.

The only significant concentration of finds from foundation trench 6 and its associated postholes came from Context 10, the upper charcoal-rich deposit towards the SE end, which produced a fired



Illus 6

Photo of foundation trench 6, pre-excitation, facing SE



Illus 7

Photo of foundation trenches 6, 7 and 49, fully excavated, facing SE

clay slingshot, sherds of pottery including Samian ware and an amphora sherd, and iron nails.

Foundation trenches 7 and 49 - an earlier phase building?

Another linear feature, Context 7, was identified extending from the SE corner of the excavated area, terminating 4.8 m to the NW. This was a relatively shallow feature, less than 0.3 m deep, and contained a deposit (Contexts 19, 20, 21, 47 and 48) that was barely distinguishable from the surrounding subsoil. This is interpreted as another foundation trench which, like the features to the north, was backfilled with redeposited subsoil. It was abutted by another trench with similar dimensions, Context 49, which extended SW beyond the limit of excavation. This contained a similar backfill deposit (Contexts 50, 53 and 55). The fills of both features appeared completely sterile and produced no finds. Even more so than foundation trench 6, these features were very indistinct and it was necessary to box-section them in places to confirm that the edges had been correctly identified.

A small circular depression (Context 52) was recognised at the junction of foundation trenches 7 and 49, below the base of the two linear features. This is tentatively interpreted as a posthole associated with the two trenches. Also, at the SW end of 49, a pronounced widening and slight deepening of the foundation trench is interpreted as another possible posthole, Context 54. In neither case, however, was it possible to distinguish a fill distinct from that of the foundation trenches, or establish any sort of stratigraphic sequence on this basis.

It was noted that foundation trenches 7 and 49 were orientated slightly differently to the foundations of the building to the NE, which implies that they belong to a different phase.



Illus 8

Post-excavation view of site, facing east

Foundation trench 56

A linear feature, Context 56, was located at the west end of the area excavated for the access ramp. The cut was 0.3 m wide and 0.15 m deep at the NW end, enlarging abruptly to 0.6 m wide and 0.25 m deep towards the SE. It contained a deposit (Context 57) which appeared to consist of redeposited subsoil, overlain at the SE end by a lens of darker, charcoal-rich material (Context 58). Neither deposit contained any finds.

This feature is similar to the other foundation trenches seen in the excavation, and follows a similar NW-SE orientation. From the small area exposed, it is unclear whether it was aligned with the foundations of the building to the NE, or with foundation trenches 7 and 49, and hence which of the two suggested phases it belongs to.

Modern features and implications for archaeological preservation

The limits of the excavation were defined by the brick and concrete foundation pads of the school building which projected from the base of the walls. There was also a large concrete step in front of the door at the SE corner which could not be safely removed. With the exception of some drains in the west part of the site, however, there was little modern disturbance. As previously noted, the area appeared to have been stripped of topsoil, but this has not resulted in significant truncation of the Roman features. The base of the foundation pads for the school building were reached at, or only slightly below, the surface of the natural subsoil, so the conditions for archaeological preservation beneath the existing building seem to be reasonably good.

Chance find of a Roman coin

During the excavation, the school janitor, Mr Robert Kinnaird, mentioned that he had found a coin (Small Find no. 3) some years earlier, while laying cables for outdoor lighting, in topsoil on the south side of the school. The approximate findspot is indicated on Fig. 1. He has lent this coin to Headland for purposes of study and identification. On initial inspection it appears to belong to the reign of Domitian (AD81-96).

The Finds (Julie Lochrie)

Pottery: 26 sherds

There are several sherds of samian ware including some with moulded floral decoration and sherd from a pedestal base. Other than these there are various white and orange, fine-grained wares, one with dec-

oration created by linear impressions or moulding to create a corrugated effect. Three sherds collected as pottery are very coarse and likely to represent daub rather than pottery.

Ceramic: 2 finds

Two bi-conical baked clay slingshots. Finger marks are still visible, particularly on context 05.

Ceramic Building Materials: 103g

A small quantity of daub with some organic impressions.

Copper alloy: 2 finds

A coin dating to the reign of Domitian AD81-AD96. The GERM on the obverse of the coin stands for Domitian's victory against Germania. The reverse appears to show a standing unidentified deity. This coin was lent to Headland Archaeology Ltd by its finder (see above). There is also a decorated fragment of copper-alloy jewellery.

Iron: 80 finds

Of these 80 finds most are nails of various types, including hobnails. There are also several bars and a blade fragment. Many are unidentifiable due to corrosion.

Lithics: 1 find

Distal fragment from a pitchstone flake/blade. Pitchstone is not locally available and must be an import. It may be a fragment of a blade and may date to the Neolithic.

Stone: 1 find

Poss quernstone but show little trace of wear or shaping.

Discussion

The small pitchstone fragment points to earlier prehistoric occupation in the area. Apart from this find, the remainder of the material is consistent with finds from previous excavations on the site and is likely to belong to the later 1st century AD.

Environmental Samples

Method

Seven samples were processed for environmental assessment. All samples were processed in laboratory

conditions using a standard flotation method (cf. Kenward et al, 1980). All plant macrofossil samples were analysed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers et al (2006).

Results

The results are presented in Tables 1 (retent samples) and 2 (floatation samples). All plant remains found were preserved through charring.

Charred cereal grain was found in five samples (see Table 2). The grain assemblage includes, spelt wheat (*Triticum spelta*), oat (*Avena* sp.), bread/club wheat (*Triticum aestivo-compactum*) and barley (*Hordeum vulgare*). Emmer wheat (*Triticum dicoccum*) and naked barley (*Hordeum vulgare* var. *nudum*), were also recovered from two samples (1, 19).

The only weed seed present was plantain (*Plantago lanceolata*) found within Sample 20, which also contained one small piece of hazel (*Corylus avellana*) nutshell.

Wood charcoal fragments, including some roundwoods are present in the five of the seven samples majority of the samples often of a size and condition that would make them usable for both identification and Accelerated Mass Spectrometry (AMS) dating (see Table 1 and 2).

Burnt bone was recovered from four samples (5, 18, 44 and 45) and from small finds. For more information on all the finds please refer to the finds report by Julie Lochrie.

Discussion

Emmer wheat and naked barley are both present along with oat and spelt wheat within Sample 19 (44). The upper deposit of Pit 29, a sub-rectangular pit thought to have been located in the interior of a former timber building (see Masser, above). The finding of emmer and naked barley is of interest as these cereals are generally found in prehistoric contexts (e.g Barclay et al, 2002). Their presence in a sample also containing oat and spelt wheat, cereals associated with a later date (Boyd, 1989) raises the possibility of earlier activity on the site. This grain could also represent the remnants of former crops surviving within the landscape that have been harvested along with the oat and spelt wheat.

The lower deposit of Pit 29, Sample 20 (45) contained lesser amounts of charred grain of oat, spelt wheat and club/bread wheat. This fill was also found to contain artifactual evidence of Roman date, including an abundant amount of pottery and iron nails. It is likely that these grains also represent activity of this period.

Sample 1 (5) a possible buried soil in the NE corner of the excavation, contained a broad spectrum of

cereal grain including potentially early cereals such as emmer wheat and those of a probable Roman date such as spelt wheat. The later grain is again likely to represent domestic activity associated with the timber building, together with the charcoal fragments recovered. The potentially earlier grain may relate to reworked material associated with Context 51 or for reasons outlined above. This sample was also found to contain a number of Roman finds including jewellery and pottery.

Charred cereal grain was also recovered from Sample 5 (18), the lower fill of Pit 14. Grain recovered here is of a probable Roman date with abundant spelt wheat present. The finds within this context also point to a Roman date with Samian ware and hobnails recovered. The pit is located within another interior part of the timber building and it is likely the grain and charcoal relate to domestic activity taking place within the structure.

DISCUSSION

The excavated features appear to include parts of the foundations of three timber buildings associated with the Roman fort. Their orientation is closely comparable with buildings identified in the 1999 excavations, and the character of the features is similar. Initial assessment of the finds is consistent with the Flavian date assigned to the fort on the basis of earlier investigations. The construction technique represented by the foundation trenches is fairly well understood: *timber posts would have been mortised into sleeper beams set in the base of the trench, with planked or wattle and daub walling in between* (Johnson 1983, 97-101).

The foundation trenches covering the NE half of the site probably correspond to part of the SW side of a timber building, with its long axis orientated NW-SE, parallel with the main axis of the fort. Lying within the northern quadrant of the fort, it is in a location typically occupied by barracks within known auxiliary forts (Johnson 1983, 35). Roman barracks blocks were typically divided lengthwise into ten *contuberniae*, each of which housed a 'tent-group' of eight men and comprised a smaller front room, the *arma*, for storage, and a larger rear room, the *papilio*, for sleeping. Excavated examples are often fronted by a row of postholes, which are thought to have supported an open verandah (Johnson 1983, 166-76). The features excavated at Doune fit closely with this pattern.

If the interpretation of these features as the frontage of a barracks block is accepted, the two pits 29 and 14, filled with charred material, would lie within the *armae* of two adjacent *contuberniae*. They are so precisely located in relation to the foundation trenches that they must be contemporary and related features. Pits are sometimes found in the floor of barracks rooms, and it has been suggested that these

were generally for storing valuable personal possessions, possibly in a wooden box and almost certainly beneath a trapdoor (Johnson 1983, 171-2).

The majority of the finds from the site came from deposits containing high concentrations of charcoal, filling pits 14 and 29 and the tops of the foundation trenches. This material includes a considerable number of iron nails and some daub, which probably derive from the barrack block itself, and other items which probably reflect a fairly typical deposit of Roman military refuse. Possibly the burnt material reflects the deliberate destruction of the fort, but in any case it is clear that these deposits accumulated after the timber building had been dismantled. Environmental samples from these deposits produced high concentrations of cereal grains, presumably derived from food stores that were kept or processed nearby.

An unexpected and remarkable element of the evidence from the site is a possible early phase represented by the two foundation trenches 7 and 49. These cannot be contemporary with the building to the NE, since they are on a different orientation and would in any case interfere with access to the barrack block. They are unlikely to be later, since their fills were sterile and contained none of the charcoal that would undoubtedly have been spread about the site, following the phase of burning that seems to have ended the life of the barrack block. Therefore they must pre-date the barrack block, but although they produced no dateable artefacts they represent a construction technique that is typical of Roman military architecture. Possibly the early phase represents temporary structures occupied during the construction of the fort, or an early layout that was abandoned before it was completed, or deemed unsatisfactory and replaced.

Despite the small area available for investigation, this excavation has therefore provided significant evidence for the layout of buildings within the fort, their origins and later history, which can usefully be compared with evidence for other contemporary forts in northern Britain. Further analysis of the finds and environmental evidence will undoubtedly provide further information about the date and character of the occupation of the fort. Finally, it is encouraging to note that the existing foundations of the school, as exposed in the excavation, do not seem to have significantly truncated the archaeological deposits beneath.

ACKNOWLEDGEMENTS

The project was funded by Stirling Council Corporate Asset Management, and overseen by the Council's Supervising Officer, Ron Spalding, who facilitated the project in many ways. The project was monitored on behalf of Stirling Council by Lorna Main. Finally, the staff and pupils of Doune Primary

gave a warm welcome to the project team, and their interest and enthusiasm was much appreciated.

REFERENCES

- Barclay GJ, Brophy K and MacGregor G 2002. *Claish Stirling: an early Neolithic structure in its context*, Proceedings of the Society of Antiquaries of Scotland 132 65-138.
- Boyd WE 1989. *Cereals in Scottish antiquity*. *Circaea* 5, 2 101-110.
- Cappers RTJ, Bekker RM and Jans JEA 2006. *Digital seed atlas of the Netherlands*, Barkhuis Publishing and Groningen University Library, Groningen.
- Johnson A 1983. *Roman Forts*, London: A&C Black
- Kenward HK, Hall AR and Jones AKG (1980). *A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits*, *Science and Archaeology* 22, 3-15
- Maxwell GS 1984. 'New frontiers: The Roman fort at Doune and its possible significance', *Britannia* 15, 1984, 217-23
- Moloney C 1999. 'Doune Primary School Doune (Kilmadock parish), Roman fort', *Discovery and Excavation in Scotland*, 1999, 87
- Moloney, C - forthcoming. *Evidence for a possible hospital building and other structures at Doune Roman Fort: an archaeological excavation of the playing fields of Doune Primary School*

APPENDIX 1: CONTEXT DESCRIPTIONS

Context Number	Description
1	Layer of fine sand up to 0.05 m thick below paving slabs: modern bedding layer. Overlies Context 2.
2	Layer of fine gravel 0.07 m thick max, beneath sand (01), overlying Context 3. Bedding layer for modern paved surface.
3	Layer of large stones, sand and gravel, up to 0.08 m thick, beneath Context 2, overlying Context 4. Bedding layer for modern paved surface.
4	Brownish grey compact sandy clay. Layer up to 0.1 m thick, present over whole area, beneath Context 3. Contains modern items, eg fragments of drainpipe, tile, scrap metal (not kept). Represents disturbed and mechanically compacted remnant of topsoil.
5	Layer of brownish grey compact silty clay, up to 0.18 m thick, covering NE corner of excavation area and overlying upper fills of features 14, 23, 29, 34 and 37.
6	Linear cut extending NW-SE across excavated area, traced for 10m. 0.3 m wide, 0.2 m deep, with steep sides breaking gradually to wide U-shaped base. Interrupted by postholes 11, 16 and 60. Contains deposits 8, 9, 10, 30. Foundation trench.
7	Cut of foundation trench. Linear in plan with steep sides, almost vertical in places, 0.45 m wide, 0.25 m deep. Terminates to NW, continues beyond limit of excavation to SE. Contains deposits 19, 20, 21, 47 and 48.
8	Fill of foundation trench 6, to NW of posthole 11. Mid to dark reddish brown compact silty sand, almost indistinguishable from subsoil.
9	Fill of foundation trench 6, between postholes 11 and 16. Similar composition to Context 8.
10	Upper fill of foundation trench 6, between postholes 16 and 60; layer 0.1 m thick overlying 30. Dark greyish-brown compact silty sand.
11	Posthole interrupting foundation trench 6. Circular cut, 0.8 m diameter and 0.6 m deep, with steep, almost vertical sides, flattish base. Contains deposits 12 and 13.
12	Upper fill of 11, layer 0.25 m thick overlying 13. Mixed yellowish, reddish and greyish brown compact silty sand.
13	Lower fill of 11, layer 0.3 m thick beneath 12. Mid reddish brown moderately compact silty sand.
14	Sub-rectangular cut, 1.8 m x 1.0 m wide, 0.5 m deep, near-vertical sides and rounded base, contains deposits 15 and 18.
15	Secondary deposit in 14, overlying 18. Dark greyish brown loose and moist sandy loam
16	Posthole interrupting foundation trench 6. Circular cut, 0.8 m diameter and 0.58 m deep, with steep, almost vertical sides, flattish base. Contains deposits 17 and 22.
17	Layer up to 0.05 m thick, overlying Context 22 (fill of posthole 16). Dark greyish brown moderately compact sandy silt. Same as Context 10.
18	Lower fill of pit 14, deposit up to 0.27 m thick beneath 15. Dark brownish grey loose and moist sandy loam.
19	Fill of 7, central section. Mid yellowish brown sandy silt
20	Fill of 7, SE section. Mid reddish brown sandy silt
21	Fill of 7, NW terminus. Mid reddish brown sandy silt
22	Lower fill of posthole 16, below 17. Reddish brown compact silty sand
23	Foundation trench. Linear cut, traced for 7.5 m crossing excavation area on NW-SE alignment. 0.4 m wide and 0.5 m deep with steep, near vertical, sides gradually breaking to flattish base. Contains deposits 24, 27, 31 and 32.
24	Backfill deposit filling 23, at its junction with 25. Mid reddish brown moderately compact sandy silt.
25	Foundation trench extending NE off 23. Linear cut 0.3 m wide, 0.35 m deep, with steep, near vertical sides gradually breaking to flat base. Contains deposit 26.
26	Backfill deposit in 25. Mid reddish brown moderately compact sandy silt
27	Backfill deposit in 23 (2nd slot to SE of 24). Mid reddish brown moderately compact sandy silt
28	Lower fill in south quadrant of pit 29, beneath upper fill 46. Dark grey silt with high concentrations of charcoal.
29	Sub-rectangular cut 1.4 x 0.5 m wide, 0.5 m deep, with vertical sides and rounded base. Contains lower fill 28 (=45) and upper fill 46 (=44)
30	Lower fill of foundation trench 6, beneath deposit 10. Mid to dark reddish brown compact silty sand
31	Backfill deposit in 23 (SE-most slot). Mid reddish brown moderately compact sandy silt
32	Upper fill at junction of foundation slots 23 and 34, overlying 33. Dark grey silt, containing high concentrations of charcoal.
33	Lower fill at junction of foundation slots 23 and 34, beneath 32. Mid reddish brown moderately compact sandy silt.
34	Foundation slot adjoining 23 to SW, extending to limit of excavation 3 m to NE. Linear cut 0.55 m wide, 0.4 m deep, with steep, near vertical sides gradually breaking to flat base
35	Upper fill in central slot through 34 (continuation of 32), overlying 36. Layer of dark grey loose and moist silty clay, up to 50mm thick.
36	Lower deposit in central slot through 34, beneath 35. Dark yellowish brown loose and moist loamy sand

Context Number	Description
37	Linear cut, parallel with 23, traced for less than 3 m across NE corner of excavated area. 0.4 m wide, 0.45 m deep, vertical sides and gently rounded base. NE edge unclear and difficult to trace. Contains deposits 39, 41 and 43.
38	Upper fill at junction of 34 and 37, overlying 39. Layer of dark grey loose and moist silty clay, up to 70mm thick.
39	Lower deposit at junction of 34 and 37, beneath 38. Dark yellowish brown loose and moist loamy sand
40	Upper deposit at junction of 34 and 37, E quadrant (same as 38). Dark grey loose and moist silty clay
41	Lower deposit at junction of 34 and 37, beneath 40 (same as 39). Dark yellowish brown loose and moist loamy sand
42	Upper deposit in slot at NW end of 37, overlying 43 (same as 38). Dark grey loose and moist silty clay, 70mm thick.
43	Lower deposit in slot at NW end of 37, beneath 42 (same as 41). Dark yellowish brown loose and moist loamy sand
44	Upper deposit in N quadrant of 29, overlies 45 (same as 46). Dark greyish brown loose and moist sandy loam
45	Lower deposit in N quadrant of 29, beneath 44 (same as 28). Dark grey silt with high concentrations of charcoal.
46	Upper deposit in S quadrant of 29, overlies 28 (same as 44). Dark greyish brown loose and moist sandy loam
47	Fill of 7, SE end (same as 20). Mid reddish brown sandy silt.
48	Fill of 7, between 19 and 20. Mid reddish brown sandy silt
49	Foundation slot extending to SW of 7. Linear cut 0.4 m wide, 0.3 m deep, with vertical sides and gently rounded base. Widens into possible posthole 53 at SW end, near limit of excavation. Contains deposit 50
50	Fill of 49. Mid reddish brown sandy silt
51	Possible pit NE of foundation trench 37. Partially excavated, but it proved impossible to define or determine whether it was a cut feature or not
52	Possible posthole at junction of 7 and 49: circular hollow approx 0.3 m wide, 0.1m deep below base of 7 and 49. It proved impossible to define a fill distinct from the two foundation slots.
53	Fill of 49, same as 50, at SW end running into possible posthole 54
54	Possible posthole in line of 49 at S limit of excavation: 0.7 m wide and 0.3 m deep. 54, and the SW part of 49, contain deposit 53.
55	Fill of 49, NE part by junction with 7 (same as 50)
56	Foundation slot in extension trench to west of south end of site. Linear cut 0.35 m wide, widening to 0.85m at SE end. Contains 57 and 58.
57	Fill of 56. Mid yellowish brown sandy silt, sealed by 58
58	Charcoal rich layer on top of 57. Dark grey charcoal rich silt, up to 10mm thick, present at SE end of feature only.

APPENDIX 2: DRAWING REGISTER

Drawing Number	Section	Plan	Description
1		1:50	Site plan
2	1:10		N-facing section through 5
3	1:10		SE-facing section through 6, slot 3
4	1:10		SE-facing section through 6, slot 2
5	1:10		SE-facing section through 6, slot 1
6	1:10		Section across foundation slot 7
7	1:10		Longitudinal section across end of 7
8	1:10		SE-facing section through 14
9	1:10		Section across 7 at SE end
10	1:10		NE-facing section through 11
11	1:10		NE-facing section through 16
12	1:10		SW-facing section through 25
13	1:10		NW-facing section through 23 (NW slot containing 24)
14	1:10		SE-facing (composite) section through 23, 29 and 37
15	1:10		SW-facing (composite) section through 29
16	1:10		SE-facing section through 23 (SE slot containing 31)
17		1:50	Plan showing fill no's + sections of foundation trenches
18	1:10		SW-facing section through 34
19	1:10		NE-facing section of 49
20	1:10		NW-facing section, junction of 7 and 49
21		1:50	Post-excavation plan
22		1:50	Edited plan to be digitized for report

APPENDIX 3: PHOTOGRAPHIC REGISTER

Shot No.	Direction Facing	Description
1	E	Site before excavation
2	S	Sand + gravel bedding layers 001 + 002 during removal
3	SW	Working shot
4	SE	Working shot
5	E	Pre-ex shot of area
6	E	Pre-ex shot of 5
7	SE	Pre-ex shot along foundation trench 6
8	E	Pre-ex shot of foundation trench 6
9	NE	Shot of slot through 5 showing underlying natural
10	NE	Shot of slot through 5 showing underlying natural
11	SW	Shot of N-facing section through 5
12	E	Pale linear feature 7, Pre-ex
13	W	Extension for ramp at W side of trench
14	E	Extension for ramp at W side of trench
15	SE	Foundation trench 6, slot 1
16	SE	Foundation trench 6, slot 2
17	SE	Foundation trench 6, slot 3
18	SE	Along foundation trench 6
19	SW	Pre-ex of posthole 11
20	NE	Shot of linear features underneath 5
21	NE	Detail shot of linear features underneath 5
22	SE	Foundation slot 7
23	NW	Foundation slot 7, close up of overcut section
24	NW	Foundation slot 7, close up of overcut section
25	SW	Mid-ex of posthole 11
26	SW	Mid-ex of posthole 11, overexposed
27	SW	Pre-ex of posthole 16
28	N	Mid-ex shot of pit 14 showing clay inclusions
29	N	Detail shot of clay inclusions in 14
30	N	Mid-ex shot of section through 14
31	E	Mid-ex shot of 14
32	-	Shot of school guides
33	-	Shot of school guides
34	-	Shot of school guides
35	-0	Shot of school guides
36	SW	NE-facing section of posthole 16
37	NE	Foundation trench 25 seeing side of 23
38	SE	Foundation trench 23 – fill 24
39	NW	Foundation trench 23 – fill 24
40	NE	Foundation trench 25 sectioned
41	SE	Working shot of box in slot 2, foundation trench 6
42	NW	Working shot of box in slot 2, foundation trench 6
43	E	Overall mid-ex shot of possible building foundations
44	SE	Overall shot of foundation trench 23
45	NE	Overall shot of foundation trench 23
46	NW	Shot of section #14 through 23
47	NE	Shot of possible pit 29
48	NE	Shot of foundation trench 34
49	SE	Shot along foundation trench 6

Shot No.	Direction Facing	Description
50	NW	Shot along foundation trench 6
51	NW	Detail shot of 6 in slot 2
52	NW	Detail shot of 6 in slot 3
53	SW	Posthole inside of 7
54	SW	Foundation slot 49 partially excavated
55	SW	Foundation slot 49, close up of section
56	SE	Possible posthole at junction of 7 and 49
57	NE	Shot of section through 51
58	W	Foundation slot 56
59	SE	Foundation slot 56
60	E	Post-ex shot of excavated area
61	SE	Post-ex shot of excavated area
62	NW	Post-ex shot of excavated area
63	NE	Post-ex shot of 14
64	NE	Post-ex shot of foundation trenches in N part
65	NE	Post-ex shot of foundation trenches in N part
66	SE	Post-ex shot of foundation trenches in S part
67	SW	Post-ex shot of foundation trenches in S part
68	NW	Post-ex shot of foundation trenches in S part

APPENDIX 4: FINDS LIST

SN - Sample No
 Mat - Material
 Q - Quantity
 Wei - Weight (g)
 Con - Conservation
 Illu - Illustration

Context	SF No	SN	Mat	Q	Wei	Object	Description	Spot Date	Period	Con	Illu
			CBM		5g	Daub	Small lump				
	3		Cu			Coin	Domitian AD81 – AD96; Diam 20.9mm; reads "...DOMIT AVG GERM . COSXI....."; relatively good condition	AD81-AD96	Rom	X	X
			Pottery			Samian	Samian Ware (Terra Sigillata). 43 body sherds and 1 base sherd; 3 sherds decorated with moulded floral motif.				
Fine (sand tempered?) orange fabric. 1 body sherd of ...		Rom	X								
			Pottery	5		Rom	Orange ?Sand-tempered fabric, rim sherd and frags, moulded stepped decoration		Rom	X	
05		1	CBM		1g	Daub	Small frags				
05			CBM		23g	Daub	Small frags				
05			Ceramic	1	37g	Sling-shot	Bi-conical baked clay slingshot				X
05	1		Cu	1		Jewellery	Semi circular rod of copper with flaring ends; clearly decorative with herring-bone incised motifs along the edges and some additional linear decoration across the shaft below the flaring ends; both ends show breaks.		Rom	X	X
05		1	Fe	1		Nail	Hobnail		Rom	X	
05		1	Fe	1			Object, very small fragmentary semi-circular fragment of iron ring			X	
05			Fe	14		Nails	Nails of various sizes, some complete, some fragmentary			X	
05		1	Lithics	1		Flake	Pitchstone flake. Distal end; poss originally blade	Neo?	PH		
05			Pottery	6		Rom	2 orange fine-grained sherds, one body, one rim				
3 white/grey, fine-grained body sherds and 1 frag, one with linear scores		Rom									
09			Fe	2		Obj	Thick curving section of bar; small frag poss related poss a hobnail			X	
10			Ceramic	1	20g	Sling-shot	Bi-conical baked clay slingshot				X
10			Fe	1		Nail				X	
10			Fe	1		Obj	2 conj frags of flat sub-circular piece of iron with poss perforation			X	
10			Fe	1		Obj	Circular flattish lump			X	
10			Pottery	1		Samian	Samian Ware (Terra Sigillata). Pedestal base sherd		Rom	X	
10			Pottery	1		Amphora	Large body sherd		Rom		
10			Pottery	6		Rom	White, fine-grained, body sherd		Rom		
15			Fe	6		Nails	4 def. nails, one shank with circular cross section may not be, and 1 small lump, poss head of nail			X	

Context	SF No	SN	Mat	Q	Wei	Object	Description	Spot Date	Period	Con	Illu
17			Stone	1		Quern	Dished stone with one flat side and curved edge, poss quern stone??		Rom		
18			CBM		13g	Daub	Large lump, burnt with linear impressions				
18			CBM		15g	Daub	Lump with some impressions				
18		5	Fe	2		Nail	Hobnails		Rom	X	
18			Fe	4		Nails				X	
18			Fe	1		Obj	Flat teardrop shaped piece of iron			X	
18			Fe	3		Nails	Nail shaft, small nail with broken shank and small lump, poss nail head			X	
18			Pottery	1		Samian	Samian Ware (Terra Sigillata). 1 body sherd		Rom		
22			Fe	1		Obj	Small unidentifiable lump			X	
22			Fe	1		Obj	Small frag			X	
28			CBM		28g	Daub	Large lump with grass impressions and smaller frags				
28			Fe	3		Nails				X	
28			Fe	1		Bar	Long thin bar in three conj. Fragments			X	
28			Fe	1		Bolt	Large bolt?			X	
28			Pottery			Rom	Body sherd of orange, fine-grained fabric, burnished exterior		Rom		
28			Pottery	1		Rom	White, fine-grained, body sherd		Rom		
33			Fe	1		Nail				X	
36			Fe	18		Nails	Nails of various sizes, some complete, some fragmentary			X	
36			Fe	1		Blade	Broken blade with no remains of tang			X	
38			Fe	1		Nail				X	
42			Fe	1		Nail	Nail shaft, no head			X	
42			Fe	1		Bar	Thick bar with tapering end, with bolt/fitting near tapered end			X	
42			Fe			Nail	Poss large nail			X	
44		19	Fe	1			Nail?, shaft			X	
44		19	Pottery	1		PH	Coarseware? Small sherd of poss coarseware with impressed line (poss daub)		PH?		
45		20	CBM		2	Daub	Small frags				
45			CBM		16g	Daub	Small lumps and frags				
45		20	Fe	7		Nail	Hobnails		Rom	X	
45			Fe	2		Nails	2 complete nails, one small, one large			X	
45			Fe	2		Nails	2 complete? Nails, one small, one large			X	
45		20	Pottery	2		PH	Coarseware? Small sherd and frag of poss coarseware with organic impression (poss daub)		PH?		
45			Pottery	1		Rom	White, fine-grained, body sherd		Rom		

Abbreviations & Notes:

Smpl & SF: sample or small find no. as appropriate

Materials: MWD = metalworking debris (slag, mag res etc); CBM = ceramic building material (brick, tile & daub); Fe = iron, Cu = copper alloy, Pb = lead alloy, Ag = silver, Au = gold;

Pottery: WG = White Gritty; GW = Greyware; RW = Redware; CP = cooking pot

Qty: number of sherds, except MWD, Mortar etc given as weights in grammes, incl bag & Lable (c.2g)

Spot Dates: 14th/16th = a date between 14th and 16th centuries, 14th-16th = material covers whole range of dates

Cn = conservation recommendations: C=cleaning/conservation, XR=x-ray; Ill = recommended for illustration

Loc = location, box number or F = fridge, T = tank, S = stone store