The Fired Clay from Linwood Road, Market Rasen (LRM05)

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A collection of fragments of fired clay from excavations on land to the east of Linwood Road, Market Rasen, was submitted to the author for identification and assessment. The site was investigated by Will Mumford on behalf of Pre-Construct Archaeology (Lincoln) Ltd.

The material in the main comes from two types of object, mud brick walling and rough thin slabs of clay. Given the presence of Romano-British pottery kilns in this area, it is likely that both object types were used in pottery production. Two of the objects, in a different fabric, are probably fragments of kiln furniture and should be included with the remaining kiln furniture which is being assessed by M J Darling.

Description

Eighty-two fragments of fired clay were recorded, of which a small number joined, giving a maximum number of 79 different objects (Table 1). Most of these were featureless lumps, some of which had a flattened face and showed signs of being humanly worked (being rolled and kneaded into shape).

Form

Table 1

Form:	Nosh:	NoV:	Weight:
	65	62	1380
DAUB	2	2	69
FIREBAR	1	1	78
MUDBRICK	3	3	702
KILN FURNITURE	1	1	73
SLAB	9	9	327
SLAB?	1	1	135
Grand Total	82	79	2764

Only one fragment had any claim to be from a wattle and daub structure, in that it has the indubitable impression of a rounded wattle. However, this impression shows that the wattle impression is perpendicular to the ‘daub’ surface and is more likely to indicate the presence of a deliberate circular-sectioned hole through a fired clay structure. Three fragments came from a flat mud brick wall. The clay had been formed into round sausages (with quartz sand used to stop the sausage sticking to the rolling surface) and the wall built up whilst the

sausage was still pliable (rather than, as in mud brick *sensu stricto* where the bricks are left to dry and then luted together in a leather-hard state with further clay acting as a cement). The wall was c.40mm thick and it is probable that the majority of the unidentified fragments come from this or similar walls.

A circular aperture, c.80mm in diameter, may have come from this walling (perhaps forming the socket into which a firebar slotted) or be part of another object.

The second object type consists of crudely-made flat slabs. One of these survives with two edges, indicating that they were probably rectilinear. They were made entirely by hand forming, without the use of a knife or other tool. Some examples have chaff impressions on the top and bottom surfaces, presumably used in a similar way to the moulding sand found in the mud brick fragments.

One fragment comes from a square-sectioned firebar. Only one dimension can be recorded, which suggests that the bar was c.67mm square with an unknown length.

Finally, one fragment is part of a second item of kiln furniture which cannot be reconstructed based on the piece submitted but which is similar to others from Market Rasen currently being assessed by M J Darling.

Fabric

The objects occur in five fabrics. The first, FAB1, consists of poorly mixed inclusionless clay with a micaceous groundmass and sparse polished rounded quartz and flint pebble inclusions. The clay often contains numerous laminae, sometimes separated by layers and lenses of quartzose sand (here termed “moulding sand”). The moulding sand found on Fabric 1 objects does not contain either polished quartz grains or flint and instead contains matt – surfaced, spherical quartz grains, of Permo-Triassic origin.

The second fabric, FAB2, is similar to FAB1 but contains numerous voids from burnt-out organic inclusions. Examples tend to have a black, carbon-rich core. Since the surface of these objects often have organic impressions which appear to be from chaff it is likely that this is the identity of the organic inclusions.

The third fabric, FAB3, contains abundant quartz sand inclusions, similar to that of the moulding sand found in FAB1.

The fourth fabric, FAB4, contains abundant voids, probably from chaff, together with abundant fine-textured quartz sand (much finer than in the other fabrics).

A fifth fabric, FAB5, appears to be the standard kiln furniture fabric sand and contains fine quartz sand, as in FAB4, but without the abundant voids.

Assessment

It is likely that all of the material is debris from pottery production. It includes fragments which are probably part of the kiln walling or a suspended floor, indicating that the structure was constructed incrementally from sausages of clay. The flat slabs may have been used as separators to keep vessels in position or to separate them during firing. The remaining fragments, which have a different fabric, are kiln furniture.

Table 2 lists the contexts and an interpretation of the finds.

Table 2

Context:	Data	UNID	DAUB	FIREBAR	KILN FURNITURE	MUDBRICK	SLAB	SLAB?
013	NoV:	1						
	Weight:	29						
033	NoV:	1						
	Weight:	8						
041	NoV:	3						
	Weight:	43						
076	NoV:						3	
	Weight:						75	
087	NoV:	3						
	Weight:	115						
088	NoV:						2	
	Weight:						113	
098	NoV:	2		1	1			
	Weight:	60		78	73			
121	NoV:	1						
	Weight:	22						
131	NoV:	3						
	Weight:	34						
142	NoV:	1				1		
	Weight:	314				482		
145	NoV:	1					1	
	Weight:	26					34	
151	NoV:	1						
	Weight:	17						
176	NoV:	1	1					
	Weight:	17	31					
181	NoV:	1	1					
	Weight:	36	38					
196	NoV:	2						
	Weight:	5						
210	NoV:	1						
	Weight:	24						

219	NoV:				1	
	Weight:				27	
247	NoV:	2				
	Weight:	19				
291	NoV:	2				
	Weight:	57				
315	NoV:	2			1	
	Weight:	45			27	
328	NoV:	1				1
	Weight:	26				135
332	NoV:	6				
	Weight:	108				
341	NoV:	2				
	Weight:	13				
362	NoV:	1				
	Weight:	3				
397	NoV:	1				
	Weight:	21				
403	NoV:				1	
	Weight:				51	
409	NoV:		1			
	Weight:		64			
417	NoV:			1		
	Weight:			103		
475	NoV:	8				
	Weight:	89				
475A	NoV:	12				
	Weight:	150				
476	NoV:	2				
	Weight:	52				
480	NoV:	1		1		
	Weight:	47		117		

Further Work

It is recommended that the kiln furniture is passed to M J Darling for inclusion in her assessment report and that Ms Darling has an overview of the material to ensure consistency of recording of the fired clay and kiln furniture. A fragment of the mud brick walling should be drawn to illustrate the method of manufacture.

Samples of the four fabrics should be characterised using thin sections and Inductively-Coupled Plasma Spectroscopy in order, firstly, to determine whether they were made from different clays or were formed by different preparation of a single clay source and, secondly,

to compare with samples of the natural Jurassic clay and pottery products from Market Rasen, which have already been characterised.

Costing

Thin section production would take place at the University of Manchester and the thin sections would be analysed and a report written by Dr Vince in Lincoln. ICPS sample preparation would take place in Lincoln and the ICPS analysis would take place at the Department of Geology, Royal Holloway College, London, under the supervision of Dr J N Walsh. The data would be examined and compared with the results of other Market Rasen analyses by Dr Vince at Lincoln. Current prices (valid until 31st March 2006) are £23.50 per analysis, including report. After 1st April 2006 the price will rise to £24.00 plus VAT per sample.

Table 3

Task	*Description*	*Amount*
1	Illustration of mud brick	Ideally to be undertaken by D Hopkins and not estimated here. (approx £20.00 max)
2	Thin-Section analysis of samples of five fabrics	£117.50 plus VAT
3	ICPS analysis of samples of five fabrics (ideally, 6 samples per fabric, but only FAB1 has more than 6 examples). 15 samples (6 of FAB1, 4 of FAB2, 2 of FAB3, 2 of FAB4 and 1 of FAB5.	£352.50 plus VAT
Total (Tasks 2 and 3 only)		£470 plus VAT
Total inc VAT		£552.25

Appendix 1

REFNO:	Context:	Cname:	Action:	Form:	SUBFABRIC:	Nosh:	NoV:	Weight:	Length:	Breadth:	Thickness:	Description:
	013	FCLAY			FAB1	1	1	29				ONE FLAT SURFACE
	033	FCLAY			FAB1	1	1	8				
	041	FCLAY			FAB1	3	3	43				
	076	FCLAY		SLAB	FAB1	1	1	10	35	22	12	OXIDIZED WITH BLACK CORE;OXIDIATION SUGGESTS ONE ORIGI
	076	FCLAY		SLAB	FAB2	1	1	24				CHAFF ON SURFACE;BLACKENED THROUGHOUT
	076	FCLAY		SLAB	FAB2	1	1	41	75	50	20	TWO ORIGINAL EDGES;FLAT SURFACES HAVE CHAFF IMPRESSIO
	087	FCLAY			FAB1	2	1	83				CRUDE CIRCULAR APERTURE;BLACKENED SURFACES (AFTER B
	087	FCLAY			FAB1	2	2	32				
	088	FCLAY		SLAB	FAB1	1	1	49	80	40	20	TWO BLACKENED SANDED SURFACES
	088	FCLAY		SLAB	FAB2	1	1	64	95	60	16	OXIDIZED LUMP;CHAFF IMPRESSIONS ON ONE SURFACE (INC CE
	098	FCLAY			FAB1	2	2	60				FLAT SURFACES
	098	FCLAY		FIREBAR	FAB4	1	1	78		67		
	098	FCLAY		KILN FURNITURE	FAB4	1	1	73				
	121	FCLAY			FAB1	1	1	22				
	131	FCLAY			FAB1	2	1	5				
	131	FCLAY			FAB1	1	1	17				FLAT SURFACE
	131	FCLAY			FAB3	1	1	12				
	142	CBM		BRICK		1	1	70				
	142	FCLAY			FAB1	1	1	314				
	142	FCLAY	DR	MUDBRICK	FAB1	1	1	482	105	95	40	TWO BRICKS/SAUSAGES OF CLAY LUTED TOGETHER
	145	FCLAY		SLAB	FAB1	1	1	34				FLAT FACE, POSSIBLY WITH CORNER
	145	FCLAY			FAB1	1	1	26				
	151	FCLAY			FAB1	1	1	17				ONE FLAT SANDED SURFACE

	176	FCLAY		FAB3	1	1	17				FLAT SURFACE;BLACK CORE
	176	FCLAY	DAUB	FAB1	1	1	31				FLAT SURFACE;POSSIBLE WIDE DIAMETER WATTLE IMPR PARAL
	181	FCLAY	DAUB	FAB1	1	1	38				FLAT SURFACE WITH ONE WATTLE HOLE PIERCING SURFACE AN
	181	FCLAY		FAB1	1	1	36				
	196	FCLAY		FAB1	2	2	5				
	210	FCLAY		FAB1	1	1	24				FLAT SANDED SURFACE
	219	FCLAY	SLAB	FAB1	1	1	27	55	30	13	
	247	FCLAY		FAB1	2	2	19				
	291	FCLAY		FAB1	3	2	57				
	315	FCLAY		FAB1	2	2	45				
	315	FCLAY	SLAB	FAB1	1	1	27	55	42	12	
	328	FCLAY		FAB1	1	1	26				
	328	FCLAY	SLAB?	FAB1	1	1	135	90	80	22	POSSIBLE SANDED SURFACES, BUT COULD HAVE SPLIT ALONG
	332	FCLAY		FAB1	4	4	40				
	332	FCLAY		FAB1	2	2	68				FLAT SURFACE
<40>	341	FCLAY		FAB1	2	2	13				
	362	FCLAY		FAB1	1	1	3				
	397	FCLAY		FAB1	1	1	21				
	403	FCLAY	SLAB	FAB2	1	1	51	60	60	15	ROUGHLY FLATTENED SLAB;CHAFF ON BOTH SURFACES
	409	FCLAY	FIREBAR	FAB5	1	1	64				CORNER OF BAR FINE SANDED SURFACES;REDUCED LT GREY T
	417	FCLAY	MUDBRICK	FAB1	1	1	103				
	475	FCLAY		FAB1	1	1	45				ONE FLAT SANDED SURFACE
	475	FCLAY		FAB1	7	7	44				
	476	FCLAY		FAB1	2	2	52				
	480	FCLAY	MUDBRICK	FAB1	1	1	117			35	
	480	FCLAY		FAB1	1	1	47				CURVED FRAG;OXIDIZED AFTER BREAKAGE
	475A	FCLAY		FAB1	12	12	150				