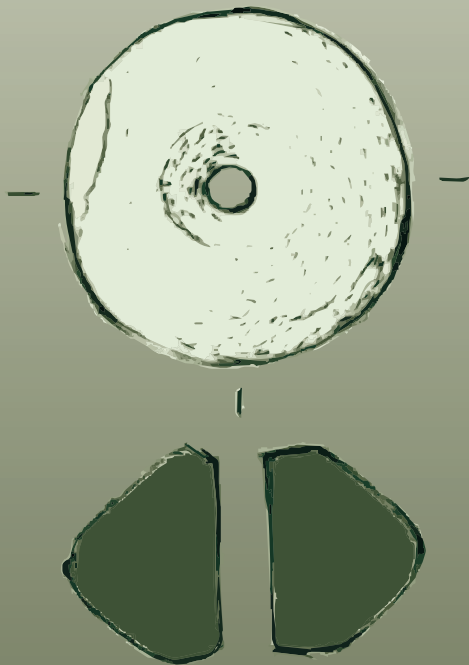


CHAPTER 21

Fired clay



by Grace Perpetua Jones

21 Fired clay

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The fired clay assemblage from Stansted totalled 9,012 fragments, weighing 41,482 g. The material was recovered from seven sites - the LTCP; MTCP; M11; FLB; SG; LBR and the NP sites. The bulk of the fired clay was amorphous in character; however the presence of wattle impressions on a number of pieces suggests that much of this material represents structural material. A total of 210 fragments, 5,859 g, could be identified as fired clay objects (Table 21.1). The fired clay was recovered from contexts dating from the Neolithic to the present day. There is an emphasis on the Late Iron Age, Romano-British and medieval periods, and a decline from the Late Bronze Age to the Middle Iron Age, presumably relating to shifts in the settlement pattern during these periods. Selected objects are illustrated in Figure 21.1, nos 1-7.

Fabrics

The fired clay assemblage is dominated by fabric 1, a soft, silty fabric containing a common amount (20-25%) of sub-rounded to rounded chalk, up to 18 mm in size and poorly sorted, with occasional angular pieces of detrital flint of a similar size, coarse-grained quartz and very coarse red iron oxides. This fabric is usually buff to orange in colour. In several cases the chalk has leached from the fabric, and for the purposes of analysis has been classified as fabric 3, however it is likely that both represent the same fabric. It has been used as daub and in the manufacture of loomweights.

A clean, sandy fabric of reddish orange colour had also been used for daub (fabric 2). It is soft and silty in texture, and contains a common amount (25%) of angular, coarse-grained quartz, with occasional pieces of sub-rounded quartz of ≤ 3 mm, poorly sorted. Fabric 4 was represented by one cylindrical loomweight. It was characterised by a silty clay matrix with occasional coarse-sized quartz and angular, detrital flint, ≤ 20 mm, and rare sub-rounded chalk inclusions, up to 12 mm.

Two fabric types were identified that had been used in the manufacture of clay slabs, and one for a brick-like object. Fabric 5 is silty and micaceous, fabric 6 contained a common to very common amount (25-30%) of sub-angular argillaceous inclusions, probably grog. They were moderately sorted, measuring up to 5 mm, although most were 1 mm. The clay matrix was also silty and micaceous. Context 356015 produced 43 fragments of extremely friable slab/brick (fabric 7). The fabric contained a very common amount (30%) of sub-rounded to sub-angular chalk inclusions, up to 3mm, moderately sorted.

Fabrics 8 and 9 were representative of salt production. The former is a fine, slightly silty fabric, with a very common to abundant amount ($>30\%$) of linear vesicles, the remains of organic temper. It had been used in the manufacture of salt containers. Fabric 9 also possessed a silty clay matrix, however only a sparse amount of organic temper had been added to the fabric. Rare pieces of detrital flint had also become incorporated. There is no evidence it had been used to make containers, but demonstrated evidence of being associated with salt production (see below). Fabric 10

was silty in texture, with occasional rounded, coarse-sized quartz grains visible on the surface of the single object found in this fabric (bead in context 107013). Fabric 11 has been assigned to the spindle-whorl in context 136130. It contained a sparse amount of organic temper in a sandy clay matrix, and is similar to the Iron Age pottery fabrics.

Objects of fired clay

Loomweights

Clay loomweight fragments were recovered from eight contexts during excavation on the MTCP site. Seven of these contexts represented the fills of Middle Bronze Age waterhole 309075, the eighth was located in Middle Bronze Age pit 312031, located approximately 63 m to the north-east of the waterhole. The loomweight assemblage was quite fragmentary and no complete examples were identified. A maximum of eleven clay loomweights were recovered from the waterhole, and one from pit 312031 (Table 21.1). Many of the fragments shared the same fabric type (fabric 1), however an attempt to refit the fragments from the different contexts within the waterhole was unsuccessful.

The fragments all originated from cylindrical loomweights. These objects were between 70 mm and 100 mm in diameter, usually at the upper end of this range, and the height of loomweights in contexts 309112 and 309119 was measured at 80 mm and 83mm respectively. Reconstruction of fragments in context 309113 indicate that the height of this particular loomweight was a minimum of 90 mm. The central perforation was visible on only one example (context 309119), and indicated that the distance from the outer edge of the perforation and the outer edge of the weight varied from 42 mm to 48 mm (Fig. 21.1, no.1).

Spindlewhorl

A single spindlewhorl was recovered from the LTCP site, in Mid/Late Iron Age pit 136129 (Fig. 21.1, no. 2). It was biconical in cross-section, with the maximum diameter (30 mm) located across the middle of the whorl. It is 17 mm in height and has been centrally perforated by a 4 mm hole. The top and bottom of the object has been flattened. The spindlewhorl is small, and weighs only 14 g. This form of spindlewhorl is paralleled at Springfield Lyons (Major 1987, 11, fig 10.3) and North Ring, Mucking (Barrett 1988, 37, fig 38.2).

Briquetage

Salt consumption

A small quantity of salt container material (briquetage) was recovered from Late Iron Age and Roman features at Stansted sites (Table 21.1). The briquetage is characterised by the highly distinctive pink, lavender, grey and white colouring of clay containers that have been used to evaporate seawater brine, which contains 3% salt in solution (Morris 2001, 41, after Peacock 1984). Crosby (2001, 112) noted that amongst the briquetage assemblage from the early Roman saltern in Morton Fen, Lincolnshire, 'salt colours are apparent only on containers'. These containers were

'shallow, slab-built sub-rectangular vessels', trough-like in form (Crosby 2001, 112). The single, fragmentary rim recovered from context 147013 (intervention 147010, Late Iron Age/early Romano-British ditch 102130) was flat-topped and appeared to represent a trough-like vessel (Fig. 21.1, no. 4). The remaining four briquetage sherds in this context were flat, 13 mm thick, and also probably originate from a trough-like vessel. In almost all of the briquetage sherds, these 'salt colours' were far stronger on one side of the fragment than the other. One surface usually remained orange in colour, presumably indicating the outer surface which was not in constant contact with the salt water. The rim fragment demonstrated the deepest level of discolouration.

The fabric of the salt containers contained at least 30% organic temper. Crosby argues that the 'almost exclusive use of organic-tempered fabrics was probably a deliberate choice by the salt-makers to take advantage of the joint properties of lightness and thermal shock resistance created by the presence of organic voids' (Crosby 2001, 111).

Evidence for salt production in Essex dates from the Late Bronze Age, with a further phase of development taking place in the Iron Age, attested at sites such as the Ardale School site C and Little Waltham (Barford 1990, 81-2). The Red Hills salterns produced salt during the Late Iron Age and early Romano-British periods (Fawn *et al.* 1990, 42).

Associated material

Three contexts produced material which appeared to represent objects used in the salt production process, but which were unlikely to be containers. Fragments from contexts 319200 (intervention 319198, Late Romano-British ditch 344200) and 110075 (early Romano-British ditch 110077) had no surfaces, and were highly variable in colour: greyish black in the core of the fragment, and a yellowish brown to orange colour towards the outside. Areas of pink suggest some relationship with the briquetage, however the form of the fragments could not be ascertained, and the sparse amount of organic temper (fabric 19) also indicates a different use to the containers.

Two fragments from context 320097 (intervention 320093, Late Iron Age/Romano-British ditch 306045) created a flat slab with two surfaces, 17-19 mm thick. Although this object did not display any of the salt colours, it did contain a high proportion of organic temper and as such is entirely different to the clay slabs defined below. The core was greyish black in colour and both surfaces were brownish orange. Faint channels from finger wiping could be seen on one surface.

Clay slabs

Flat slabs of clay, with two surfaces, were recorded from three of the Stansted sites. This type of object was recovered from five contexts on the LTCP site. Intervention 129039 (ditch 109215) and intervention 129100 (gully 129160), dated to the Late Iron Age and Late Iron Age/early Romano-British periods respectively, produced fragments of similar appearance, with a silty, micaceous fabric (fabric 5). Both were fully oxidised, a buff to light greyish brown colour, 30-35 mm in thickness. This

fabric had also been used to construct a slab recovered from the topsoil (context 101005, Fig. 21.1, no. 5). The slab was 43 mm thick and demonstrated upper and lower surfaces, as well as two finished edges, joined at an angle of approximately 135°. The core of the object was completely unoxidised and black in colour, the surfaces were a light greyish brown colour. The slab was not dissimilar to a lumpy slab recovered from Middle Iron Age pit 109011. This object was the least evenly formed of the clay slabs, and was also the thickest at 90 mm. The core was again completely unoxidised, and the external surfaces only lightly oxidised. Two finished edges were visible, joined at a rounded corner. Three fragments from a subsoil spread (context 110126) joined to create the edge of a slab which survived to a length of 185 mm and was 28-29 mm thick. It was also composed of the silty, micaceous fabric 5. Intervention 129074 (Late Iron Age/early Roman ring gully 129088) produced fragments of a grog-tempered slab (fabric 6), however only one surface was present.

A grog-tempered (fabric 6) slab was also recovered from intervention 435021 (Late Iron Age/early Roman ditch 433033) on the M11 site (Fig. 21.1, no. 6). The largest fragment measured 130 mm x 140 mm and was 30 mm thick. Three fingertip impressions were visible at the edge of the fragment. A 30 mm thick slab in silty, micaceous fabric 5 was also recovered from this site, in intervention 439047 (Late Iron Age ditch 433054). Both upper and lower surface were present, plus one finished edge.

Extremely friable fragments from some form of brick or slab were found at the base of an undated pit, feature 356013. The pit also contained metalworking debris and it is possible these clay objects were used to line the pit. During excavation it was noted that some had been embedded into the natural. The highly abraded nature of the fragments had caused most to crumble, and none demonstrated two surfaces. Those surfaces that had survived appeared to have been carefully flattened, and may have been given some form of slurry treatment as they are almost light-reflective.

Perforated clay slabs are seen on Late Bronze Age sites in Essex and have been reported on at Springfield Lyons (Major 1987, 11) and North Ring, Mucking (Barrett 1988, 39), however no perforations were visible on the Stansted clay slabs.

Bead

A single bead was recovered from the LTCP site, from context 107013 – intervention 107016, Late Iron Age ditch 113048 (Fig. 21.1, no. 3). It was 22.2 mm in diameter, had rounded, convex sides and had been flattened on the top and the bottom. The centre had been perforated with a 4 mm diameter hole. The form of this object would suggest it may have been used as a spindlewhorl, however it is only 8 g in weight and it is therefore unlikely it would have served such a function. A study of West Norwegian spindlewhorls from the Sogn Folkemuseum recorded a weight range of 10 g to 50 g, with most between 20-35 g (Øye 1988, 37).

Ball

Context 347109 (intervention 347108, Late Iron Age ditch 344347) produced a spherical ball of fired clay, 90 mm in diameter (Fig. 21.1, no. 7). The ball had been irregularly formed, with flattened areas visible on the surface. It had been made from

the chalk-gritted fabric 1, and fired to a buff / yellowish brown colour on the exterior, however most of the interior remained unoxidised. The function of this ball, if any, is unknown.

Structural material

The bulk of the fired clay recovered from the Stansted sites can be described as amorphous in character, consisting of small and abraded fragments, in poorly fired fabrics. The function of many of these small fragments cannot be ascertained, and any dating must rely on associated material. The presence of featureless fired clay across the sites is quantified in Table 21.2. Wattle impressions on a number of fragments suggest that many derive from structural material such as daub. The most commonly occurring daub fabric was fabric 1, containing rounded chalk inclusions, which was also used for the loomweights and clay ball.

Distribution

The assemblage was recovered from a large number of contexts across the sites (658 contexts), many of which contained very small quantities of material. The largest group of material came from the MTCP site, yet of the 335 contexts that produced fired clay, 303 contained less than 100g. A similar situation is seen at all of the other sites, with 198 contexts at the LTCP site producing less than 100 g, 54 contexts at the M11 site and 36 at the FLB, SG, LBR and the NP sites produced very small quantities of material, with less than 50 g of fired clay per context, with the exception of context 494015 (BAASG03). This context was located in pit 494014, containing daub, late Saxon pottery and charcoal.

Of particular interest is the small quantities of fired clay recovered from Neolithic tree-throw 429002 (1 g) and Neolithic pit 502 (6 g), suggesting the earliest use of the landscape.

MTCP

The largest group of material was recovered from hearth 354081, located within an early medieval building. The 2.4 kg of fired clay, predominantly daub fragments, may result from the destruction of the building. Late Saxon pit 315051 produced 527 g of daub, a further 1.2 kg was recovered from nearby Late Saxon pit 305011. Late Romano-British pit 319140 contained 1.3 kg of daub and featureless fragments. This feature was thought to have an industrial use. This material may have derived from the destruction of the rectangular buildings, alternatively it may relate to nearby oven/kiln features, such as late Roman kiln 338022 (contexts 338010 and 338015), from which 2 kg of material was recorded. Late Roman ditch 306175, located to the south of the kiln, produced 438 g. Early medieval pit 310129 contained 645 g, adjacent early medieval pit 310136 produced 461 g. Other interventions from which reasonable quantities of material were recovered include Middle Bronze Age waterhole 309075 (1.1 kg); Late Bronze Age pit 334059 (336g); Late Iron Age ditch 344073 - intervention 361006 (430 g); late Roman-British pits 334013 (480 g) and 356077 (245 g), an early Roman posthole, 319298 (266 g); early medieval pit 310118 (250 g) and Late Saxon pit 317001 (208 g). Large quantities were also recovered from unphased tree-throw 357067 (1.7 kg).

LTCP

Only four contexts excavated at the LTCP site produced over 150 g of fired clay. These include early Romano-British ditch 102134 (192 g); Late Iron Age/early Romano-British pit 136012 (538 g); a deposit that had formed in the top of early Romano-British ditch 109214 (618 g), and unphased hearth 147027 (721 g).

FLB

The largest groups of fired clay from the FLB site were recovered from a medieval oven/kiln, feature 405015 (1.7 kg, contexts 405011, 405014, 405022). Medieval ditch 407009, located to the south-west of this feature, produced 376 g. Fired clay was also identified in unphased tree-throw 409035 (160 g).

M11

Assemblages of more than 150 g of fired clay recorded from the M11 were concentrated around adjacent pits 423154 (1 kg) and 423113 (672 g), Middle Bronze Age waterhole 426015 (520 g) and late Iron Age ditch 430052 (178 g).

Discussion

The low percentage of identifiable objects from Stansted is surprising for a site displaying substantial settlement evidence during the Middle to Late Bronze Age, Late Iron Age to Romano-British and medieval periods. The bulk of the assemblage represents structural fragments, found widely across the sites, in contexts dating from the Neolithic to the medieval period. Nonetheless, the assemblage also provides evidence for textile production during the Middle Bronze Age at the MTCP site and, to a lesser extent, during the Iron Age at the LTCP site. During the Late Iron Age and Romano-British periods salt was being brought to the site, perhaps from the Red Hills. The presence of material that may be associated with production suggests the possibility that part of the process may have been carried out on, or near to, the site.

The clay slabs, recovered from Late Iron Age and Roman features at the LTCP and M11 sites, are similar in form to fragments of pre-Roman 'bricks' associated with 'ovens' in Prae Wood (Wheeler and Wheeler 1936) which are likely to derive from 'slab-like' pedestals used in pottery kilns (Swan 1984, 61). Swan has termed them 'Belgic bricks' (*ibid*). Unperforated clay plates may also have been used during pottery production as oven-floors or as spacers in the kiln, however the function of small fragments can be difficult to interpret (Swan 1984, 64). No perforated clay slabs were recovered from the Bronze Age contexts.

Table 21.1: The fired clay objects

Context	Cut	Feature	Object type	Fabric	No of pieces	Weight (g)
LTCP (BAACP00)						
101005	Topsoil		Clay slab	5	3	882
109015	109011	MIA pit 109011	Clay slab	5	10	396
110126	Subsoil		Clay slab	5	3	208
129038	129039	LIA ditch 109215	Clay slab	5	4	208
129073	129074	LIA/ERB ring gully 129088	Clay slab	6	23	95
129099	129100	LIA/ERB gully 129160	Clay slab	5	4	186
103006	103003	LIA ditch 113060	Briquetage	8	1	6
129030	129039	LIA ditch 109215	Briquetage	8	11	26
147013	147010	LIA/ERB ditch 102130	Briquetage	8	5	69
150025	150024	ERB ditch 102074	Briquetage	8	1	5
110077	110075	ERB ditch 110077	Fragment associated with salt production	9	1	13
107013	107016	LIA ditch 113048	Bead	10	1	8
136130	136129	M/LIA pit 136129	Spindle whorl	11	1	14
MTCP (BAAMP00)						
309084	309075	MBA waterhole 309075	Cylindrical loomweight	3	10	116
309084	309075	MBA waterhole 309075	Cylindrical loomweight	1	3	74
309087	309075	MBA waterhole 309075	Cylindrical loomweight	1	1	91
309108	309075	MBA waterhole 309075	Cylindrical loomweight	3	6	76
309111	309075	MBA waterhole 309075	Cylindrical loomweight	1	10	91
309111	309075	MBA waterhole 309075	Cylindrical loomweight	1	6	175
309112	309075	MBA waterhole 309075	Cylindrical loomweight	3	2	210
309113	309075	MBA waterhole 309075	Cylindrical loomweight	1	19	182
309113	309075	MBA waterhole 309075	Cylindrical loomweight	4	2	292
309117	309075	MBA waterhole 309075	Cylindrical loomweight	1	7	91
309119	309075	MBA waterhole 309075	Cylindrical loomweight	1	6	279
312027	312031	MBA pit 344312	Cylindrical loomweight	1	1	89
356015	356013	Undated pit 356013	Clay slab/brick	7	43	436
319320	319319	LRB ditch 344170	Briquetage	8	2	12
330281	330275	LIA/ERB ditch 344078	Briquetage	8	1	1
319200	319198	LRB ring ditch 344200	Fragment associated with salt production	9	3	48
320097	320093	LIA/ERB ditch 306045	Slab associated with salt production	8	2	141
347109	347108	LIA ditch 344347	Clay ball	1	4	622
M11 (BAALR00)						
435023	435021	LIA/ERB ditch 433033	Clay slab	6	7	524
439050	439047	LIA ditch 433054	Clay slab	5	1	192
439057	439056	LIA/ERB ditch 439061	Briquetage	8	6	27
Total quantification of fired clay objects					210	5885

Table 21.2: Quantification of featureless fired clay fragments

Site name	No of contexts in which fired clay is present	Count of fragments	Weight of fragments (g)
FLB	43	557	3305
LBR	3	5	13
LTCP	208	1959	5333
M11	61	343	4264
MTCP	335	5894	22257
SG	6	40	393
NP	2	4	32
Totals	658	8802	35597

Table 21.3: Percentage of featureless fired clay present by period

Mesolithic/Neolithic landscape	<0.1
Neolithic landscape	<0.1
Bronze Age landscape	14.4
Late Bronze Age/Early Iron Age landscape	3.1
Iron Age landscape	9.7
Late Iron Age/early Roman landscape	4.4
Roman landscape	26
Saxo-Norman landscape	0.9
Medieval landscape	31.4
Post-medieval landscape	0.2
Modern features	<0.1
Unphased features	9.8

Catalogue of illustrated objects (Fig. 21.1)

1. Loomweight, fabric 1, context 309119, waterhole 309075, MTCP (BAAMP00)
2. Spindlewhorl, fabric 11, context 136130, pit 136129, LTCP (BAACP00)
3. Bead, fabric 10, context 107013, ditch 107016, LTCP (BAACP00)
4. Briquetage rim, fabric 8, context 147013, ditch 147010, LTCP (BAACP00)
5. Clay slab, fabric 5, context 101005, topsoil of field C, LTCP (BAACP00)
6. Clay slab, fabric 6, context 435023, ditch 435021, M11 (BAALR00)
7. Clay ball, fabric 1, context 347109, ditch 347108, MTCP (BAAMP00)

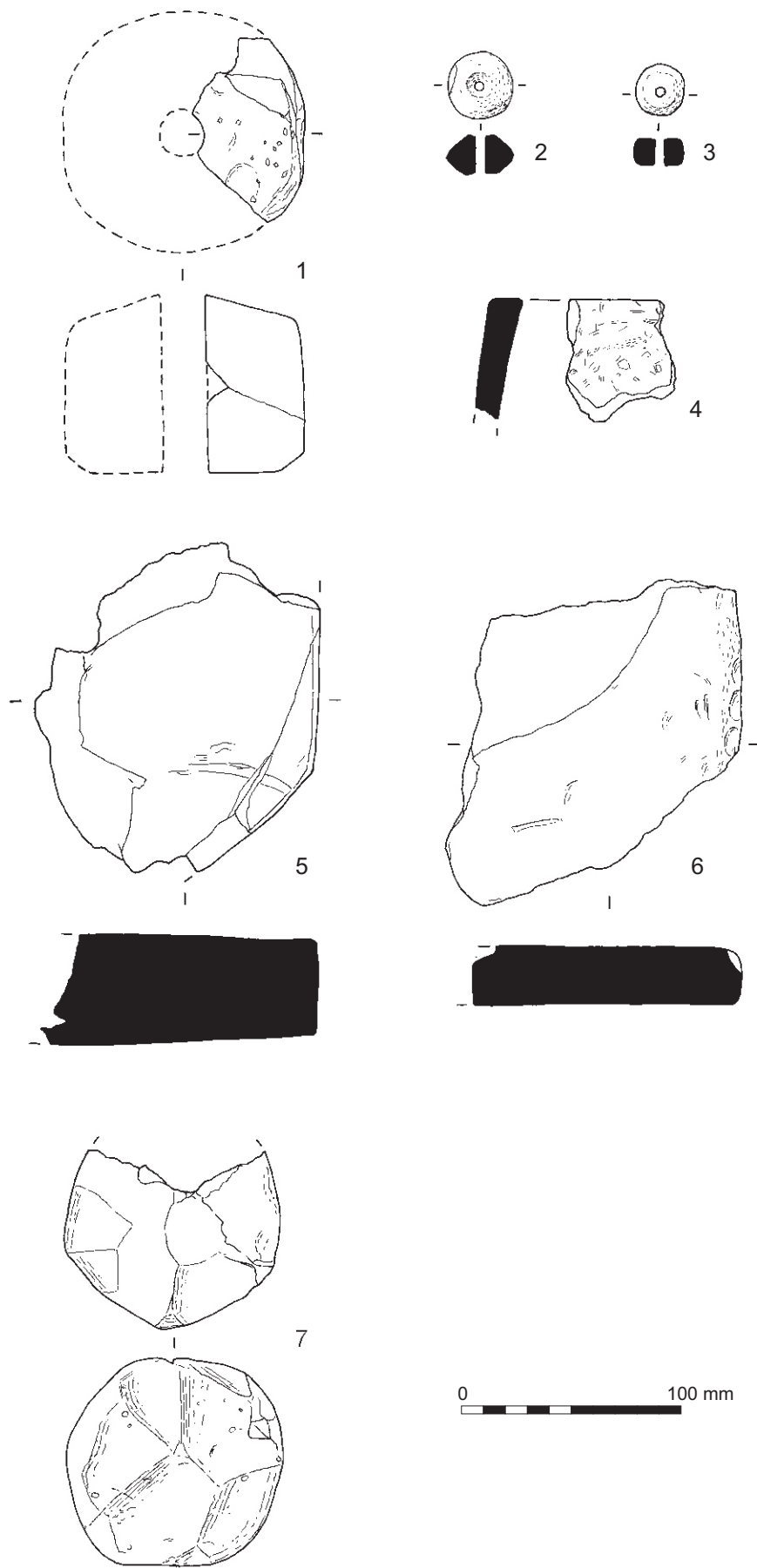


Figure 21.1: Selected fired clay objects (details in the catalogue)



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