Assessment of the Finds from Abbey House, Whitby (OSA06WB24)

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A group of finds from a watching brief carried out at Abbey House, Whitby, by On-Site Archaeology was submitted for identification and assessment. The finds consist mainly of iron-smithing slag and ceramic building material with a small quantity of pottery and metal finds. The earliest material is probably of late medieval date and some finds of 19th century or later date are also present.

Description

The finds were identified, catalogued and quantified by count, the number of objects represented and their weight in grams (Appendix 1). The mean fragment weight was calculated (App 1. ASW).

Ceramic Building Material

All of the fragments were examined at x20 magnification and assigned to fabric groups.

Several of these fabrics were made from marine/estuarine clays and therefore cannot have been made locally (Fabrics 1, 6 and 8). They might be imported from the Low Countries although similar bricks and tiles were produced in the Humber estuary in the later medieval and post-medieval periods. The remaining fabrics have characteristics which point to the use of Jurassic-derived sands and clays, either using exposures of the solid rocks or boulder clays and fluvio-glacial sands. These are likely to have been made somewhere in the North Yorkshire Moors area and could therefore have been local (Fabrics 3, 4, 5 and 7).

> Fabric 1 contains no large inclusions and has a calcareous groundmass containing abundant quartz and muscovite silt. Similar fabrics were produced in the Low Countries ("Flemish" bricks) and in the Humber estuary, at Beverley.
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> Fabric 2 contains sparse altered limestone and coarse-grained sandstone inclusions up to 4.0mm across in a fine-textured, calcareous groundmass.
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> Fabric 3 is a variegated fabric containing sparse sand composed of rounded quartz, rounded mudstone, and rounded red sandstone fragments, which also occurs as a moulding sand. The groundmass includes lenses of inclusionless light-firing and organic clays.
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> Fabric 4 contains abundant quartz sand, similar in character to that in Fabric 3, in a fine sandy groundmass.

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Fabric 5 contains sparse angular fragments of white sandstone, red sandstone and a fine-grained limestone (micrite) up to 10mm. The groundmass is similar to Fabric 4.

Fabric 6 is similar to Fabric 1 but contains moderate rounded dark brown clay pellets up to 3.0mm across.

Fabric 7 contains similar fragments to Fabric 5, but up to 2.0mm. The groundmass is similar to Fabric 4.

Fabric 8 has few large inclusions except for voids once filled with straw/reeds. A fine quartz sand moulding sand is present and the surfaces are salt-surfaced.

The ceramic building material consists of bricks, flat roof tiles and a single fragment of a U-sectioned field drain. The latter is undoubtedly of 19th-century or later date. One of the bricks is remarkably thin and wide, often a sign of a 16th-century date, whilst others, where measureable, follow the normal medieval and later ratios and cannot be closely dated. Nevertheless, it is likely that the non-local fabrics (1, 6 and 8) were used before the local ones.

Copper Alloy

Two copper alloy artefacts were recovered. The first is a cast buckle of a type not represented in the London waterfront collection (Egan and Pritchard 1991) and therefore likely to be of mid 15th century or later date and the second is a fragment of a pin or hook, possibly also from a buckle.

Lead

A fragment of window came was recovered. It is possible in some cases to distinguish post-medieval cames, produced with a milled tool, and early modern cames, which were cast or extruded and have a very regular appearance. This piece is not of either type and may therefore be of medieval or post-medieval date.

Pottery

Four sherds of pottery were recovered. They consist of one sherd of Brandsby-type ware (BRAN), which may be a late 13th to 15th-century product from the Hambleton Hills area, although similar clays outcrop at various points around the North Yorkshire Moors, and were exploited at Ruswarp Bank, on the outskirts of Whitby, and at Scarborough, although neither area is known to have produced similar vessels to Brandsby; a sherd of Raeren Stoneware (Hurst, Neal, and van Beuningen 1986) of late 15th to mid 16th century date; a reduced green glazed ware vessel, a type common in northeast England in the late 13th to 15th centuries; and a sherd of a Blackware (BL) of later 16th century or later date (such vessels were still being produced in the 19th and early 20th centuries).

Slag by Jane Cowgill

Introduction.

A small assemblage of slag and related finds were recovered during an excavation undertaken by On-Site Archaeology at Abbey House, Whitby. The house had been built on the site of the Abbey in the 16th century and the majority of the finds recovered appear to be late 16th century or later in date.

Recording Methodology.

A total of *c*.6kg (96 pieces) of slag and related debris was submitted for recording. They were identified solely on morphological grounds by visual examination, sometimes with the aid of a x10 binocular microscope. This was recorded on a *pro forma* recording sheet and the information was entered directly into the catalogue below. A note of probable fuel type has been recorded when fragments or imprints were incorporated within the slag. The soil in the bags containing the slag from context 207 was tested with a magnet and hammerscale was found to be present, none of the other bags contained enough soil for it to be checked. It is therefore uncertain whether hammerscale was present in contexts 406, 407 and 408.

Stone

Five fragments of shale were recovered, representing two objects. Shale occurs locally in the Middle Jurassic and these fragments may be unworked pebbles of local origin or possibly Coal Measures shale, waste from the use of coal.

Tarmac

A single small fragment was tentatively identified as tarmac/asphalt although conceivably it might be wood tar, used in boat construction and other purposes.

Assessment

Dating/interpretation of stratigraphy

Western Part of Courtyard (Trenches 1, 2, 4, 5, 6)

Within this area, natural boulder clay was not reached and the earliest deposit was [410] which was either cut by or contemporary with a stone culvert. The clay produced a single find, initially interpreted as slag but identified by J Cowgill as a heavily corroded iron object.

Above this clay was a flagstone surface and above this a layer of dark grey silt, 106/408, followed by further dark grey silt, containing “charcoal” and slag, 103/207/407, and above this a third deposit of dark grey silt, 406. All three deposits contained slag which appears to have been primary iron-working refuse relating to activity carried out by two separate smiths (see below, “Slag”). Associated with the slag, sometimes intimately, were fragments of organic shale, indicating that the fuel used was coal rather than wood or peat. Other finds from these

layers include a small group of pottery, most of which could be of late medieval/early 16th century date. The latest sherd, however, was the blackware bowl, a small scrap which is probably not trustworthy dating evidence. The window came and the copper alloy buckle also came from these deposits and could both be derived from the abbey. Ceramic building material was the most common find other than slag and included a single substantial fragment of brick (Fabric 1) as well as 13 fragments of flat roof tile in Fabrics 2, 3, 4 and 5. The building material includes one flat tile with sooting on the underside (indicative of use in an open hall) and one with attached mortar and is therefore used material rather than construction debris. It could either have been demolition debris from Abbey House or the medieval abbey, and the date of the associated finds does not allow us to decide which option is correct. Unlike the slag, the pottery could well have been redeposited and can only provide a terminus post quem, either of the later 15th century or the later 16th century, depending on whether the blackware scrap is accepted.

Finds associated with L-shaped wall, 205, which cut these deposits, include a fragment of tarmac, bricks of fabrics 6 and 8 (not represented in the earlier deposit) and a fragment of U-shaped field drain, suggesting either that the finds were contaminated or that the structure is modern. The former is more likely.

Other finds consist of ceramic building material and slag from demolition and backfill layers 402, 404 and 405. All are of types present in the earlier deposits and are probably residual.

Eastern Part of Courtyard (Trenches 3 and 7)

A single fragment of flat roof tile of fabric 3 was recovered from context 701, the B-horizon of the soil profile above natural clay revealed in this part of the courtyard.

Slag by Jane Cowgill

The slag consists of a fresh assemblage buried shortly after the iron-smithing episodes of which they are a by-product; it has not been weathered on a ground surface nor has it been moved and redeposited. Surprisingly the assemblage in context 207 appears to have been generated in two different episodes or at least by two different smiths whose hearth management and forging techniques differed. One group is quite dense and includes a number of quite large hearth bottoms while in contrast the slag from the second group tends to be much lighter, more cindery and much smaller in size. Hammerscale was associated with both groups (they had been bagged separately), which not only suggests that the slag had been discarded directly from a smithy floor, but also that it may have been nearby.

The slags found in contexts 406, 407 and 408 all closely resemble those that form the first group from context 207, indeed they could all be the by-products of the same smith. Again these are all in a very fresh condition, but the lack of soil with them means that it could not be checked for hammerscale.

Coal was, not surprisingly given the site date and location, the only fuel used by the smiths. The Port of Whitby was on the main trading route used by the North Yorkshire and Northumbrian coal producers to export their coal to London and the other eastern seaboard ports of England.

Further Work

No further work is required on the slag assemblage. A closer date for the copper alloy buckle might be achieved through a literature search or submission to a specialist, but given that it is associated with late 15th to 16th century pottery, which probably pre-dates the dissolution, this is probably not worth pursuing. Similarly, it is interesting to note the use of non-local or imported bricks on the site but since these too might have been used in the latest phases of the Abbey or in the earlier phases of Abbey House it is probably not worth establishing whether the bricks are of Beverley or Flemish origin. This could, however, be determined through the use of thin section and chemical analysis of the single fragment of Fabric 1 brick.

Retention

All the finds come from stratified deposits and should be retained for potential re-examination at a later date. The slag assemblage should also be retained and it will not need any special storage conditions.

Bibliography

Egan, Geoff and Pritchard, Frances (1991) *Dress Accessories: c.1150-c.1450*. Medieval Finds from Excavations in London 3 London, HMSO

Hurst, John G, Neal, David S, and van Beuningen, H J E (1986) *Pottery Produced and Traded in North-West Europe 1350-1650*. Rotterdam Papers VI Rotterdam, Museum Boymans-van Beuningen

Appendix 1 Catalogue of Finds other than Slag

Context	Action	cname	subfabric	Form	Description	Part	Nosh	NoV	Weight	ASW	Condition	Use
106		BL		BOWL		BS	1	1	2	2.00		
106		PMTIL	FAB3	FLAT		BS	1	1	50	50.00		
106		PMTIL	FAB4	FLAT		BS	1	1	41	41.00		SOOTED UNDER
106		SHALE				BS	1	1	10	10.00		
207 (9)		PMTIL	FAB3	FLAT		BS	1	1	95	95.00		
207 (9)		PMTIL	FAB3	FLAT		BS	1	1	57	57.00		
207 (9)		PMTIL	FAB3	FLAT		BS	1	1	17	17.00		
207 (9)		PMTIL	FAB5	FLAT		BS	1	1	30	30.00		
207 (9)		PMTIL	FAB5	FLAT		BS	1	1	9	9.00	BURNT	
207 (9)		PMTIL	FAB5	FLAT		BS	1	1	80	80.00		
207 (9)		PMTIL	FAB5	FLAT		BS	1	1	100	100.00		
207 (9)		PMTIL	FAB4	FLAT		BS	1	1	19	19.00		
207 (7)		PMTIL	FAB4	BRICK/FLAT		BS	1	1	8	8.00		
207 (6)		BRAN		JUG		BS	1	1	6	6.00		
207 (6)		RAER		DJ		BS	1	1	17	17.00		
207 (6)		REDUCED GREEN WARE		JUG		B	1	1	32	32.00		
204		PMTIL	FAB4	BRICK/FLAT		BS	1	1	3	3.00		
204		TARMAC				BS	1	1	3	3.00		
205		PMTIL	FAB6	BRICK		BS	1	1	1357	1,357.00		MORTAR ON SURFACES
205		PMTIL	FAB7	U-SHAPED FIELD DRAIN		BS	1	1	55	55.00		
207	DR1	COPP		BUCKLE	PMED NEAR CIRCULAR	PIN	1	1	6	6.00		

Context	Action	cname	subfabric	Form	Description	Part	Nosh	NoV	Weight	ASW	Condition	Use
					DECORATED FRAME WITH OFFCENTRE BAR; SHOE BUCKLE	MISSING						
208		PMTIL	FAB8	BRICK		BS	1	1	358	358.00		
208		PMTIL	FAB8	BRICK		BS	2	2	33	16.50		
402		PMTIL	FAB2	BRICK		BS	2	1	112	56.00		
404		PMTIL	FAB4	FLAT		BS	1	1	56	56.00	BURNT	
404		PMTIL	FAB4	FLAT		BS	1	1	10	10.00		MORTAR
404		PMTIL	FAB1	BRICK/FLAT		BS	1	1	3	3.00		
405		PMTIL	FAB4	FLAT		BS	2	1	50	25.00		
405		PMTIL	FAB4	FLAT		BS	1	1	84	84.00	BURNT	
406		LEAD		WINDOW CAME		PART	1	1	11	11.00		
406		PMTIL	FAB1	BRICK		BS	1	1	738	738.00		
406		PMTIL	FAB2	BRICK/FLAT		BS	1	1	2	2.00		
408		COPP		HOOK; BUCKLE PIN		PART	1	1	1	1.00		
408		PMTIL	FAB5	FLAT		BS	2	1	398	199.00		TRACES OF MORTAR UPPER
408		PMTIL	FAB5	FLAT		BS	1	1	28	28.00	BURNT	
408		PMTIL	FAB5	BRICK/FLAT		BS	1	1	3	3.00		
408		PMTIL	FAB4	BRICK/FLAT		BS	1	1	5	5.00		
408		SHALE				BS	4	1	17	4.25		
701		PMTIL	FAB3	FLAT		BS	1	1	13	13.00		

Appendix 2 Catalogue of Slag

Context	Type	Count	Weight	Fuel	Condition	Comments
106	SLAG	1	11g			Vitrified clay?
207	HB	5	2100g	COAL	FRESH	Complete; large; varied shapes.
207	HB	1	172g	COAL	FRESH	Complete; magnetic.
207	HB	1	826g	COAL	ENCRUSTED	Complete; large; odd shape.
207	HB	4	513g	COAL	FRESH	Complete; medium size.
207	HB	6	266g	COAL	FRESH	Complete; small; 1 x magnetic.
207	PROTOHB	1	27g	COAL	FRESH	
207	SSL	7	19g	COAL		
207	HAMMS					Few associated with the above slags.
207	PROTOHB	6	161g	COAL	FRESH	Light and cindery; some elongated.
207	HB	4	242g	COAL	FRESH	Light and cindery; one elongated.
207	TUYERE	1	84g			Straight rim; light and cindery slag attached.
207	SLAG	1	62g			Glossy; vitrified clay?
207	IRON	2	52g			Covered in cindery slag; smithing off-cut?
207	TUYERE	1	4g			Small fragment.
207	SSL	2	9g	COAL	FRESH	Light and cindery.
207	COAL	1	26g			Slagged.
207	HAMMS					Few (including a large plate) associated with light cindery slags.
207	COAL	1	87g			Iron object (off-cut strip?) attached.
207	IRON	8	52g			Objects; smithing off-cuts? Coal in corrosion.
207	IRON	1	20g			Object; smithing off-cut? Lots of coal and hammerscale in corrosion.
404	TAP	1	19g			Flow.
404	SLAG	1	47g			Or iron; very magnetic; coal and slag in corrosion.
406	HB	1	102g	COAL	FRESH	Complete; medium.
406	HB	1	50g	COAL	FRESH	Complete; small.

Context	Type	Count	Weight	Fuel	Condition	Comments
406	PROTOHB	1	22g	COAL	FRESH	Complete.
406	SSL	1	9g	COAL	FRESH	Complete.
406	COAL	1	17g			Slagged.
406	IRON	2	39g			Objects; 1 x cracking; smithing off-cuts?
407	HB	1	265g	COAL	FRESH	Cindery; large; complete.
407	HB	7	173g	COAL	FRESH	Cindery; complete.
407	COAL	1	13g			Slagged.
Context	Type	Count	Weight	Fuel	Condition	Comments
408	HB	1	262g	COAL	FRESH	Complete; large; elongated.
408	HB	2	152g	COAL	FRESH	Complete; medium.
408	PROTOHB	2	34g	COAL	FRESH	Complete.
408	SLAG	11	7g			Fragments including iron-smithing cinder.
408	HAMMS					Possible small fragments.
408	COAL	5	3g			
408	IRON	1	8g			Slag/ prill in corrosion.
408	SLAG	1	<1g			Fragment of copper-alloy attached.
410	IRON	1	6g			Object.

CODES USED IN THE ABOVE TABLE.

HAMMS: hammerscale; HB: Plano-convex slag accumulation (commonly known as a hearth bottom); SSL: Smithing-slag lump.