

APPENDIX 6

THE FIRED CLAY (F)

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Fired-clay Objects

Objects of fired clay are relatively well-represented on the northern Lanes, with 33 identified, including five lamps (**F1-5**) and a candlestick (**F6**), five inkwells (**F8-12**), 16 counters (**F13-28**), and two spindle whorls (**F29-30**). Metal-working is represented by three crucible fragments (**F33-5**).

The five lamps and the candlestick should be considered in conjunction with the other ceramic vessels from the site, and there is little doubt that the simpler examples are likely to be locally made, in ceramic Fabric 12 (*Appendix 2*). Both open and closed vessels appear within the group. So-called 'factory lamps' are regarded as the most common type of closed lamp found in Britain and the northern Provinces (Hird 2010, 217). Three fragments were recovered (**F2-4**), none of them from Roman contexts; fragments **F3** and **F4** can probably be dated to the second half of the second century, but were residual in post-Roman Periods 13 and 14B, respectively. **F2**, again a factory lamp, but of a distinctive late type made in Cologne (perhaps Loeschcke (1919) type VIII), can be placed in a date range from the late third to the fifth century (Eckardt 2002, 218); it too was residual in a post-Roman phase (Period 13).

Eckardt (2002) has argued that the distribution of closed lamps has a close correlation with military activity, especially during the first and second centuries, and could be an indicator of the degree of Romanisation. A few are known from Carlisle, with two well-preserved examples from the southern Lanes (Hird 2010, **F4** and **F5**), though none have been recovered from excavations within the fort. They presumably reflect the military origins of the civil settlement, and the trade networks on which they relied, which were still bringing oddities like lamp **F2** into the town at a time when the use of

closed oil lamps was falling into decline (Eckardt 2002, 49). There are also two examples of open lamps (**F1**, **F5**), the former an almost complete Loeschcke type XII, the latter Loeschcke type XIa, both of which can only be dated broadly to the first/second centuries AD (1919). A squat candlestick (**F6**), in oxidised ceramic Fabric 12 (*Appendix 2*), cannot be dated with any precision, although it is without doubt of Roman date (see, for instance, Monaghan 1997, fig 411).

Literacy on the site is attested by the group of inkwells, in South Gaulish (**F8**, **F10**) and Central Gaulish (**F9**, **F11**) samian ware (form Ritterling 13 (1913); *Appendix 1*); a single small vessel in ceramic Fabric 12 (*Appendix 2*) is also identified as an inkwell. Samian-ware inkwells were in production throughout the period during which samian was imported into Britain, and fragments were also noted at the southern Lanes (Hird 2010, 218) and elsewhere in Carlisle, for example at Blackfriars Street (Taylor 1990, 267) and within the fort (Caruana in prep a; in prep b; Ward 2009, 552).

Other pastimes are represented by a group of small counters (**F13-28**) made from pot sherds (Fig 181), including fragments of amphora, samian ware, and mortaria, and ranging in diameter from c 20 mm to c 40 mm. Such objects undoubtedly had numerous uses, but could have been used in board games. Two spindle whorls were also found (**F29-30**), attesting to textile production, and it is suggested that a worn flange fragment from a samian-ware bowl, of form Dr 38, had been reused as a smoother or burnisher. There were also three fragments of crucibles. Two of these (**F33**, **F34**) were too small for their size and form to be determined with accuracy. The third (**F35**), a large, near-complete, globular specimen, contained a residue that X-ray fluorescence (XRF) analysis has shown was used in the production of copper alloys. Although recovered from a medieval context, the crucible's distinctive form leaves no doubt that it is a redeposited Roman object.

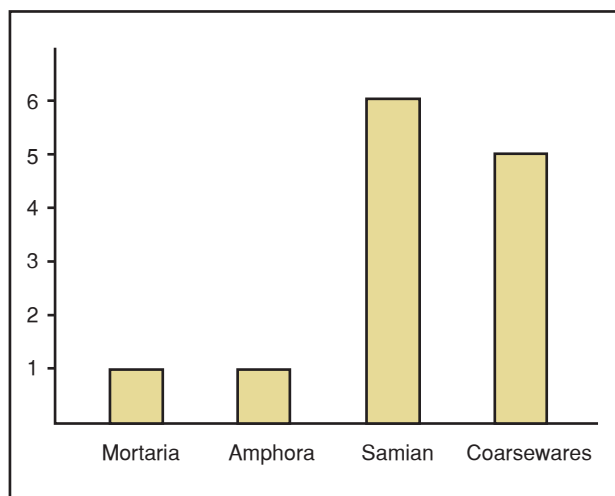


Figure 181: Counters made from different vessel types

Catalogue

Household utensils and furniture

- F1** Lamp (Fig 182). Almost complete, circular open lamp with a small pointed spout, in oxidised ware (Fabric 12; *Appendix 2*).
Diam: 55 mm
KLA C 1174, Period 11C
- F2** Lamp (Fig 182). Spout fragment, chipped, and upper surface decorated with blobs. See Bailey 1972, pl 10 (c). Oxidised fabric, with blue-grey core and mica-dusted surface.
L (frag): 45 mm; W (frag): 27 mm
KLA B 278, Period 13 (Post-Roman)
- F3** Lamp. Fragment of upper surface of a factory lamp. Fine-textured grey fabric, or possibly oxidised fabric burnt grey.
L (frag): 34 mm; W (frag): 31 mm
KLA B 695, Period 13 (Post-Roman)
- F4** Part of upper surface of a factory lamp. See Bailey 1972, pl 10 (g), which was made in Cologne and dated to the second half of the second century. Fine-textured oxidised fabric.
L (frag): 28 mm; W (frag): 15 mm
KLA B 487.07, Period 14B (Post-Roman)
- F5** Open lamp with two-ribbed handle (Fig 182) in oxidised fabric (Fabric 12; *Appendix 2*).
L (frag): 70 mm; W (frag): 65 mm
KLA C, Unstratified
- F6** Candlestick (Fig 182), almost complete. Sooted around upper edge, top segment, and down one side. Oxidised fabric (Fabric 12; *Appendix 2*).
Ht: 100 mm; Diam (base): 62 mm
KLA B 142, Period 10A

- F7** Stopper or pestle? Object in hard, rough hand-made grey fabric.
Ht: 45 mm; Diam (widest): 53 mm; Diam (narrowest): 38 mm
LAL C 156, Period 11B

Written communication

- F8** Inkwell. Twenty-one sherds of inkwell in South Gaulish samian, with worn footring. Flavian or Flavian-Trajanic.
LAL D 1100/1104/1132, Period 9
- F9** Inkwell. Five sherds of inkwell in Central Gaulish (Les Martres-de-Veyre) fabric. Trajanic.
LAL B 206/224, Period 10B/10C
- F10** Inkwell. One sherd of South Gaulish samian inkwell. Flavian-Trajanic.
LAL D 920, Period 10C
- F11** Inkwell. One sherd of Central Gaulish samian inkwell. Hadrianic or early Antonine.
LAL B 161, Period 11E
- F12** Inkwell? Complete small vessel (Fig 183) in oxidised fabric (Fabric 12; *Appendix 2*).
Diam: 38 mm; Ht: 27 mm
KLA C 1933, Period 7

Recreation

- F13** Counter. Sherd of amphora Fabric 207 (*Appendix 2*), shaped for use as a counter.
L: 40 mm; W: 45 mm
LAL C 264, Period 10C
- F14** Counter. Sherd of Central Gaulish Dr 30 or Dr 37, shaped into a rough square. Trajanic or Hadrianic.
LAL D 739, Period 11C
- F15** Counter. Sherd of Fabric 12 (*Appendix 2*), shaped for use as a counter.
L: 21 mm; W: 21 mm
LAL C 121, Period 11D
- F16** Counter. Sherd of East Gaulish (Rheinzabern) samian dish or bowl, shaped for use as a counter. Late-second or early third century.
LAL D 232.12, Period 11D
- F17** Counter. Lattice-decorated sherd of cooking pot in Fabric 11 (*Appendix 2*), shaped for use as a counter.
L: 24 mm; W: 23 mm.
LAL B 163, Period 11E
- F18** Counter. Sherd in Fabric 12 (*Appendix 2*), shaped for use as a counter.

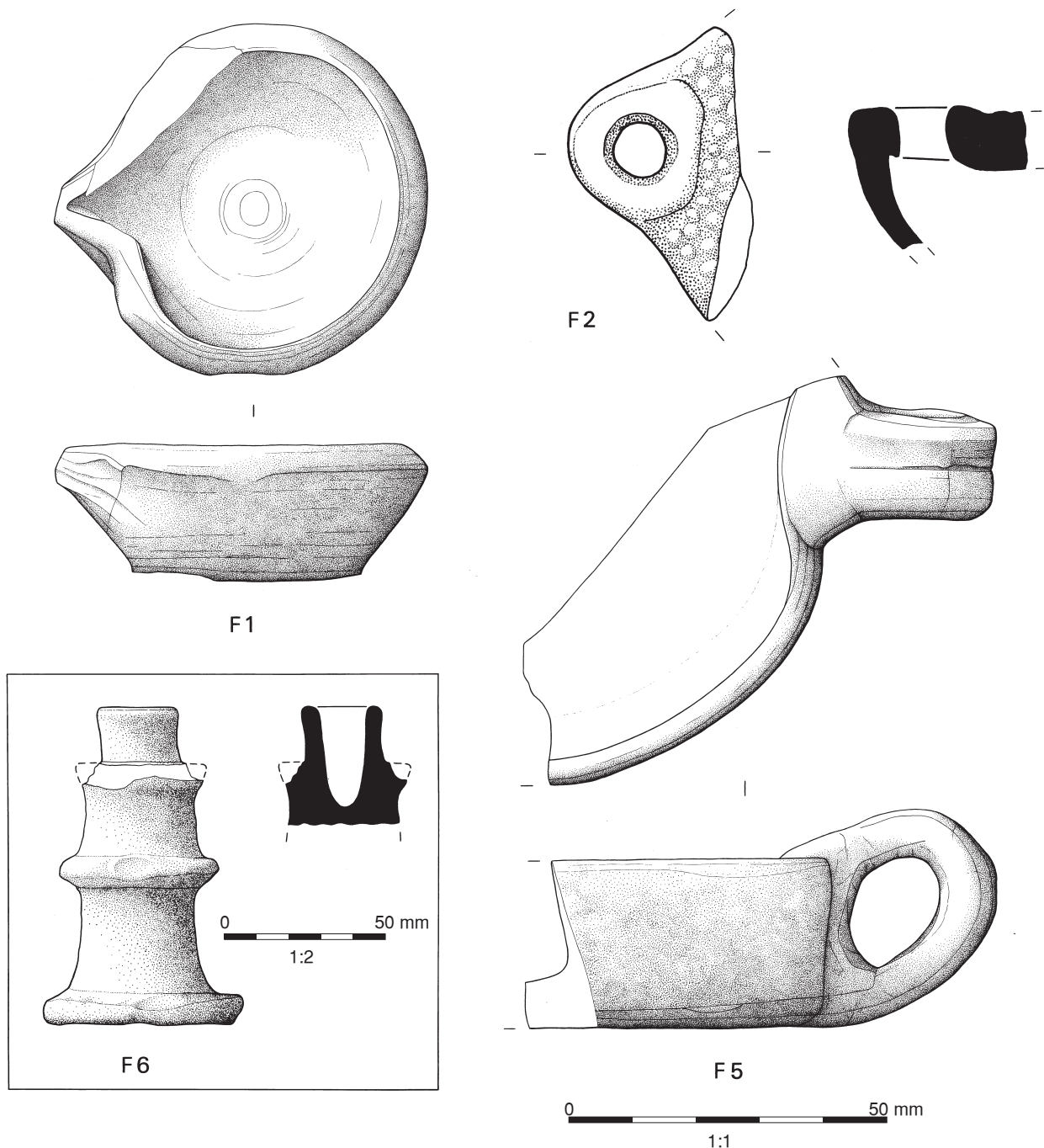


Figure 182: Ceramic lamps and candlestick

- L: 22 mm; W: 19 mm
LAL C 97, Period 11E
- F19** Counter. Sherd in Fabric 12 (*Appendix 2*), shaped for use as a counter.
L: 24 mm; W: 25 mm
KLA C 961, Period 11D-12
- F20** Counter. Sherd of Central Gaulish dish or bowl, shaped for use as a counter.
L: 26 mm; W: 26 mm
KLA A 765, Period 13 (Post-Roman)
- F21** Counter. Sherd of mortarium Fabric 328 (*Appendix 2*), shaped for use as a counter.
L: 23 mm; W: 24 mm
KLA B 694, Period 13 (Post-Roman)
- F22** Counter. Sherd of Fabric 21, shaped for use as a counter.
L: 32 mm; W: 37 mm
KLA B 601, Period 14B (Post-Roman)
- F23** Counter. Sherd of Central Gaulish samian ware, Dr 37, in the style of Do(v)eccus i (*Appendix 1*),

- shaped for use as a counter. Antonine or late second century.
Diam: 35 mm
KLA B 296, not closely phased
- F24** Counter. Sherd of Central Gaulish samian ware, form indeterminate, as the counter is worn and abraded. Hadrianic to late second century.
Diam: 20 mm
KLA C, Unstratified
- F25** Counter? Sherd of Central Gaulish samian-ware dish/bowl. Hadrianic or Antonine.
L: 24 mm; W: 24 mm
KLA C 1073, Period 10A-11B
- F26** Counter? Sherd of Central Gaulish samian-ware dish or bowl. Hadrianic or early Antonine.
L: 22 mm; W: 22 mm
KLA D 317.03, Period 11A
- F27** Counter? Sherd of Central Gaulish samian ware. Hadrianic or Antonine.
L: 22 mm; W: 22 mm
KLA D 171, Period 11D-12
- F28** Counter? Sherd of Central Gaulish samian ware, possibly Dr 33. Antonine or late second century.
Diam: 26 mm
LAL D 422, Period 12
- Tools and industry**
- F29** Spindle whorl, fragmentary. Sherd of Central Gaulish samian ware of indeterminate form. Hadrianic or late second century.
Diam: 40 mm
KLA B 293.05, Period 11C
- F30** Spindle whorl. Sherd of Central Gaulish samian ware, shaped for use as a spindle whorl. Hadrianic or early Antonine.
LAL D 468, Period 11E
- F31** Spindle whorl. Sherd of Central Gaulish samian ware, form Dr 31R. Antonine or late second century.
Diam: 35 mm
KLA C 915, Period 13 (Post-Roman)
- F32** Smoother? Flange fragment of Central Gaulish samian-ware bowl, form Dr 38, reused perhaps as a smoother. Antonine.
KLA A 679, Period 13 (Post-Roman)

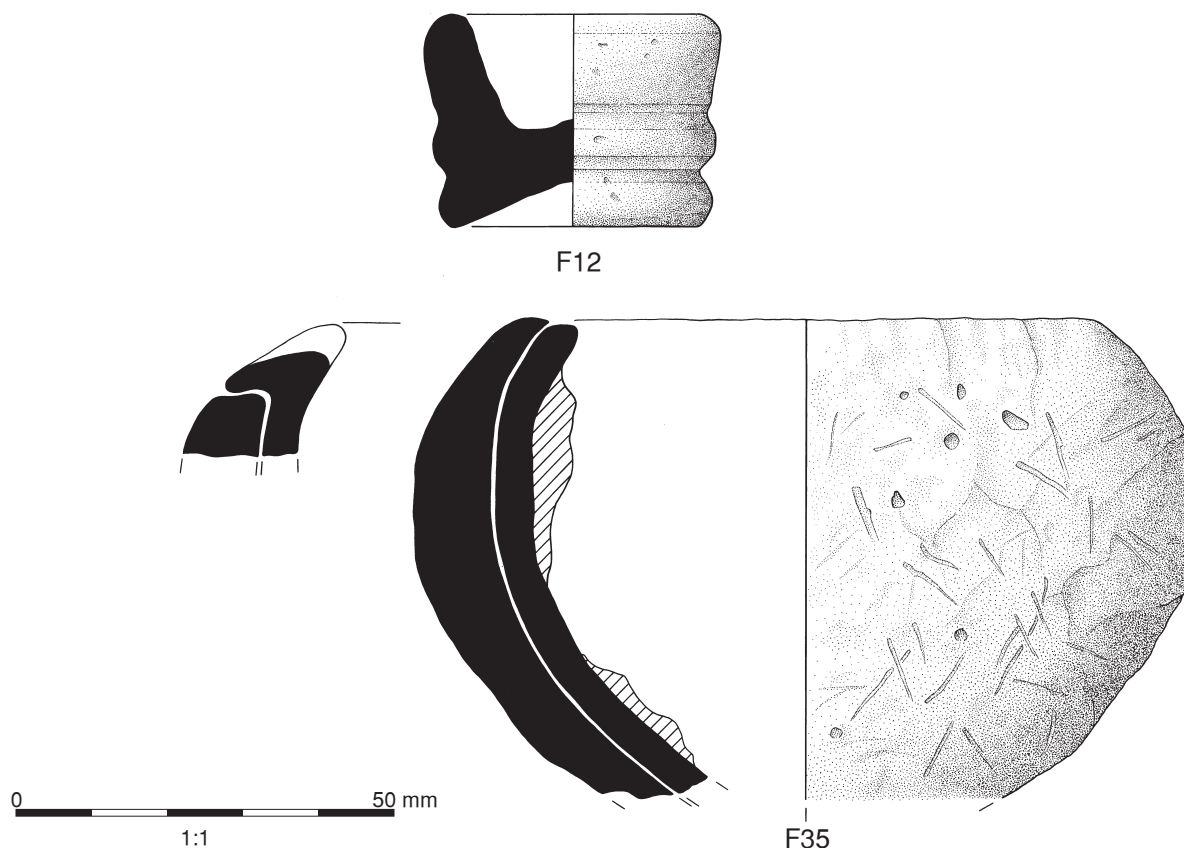


Figure 183: Ceramic inkwell and crucible

The crucibles

J Bayley

- F33 Crucible fragment with internal residue.
Th wall: 8 mm
KLA A 964, Period 10B
- F34 Crucible fragment.
Th wall: 10 mm
KLA D 168.02, Period 11C
- F35 Large part of a crucible (Fig 183). The wall thickness is about 3.5 mm, but an extra layer of (?less refractory) clay about 10 mm thick had been added to the outside of the vessel. This would have increased its thermal capacity and would perhaps have helped protect it from thermal shock as it was lifted from the fire. The application of such an outer layer is well attested in the Roman period (Bayley 1991), but is unknown in earlier or later periods.

The crucible is globular or bag-shaped, with a diameter exceeding its height, and a rim diameter only slightly less (*c* 60 mm) than the possible maximum. The fabric contained a great deal of organic temper (now burnt out) and some mineral temper. The outer layer is less tempered. X-ray fluorescence (XRF) analysis showed that the metal inside the crucible was a gunmetal (copper, zinc, and tin), containing a minor amount of lead. Some of this metal appears to be trapped in the vitreous surface of the crucible, but some may have been deposited in it after use.

Th wall: *c* 3.5 mm

KLA D 2, Period 14B (Post-Roman)

Ceramic Building Materials

The tile and brick was recorded by fabric, weight, fragment count, and thickness, and where possible, it was categorised as *tegula*, *imbrex*, flat tile, brick, pipe, etc. *Tegula* flange profiles were assigned to type using the system devised for the fort at Annetwell Street (Caruana and Hird in prep) and used for the southern Lanes (Hird 2010). No new forms were found (see Hird 2010, fig 109, for the range seen at the southern Lanes), but not all the forms are represented within the northern Lanes assemblage. As was the case with the southern Lanes material, the tile and brick from the northern Lanes is very fragmentary and, as a consequence, fabric differentiation proved somewhat subjective. The fabrics seen in both the northern and southern Lanes are almost certainly from the same source or sources as those from

the fort (Caruana and Hird in prep; Pringle 2009), and the tile kilns at Scalesceugh are a strong possibility.

In all, 2771 fragments of brick and tile were recovered, of which 1484 (54%), weighing 164.535 kg, came from phased Roman contexts. The average sherd weight is slightly larger than that from the southern Lanes, being 111 g, rather than 86 g (Hird 2010). Much of the material comprised featureless flakes, although some fragments had one surface remaining. Measurements of thickness, taken only where two surfaces remained, are recorded in the archive. It was not possible, on the grounds of thickness alone, to differentiate between different types of tile, although anything thicker than 45 mm was assumed to be brick.

The tile and brick from the northern Lanes does not show any great accumulation in any particular period, in contrast to the southern part of the fort, where approximately 56% of the material came from the later Roman (third/fourth-century) stone fort, and was believed to have been the roofing material of the period (Caruana and Hird in prep). A very similar proportion (58%, by weight) of the ceramic building materials recovered during the Millennium Project, which investigated other areas within the southern part of the fort, as well as a small part of the central range (Zant 2009), also came from deposits associated with the stone fort (Pringle 2009, 88, table 63). The scarcity of tile and brick on the Lanes sites generally leads to the conclusion that the roofing material, at least, could derive from rubbish dumped from other parts of the Roman town, possibly even from the fort, and that perhaps only some of the other categories of ceramic building material, for example flat tile, brick, or pipe, saw any, albeit limited, use on the site.

Classification

The classifications follow those of Brodribb (1987), with *tegulae* flanges following Hird 2010.

Roofing (*tegulae* and *imbrices*)

Fragments which were definitely identifiable as *tegulae* made up 5% of the assemblage. No fragments were large enough to provide full dimensions, and thus *tegulae* are undoubtedly under-represented, as, unless fragments have distinctive features (eg flanges), they have been classified with the flat tiles. Examples of flange profile types 1, 2, 3, 5, 7, 9, and 10 are represented. A single *tegula* fragment was recovered from Period 6, but it could be intrusive, as fragments of the form occur more consistently from Period 9 onwards, with a concentration in Period 12. Incised lattice decoration occurs fairly commonly on the underside of the *tegulae*. Their marked curvature makes *imbrices* easily recognisable, so the figure of 11% in the assemblage is reliable. *Imbrex* fragments first occur in Period 8B, and are concentrated in Periods 11A, 11B, and 11E.

Flat tiles

Any fragment with two surviving surfaces, but less than 45 mm thick, and with no other distinguishing features, has been broadly classified as flat tile. Consequently, the figure of 13% for this material is likely to be inflated by the inclusion of unrecognised fragments of *tegula* or box tile. A flat tile, or possibly a box tile, with a square hole came from a Period 8A deposit in KLA D, in the north-east of the site.

Water-pipe

Fragments of pipe make up only 2% of the assemblage. They first occur in Period 9, and are concentrated in Periods 11E and 12. There are no fragments complete enough to provide dimensions.

Box tile

Fragments of box tile are relatively uncommon, amounting to less than 1% of the assemblage (see flat tile). Recognisable fragments were recovered from Periods 10B, 10C, 11B, and 11D. A fragment of box tile from the fill of a Roman (but not closely phased) pit was thickly sooted internally, as if it had been used in a flue. A slightly burnt box tile with a square hole in the wall came from a Period 10A layer in KLA D, in the north of the site.

Brick

Fragments which can with reasonable certainty be attributed to bricks amount to just over 7% of the assemblage, and appear in contexts from Period 5B onwards, with a concentration in Periods 10C and 11A.

The brick and tile fabrics

Fabric 1

A sandy, rough fabric with a hackly fracture. It is reddish-orange in colour, and may have paler streaks in its fracture.

Fabric 2

A hard, orange-red fabric, finer textured than Fabric 1, with quartz sand; it may have larger inclusions of red pebbles and quartz.

Fabric 3

A very hard, rough, abrasive, almost crumbly, red fabric with a purplish tinge. The fabric is sandy, with quite large (1 mm) quartz particles.

Fabric 4

A fairly fine-textured, pink fabric with large quartz and black inclusions.

Fabric 5

A very hard, fine-textured, purplish-red fabric with large quartz and other inclusions.

Tile stamps

F36 Fabric 2. A single fragment, with no surviving edges, with a fragmentary incuse ligatured IMP stamp. All the examples of this stamp from excavations within the fort at Carlisle, as well as those known from Bainbridge and Housesteads, are thought to be from a single die (Caruana and Hird in prep), and it is likely that, although incomplete, this example is from the same. The earliest occurrence of the stamp on the Annetwell Street site is from a context suggesting production before the end of the second century. Further examples were recovered from the Millennium excavations within the fort (Pringle 2009), where they appear in the early third century. There was also a fragmentary example of this stamp from the southern Lanes (Hird 2010, fig 110).

Th: 40 mm

KLA C 628, Period 15A (Post-Roman)

F37 Fabric 5. Six fragments, making up an almost complete stamp of LEG VI in relief, on a *tegula* with flange type 10. There was only one example of this stamp, out of a total of 67 stamps, from a post-Roman context from the fort at Annetwell Street (Caruana and Hird in prep), although a possible example is known from the Millennium excavations (Pringle 2009, 899), where it was identified as a Scalesceugh product. It does not appear to be one of the dies of the Sixth Legion recorded by Wright (1976).

LAL D 422, Period 12

Discussion

It is clear that very little ceramic building material could be associated with the northern Lanes during the early days of its occupation. Contexts associated with Periods 1-5 produced no more than 34 fragments in total, making it likely that none was used on-site during this period, the small amount being dumped with other rubbish. The situation was little different in Period 6, with only 35 fragments recovered.

Periods 7 and 8 saw some increased use, with brick and flat tile from Period 7, including a heavily sooted flat tile, represented by six fragments, from a gully in the central part of the site (KLA C). Material from contexts attributed to Period 7-8A (26 fragments) included a single *imbrex* fragment, and one of brick. Thirty-five fragments came from Periods 8A and 8B, and were predominantly brick and flat tile. Period 9 produced a similar quantity of ceramic building material, in all five fabrics. Most of the distinguishable tile types are flat tile or brick, but there is a single fragment of possible box tile from

the central part of the site (KLA C), and an *imbrex* fragment from the north-west corner (LAL D).

Period 10 produced significantly more fragments of ceramic building materials, with a steady increase through the period, peaking in Period 10C. Amongst the fragments (68) from Period 10A, there was a *tegula* (flange profile 10) and several *imbrex* fragments from the eastern and northern parts of the site (KLA B and LAL C). Brick fragments also came from several deposits in the central eastern area (KLA B and KLA C), and possible box-tile fragments were recovered from external soil deposits in the northern property (KLA D and LAL D). Almost 64% of the 99 fragments from Period 10B were small and indeterminate, though a few fragments of *tegulae* and *imbrices* can be identified. In addition, a possible box tile came from a seemingly dumped deposit in the northern part of the site (LAL D; 1013; Ch 3, p 81), and a fragment of pipe was recovered from a minor deposit in the east (KLA B). Although 185 fragments of tile and brick were recovered from Period 10C contexts, a large proportion (c 63%) was again small and undiagnostic. No *tegulae* were noted, but there were 20 fragments of *imbrex*, and 23 of flat tile.

The soils of Period 10A-11B, which accumulated over the southern half of KLA C in the central part of the site, yielded some 68 fragments, including small pieces of *tegulae* and *imbrices*. Well 1016, dated only to before Period 10C (Ch 3, p 75), produced four fragments, including one of *imbrex* and one from a possible box tile.

Period 11 yielded a yet larger quantity of ceramic building material, although, again, there is not sufficient to suggest significant use in buildings on the site. In all, 151 fragments of tile and brick were recovered from Period 11A, 121 (80%) of them coming from central and southern parts of the site (KLA), perhaps associated with the construction of Building 2000 (Ch 4). Bricks are well-represented, and this period has the densest concentration of stratified examples. Flat tiles are also present in numbers, including a large fragment, weighing almost 2.5 kg, from the west wall of the building, and an example from the same wall bearing a dog's footprint. Roof tiles were represented by a *tegula* fragment (flange type 7) from a make-up deposit within the building, and 22 *imbrex* fragments. All are relatively small, and, although there would appear to be a concentration in the area, there is far too little material to suggest that any building in the area was roofed with ceramic tile.

Activity attributed to Period 11B produced an amount similar to that in Period 11A (154 fragments), 57 of which (37%) came from the northern property (LAL D), mostly from an internal deposit within Building 1568 (Ch 4, p 100). The latter (40 fragments) include two *tegula* fragments (flange profiles 1 and 5) and two fragments of a possible box tile. Much less ceramic building material (53 fragments) can be associated with Period 11C, and most comprises small, undiagnostic fragments. The bulk of the material (43 fragments, or 81% of the assemblage) came from the central and southern parts of the site (KLA), most from KLA C, and includes several fragments of flat tile, *tegulae*, and *imbrices*. Five joining fragments of a flat tile, weighing over 4 kg, came from an external deposit immediately west of Building 2000, whilst 11 ceramic pipe fragments were recovered from the area south of the building. All but one of these came from cobbled surface 954 (Ch 4, p 117).

Only 20 fragments were recovered from activity associated with Period 11D in the northern property. These included eight fragments from well 226 (Ch 4, p 119), one of which is a relatively large brick fragment, weighing almost 2 kg. By contrast, well over 100 fragments came from deposits attributed to Period 11E within the northern building plot. Fragments of *tegula*, *imbrex*, and flat tile were recovered, but almost all are relatively small and featureless. Single pipe fragments were also recovered from two layers in this property, and others came from external surface 575 in the north-west of the site (LAL D; Ch 4, p 123). Period 11D-12 deposits to the south, associated with the abandonment of Building 2000, yielded a relatively large assemblage of over 200 fragments, mostly from KLA C, but there, too, most of the material comprised small and heavily abraded fragments, with few diagnostic pieces. In the area south of the building, where extensive soil deposits accumulated during this period, a *tegula* of flange type 1 came from deposit 904, and several fragments of ceramic pipe were recovered, both from this deposit and from related deposit 907 (Ch 4, p 131).

In all, there were over 60 fragments of tile and brick from Period 12 deposits in the northern property, although, once again, the fragments were relatively small, averaging only 64 g in weight. *Tegulae* include six fragments of a stamped tile of the Sixth Legion from a layer in the north-west of the site (LAL D; F37; p 452), and a fragment with a flange of type 5, from the same layer. Another *tegula* of flange type 2 was recovered from another deposit within this trench.

