

Figure 1

Site Location (red dot).

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Excavations at North Berwick nunnery tile kiln, Old Abbey Road, North Berwick

Derek Hall

Summary

Excavations funded by Historic Scotland were carried out on the site of a tile kiln first excavated in the 1920s with the aim of retrieving samples for chemical sourcing

(ICP) and trying to assess how much of the kiln still survived.

Introduction Figure 1

This site evaluation, funded by Historic Scotland, was designed to retrieve tile samples from the tile kiln previously excavated by James Richardson in 1929, to assess how much of the structure still survived and to see if it was still worthy of protection and if so whether it was scheduled in the right place.

Archaeological Background Figure 2

The priory of Cistercian nuns at North Berwick was founded by Duncan, Earl of Fife, between 1147 and 1153. It would appear that this house may have been

founded as a Benedictine house, and later claimed to be Cistercian to obtain the privileges of that order. The church was dedicated (to St Mary) by David de Bernham, bishop of St Andrews, in 1242. In Clement VII's bull, which is erroneously dated 1529, this house is said to have suffered frequent devastation by war and to have had its church burned by hostile action, but the occasion of the statement is not quite clear (English invasions took place in April and August 1385, and the reference must be retrospective). The buildings of the priory were said to be ruinous in 1587, and were granted to Alexander Hume, in whose favour in 1587x8, James VI granted 'the place in which the church and cloister were formerly situated', with the nunnery's properties, erected into a free barony (Cowan and Easson 1976, 147,

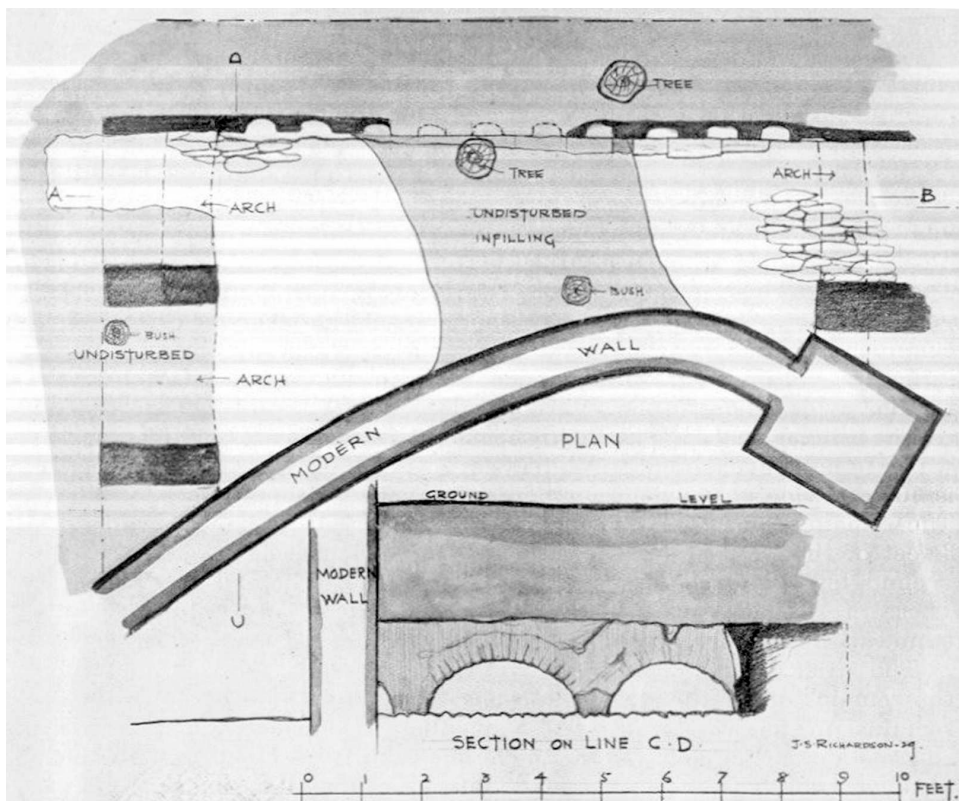


Figure 2
Richardson's published trench location plan (PSAS 63 (1929).



Figure 3
 Floor tiles
 from J S Richardson's
 excavations.
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148). The medieval tile kiln at North Berwick (SAM no 760) was excavated by J S Richardson in the 1920's producing a remarkable group of decorated floor tiles (Figure 3) and still remains the only such kiln ever excavated in Scotland (Richardson 1929, 281–284). At the start of this particular project Beverley Nenk of the British Museum passed on copies of photographs in their archives that were thought to be of Richardson's excavations. It is however difficult to reconcile these images with the site topography and it is now considered that they come from an as yet unidentified excavation of a tile kiln.



General view of site, looking north (Trench A being opened).

Site evaluation

This work took place between 7th and 10th February 2011, weather conditions were cold and slightly overcast with bright sunshine on the final day. Three trenches were opened by hand and backfilled at the end of the fieldwork, yellow and black tape was laid on the top of the excavated structures to enable their rediscovery at a future date.

Trench A Figures 4, 5 and 6

This trench measured 3.60m East to West and was 0.80m wide. A layer of dark brown rooty topsoil (1) 0.40m deep overlay a mid dark brown rooty humic loam (2) which was 0.38m deep. Context 2 overlay orange brown sandy clay with sandstone rubble and frequent tile fragments (3) which was 0.28m deep. Context 3 overlay a mid brown silty clay with occasional stones and tile fragments (5) which was 0.20m deep. Context 5 overlay a layer of mortar bonded flagstone paving (7), a possible foundation course for a sandstone wall (8) and another flagstone surface (9). Flagstone surfaces 7 and 9 were sealed by a thin layer of carbon rich ashy loam (6). All the surfaces were left in situ and not excavated.



Figure 5
General view of Trench A showing paving 009, wall foundation 008 and paving 007, looking northwest.



Figure 6
General view of Trench B showing upstanding tile and stone wall 101, looking northwest.

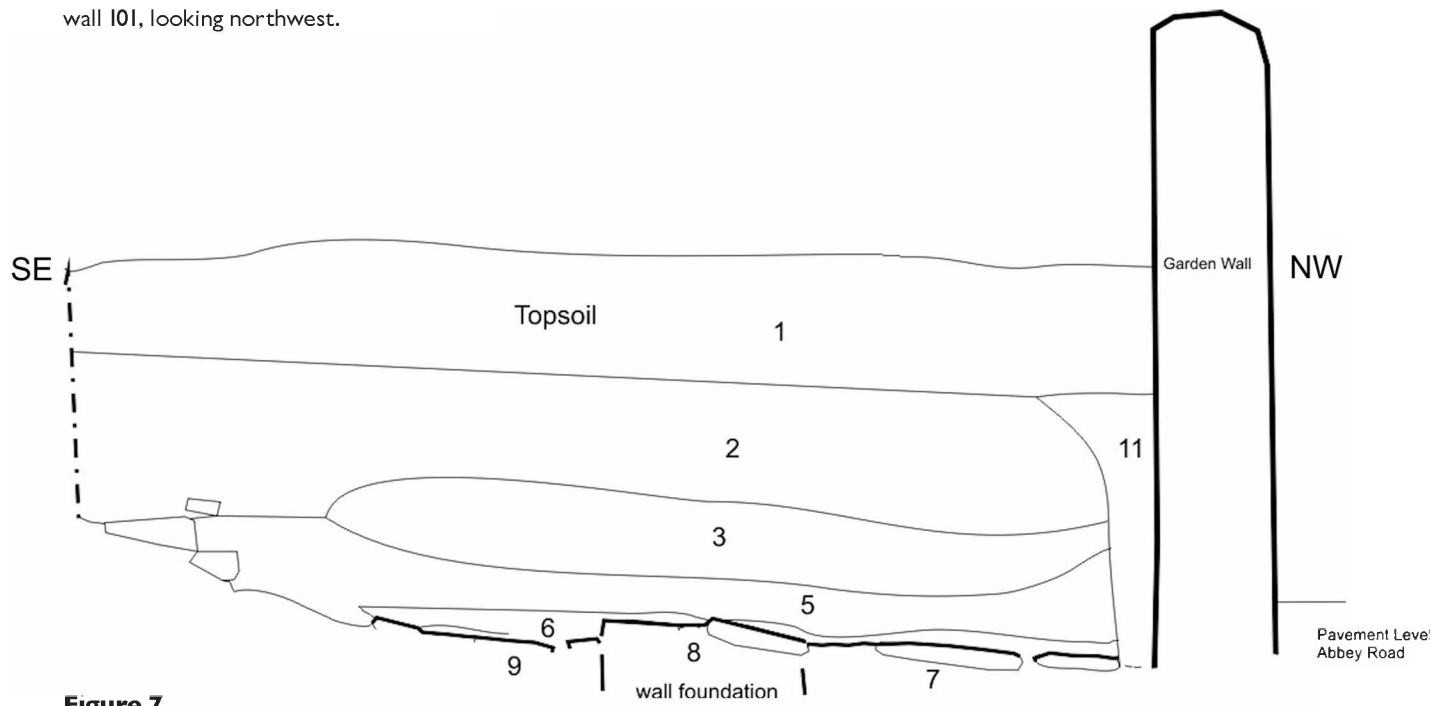


Figure 7
West facing section of Trench B. Scale 1:30.

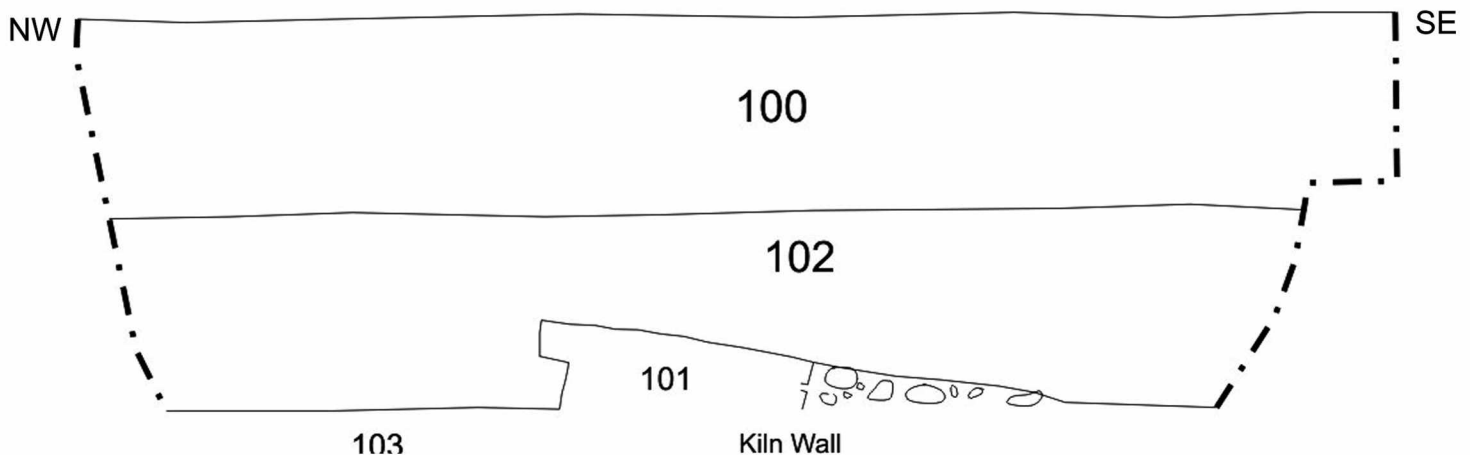


Figure 8
East Facing section of Trench A Scale 1:30.

Interpretation

The laid flagstone surfaces and potential wall foundation showed no signs of intense heat so must lie outside the interior of the tile kiln. It seems very likely that this trench lies in an area that had not been investigated by Richardson in 1929. At their deepest point at the end of the trench closest to the boundary wall the laid stone surface lay at a depth of 1.26m below modern ground level.

Trench B Figures 6, 7 and 8

This trench measured 2.6m East to West and was 0.65m wide. A layer of dark brown rooty topsoil (100) 0.40m deep overlay a light brown silty clay and sandstone fragments (102) which was 0.36m deep. Context 102 sealed the top of a built structure (101) which was made up of a combination of tile and sandstone, a layer of clean yellow white sand (103) and a light brown silty clay (104). Where built structure 101 met the West facing section of the trench the very edge of a small recess in the wall face was noticed. The top courses of 101 had fired glaze adhering to their inner (northern) surfaces. Structure 101 was left in situ and excavation ceased at the top of layers 103 and 104.

Interpretation

The stone and tile built structure (101) with a slight recess in its inner face must represent the back wall of the tile kiln which was located by Richardson in 1929. The layer of clean yellow white sand (103) must represent Richardson's deliberate backfilling of his trench (es) and is a good site marker for locating where he has previously excavated. The surviving in situ fragment of the kiln lay at a depth of 0.65m below modern ground level.

Trench C Figure 9

This trench measured 1.30m North to South and was 0.40m wide and was located with the aim of picking up the Westernmost of Richardson's trenches. A layer of dark brown black topsoil (200) 0.40m deep overlay a stone and tile built structure (201) which had been cut on its western side by the small revetting wall to the garden. Structure 201 was left in situ and excavation ceased at this point.

Interpretation

The stone and tile built structure (201) may represent the very western end of the kiln, the absence of clean yellow white sand suggests that trench 3 lay outside Richardson's previously investigated area.



Figure 9

General view of Trench C, showing tile and stone structure 201, looking northeast. The gate into Abbey Nursing Home is to the left.

Tile and other finds

180 pieces of tile and waster material were recovered from all three trenches. The assemblage is dominated by fragments of roof tile (147) with evidence for a variety of fixing methods including both peg holes (8) and nibs (5). All the tiles are in a redware fabric with occasional traces of green glaze on their external surfaces. Three sherds of pottery were recovered from Trench A, a Scottish White Gritty Ware handle from context 5, a Scottish Post Medieval Oxidised Ware sherd and a sherd of Tin Glazed Earthenware from context 1. 20 pieces of tile and kiln structure and the sherd of SWGW were submitted for ICP analysis for comparison with the Scottish Redware and Whiteware databases.

Animal bone

Catherine Smith

A small assemblage of animal bone and marine mollusc shell was recovered from this evaluation. Animal bones came from two trenches, NBE01A and NBE01B. Four contexts in Trench A and one context in Trench B contained well-preserved bone amounting to a total of 31 fragments in Trench A and two in Trench B. A single oyster valve was also retrieved from Trench B.

The animal bones were all from domestic mammals and came from cattle, pig, large ungulate (probably cattle) and indeterminate mammal. Total numbers of fragments from each trench are listed in Table 2 and a detailed catalogue is given below.

Minimum numbers of animals was estimated at one per context for cattle. However two different pigs were represented in Context 5, based on the presence of two

Table 1 Tile by trench.

SPMOW Scottish Post Medieval Oxidised Ware TGE Tin Glazed Earthenware SWGW Scottish White Gritty Ware

Trench	Context	Roof Tile	Floor Tile	Waster	Pottery	Tile fixings
A	1	22	1	2	2 (SPMOW, TGE)	0
A	3	68	5	0	0	6 pegged, nibbed
A	5	11	2	1	1(SWGW)	1 nibbed
A	6	1	0	0	0	0
B	100	31	13	0	0	2 pegged, nibbed, 1 notch
B	102	13	2	2	0	0
C	200	1	0	2	0	0
		147	23	7	3	14

Table 2 Total number of animal bones in each context.

Species	Trench A				Trench B	Total
	Context 1	Context 3	Context 5	Context 6	Context 100	
Cattle	1	2	5	1	2	11
Pig			3	1		4
Large ungulate		6	4	1		11
Indeterminate mammal		4	2	1		7
Oyster					[1]	[1]
Total	1	12	14	4	2	33 + 1 Oyster

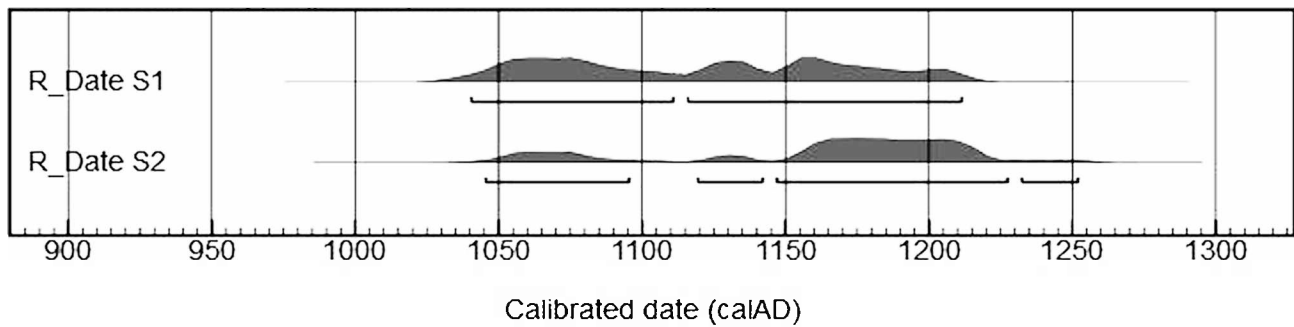


Figure 10

Radiocarbon plot for samples 1 (Context 6 Trench A) and 2 (Context 3 Trench A). (OxCal v4.2.2 Bronk Ramsey (2013); r:5 Atmospheric data from Reimer et al 2009).

right zygomatic bones, one from an adult and one from an immature animal.

Age of the animals at death

Fragments from adult and juvenile/immature cattle and pigs were present. For example an unfused pig distal femur and zygomatic bone in Context 6 both came from juvenile/immature animals. No bones of very young calves or piglets were seen. This may be an effect of the small sample size, rather than an indication that young animals were not eaten at this site.

Butchery

Several of the bones bore evidence of butchery marks, mainly in the form of small knife cuts made by thin-bladed implements. Such cuts were present on a cattle innominate (pelvis) and a large ungulate rib shaft in Context 3. Other bones, for example the acetabulum of a cattle innominate (the hip joint) were probably chopped with an axe or cleaver (Context 5). None of the bones had been sawn.

Discussion

The bones probably represent domestic refuse and are of the small size usually associated with domestic livestock of the medieval or post-medieval period in Scotland. The butchery style is also typical of the pre-modern period as knives and cleavers have been used to cut up carcasses, rather than saws. Somewhat surprisingly in a medieval context, sheep/goat bones were absent, but this is probably a factor of the small sample size.

Carbon 14 dating Figure 10

Two samples of animal bone from contexts 3 and 6 in Trench A were selected for C14 dating. These were taken from deposits that appeared to be related to the operation (Sample 1) and demise (Sample 2) of the kiln. Sample 1 from context 6 in Trench A produced a date of 900 +/- 30BP which gives a calibrated date of

1030–1220 AD at a 95.4% probability, sample 2 from context 3 in Trench A produced a date of 870 +/- 30BP which gives a calibrated date of 1110–1260AD at a 95.4% probability.

Conclusions Figure 11 and 12

All three trenches located evidence for the tile kiln, only one of them (Trench 2) coincided with the area previously excavated by J S Richardson. It appears that the structure of the kiln still survives very well at some depth below modern ground level. Intriguingly the excavated tile assemblage was dominated by roof tile with only one fragment of decorated floor tile recovered (Sample 31). This begs the interesting question as to whether the kiln was producing both floor and roof tile, if so on our current limited understanding of roof tile production in medieval Scotland, this would suggest that the kiln operated for a considerable length of time (Haggarty, Hall and Chenery 2011). The presence of fused roof tile wasters (Figure 13) from Trench A certainly confirms that roof tile was being fired in this kiln. There is currently no existing evidence to suggest Scottish ceramic roof tile manufacture any earlier than the 14th or 15th centuries and the floor tiles from North Berwick have been dated on typological grounds to the early 12th century. However the two carbon dates received suggest that the kiln was probably in operation in the early to mid 13th century for 40 years at most and is the earliest datable evidence so far recovered for the production of ceramic roof tiles in Scotland.

Recommendations

It is clear that the scheduled area at Old Abbey Road is located too far to the East, some consideration should be given to rescheduling the site. Archaeological deposits are liable to survive under the pavement directly outside the wall around the Old Abbey Nursing Home and any rescheduling should also include this area. The medieval tile kiln at North Berwick still survives to some height and undisturbed archaeological deposits do exist. As

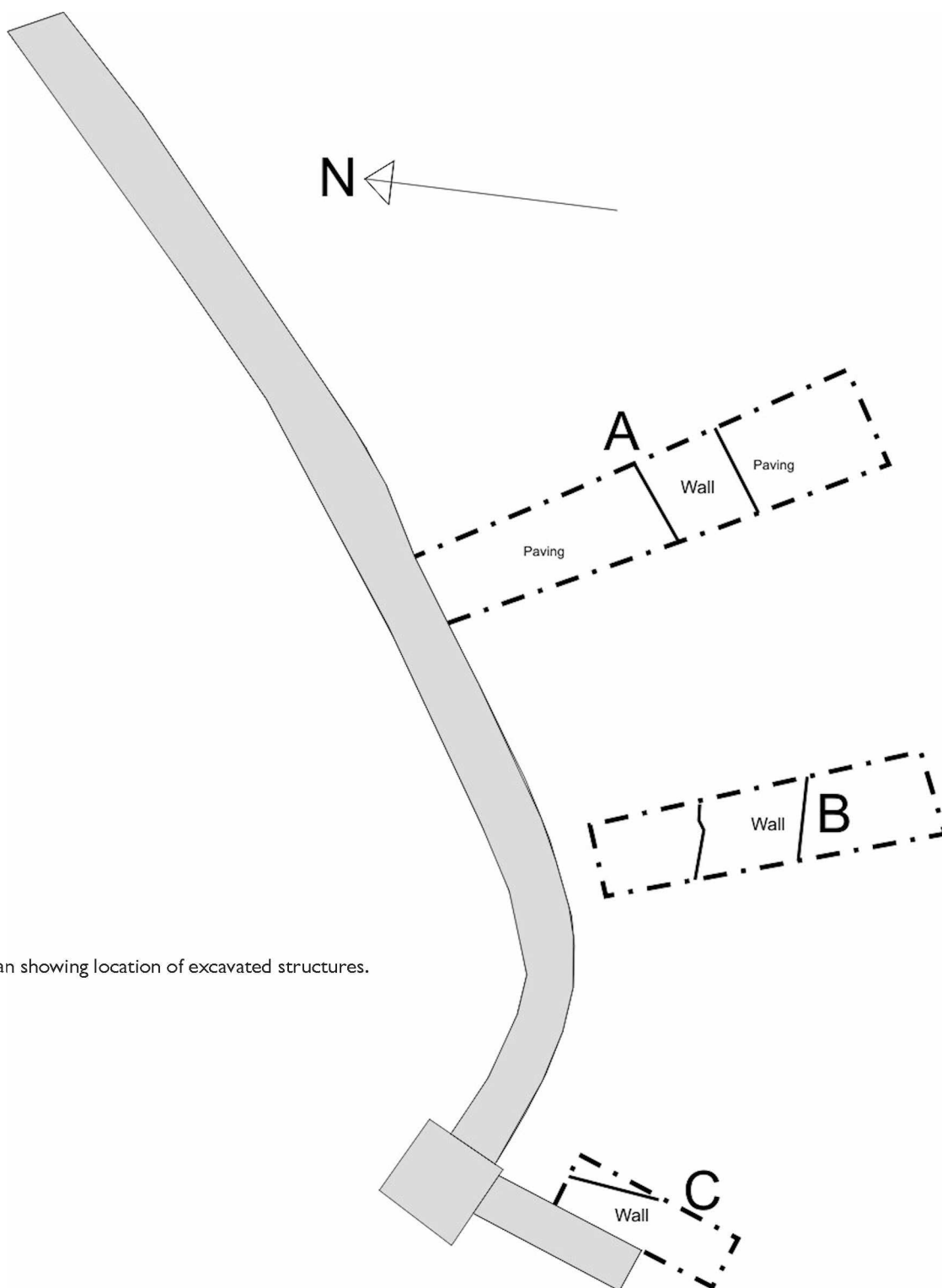


Figure 11
Overall trench plan showing location of excavated structures.
Scale 1:50.

this is the only medieval tile kiln so far identified in Scotland potential does exist for further excavation on the site to improve our understanding of this monument type and its products. This could possibly be integrated with survey and consolidation of the nunnery ruins and from initial discussions with the local authority archaeologist this might be worth pursuing.

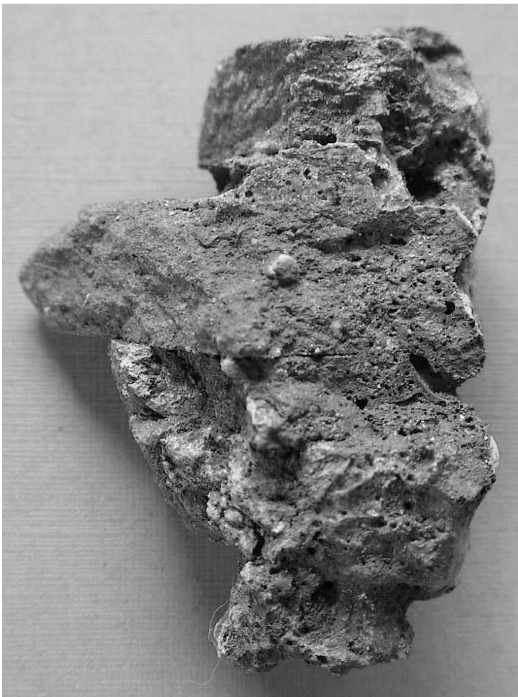


Figure 12
Roof tile waster from Trench A Context 5.

Résumé

Des fouilles subventionnées par Historic Scotland ont été entreprises sur le site du seul four à carrelage médiéval jamais excavé en Écosse. Découvert par hasard dans les années 20, ce four a produit un assemblage unique de carrelages de sol en relief. Ce travail complémentaire a été entrepris dans le but de dénicher d'autres échantillons pour les soumettre à des analyses chimiques (spectrométrie de masse à plasma à couplage inductif, ou ICP), d'évaluer la production et la date du four, et de tenter de découvrir ce qu'il en reste.

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Acknowledgements

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Zusammenfassung

Von Historic Scotland finanzierte Ausgrabungen wurden am Standort des einzigen mittelalterlichen Fliesenbrennofens durchgeführt, der je in Schottland ausgegraben wurde. Er wurde in den 1920er Jahren zunächst zufällig entdeckt und hat eine einzigartige Ansammlung von reliefverzierten Bodenfliesen hervorgebracht. Die zusätzlichen Grabungsarbeiten wurden mit dem Ziel durchgeführt, weitere Proben für die chemische Analyse (ICP) zu gewinnen, die Produktion des Brennofens zu bewerten und zu datieren und den Versuch zu unternehmen, herauszufinden, wie viel von diesem Brennofen tatsächlich noch erhalten ist.