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# Bearsden

A Roman Fort on the Antonine Wall

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# Chapter 21

# DISCUSSION

This discussion cannot do full justice to the detailed specialist reports which form such an important part of this account of the work at Bearsden. I have attempted to give an over-view rather than repeat these reports and the reader is directed to them for further information. One point, however, requires stressing, which is the evidence for the date of the site. This uniformly points to a single period of occupation spanning the middle years of the second century, that is the time that the Antonine Wall was built and occupied. Unfortunately, the evidence does not permit a closer dating. The few items in the building layers (7.1.1.45; 46; 7.2.3.2; 3; 3.7.49) cannot be dated tightly enough to aid discussion of the foundation of the fort, and the same may be said from the larger quantities of material from the destruction layers.

## 21.1 THE SITE BEFORE THE ROMANS

Pollen analysis has demonstrated that when the fort was built the vegetation was established pasture with some partially cleared woodland (4.2; 13.12). Trees were mainly of alder and hazel with some willow; there was a little oak and less birch. Grasses, heather and rushes grew in cleared areas. The turves used to construct the fort ramparts were mostly cut from rather wet well-grazed pasture with rushes. This is supported by analysis of the brown earth soil below the west rampart a little north of the presumed position of the west gate, which indicated the existence of a wet meadow environment capable of supporting agriculture (4.1). Indeed, the appearance of small fragments of charcoal in the soil sample below the main zone of earth worm activity suggests that the land was used for agriculture before the arrival of the Romans. The reduction in the original forest cover restricted the types of trees available for use by the Roman army. Analysis of the beetles suggests that the climate was little different from that pertaining today, but possibly a little cooler (17.4).

## 21.2 THE ANTONINE WALL

No trace survived of the Antonine Wall rampart. However, a hard strip of subsoil at the east end of the site, 4.3m wide, probably marks the position of the stone base. This strip lay 9m behind the ditch, which was about 2.5m deep, but varied in width from 6.5m or more at the west end of the site to 8.3m at the east end, perhaps reflecting erosion down the slope. The single measurement for the base, itself not entirely certain, combined with the variety in the width of the ditch results in it being difficult to plot the putative line of the north rampart of the fort. The line on the plan can only be the best guess.

The putative base matches the average width of the Antonine Wall rampart, 4.3m which is 15 Roman feet, though wider dimensions are recorded in the western part of the Wall (Keppie 1974: 156–63; Robertson 2015: 17). However, the closest sections to Bearsden fort are in New Kilpatrick Cemetery where two visible lengths are 4.3m wide, one widening to 4.6–4.7m (Keppie 2009b: 57). The base is also 4.3m wide at Thorn Road, the next known record to the west of Bearsden (Keppie 1974: 160). There are few measurements for the ditch and the berm in this area. At Peel Glen, 2.5km to the west, the berm was 8.6m wide and the ditch 7m, both roughly comparable to Bearsden.

## 21.3 THE FORT

### *21.3.1 The fort platform*

The topography of the site has already been described (3.1), but to reiterate briefly, the northern half sloped from north to south into an east–west depression while the southern half was more or less flat. Two points may be added. The headquarters building was placed on a slightly higher elevation in the southern half of Bearsden 1. This consideration may have influenced the exact location of the fort at this particular point. There appears to have been an attempt to even up the fort platform by infilling part of the east–west depression. Such evidence survived at 'building' 8 while the soft fill of the ground in the area to the south of the bath-house from the fort/annexe rampart to the latrine suggested in filling here also.

### *21.3.2 Measurements and builders*

Roy and other antiquarians as well as the early OS mappers provided a simple plan for the fort, a single enclosure lying east–west and attached to the rear of the Antonine Wall. During the excavation, an internal subdividing rampart of this enclosure was located, similar in form to the other ramparts, though few sections across any surviving rampart were possible. It gradually became clear that the large enclosure was not originally subdivided into a fort and annexe but had been divided during construction. The

evidence for this is worth stating here as it colours all subsequent interpretation.

One room of a bath-house had been erected in a location which implied that the building was to have been aligned north–south immediately inside the east rampart of the larger enclosure; it was, however, demolished and a new bath-house constructed on an east–west alignment.

There appeared to have been no headquarters building in the centre of the fort; it was only deep into the post-excavation work that Geoff Bailey suggested (pers comm) that the courtyard building (11) was part of a headquarters building (11 and 15) and that this had been erected in the centre of the larger enclosure.

These two facts were sufficient to lead to the conclusion that an original large enclosure (Bearsden 1), with these two buildings in their normal locations, had been modified during construction and divided into a fort (Bearsden 2) and annexe. The lack of ditches between fort and annexe strengthens this conclusion.

The larger enclosure measured 152m × 113m over the ramparts, 1.72ha, and 143m by 104m internally, 1.48ha. Following division of this into a fort and annexe, the former was reduced to 113m × 102m, an area of 1.15ha, internally 104m × 93m, 0.95ha.

The dimensions may be compared to other forts on the Antonine Wall. The forts larger than Bearsden 1 are Carriden, Mumrills, Balmuildy and Old Kilpatrick, with Castlecary similar in size; all are primary forts, that is, forts built during the implementation of the first plan for the Antonine Wall. When the secondary forts, that is, those erected as part of the revised plan, are taken into consideration, Bearsden 2 is smaller than Bar Hill, Auchendavy, Cadder and possibly Castlehill but larger than Rough Castle, Westerwood, Croy Hill and Duntocher; it thus sits squarely in the middle of this group of forts.

**Table 21.1**
**Forts on the Antonine Wall: internal area**

| | |
|---|---|
| **Carriden** | *c* 1.6* |
| **Mumrills** | 2.6 |
| Rough Castle | 0.4 |
| **Castlecary** | 1.4 |
| Westerwood | 0.78 |
| Croy Hill | 0.6 |
| **Bar Hill** | 1.3 |
| **Auchendavy** | 1.1 |
| Cadder | 1.12 |
| **Balmuildy** | 1.6 |
| Bearsden 1 | 1.48 |
| Bearsden 2 | 0.95 |
| Castlehill | *c* 1.0 |
| Duntocher | 0.2 |
| **Old Kilpatrick** | 1.7 |

**Bold** indicates a primary fort, with both Auchendavy and Bar Hill listed as such in view of the present uncertainty. * Bailey 1997

An inscription found beside the northern granary records work by the century of Quint … in the Twentieth Legion (5.2.1.1; *RIB* 3506). This legion was based at Chester and is recorded on many inscriptions as helping to build the Antonine Wall. It is not known whether the soldiers of this legion built the whole fort or perhaps only the stone buildings. Elsewhere legions are recorded building at the forts of Croy Hill (*RIB* 2161, 2162, 2163), Auchendavy (*RIB* 2180) and Balmuildy (*RIB* 2191), while auxiliary units are recorded at work at Castlecary (*RIB* 2155). Bar Hill has furnished building stones of both auxiliaries and legions, including the Twentieth Legion (*RIB* 2170, 2171).

### *21.3.3 The defences*

The variety in the number of ditches round the fort and annexe is worthy of comment. The north rampart was protected by the single ditch of the Antonine Wall. There were three ditches to the west, two to the east and one wide ditch to the south. The *actus* grid (illus 21.12, and discussed below) suggests that the outer west ditch may be an addition to the main plan for the defences as the western edge of the frame is the outer lip of the middle west ditch. This could imply either that the first proposal was for two ditches to encompass the site, or that from the beginning two ditches were considered sufficient to the east and south but a third was required to the west. The ground falls away steeply to the south, and less sharply, but still noticeably, to the east. However, to the west the land today is almost level, before rising gradually about 300m from the fort. For that reason an extra ditch could have been thought necessary to the west.

It is not certain where the south termination of the outer west ditch lies. Roy ignored it, commenting that the fort was surrounded by 'a double envelope' while his plan shows only two ditches (illus 2.1). There was no distinction in the fill of the three western ditches which may imply that the outer ditch was filled at the same time as the others. The 1863 OS map of the site, surveyed in 1860, records only a wide depression running round the fort and annexe south of the Military Way (illus 2.2). This depression is a little wider than the south ditch, but over twice as wide as the two east ditches. On the west side the depression is about half as wide again as the three ditches, and widens to the north. This may be significant, but it does not offer any help in determining the southern limit of the outer ditch. This has been placed at the south-west corner of the defences as the most logical place and for that reason alone it is represented thus on the plans. The width of the depression in the OS map presumably reflects centuries of ploughing over the defences.

The reason for the extra wide ditch to the south is problematic. This ditch is about equal to the two east ditches and the inner two west ditches in width, but is not markedly deeper when measured from the south lip; the north slope is very different as the ground surface is higher here. As the subsoil is boulder clay it is unlikely

that the central spine between two ditches had collapsed and been removed in antiquity. Indeed Roy (1793: 159) states that the defences were best preserved on the south side and thereby implies that the 'double envelope' was visible there in 1755. It might be considered possible that the trench coincidentally crossed the junction between two ditches beside the causeway outside the south gate, but the trench lay a little too far to the west for this to carry conviction. The reason for the width of the south ditch must remain uncertain.

The eastern ditches do not extend as far north as the Antonine Wall rampart, stopping 17m short. The Wall changes direction here, turning slightly south, and it is possible that a gap, made too large by miscalculation, had been left to allow for this southern turn. The two eastern ditches of the fort at Rough Castle did not extend north of the Military Way which exited the fort at the east gate but a small enclosure lay here. At Mumrills, the outer west ditch stopped at the Military Way while the inner three extended to the south side of the rampart. At Croy Hill and at Balmuildy the outer ditches did not reach the back of the rampart; these situations could be explained in a similar way to that at Bearsden (Robertson 2015: 86 and 104 for the plans). No fortlet was found at Bearsden the existence of which otherwise might explain this arrangement.

The inner east ditch was not available for examination, but the outer ditch was roughly half full of sewage by the time the fort was abandoned. The simplest explanation for this is that the sewage flowed from the latrine into inner ditch and then backed up into the outer ditch. On that basis, it is presumed that the inner and outer ditches were conjoined immediately to the north of the causeway outside the east gate of the annexe.

The east and west ramparts of Bearsden 1 were 4.5m wide, a little more than the normal width for the Antonine Wall rampart, but the fort/annexe rampart was 4.35m wide. The ramparts were formed of turf blocks. No turfwork survived higher than 300mm, with a maximum of three layers of turf each 80mm–100m thick, rather thinner than the 140mm recommended by Vegetius (3, 8). One argument has been that the turves of such thickness were difficult to obtain on the Antonine Wall, and a suggested thickness of 130mm was proposed, this then being reduced by subsequent compression, which would bring us close to the thickness at Bearsden. The thickness would also indicate that the turves were laid turf-to-earth (for discussion see Hanson &

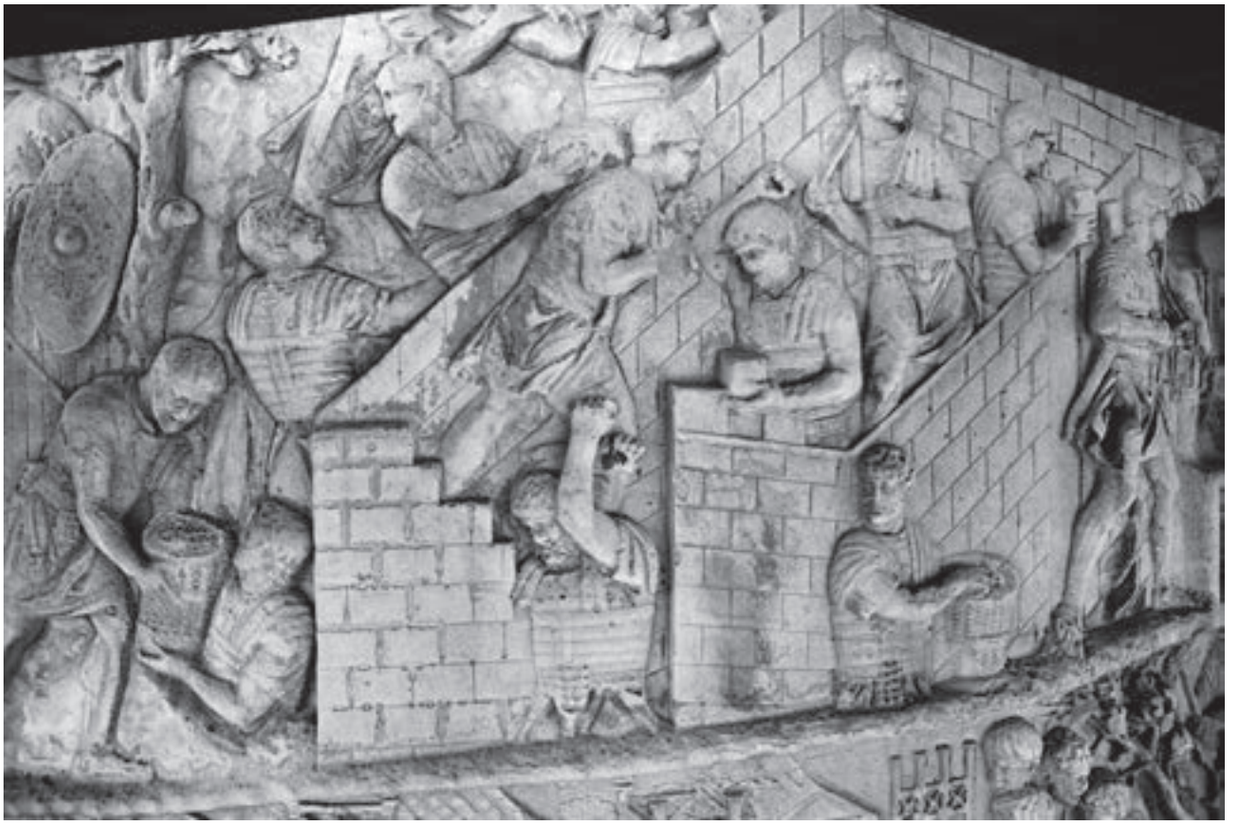

*Illustration 21.1*
Trajan's Column in Rome shows the construction of a Roman fort. The soldiers carry turves on their shoulders. In the centre a turf is being removed from the shoulders of a soldier ready to be placed on the rampart. The earth is being removed from the ditches in baskets.

Maxwell 1983: 82) The turves in the west rampart, the only place where they could be measured, varied in size, but several were found to measure about 450mm × 300mm, close to the regulation size of 430mm × 300mm stipulated by Vegetius (3, 8). No evidence was found to indicate the batter of the rampart.

Outside the east rampart of the fort an area of burning, about 1.5m wide and up to 120mm thick, overlay an area of cobbling. Within the burnt debris were willow, alder and hazel branches about 10mm–15mm in diameter. These probably formed part of the timber breastwork of wattles fallen from its original position on top of the rampart and burnt when the fort was abandoned; the recovery of such evidence is unusual.

None of the fort's gates has been located. The east and west gates presumably lie under Roman Road. The ditches outside the assumed position of the north and south gates of Bearsden 2 were examined before it was realised that this fort was secondary; it was not possible later to examine similar areas in the centre of Bearsden 1. The lack of causeways in the centre of Bearsden 2 suggests that causeways in the centre of Bearsden 1 were retained. This is supported by the results of a resistivity survey along the line of the south ditch which led to the tentative identification of a causeway about 24m wide over the south ditch in the centre of Bearsden 1.

The location of the gates, however, remain uncertain. It is possible that they were not moved from the centre of Bearsden 1, but the plan of the fort suggests that each lay in the centre of the north and south sides of Bearsden 2. In this case, travellers would have had to pass along the berm from the causeway to the gate to enter the fort. Bailey has pointed out to me that the position of the south gate at Cadder may have been moved when, as he argues, the central range was turned through 90°.

### *21.3.4 The roads*

Bearsden 2 was crossed by the usual pattern of roads. They were generally formed of cobbles surfaced with gravel or crushed sandstone. Under present-day Roman Road presumably lay the *via principalis* passing between the west and east gates. This was not examined. From the centre point of the fort the *via praetoria* led northwards. The space between buildings 3 and 7 was 10m, though not all of that was necessarily metalled; the surviving metalling was 3.8m wide. The *via decumana*, leading to the south gate, was 9.2m wide. A strip of metalling, 6.3m wide, behind building 12 was possibly the *via quintana*. The interpretation of buildings 11 and 15 as the headquarters building, however, casts doubt on this assumption. It was wider than the paths in the fort but if building 12 was a storehouse an area of hard standing to its south may have been necessary for the unloading of carts; the granaries at Housesteads were loaded from the *via quintana*. The width of the *via praetoria* and the *via decumana* suggests that the space allowed for the *via principalis* and its 'verges' would be about the same, 10m, and this is the space which has been allowed between buildings 4 and 9.

Narrower streets or paths, 1.7m wide, lay between buildings. There were frequently gaps between the metalling and the buildings but no indication what the ground cover was during occupation of the fort.

Running around the fort inside the rampart lay the intervallum space. This included a road, varying in width from 2.1m to 3.2m, and an open space from 1.5m to 3.7m wide between the road and the rampart, though this may have been as wide as 5m inside the north rampart. At some forts ovens were placed in this area, but none were found at Bearsden. In one location, within the western intervallum road, a water tank was discovered; elsewhere there were patches of cobbles and small pits while post-holes inside the south and east ramparts suggest the existence of structures.

### *21.3.5 The stone buildings*

Sandstone was favoured for building and sculpture with slate used for some floors, for example in the cold bath. Undressed cobbles might be used in the side walls of drains, and occasionally in the heated range of the bath-house while some undressed boulders lined the passages of the main furnace. The sandstone was available locally, for example from outcrops in the Kelvin Valley 2.5km to the south-east (5.1).

The form of construction of all buildings was coursed rubble, though of various standards. The primary bath-house contained the best dressed stones and it appears that many were re-used in the hot dry room and some in the cold bath of its successor. Many stones exhibited diamond, diagonal or vertical broaching. The granaries were next best in terms of construction, with the steam range of the bath-house the poorest. All walls were clay bonded with the core also containing sandstone fragments, and, not least in view of the bonding material, we may presume were plastered. The walls were normally 900mm–1m wide placed on cobble and clay or cobble foundations.

Little evidence survived for the roofing materials. No slates were found. Placing aside 'building' 16 and the bath-house, the greatest concentration of tiles was in and immediately to the area of the north granary. These were all fragmentary but probably from *tegulae*, roofing tiles (6.1). Part of a structural timber, smaller roundwood and clay-covered rushes were found on the floor of the latrine and it is possible that they were used to roof this building (13.9.8). Otherwise a different form of organic covering could have been used such as shingles. Vegetius (2, 23) comments on the use of reeds, rushes or thatch for the roofs of drill halls if tiles or shingles were not available. Caesar (*Gallic War* 6, 2) used thatch to roof the huts in his winter quarters in Gaul, but this was obviously a temporary arrangement.

### *21.3.6 The timber buildings*

Most buildings in the fort were of timber. They were based upon a frame of vertical timbers placed in post-holes. These post-holes were usually about 400mm in diameter, though they were often smaller, and were normally 400mm–500mm deep. It was not possible to determine if variation in the size of post-holes had any significance. The post itself, surviving as an impression, was generally 100mm–120mm square. It was usually, but not always, held in place by a packing of stones: elsewhere clay was used (illus 3.2.31; 3.3.13; 14; 21.2).

The posts were considerably smaller than those recorded at contemporary Bar Hill, where the posts themselves often survived (Macdonald & Park 1906: 51). The stumps there had an original diameter of 150mm to 200mm and were set in post-holes with a diameter of about 600mm and from 600 mm to 750mm deep.

The wood commonly used at Bearsden was alder, hazel, oak and willow with ash and birch less so. Alder in particular with some oak and ash were used as structural timbers with the wattles mainly of hazel and willow with some alder; oak planks or boards were used in one of the barracks. Two nails were found with oak adhering and a third embedded in a piece of conifer (11.3.7.325; 326; 327). Large quantities of burnt daub indicated the nature of the walls of the buildings; there is some indication that rushes were used instead of straw to strengthen the daub. In one area small holes were recorded between two post-holes. These, if used, would have held the stakes which formed the basis of panels of wattle and daub. The distance between the main uprights suggests that the wattles at Bearsden would have been woven horizontally round vertical stakes (Hanson 1982: 179). It is not clear why stake-holes were not found elsewhere. They were carefully sought, but it is possible that later denudation of the site had removed all trace of them in many areas, while in those areas where they might be expected to have survived, the accumulation of later deposits – most notably the Victorian clay for the terraces – had resulted in compaction of the subsoil and thus a squeezing of the Roman intrusions. Thus many post-holes were most difficult to find, and it may be that the stake-holes had all but disappeared altogether.

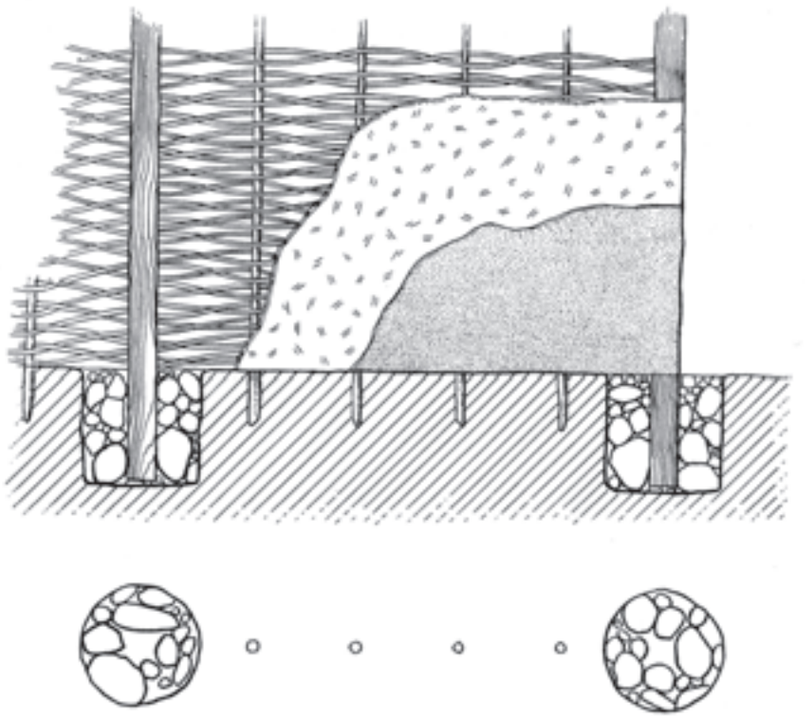

*Illustration 21.2*
Plan and restored elevation of the wall of a timber building. Drawn by Tom Borthwick.

The walls of the timber buildings were not all straight, for there was often at least one post out of alignment (cf the barrack-blocks in the contemporary fortlet at Barburgh Mill; Breeze 1974b). The post-holes were generally about 1.7m apart, though they could vary from 900mm to 2.4m. The width of the rooms was double the normal distance between the posts, about 3.4m; it seems probable that where a complete plan of a building could not be recovered, the 'double spacing' indicates the existence of a room. The spacing of the timbers is normal for the Antonine period (Hanson 1978: table 5), when timbers seem to have been placed rather further apart than in earlier years. Hanson has also noted that simple post-hole construction rather than sleeper-beam construction is more frequent in the second century (Hanson 1982: 177). He has suggested that posts of 75mm–100mm would be unlikely to support a second storey (Hanson 1982: 180). Posts of a diameter of about 100mm square could support a span of 6m, considerably more than the 4m wide barrack-blocks of Bearsden (Moleworth 1910: 117, 153, 156). This issue only becomes significant when considering the nature of the headquarters building.

A floor survived in only one room: the eastern room of the men's quarters in building 7, and even then it is little more than a patch of gravel. In the adjacent officer's quarters an area of packed clay may represent a floor especially since it was overlain by some burnt daub, though a gravel floor would be expected. Rushes were found in a drain beside building 7, a barrack-block, and in the latrine and may have been from the roof. Only one fragment of window glass was found in a barrack, in the men's quarters of building 3. The windows would presumably have been closed by wooden shutters, but equally the glass may have been removed and taken with the army when the fort was abandoned. Only two fragments of window glass were found elsewhere, one beside building 12 and the other near the bath-house (9.2.2.56–8).

Some fittings were found, including a drop hinge in the gulley to the north of building 1 (11.3.3.100), staples to support drop hinges in the east intervallum, the gulley to the north-west of building 3, the hot dry room and a pit to the south of the bath-house (11.3.3.116–119). Parts of locks were recovered from the middle west ditch (11.3.3.101; 102). Fragments of strapping and sheeting possibly from doors, window grills, etc, were found in

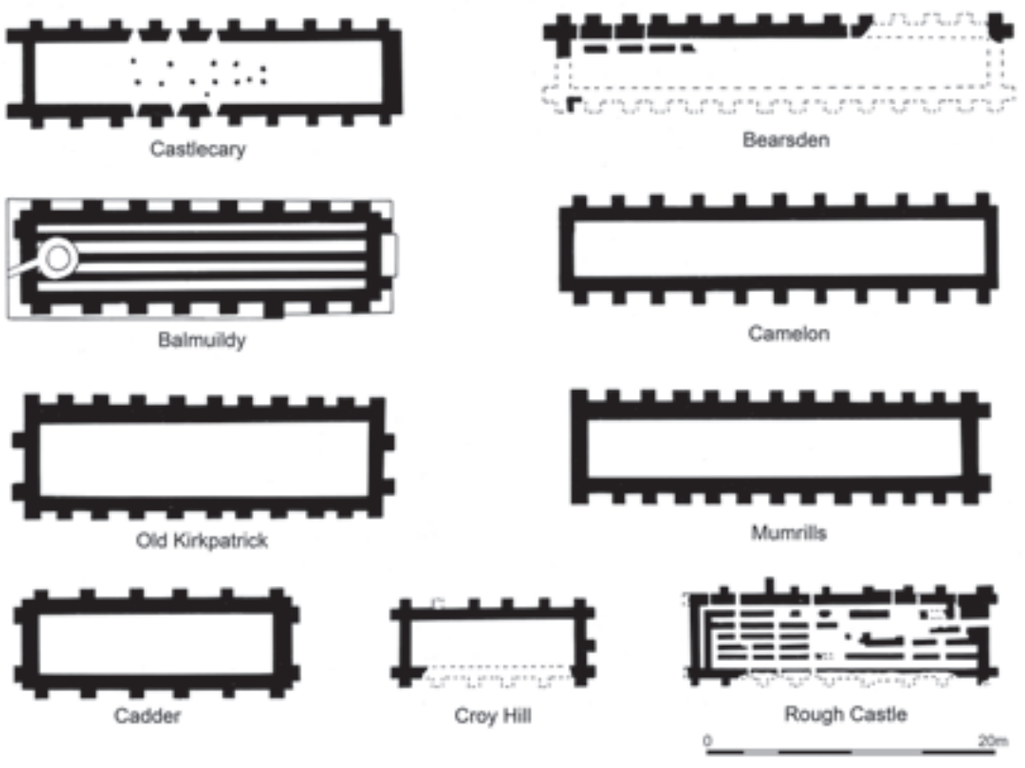


*Illustration 21.3*
Plans of granaries.

or beside buildings 1, 6, 7 and 16, the bath-house and the latrine (11.5.158–221). Nails were ubiquitous across the whole site.

Once completed, these buildings would have been virtually indistinguishable from their stone counterparts. The plastered walls would no doubt have been painted, possibly in lines to simulate stone blocks. Unfortunately no evidence survives from Britain to indicate that any barrack-blocks here had painted upon their walls scenes from Greek mythology such as are known from Germany (Baatz 1993: Taf 2). One might suspect that the marks on the walls of barrack-rooms were in any case more usually of a more prosaic nature.

The post-pipes were filled with soft, brown soil. In no case was there any evidence surviving to suggest that the post had been uprooted by rocking to and fro, and, while occasionally charcoal flecks at the top of the post-hole indicated the position of the post-hole, such flecks were rarely found within the post-pipe.

### *21.3.7 The identification of the buildings*

*The granaries*

The only buildings not of timber within the fort were the two stone granaries (4 and 9), recognisable from their unique plan, and in particular their buttresses. The granaries had raised floors to help keep the food dry and fresh, and side vents in the walls below floor level aided these processes. A layer of fine burnt debris covered the floor of the basement of the north granary. Analysis of such material in granaries elsewhere suggests that it may have derived from the periodic sterilisation through burning of the interiors of granaries, but in this case analysis was not able to suggest the derivation of the debris. Sufficient tiles were found in and around the north granary to suggest that its roof was of tile; nothing can be said about the roof of the south granary.

The granaries were the same width, 5.5m externally, but the northern granary was 32.7m long and the southern calculated as at least 22m long. The walls of both varied in thickness but averaged 1m. The floor area of the north granary was about 107.35m$^2$, reduced to about 61.4m$^2$ if a corridor 1.5m is allowed through the building (Gentry 1976: 25). The southern granary had a floor area of 77m$^2$, equivalently reduced to 44m$^2$. The total floor area of the granaries was therefore 105.4m$^2$. Storing grain to a height of 2m would provide a capacity of 210.8m$^3$. Gentry's figures for the requirements of 100 men for a year were 53m$^3$. In theory, therefore, the two granaries would provide grain to feed nearly 400 men, though this does not take into account the fodder for the horses.

The proportion of the granary space to the internal area of the fort is 1:4, which is the same as Cadder, and similar to Bar Hill and to Rudchester and Housesteads on Hadrian's Wall (Gentry 1976: 30, table 1). Gentry emphasises the many unknowns, not least whether all types of food were stored within the granaries,

but these figures are an indication that Bearsden falls within normal parameters (illus 21.3).

*Barrack-blocks and 'storehouses'*

Buildings 3 and 7 are recognisable as barrack-blocks. Each contained a large room for the officer at the rampart end of the building, where it is normally placed, and eight smaller rooms for the men. Little can be said of the internal arrangements of the barrack-blocks. In the officer's quarters of building 5 lay a small hearth, while one in the base of an amphora was found in a barrack-room in building 3. A small patch of gravel flooring survived in one room in building 7. No evidence was found to hint at how many men slept in each room.

The other buildings within the fort are not so easy to identify. In the northern part of the fort three long narrow buildings (1, 2 and 5), similar in size to the adjacent barrack-blocks, were investigated. Unfortunately it did not prove possible to examine these buildings as thoroughly as the barrack-blocks, and thus it is not clear whether those parts excavated were accurately representative of the rest of the buildings. However, it does seem clear that there were no partitions in building 1, while the partitions in the other two buildings were differently spaced from those in the barrack-blocks. In the belief that these buildings may have served as stables, the phosphate levels and the insect remains were examined, but inconclusively.

Building 12 in the central range is closely paralleled in other Antonine Wall forts, most clearly at Cadder and Balmuildy, and is probably a storehouse (Robertson 2015: 101 and 104). It should be noted, however, that such buildings normally extend to the back of the central range and this building does not appear to do that. The distribution of different types of pottery was helpful in reinforcing the evidence provided by the plans that buildings 3 and 7 were barrack-blocks while the others were not: see pp 350–9.

*The headquarters building*

Building 11 in the central range requires rather more consideration. Once the existence of the courtyard had been recognised, the building was tentatively interpreted as a commanding officer's house. This was on the basis of the existence of the courtyard. The lack of a south range to the building led to the abandonment of this theory. The similarity of the plan – three ranges round a courtyard in the style of the *fabrica* at Inthtuthil (Johnson 1983: 183–8) – led to the suggestion that it was a workshop. The lack of any evidence for industrial activity militates against this proposal. During the post-excavation work Geoff Bailey offered (pers comm) a third possibility, that buildings 11 and 15 together comprise parts of the headquarters building. This proposition needs to be examined at some length as the evidence is contradictory.

In favour of the suggestion that buildings 11 and 15 together formed the headquarters building:

- a courtyard normally forms the forward part of a headquarters building;
- the building is in the centre of Bearsden 1;
- the linking of buildings 11 and 15 creates an acceptably sized headquarters building;
- the well discovered in the grounds of Maxholme (Macdonald 1934: 326) would have been appropriate to a headquarters building;
- the small number of artefacts found here would be appropriate for a headquarters building (Giles, pers comm).

Against the suggestion:

- the three post-holes which should have formed the southern part of the western wall between buildings 11 and 15 were not found; while it is possible that a modern intrusion destroyed them, this is not conclusive (see p 37);
- the metalling south of building 12, interpreted as the *via quintana*, is directly east of the gap between the southern post-holes of building 11 and the northern post-hole of building 15; this gap was originally interpreted as indicating the line of the *via quintana*; there is hardly sufficient space for the road to turn south and pass along the east wall of the headquarters building, but it is possible that the metalling led to a side entrance to the headquarters building as is visible at both ends of the aisle to the cross-hall at Chesters on Hadrian's Wall, though such entrances have not been recognised at other forts on the Antonine Wall;
- there is a range to east and west (and possibly also the north) of the courtyard, which is unusual on the Antonine Wall. It is, however, paralleled at Balmuildy, Mumrills and Cadder where the courtyards were flanked by ranges but with no indication of subdivisions (Miller 1922: 22–5; Macdonald & Curle 1929: 426–30; Clarke 1933: 35–7).

The interpretation of the courtyard as an industrial building or part of the commander's house must be rejected. Its location in the centre of Bearsden 1 is a powerful argument in favour of its interpretation as part of the headquarters building. It is helpful that its east and west ranges are paralleled at other Antonine Wall forts. The main difficulty lies in explaining the gap in the putative west wall of the building. However, the way in which the west wall of building 11 and the corner of building 15 line up is suggestive. In conclusion, the evidence, on balance, supports buildings 11 and 15 being part of the headquarters building.

The headquarters building at an estimated 23.50m north–south by 19.70m east–west would be comparable to that at Bar Hill, 25.50m × 23.47m, and Cadder, 23.47m × 17.68m. The latter is a secondary fort and the former possibly also. The headquarters buildings in the primary forts, Mumrills, Castlecary, Balmuildy and Old Kilpatrick, are all larger than Bearsden, while those in the secondary forts, Rough Castle, Croy Hill and Cadder, are all smaller.

To turn to internal arrangements. A headquarters building normally consisted of a courtyard, cross-hall and rear range of

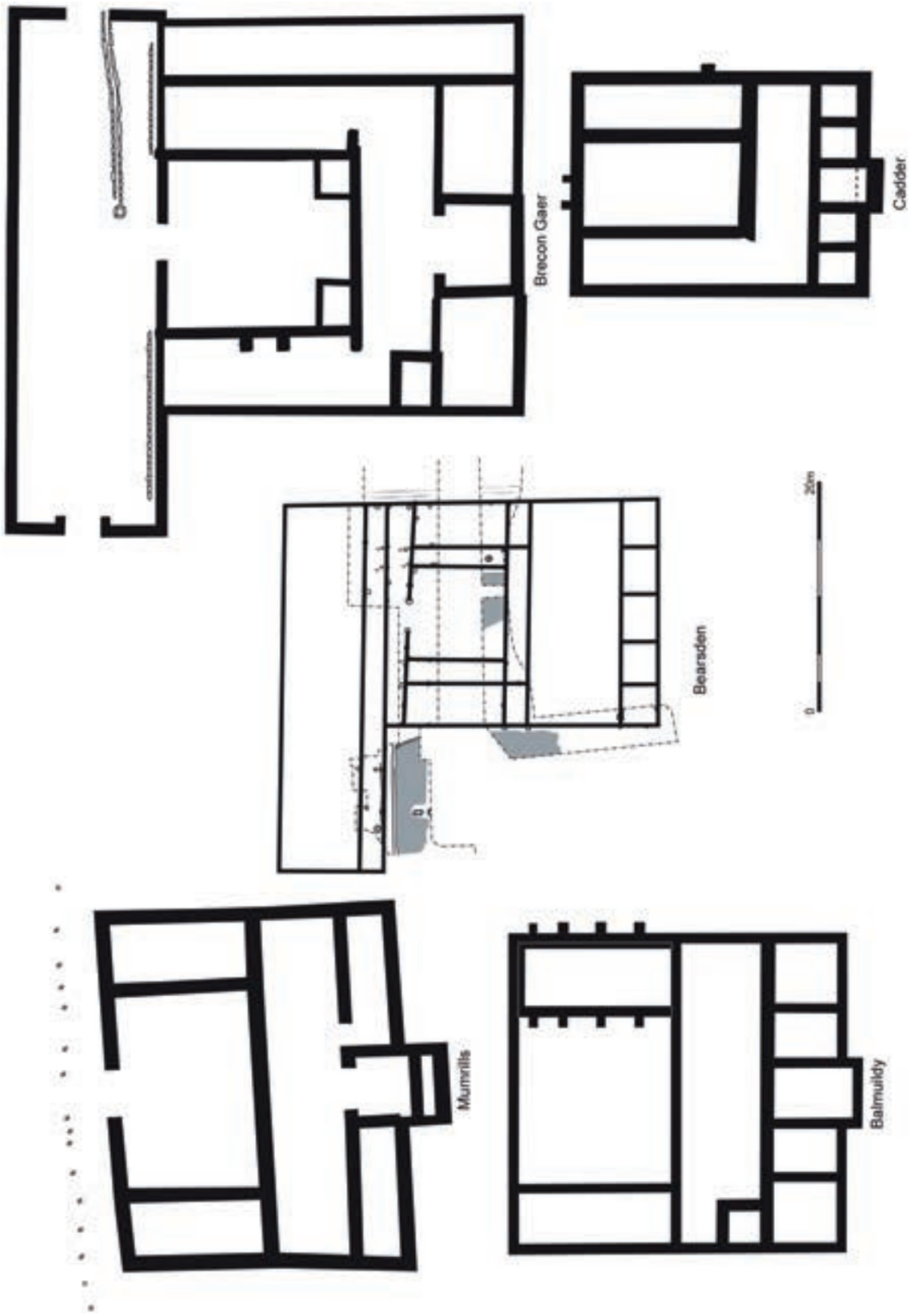


*Illustration 21.4*
Headquarters buildings on the Antonine Wall.

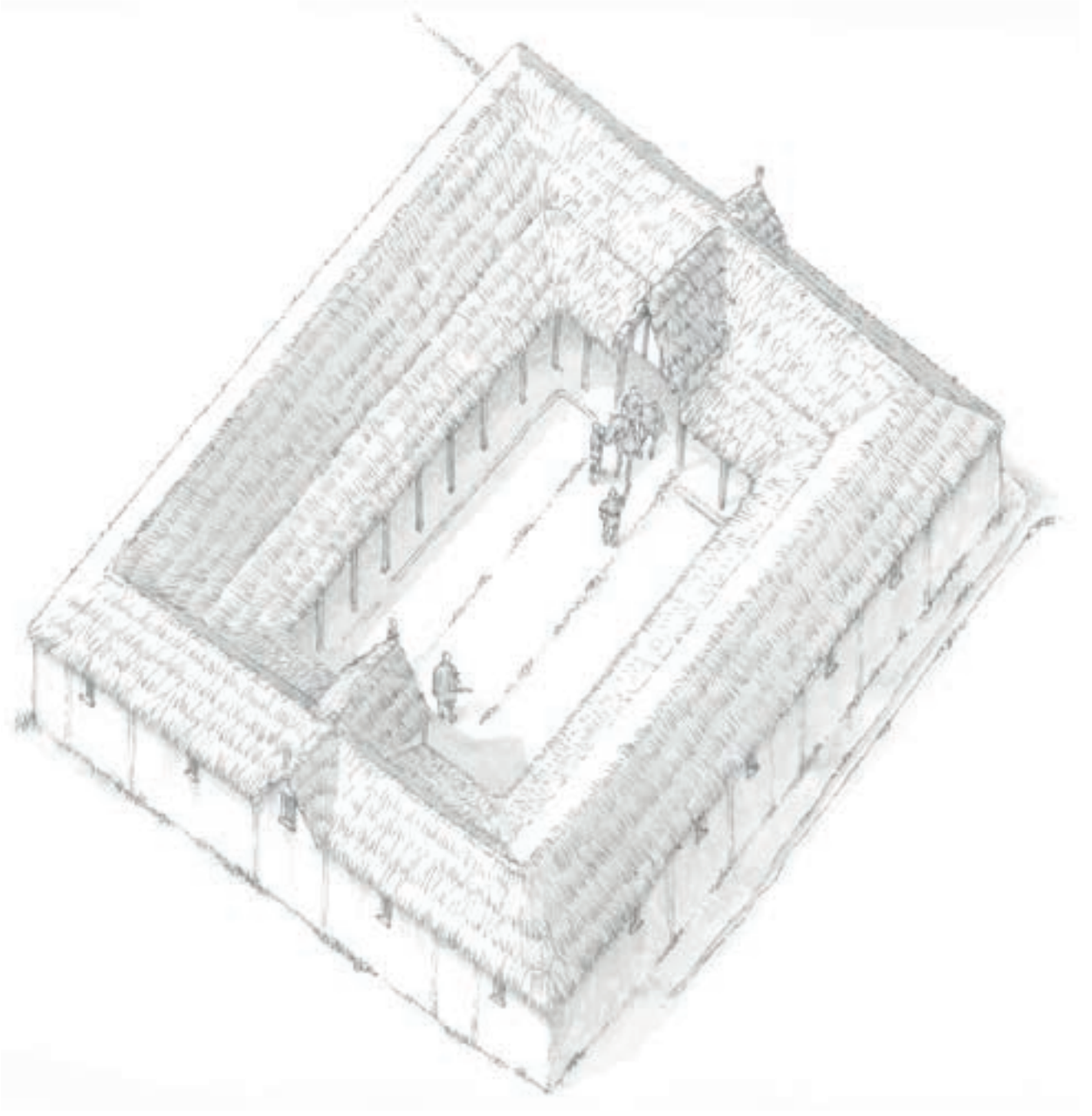

*Illustration 21.5*
A reconstruction of the headquarters building without a forehall and without a basilica. This version is offered on the basis of the lack of evidence for a cross-hall. Its post-holes suggest that its vertical timbers were no more substantial than those in other buildings within the fort. In keeping with the general poor quality of the internal structures in the fort, this is shown as a single-storey structure with a thatched roof. Drawn and described by Michael J Moore.

five rooms. At Bearsden the courtyard can be recognised, but the area where the cross-hall would have lain was not available for excavation. The right-angle of posts (building 15) should indicate the south-west corner of the building, but otherwise it is not possible to determine the internal arrangements. The irregular linear feature to the east of the more northerly post at this corner may suggest the location of the north wall of the rear range of rooms. The rooms, however, would then be shorter east–west than north–south which would make them unique on the Antonine Wall. Unfortunately no other post-hole was found which would help clarify the arrangements in this part of the building.

**Table 21.2**
**Headquarters buildings on the Antonine Wall**

| *Fort* | *N–S* | *E–W* |
|---|---|---|
| Mumrills | 33.22m | 36.27m |
| Rough Castle | 24.99m | 13.11m |
| Castlecary | 29.57m | 26.52m |
| Croy Hill | 16.29m | 20.57m |
| Bar Hill | 25.50m | 23.47m |
| Cadder | 23.47m | 17.68m |
| Balmuildy | 26.21m | 24.99m |
| Bearsden | 23.50m | 19.50m |
| Old Kilpatrick | 27.43m | 24.99m |

*A forehall?*

Bailey has also suggested that there was a forehall to the north of the headquarters building. There are pros and cons for this proposal.

In favour of the existence of a forehall:

- a long forehall could encompass the posts in building 10 which otherwise have no explanation, though it remains possible that these posts form part of another building;
- the forehall would include the area immediately north of the courtyard and would therefore eradicate a possible northern range to the headquarters building which would otherwise be a unique feature on the Antonine Wall;
- it could offer an explanation for the many posts in the northern range of the building.

Against the suggestion:

- the gap in the west wall of the building remains a problem in defining buildings 11 and 15 as a headquarters building, though it does not in itself affect the proposal for a forehall;
- if the two most northerly rows of posts in buildings 11 and 10 are taken as dividing the south aisle from the nave, the aisle would be only 2m wide. This is narrower than the aisle in the timber forehall at Zugmantel, which is 3.3m wide, and the aisle in the stone basilica at Birdoswald, a putative exercise hall, 2.85m (Johnson 1984: 124, fig 95; Wilmott 1997: 97). Further, the approximate width of the forehall, about 8m, is narrower than the more normal 12m;
- the posts in building 10 do not completely match those in the northern part of building 11; this could be explained if the southern 'aisle' of the forehall was a corridor running into building 10, with the next row of posts to the north in each building forming the south wall of the forehall; this arrangement would, however, appear to be unique and leaves unaccounted a random post at the south-east corner of building 10; although, 100mm square timbers are thought not to have been strong enough to support an upper storey, with appropriate bracing they could have risen to sufficient height for an exercise hall (Hanson 1978).

In conclusion, there are more arguments for buildings 10, 11 and 15 forming part of a headquarters building with a forehall than against. The minimum length of the building would have been 30.07m. The width of the building is even more difficult to compute, but would have been perhaps 8m.

There appears to be two main types of forehalls, those consisting of a single hall and the other a hall with an aisle to each side. The proposed Bearsden forehall measuring 30.07m × 11.2m compares well to other buildings with aisles. The aisle-less stone forehall at the Saalburg, reconstructed over 100 years ago, measures 40m × 11.5m while the timber example at Zugmantel was also 40m long, but had a nave 4.5m wide with aisles of 3.3m.

We are left with a number of possible unique elements to the headquarters building: the shape of the rear rooms; the forehall; construction in timber, all other such buildings on the Antonine Wall being of stone, though the possibility that some of the stone headquarters buildings in other forts had timber predecessors must be borne in mind.

Finally, we should note that the building was not moved when the enclosure was divided between fort and annexe. It remained in its asymmetrical location helping to provide the fort with a most unusual plan.

*The rear part of the fort*

Examination of two areas in the *retentura,* the southern third of the fort, was less successful than the investigations north of Roman Road. In the eastern half of the *retentura* excavation of one area (16) failed to reveal traces of buildings, though several small pits containing burnt debris were found. In the west half of the *retentura* restricted excavation among greenhouses revealed a granary, as discussed above, and a complex of post-holes forming no clear pattern of buildings (13/14). It seems probable that at least two buildings lay here. Pottery was unrepresented in comparison to the rest of the fort, with but two fragments of cooking pots and one of a plate from buildings 13/14.

## 21.4 THE ANNEXE

The annexe was carved out of the larger enclosure, Bearsden 1. It was about half the size of Bearsden 2, containing 0.47ha within its ramparts.

Three stone buildings were located in the annexe: part of a primary bath-house; its successor; a latrine. Elsewhere, clay-and-cobble foundations, post-holes, including two lines of three, and patches of cobbles were recorded, but little sense can be made of them. So much pottery was found in the area south-west of the bath-house and immediately east of the fort rampart (30% of the total coarse ware by weight) as to suggest that it served as a rubbish dump, though perhaps some of the material was used to

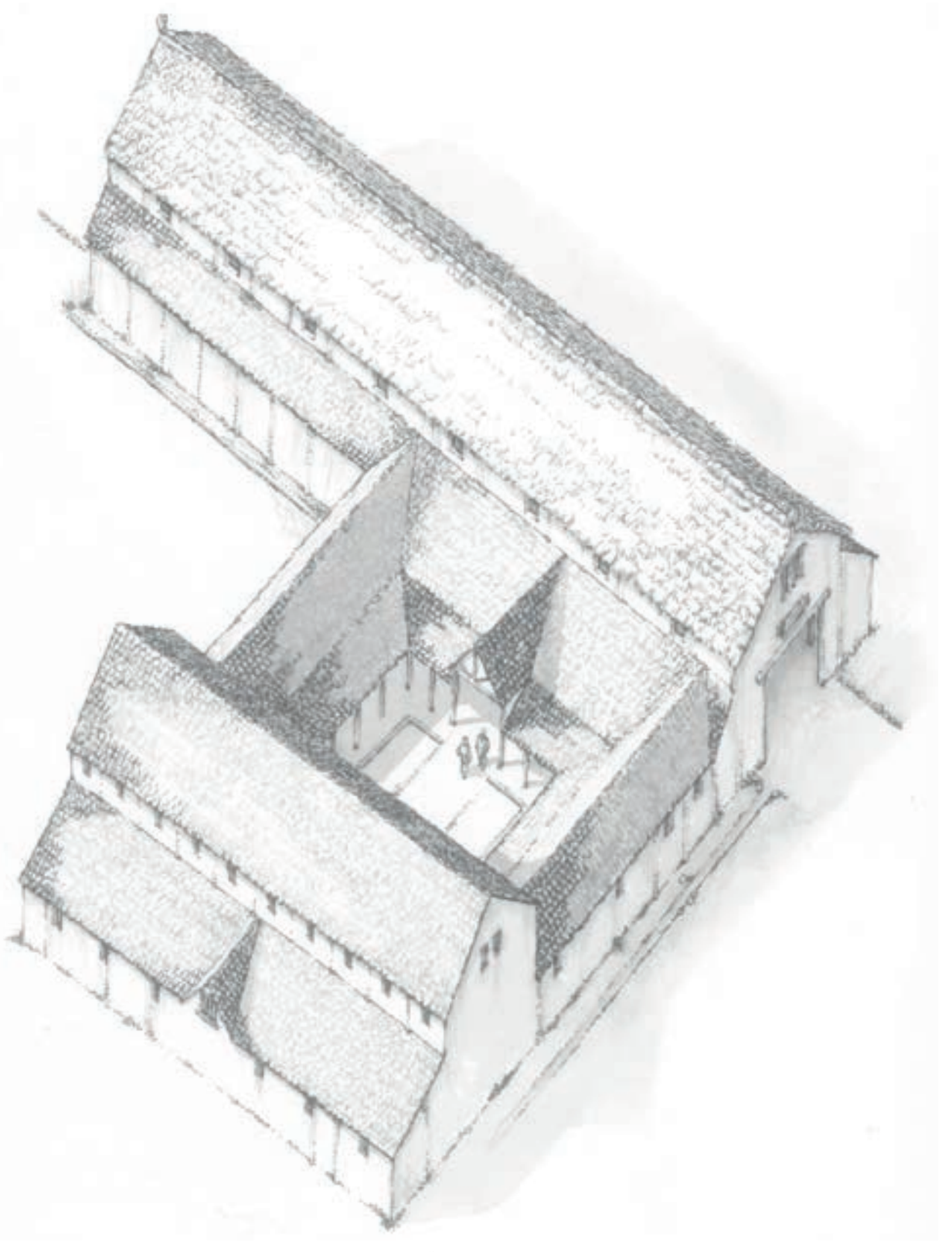

*Illustration 21.6*

A reconstruction of the headquarters building with a forehall. This reconstruction shows a relatively well-built conventional HQ building with shingle roofs. Attached to its front is a forehall of the type found in several cavalry forts. The forehall, if built to the dimensions suggested by Bailey as shown here, would have been a very substantial building, if built to the dimensions shown here. The thatched roof would have weighed in the region of nine metric tonnes, much more when wet with rain. None of the post-holes found appear large enough to have accommodated the substantial timbers required to support such a roof, therefore this reconstruction, though the ideal design for a cavalry fort, must remain the least likely of three possible interpretations of this building. Drawn and described by Michael J Moore.

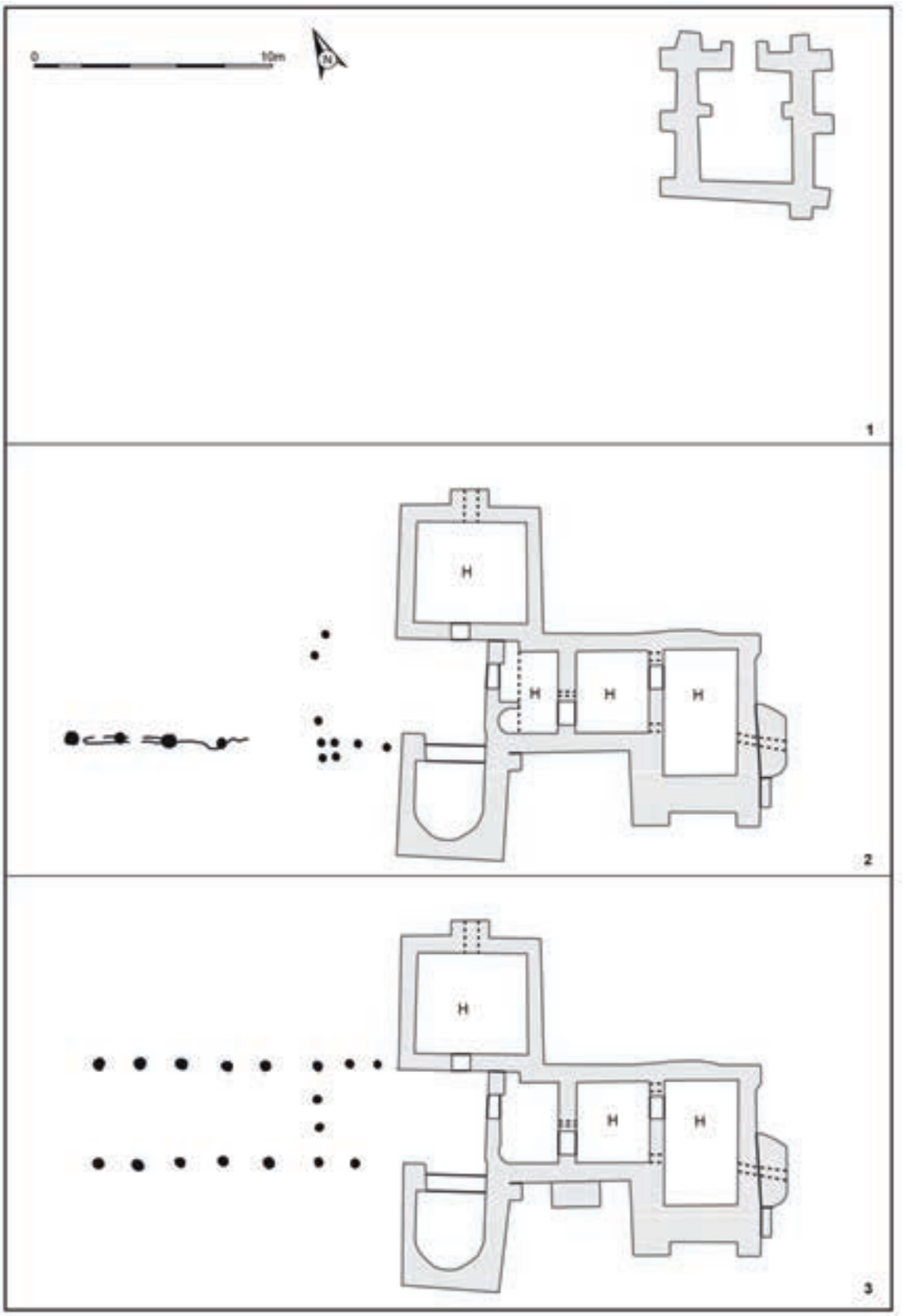


*Illustration 21.7*
The development of the bath-house.

help fill the hollow which crossed the annexe at this point. The adjacent area to the west, but on the other side of the rampart, also appears to have been used as a dump for several misfired vessels were retrieved here. No evidence was to found to suggest that the activities in the annexe were other than military in character. Investigations in advance of development took place on several occasions between 2002 and in 2012 in the southern part of the annexe. No buildings were discovered; there was some evidence for dumping and demolition deposits overlying some random post-holes, but in other areas the Roman features appear to have been totally destroyed by the construction of the Victorian buildings (Duncan & Leslie 2003: 32; Will & Sneddon 2010; Becket 2012).

### *21.4.1 The bath-house*

*The primary bath-house*

On the Antonine Wall the bath-house was usually placed in the fort (Bailey 1994: 300–5). This is the normal arrangement in both primary and secondary forts; the placing of the bath-house in the annexe at Rough Castle may be due to the small size of the fort. Bailey has pointed out that the bath-houses tended to be simple structures and it may have been intended that they should be temporary to be subsequently replaced or extended (Bailey 1994: 300). Certainly, the bath-house at Balmuildy was demolished when the annexe was added to the fort and a larger building erected over the in-filled fort ditches. Bailey has argued that the original bath-house at Bearsden was intended to be one of the simpler structures and the opportunity was taken of the creation of the annexe to rebuild it to a larger scale. The high quality of the masonry, however, may suggest that the intention was that the building was to have been permanent. The lack of buttresses in the south wall of the building indicates that the intention was for it to extend in that direction. The building would therefore have been in a similar location within the fort to the bath-houses at Mumrills, Castlecary (assuming that the known bath-house was not that of the commanding officer's house: Bailey 1994: 304), Westerwood, Bar Hill, Balmuildy, and possibly Old Kilpatrick, all lying parallel to and inside one of the fort ramparts (Bailey 1994: 301). Bailey has suggested (pers comm) that the latrine may have lain at the south end of this building. This would have created a building a little short of 22m long north–south, assuming that it stopped short of the latrine, and probably containing three rooms. This is well within the range of the early bath-houses in Antonine Wall forts. As a drain was provided through the rampart for the sewage to flow out of the fort, it is likely that the latrine was one of the original suite of buildings in the fort. The early provision of a latrine would, in any case, not be surprising; there is a similar sewage outlet at Castlecary which would appear to have been part of the original planning of the fort (Christison et al 1903: pl IV).

All but six of the 38 voussoirs and fragments thereof were found in the rubble above the room (5.2.2.). Of the six, four were recovered from the adjacent hot room; the other two from elsewhere in the bath-house were fragments. It seems likely therefore that the voussoirs were all used to roof this room.

The internally projecting walls are problematic. They divide the internal space into two areas, one measuring 3.9m × 1.4m and the other 4m × 2.6m. As already noted, Bailey has argued that these may represent a hot room and a warm room (Bailey 1994: 302). At Cadder, the smallest room appears to have been the changing room, measuring 4.1m × 1.8m while at Bar Hill the first warm room measured 3.9m × 1.6m. These are in the range of the smaller compartment at Bearsden, but neither room served the same purpose. Other hot rooms in Antonine Wall bath-houses are generally closer in size to the whole room in the primary bath-house at Bearsden.

Finally, we may note the conclusion already reached, that while the roof may have been erected, the basement was not dug out and a hearth had been placed on the natural clay suggesting that the room provided shelter for the soldiers building the secondary bath-house.

*The secondary bath-house*

The secondary bath-house appears to have been built in two phases. The original building consisted of a timber changing room and cold room, a stone heated range and, to the south of the cold room, a stone cold bath. A hot dry room was added to the north of the cold room, probably even during construction. The construction of the changing room and the cold room in timber cannot be proved to have occurred elsewhere on the Antonine Wall, but it is paralleled in both the bath-houses at Walldürn in Raetia (Baatz 1973). The stone steam range of three rooms does have parallels elsewhere on the Antonine Wall (Bailey 1994). The internal bath-house at Balmuildy contained four rooms, a probable cold room with a cold bath, two warm rooms and a hot room, in a row with an additional heated room, presumably the hot dry room, to the side of the cold room. A 'paved court' in the main row and beside the cold room may have been the changing room (Miller 1922: 41–7). Again, there was evidence for modifications before the building was demolished and a new bath-house erected in the annexe. The hot dry room may have been an addition (Bailey 1994: 302).

The bath-house at Cadder started life with a simple three-room steam range which was later modified by changing the location of the furnace, adding a cold bath and a circular hot-dry room, itself modified (Clarke 1933: 53–60. Although no timber element was discovered, the existence of a cobbled surface on the side away from the furnace hints at the location of a room here.

The bath-house at Bar Hill consisted of a row of rooms immediately inside the north rampart of the fort, apparently of two phases, the first consisting of a steam range of three rooms, later extended by the addition of a further heated room, changing room and latrine (Keppie 1985: 58–64).

My purpose here is not to undertake an analysis of bath-houses on the Antonine Wall, but to emphasis that the Bearsden building follows a conventional plan with a steam range of three heated rooms, a timber changing room, and a cold bath to one side, later modified and elaborated through, for example, the addition of a hot dry room. The amendments to these bath-houses, as at Bearsden, is notable considering the short life of the Antonine Wall.

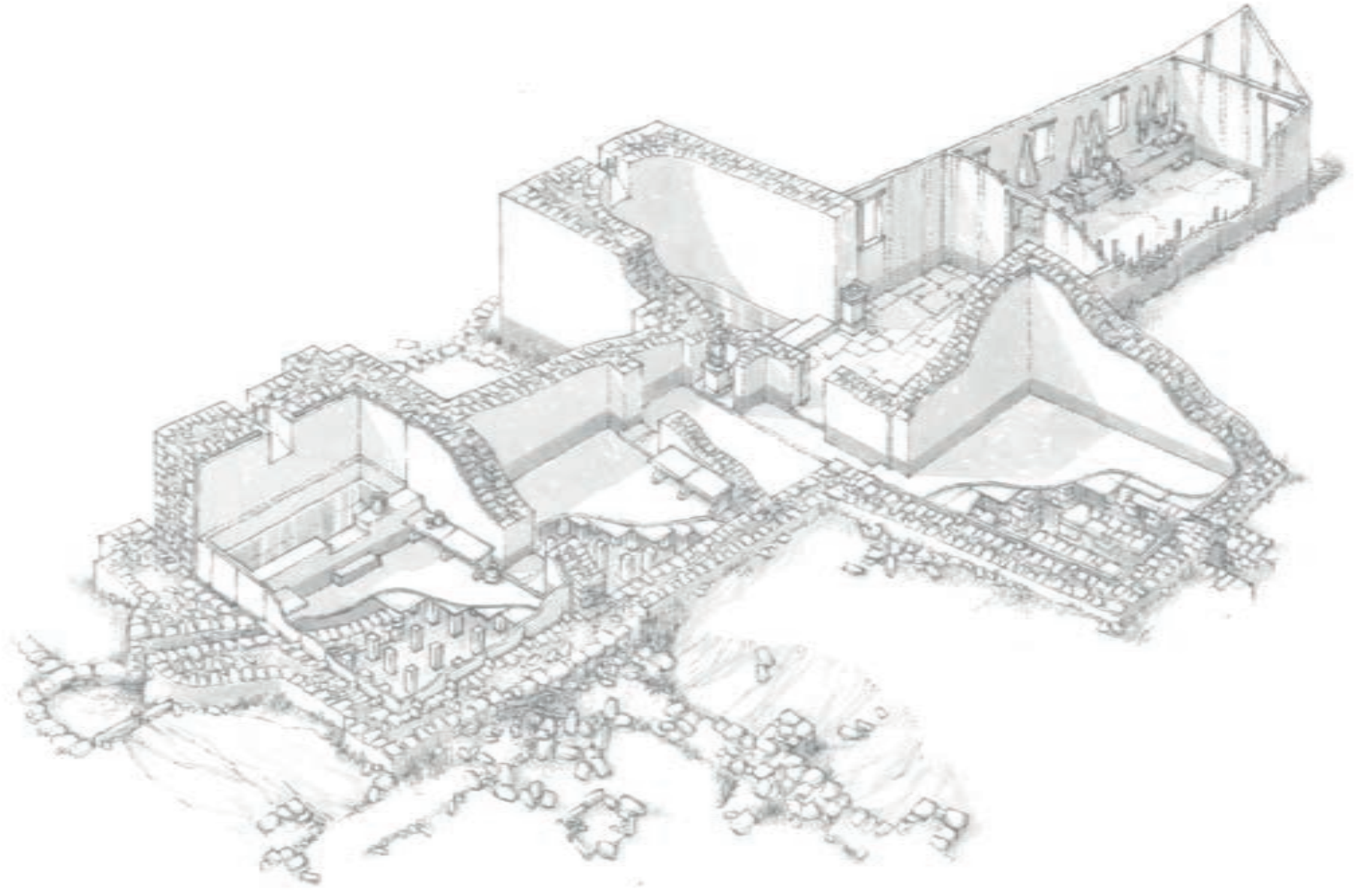

*Illustration 21.8*

Cut-away view of the bath-house from the north-east. At the top right can be seen the timber-framed changing room with its rammed gravel floor, wooden benches lining the long walls and pegs for the bathers' garments. In the central block lie the flag-floored cold-room with its apsed cold plunge bath, and on the right the hot dry room, its floor supported by the dwarf walls of the hypocaust below. Next comes the first warm room with a decorative semi-circular niche which may have contained a statue of the goddess Fortuna. A second warm room follows and then the final hot room with its heated bath.All the bath-house rooms are plastered. Doubtless they would have been lime-washed to reflect the limited daylight from the small windows. These were probably glazed in the actual baths suite but perhaps only shuttered in the changing room. The small altar in the cold room adjacent to the plunge bath and the statue of Fortuna make the point that religion was an integral part of the soldiers' daily life, even when socialising in the baths. Fortuna was a particularly appropriate deity for the bath-house where soldiers traditionally gambled. In the centre foreground can be seen the remains of a hot room apparently demolished to make way for the surviving baths suite, or perhaps as the result of a change of plan during construction. Drawn and described by Michael J Moore.

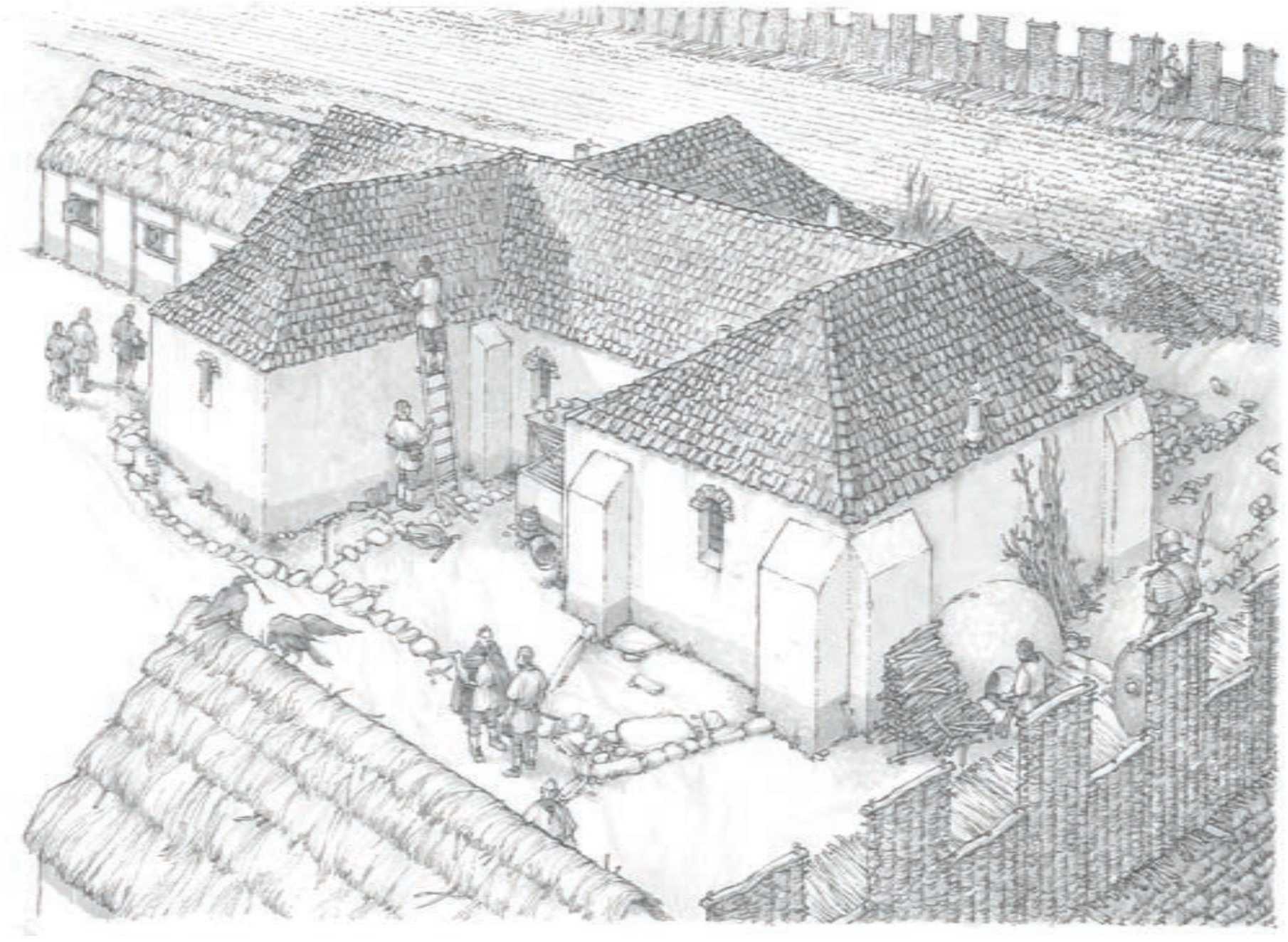

*Illustration 21.9*

A reconstruction of the bath-house as viewed from the south-east. The stone-built eastern part of the building is shown with well-finished external plastering and neat shingle roofs, that of the cold plunge under repair. The western range, probably a changing room, is shown as a well-constructed, timber-framed thatched building. Adjacent to the stoke-hole of the hot bath in the foreground are stacked fire wood and kindling; more is stacked in the lee of the Antonine rampart. The breast-work of the annexe's eastern rampart can be seen in some detail in the right foreground. This is shown as prefabricated wicker hurdles attached to a framework of timber posts. Panels of this type are surprisingly resilient and capable of deflecting spears and arrows. They would be easier to install and maintain than a timber palisade. A corduroy of brushwood protects the rampart top, providing a firm, well-drained footing for patrolling sentries. Drawn and described by Michael J Moore.

*The operation of the bath-house*

The arrangements in the heated range and hot dry room were broadly similar with each heated by a fire placed in a furnace chamber, but differed in detail. The floor of the hot dry room was supported on dwarf walls and the walls clad in wall-jacketing held in place by iron T-pieces (11.3.3.141). The heat from under the floor seeped up the gap between the walls and the jacketing, so that five of the six sides of the room were heated. The floors of the rooms in the heated range were placed on pillars usually formed of single stones. The hot room was furnished with wall-jacketing formed of upright flags held in place by iron T-pieces (11.3.3.132; 133; 138), but this arrangement was not used in the two warm rooms. In the second warm room, the floor came right up to the walls with heating ducts within the walls; nevertheless, two T-pieces were recovered from the basement of this room (11.3.3.139; 140). In the two pits found outside the west wall of the changing room were buried fragments of box-tiles and these were found elsewhere on the site. It cannot be ascertained where these were used in the building; they may have been intended for use in the primary bath-house and discarded.

The burning in the area of the stoke-hole for the heated range appeared to be more intense than at the stoke-hole for the hot dry room. Soot still adhered to the walls of the stoke-hole and the pillars and sides of the furnace passage had been badly damaged by the heat. Burnt debris had been washed down to the south of the furnace chamber in the drain and also over the ground. On the other hand, the stoke-hole of the hot dry room showed little evidence for heat and little burnt debris was found in the area. A similar situation was noted at Mumrills and the excavators there suggested that this was because different fuel had been used, wood in the heated range and charcoal in the hot dry room (Macdonald & Curle 1929: 458–9; 490). The possibilities also exist that the hot dry room at Bearsden either had a short life or was infrequently used (we do not know how often Roman soldiers bathed). The hot dry room appears to have been an addition to the bath-house. If the above suggestion that it was added during construction of the main building is wrong and it was later, the hot dry room may indeed have had a short life.

The charcoal found in and beside the flue and stoke-hole of the hot room and the stoke-hole of the hot dry room was of alder, birch, oak and rowan (one fragment). The drain south of the stoke-hole of the hot room produced rare fragments of heather and occasional burrs from bark. A small amount of burnt peat was found in the hot room flue, and burnt turf in its stoke-pit. It would appear that a variety of fuels was used in the hypocausts of the bath-house, at least for the last fires.

The stone walls in all parts of the building were bonded with clay. The walls were plastered internally, though this rarely survived. The walls of the timber

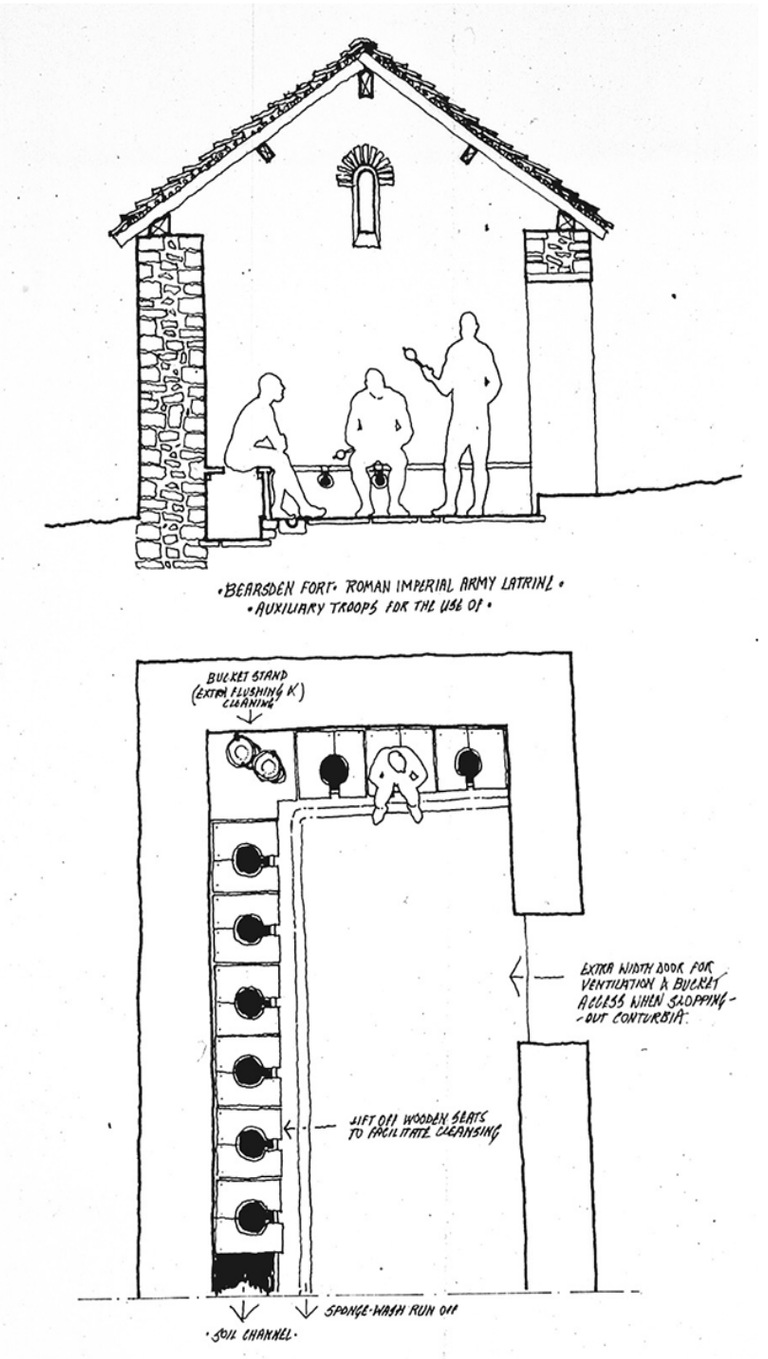


*Illustration 21.10*
Reconstruction plan and section of the latrine. Drawn by Michael J Moore.

end of the building were of wattle and daub. No doubt all walls were also plastered on their exterior surfaces, though no evidence survives: certainly the use of clay bonding leads to this conclusion. The lack of voussoirs in the area of the bath-house suggests that the roof was not insulated in the manner intended for the primary bath-house (cf Rook 1978: 275–6 on other roof forms). Few fragments of tiles were found in the building so perhaps the roof was of shingles or even thatch. Window glass found near the cold bath indicates that it was fitted into a wooden frame with glazing bars. The lack of window glass may be the result of it being removed from buildings before the fort was abandoned.

Something can be said of the internal fittings. A stone bench end and a seat were found in the second warm room and a further two bench ends of different design in the hot room. The niche in the first warm room presumably held a basin or a statue. A stone female head from a statue or bust was found in the cold bath; as this was next to the warm room it could therefore easily have found its way there during or after the destruction of the building (5.2.1.6). A positive identification of the head with Fortuna, the goddess normally associated with bath-houses, is not possible and Keppie has suggested that the head may represent a local goddess. Two parts of an altar, unfortunately uninscribed, were found on the floor of the cold room and the fragment of a possible second in the cold bath, while parts of two plinths may have been the bases for these altars (5.2.1.4; 5.2.1.5; 5.2.1.10; 5.2.1.11). A sculpted head which acted as a water-spout was recovered from just south of the changing room (5.2.1.7). Keppie notes that the gaping mouth resembles external fountain heads at Pompeii, Herculaneum and Glanum, so perhaps the example at Bearsden sat outside the building leading to the question of where the water came from. Several stones were decorated, one with the figure, possible a soldier, and another with a frieze of leaves and tendrils (5.2.1.8; 5.2.1.9). In spite of all the drains, the only item of jewellery was an intaglio depicting Minerva from a ring found on the floor of the cold room (10.1.1).

*The history of the bath-house*

There was one major structural change during the construction of the bath-house, and possibly a second. The first was the demolition of the primary bath-building before completion, apparently with its retention as a mess room while the second bath-house was being constructed. The second would appear to have been the addition of a hot dry room to the main bath-house.

Modifications were noted in two rooms of this bath-house. In the changing room the floor was replaced, with a layer of burning intervening between the two gravel surfaces. There were two modifications to the first warm room. Firstly, the floor was lifted, the pillars removed, the basement filled with clay and the floor replaced. Later, a new floor was laid. This, in part, may have been due to the subsidence of the earlier floor.

None of these modifications, in either room, can be dated. There may be something to be said for seeking to link the first change to the warm room, the infilling of the basement, to the addition of the hot dry room which appears to have caused partial reconstruction of the north-west corner of the first warm room.

### *21.4.2 Latrine*

The latrine was strategically situated to the south-east of the bath-house and at a lower level where it could use the water from the bath-house. Two main drains led to the latrine. One combined drains from the cold room, the cold bath and the first warm room, reaching the north-west corner of the latrine as an open gulley; the other led south from the furnace chamber of the steam range and passed under the entrance to the latrine to join the sewage outfall just inside the annexe rampart and thereby help the flow of sewage.

The latrine was built of stone, at least in the lower courses, but it was placed against the inside face of the east rampart of the annexe rampart. A parallel lies at Bar Hill where the north wall of the latrine and changing room is formed by the inside face of the north rampart of the fort (Keppie 1985: 62). The roof of the latrine may have been of thatch as rushes were found on the floor.

The sewage channel was shallower than normal and, as no evidence survived to indicate stone seats, it is possible that the seating was of timber, though in any case few stone seats are known in Britain. There was space for nine seats (illus 21.10 and 11). The sewage passed along a drain and through the stone base of the annexe rampart. It was not possible to examine the inner east ditch of the annexe, but the outer ditch was sectioned and this proved to be roughly half full of sewage, its state when the fort was abandoned. It must be presumed that the inner ditch also contained sewage, the ditches linked at their southern ends. Although the sewage collected in the ditches so close to the fort, it is unlikely that the soldiers would have smelt it as it lay beneath a covering of water.

The examination of the sewage demonstrated that it contained fragments of moss. This, it has been suggested, was used by the soldiers to clean themselves. Recent discussions have considered the use of sponges for this purpose, citing the few references which survive (Hobson 2009: 139; Wilson, A 2011: 102–4). Seneca described how a German gladiator committed suicide by choking himself with a wooden stick tipped with a sponge which was devoted to the vilest uses, though, as Hobson points out, the purpose of the sponge on the stick is not explained and 'it might have been used for wiping the toilet' (Seneca, *Epistles* 70, 20; Hobson 2009: 139). Martial refers to a dinner which will soon be 'a matter for a luckless sponge on a doomed mop stick' (Martial, *Epigrams* 12, 48, *7*–8; Hobson 2009: 140). A text in the Baths of the Seven Sages at Ostia refers to a sponge stick (*AE* 1941, 5). Claudius Terentius also refers to a sponge-stick (*xylosphongium*) as meaning something nasty or of no value (*P. Mich*. 471, 29). In Britain, marine sponge spicules were found in a sewer in york and Wilson agrees that they were probably used for cleaning, unlike the freshwater sponge spicules (Wilson, A 2011: 104, quoting Buckland 1976: 14–15). It is not clear whether sponges were held communally or individually; if the former, they would certainly have been a health hazard.

The discovery of the moss at Bearsden is an important contribution to this discussion. It suggests what happened in this latrine, and moreover the use of moss is not far removed from the grass mentioned in the Jerusalem Talmud as a cleaning agent (yT *Shabbat* 82a (11c 2–20), cited by Wilson 2011: 102).

Within the latrine, a shallow channel or gutter ran round the inside of the seating. Such a channel is usually interpreted as carrying the water into which the cleaning material was dipped (Wilson, A 2011: 102–3). Certainly, water flowed into the channel at Bearsden for a tile was carefully placed at the point where the drain from the bath-house entered the building, tipping the water either into the sewage channel or the interior channel. It seems likely therefore that the channel was used for wetting the moss before its use as a cleaning agent. Consideration has been given to the use of the gutter as removing spillage from those using the latrine, but the arrangement of the latrines in the Baths of the Cyclops at Thugga in North Africa demonstrates that it did not have this function (Wilson, A 2011: 104). Gemma Jansen has discussed the illnesses associated with toilets. Touching the toilet seat was a prime source of contamination and through this, or by swallowing faeces, diseases such as typhus, typhoid, cholera and dysentery can be transmitted to humans, aided of course by flees, lice, flies, mice, rats and cockroaches, the last mentioned

*Illustration 21.11*
A reconstruction of the interior of the latrine. Drawn by Michael J Moore.

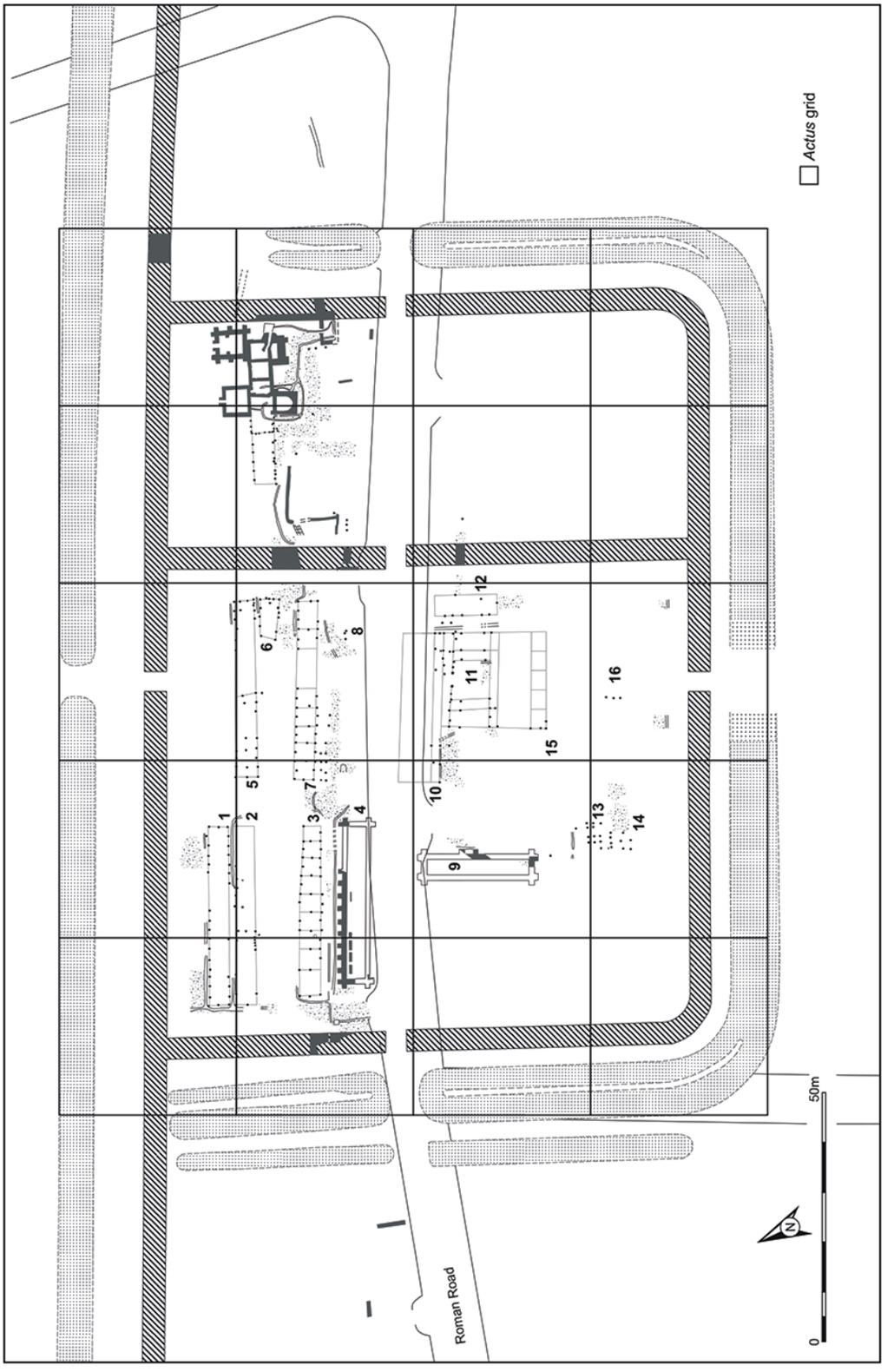


*Illustration 21.12*
Plan of Bearsden with the *actus* grid superimposed.

by the Elder Pliny as being found in bath-houses (Jansen 2011: 159; Pliny *NH* 11, 99). A wooden toilet seat is more difficult to clean than a stone one, while a sponge would retain bacteria, water being insufficient to cleanse it (Jansen 2011: 160). Moss as a cleaning agent to be immediately discarded would therefore have much to recommend it.

### 21.5 THE PLANNING OF THE FORT AND ANNEXE

The plan of Bearsden is very different from that of a 'normal' fort such as Housesteads on Hadrian's Wall. Indeed at first glance it would appear that the only consistent aspect lies in its inconsistency. To the west lay three ditches, to the east two, while to the south there was a broad ditch the width of two elsewhere. Within the fort there were open areas towards the south-east and also between certain buildings in the north half, though this may have been caused by the steep slope here. One granary was placed, unusually, in the forward half of the fort. The barrack-blocks were smaller than usual. The headquarters building was not in the centre of the fort. Finally, beside the *via principalis,* the main road through the fort, two depressions appear to have been left open during the life of the fort. While several of the individual idiosyncrasies of the fort's layout can be paralleled at other Antonine Wall forts, it is the general impression created by the combination of all these factors which renders the plan of Bearsden so distinctive.

yet it is clear that the irregular plan was not the result of mere happenstance, as the superimposition upon the plan of Bearsden of a grid based upon one of the major units of measurement, the *actus* (= 120 Roman feet) demonstrates (illus 21.12). A grid measuring 5 × 4 *actus* fits neatly over the fort (this was recognised by Dennis Gallagher). The outer lines of the grid lie on the outer lips of the ditches on all four sides, with the exception of the west where the line follows the outer lip of the middle ditch, suggesting that the outer ditch is in some way an addition to the basic plan. Half an *actus* within these lines, the next grid lines fall neatly upon the ramparts: the fort and annexe combined measure 4 × 3 *actus* and the rampart between fort and annexe lay close to a further grid line. The main east–west centre line of the grid passes through the centre of the enclosure. The headquarters building faced onto the central point of the grid on its east–west alignment. Furthermore, four of the five full-sized timber buildings in the northern part of the fort are each about an *actus* long measured externally (building 3 is the exception being shorter), while the distance over the widths of buildings 2 and 3 combined is half an *actus*, that over 5 and 7 being a little short of this measurement, though the distance from the southern row of the post-holes at the west end of building 7 to the north wall of building 5 is almost exactly half an *actus*.

There is no doubt therefore that the fort was carefully planned. Far from being a jumble of buildings thrown together, the fort reflects a care, even sophistication, in planning. The Roman military engineers knew what they wanted and provided a fort which corresponded to their needs. The plan of Bearsden should demonstrate, beyond question, that a site such as Housesteads is not the only type of Roman fort, and that Roman forts were built for specific needs, each one being unique. Analysis of the plan for a fort should therefore help to reveal the part that its garrison had to play in the organisation and functioning of the frontier.

There is a further point about the grid. Bearsden 1 relates to the grid, but so do four buildings of Bearsden 2, as does the location of the rampart between the fort and the annexe. It seems possible therefore that the soldiers who started building the first fort stayed on to lay out the second, implying no break between the two phases. On the other hand, if there was a physical plan, this may have been handed over to the new building gang.

The start point for understanding the detailed planning of Bearsden has to be Bailey's suggestion that buildings 11 and 15 together form a headquarters building. This structure sits in the centre of Bearsden 1 and on the most elevated point south of the *via principalis*. It was planned in relation to this enclosure and when that was divided into fort and annexe the building was not moved. Vegetius (3, 8) stated that in a camp the standards are first set in their place, followed by the tent which served both as the headquarters and the commanding officer's accommodation. It is not surprising, therefore, that the headquarters building at Bearsden should have been constructed first.

To its east lay a small building of the type normally interpreted as a storehouse for no better reason that it lacks diagnostic characteristics. To its west lay a granary. yet, a second granary was placed north of the *via principalis*, a most unusual location. The reason for this probably lies in the reluctance to move the headquarters building into the centre of the reduced fort, which in turn implies that the building was completed, or nearly so, when the decision was taken to create the annexe. Leaving the headquarters building asymmetrically placed to one side of the fort resulted in there being insufficient space for the commanding officer's house in its normal location, to the right of the headquarters building. In Antonine Wall forts that is the location of every commanding officer's house with the single exception of Rough Castle. The alternative place for the commanding officer's house was therefore to the west of the headquarters building. But did it lie between the headquarters building and the granary, or to the west of the granary?

It is unfortunate that neither space was available for excavation, with the exception of the northern part of the area between the headquarters building and the granary where several post-holes were recorded and, as we have seen, interpreted as part of a forehall. If the interpretation of building 10 as a forehall is preferred there would be insufficient space in this area for a commanding officer's house.

If, however, we assign the posts to the house rather than the forehall, and allow the normal space for paths between buildings and for the intervallum to the west, the available space in both locations was about the same, 25m north–south by 20m east–west. If the commander's house occupied either of these spaces it would be larger than those at Rough Castle and Cadder. The arrangements at Rough Castle and at Mumrills (and at Housesteads on Hadrian's Wall), however, offer a hint as to how the lack of space may have been dealt with at Bearsden for at both forts the commanding officer's house extended further south than the other buildings in the central range. A projection of 5m south of the headquarters building,

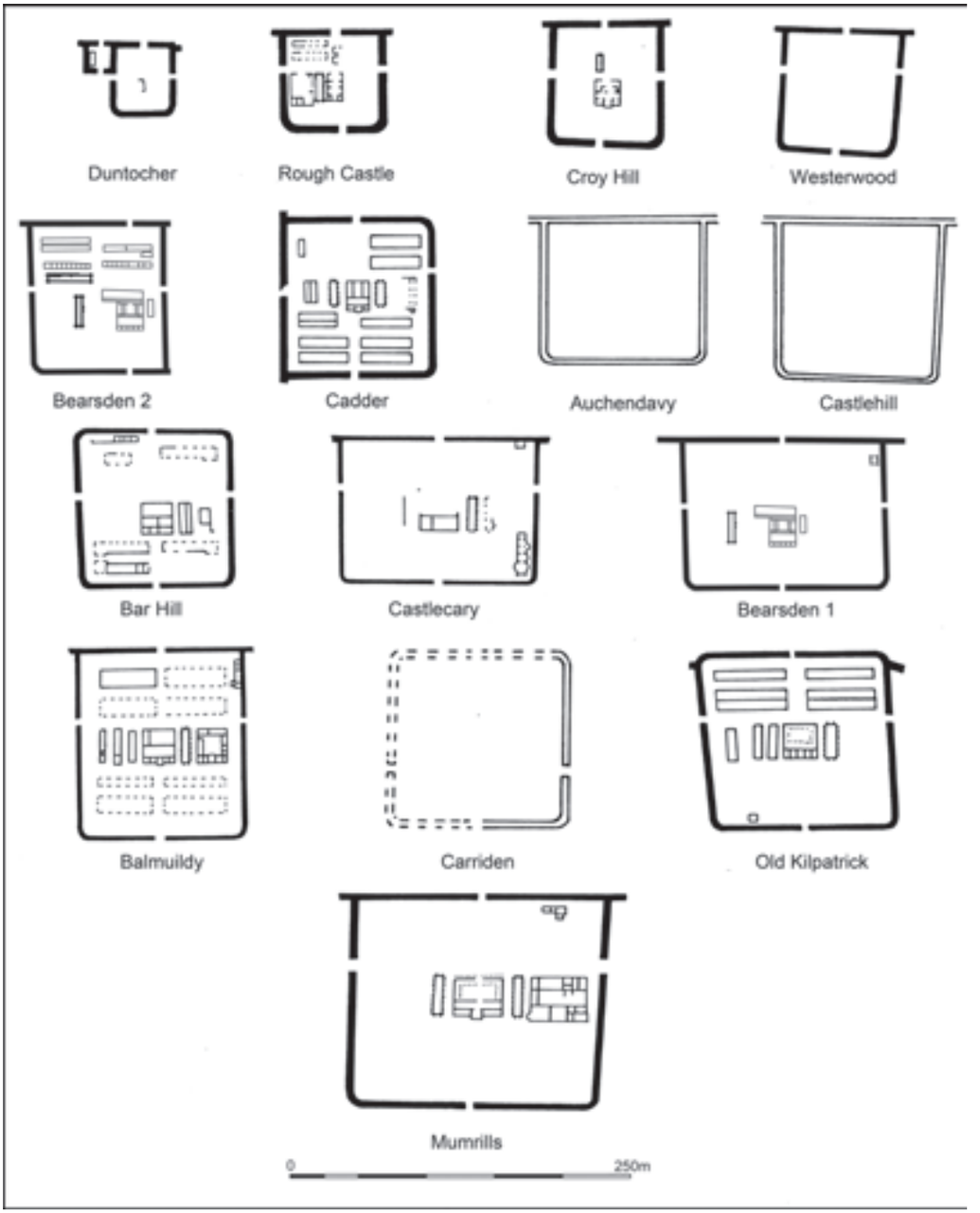


*Illustration 21.13*
Plans of forts on the Antonine Wall.

as at Mumrills, would offer the house similar space to that at Balmuildy.

While there is little evidence available from building 10, it does seem unlikely that this was the commander's house. If, however, the southern east–west line of posts is accepted as the southern side of the north range a house, a width of about 4m can be allowed for the range (interpolating from the presumed width of the north range of the adjacent headquarters building). This is similar in size to the 3.8m wide south range of the timber commander's house at Cadder and the east and west ranges of the stone house at Balmuildy which have an internal measurement of 3.5m and an external dimension of 4.5m; the north and south ranges were wider (Clarke 1933: 45; Miller 1922: 29). There was, however, no evidence for an eastern range at Bearsden, only one post having been recorded in this area. In short, there was no positive evidence for the existence of a

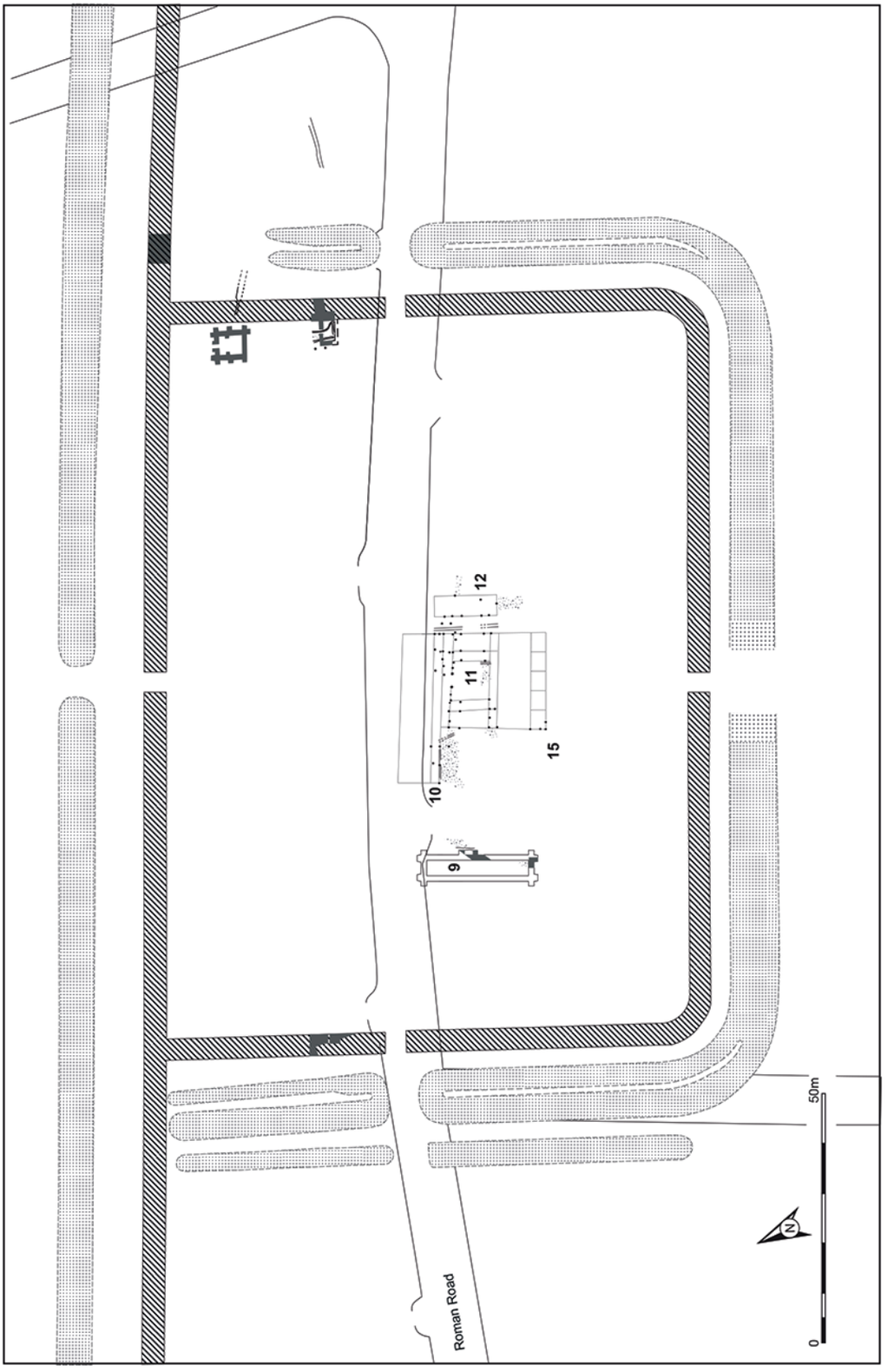


*Illustration 21.14*
(a) Plan of Bearsden 1.

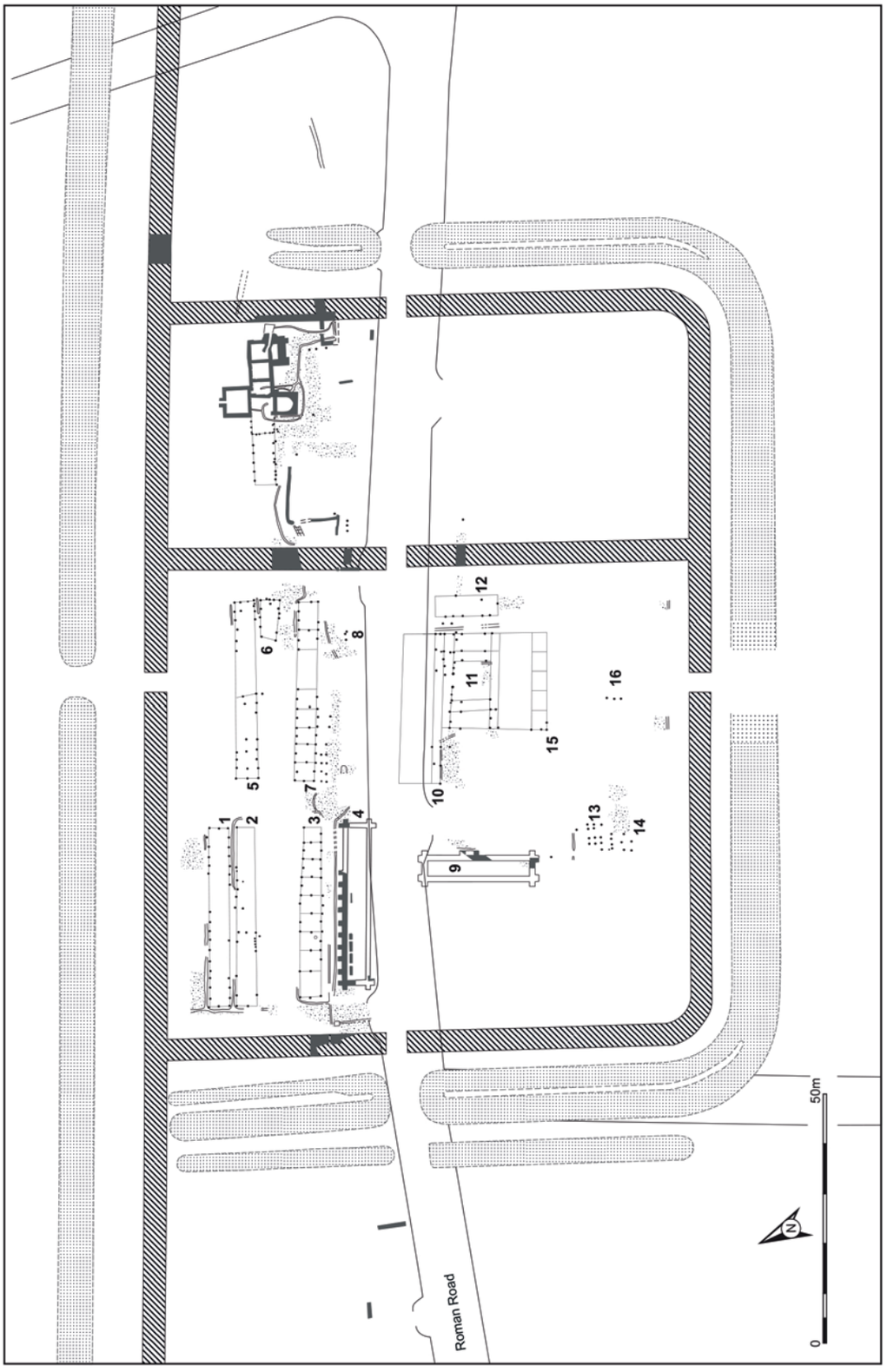


*Illustration 21.14*
(b) plan of Bearsden 2.

commander's house between the headquarters building and the granary.

The plans of other forts on the Wall are not much help in view of the unusual layout of Bearsden, but at Mumrills, Rough Castle, Castlecary, Cadder, Balmuildy and probably also Bar Hill and Old Kilpatrick a granary intervened between the headquarters building and the commanding officer's house (illus 21.13). If the same situation had pertained at Bearsden, it is conceivable that the commanding officer's house occupied the western end of the central range, that is beyond the granary.

A further possibility is that the commanding officer's house was eccentrically placed in the rear part of the fort. Here, again, the available space is similar, but this would be a most unusual location for this period (the house in a similar location at South Shields dates to the fourth century). yet another possibility is that the commanding officer's house lay at Castlehill, but this seems unlikely in view of the presence of the headquarters building, if such it is, (and the granaries) at Bearsden.

The location of the second stone granary at Bearsden in the northern part of the fort requires consideration. Why was it placed here? Only one other fort on the Antonine Wall had a granary in its forward area, Croy Hill, but here it was aligned north–south and was much smaller. If the post-holes forming 'building' 10 were part of a forehall, and the commanding officer's house occupied the western end of the central range, it might have led to insufficient space available for a second granary in the central range which was therefore placed in the northern part of the fort. Accordingly, to turn the argument around, we may here have supporting evidence for the existence of a forehall.

The only other building(s) which might have occupied the central range is a storehouse, such as found at Cadder and Balmuildy, or one or more timber granaries as at Old Kilpatrick, but we already have two stone granaries at Bearsden and two probably storehouses, while the posts forming 'building' 10 do not give the appearance of forming part of a granary.

To review the central range of the fort. To the extreme east end lay a small building best interpreted as a storehouse. Beside it lay the headquarters building probable fronted by a forehall. To its left was a stone granary. The commanding officer's house is therefore likely to have been located at the western end of the central range. This arrangement offers the explanation for the location of the second granary in the northern part of the fort: there was insufficient space for it in the central range. yet there was space to place one granary here. This may imply that the granary in the central range was built when it was intended that the fort would occupy the whole of the larger enclosure, otherwise it might have seemed more sensible to place both granaries to the north leaving more space for a commanding officer's house in its prime location. This argument, however, rests on the presumed existence of an undiscovered building, the commanding officer's house.

Finally, in this discussion, we may note that the unusual placing of the granary in the northern part of the fort and the presumed location of the commanding officer's house at the western end of the central range, imply that the forehall, built for the larger fort, was retained in its smaller successor. If the forehall had been demolished, we may assume that a granary or the house would have been built immediately to the west of the headquarters building.

We can conclude that the intention of those who planned Bearsden 1 was to create a normal arrangement with the headquarters building in the centre of the enclosure, one granary to each side and a house for the commanding officer to the right. This is the arrangement at Mumrills, Cadder, Balmuildy and probably Old Kilpatrick, while at Castlecary and Bar Hill a granary is known to one side of the headquarters. The other building in Bearsden 1 was the partially built bath-house which was to have been inside and parallel to the east wall. Other Antonine Wall forts had interior bath-houses in similar locations, such as Mumrills, Bar Hill and Balmuildy.

The decision to divide Bearsden 1 into a smaller fort and an annexe was clearly taken after the headquarters building and its putative forehall were constructed and a start made on building the bath-house. It seems possible that the granary in the central range had also been built (the storehouse may also belong to this phase). Once the decision was taken to divide this enclosure into a fort and an annexe, the headquarters building and granary were retained but the remainder of the fort laid out in a relatively normal way, with the central cross road, the *via principalis*/Military Way, retained and two new roads leading north (the *via praetoria*) and south (the *via decumana*) from it. Buildings were arranged to each side of the *via praetoria*, the two unusual elements being the placing of a granary in the northern part of the fort, for reasons already discussed, and the existence of two depressions immediately north of the *via principalis* to the east of the granary. While the depressions appear to have lain in a slight valley running westwards into the site, it would have been possible to fill this in. So, the depressions were retained or excavated for a particular reason and that may be for the collection and retention of water. The intention may have been to collect water for the horses.

The next problem is: where were the north and south gates? The assumption during the excavation was that these two gates lay in the centre of the north and south ramparts of the fort. Excavation of the ditches opposite such gates, however, failed to find evidence for causeways. Following the end of the excavation geophysical survey was undertaken on the line of the south ditch, today occupied by several large trees which had prevented excavation. This revealed the possible site of a causeway in the middle of the south defences. This underlines the possibility, indeed probability, that the south and the north gates to the fort were located in the centre of the larger enclosure and were not moved. This would account for the lack of causeways in the areas where they were sought. By the time that it was discovered that there had been a change during the building programme, the centre of the north side of the enclosure was not available for excavation as it was being built on. One further possible piece of evidence may be offered for the north gate remaining in its presumed original location, the extensive space north of building 5. This may have been left to allow for movement in the area. The asymmetrical placing of fort gates is not unusual on the Antonine Wall. The south gate of Rough Castle and the north gate of Cadder both lie a little distance from their appropriate locations (Robertson 2015: 72 and 101).

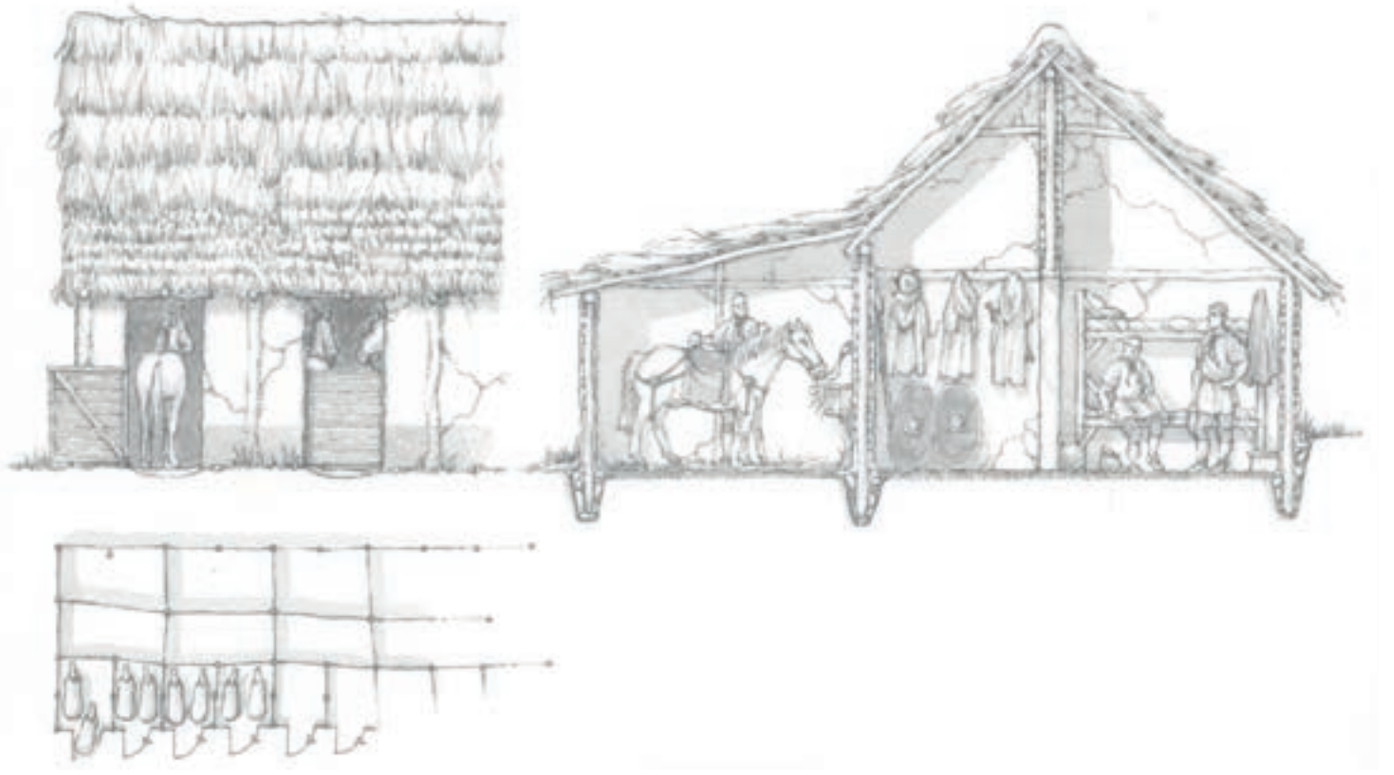

*Illustration 21.15*

A possible reconstruction of building 7. This interprets the building as incorporating both barrack-rooms and stables on the lines of buildings on Hadrian's Wall and the German frontier. This interpretation could explain the grouping and close spacing of the surviving post-holes in the southern third of the building. The elevation and section show how such a combined building might have looked with stabling to the front, a tack-room for harness, armour and weapons in the centre and barrack-room with bunks to the rear. Drawn and described by Michael J Moore.

The gaps within the fort have already been mentioned. While it has been argued that those in the northern part of the fort may relate to the steep slope, it is possible that they, and the apparent lack of buildings in the south-east corner of the fort, were due to the full complement of buildings not having been provided. Keppie has reviewed the evidence available for the forts along the Wall and suggested that it was lightly held (Keppie 2009a). At Bar Hill, he argued, perhaps only four barrack-blocks were erected when six were required for the full complement of each of the units attested there; at Cadder no buildings were found by the excavator in the *praetentura*; while at other sites, Balmuildy, Rough Castle, Old Kilpatrick and Castlecary, the presence of barrack-blocks is inferred and at Croy Hill and Duntocher the space available for any such buildings was very limited (Keppie 2009a: 1138–9). Keppie's conclusion was that the army of Britain did not have enough troops to occupy all the known forts and fortlets at the same time (Keppie 2009a: 1141).

This discussion of the planning of the fort has concentrated on Bearsden 2 and the headquarters building of its larger predecessor. There was, however, another building within the first fort, the bath-house. This, as we have seen, was placed in a normal location for bath-houses in Antonine Wall forts, parallel to one of the ramparts (Bailey 1994: 301). The division of the large enclosure and the decision to rebuild the bath-house resulted in a location which can be paralleled most closely at Rough Castle but also to an extent at Balmuildy. Its new location, however, had no impact on the planning of the smaller fort as it lay outside it.

## 21.6 THE UNIT BASED AT BEARSDEN

In the northern part of the fort, five long narrow timber buildings were recognised and planned, together with a short sixth. Four of the five are all the same length – the fifth is about 1.6m shorter – and about the same width. Two of the buildings, 3 and 7, are recognisable as barrack-blocks. Each contained eight rooms, identified either through excavation or interpolation, and a larger room at the rampart end, the normal location of the officer's quarters. The location of the gulley close to the north walls of both barrack-blocks together with the greater distance of the gulley from the south wall suggest that the two buildings faced south. If the additional row of posts to the south of the eastern end of building 7 supported a verandah, this would be additional support for the building facing south (illus 21.15).

No evidence for partitions was found in building 1 in spite of extensive investigation of the building. The arrangement of the internal divisions in buildings 2 and 5 was not the same as in the barrack-blocks. In building 2, two post-holes were recorded within the building, but neither was placed at the normal intervals pertaining in buildings 3 and 7. Equally, the post-holes recorded in building 5 would not permit an arrangement of rooms similar to those of the barrack-blocks. Analysis of the distribution of pottery underlines the differences between buildings 1, 2 and 5 on the one hand and 3 and 7 on the other (section 21.11.6). In brief, the presence of at least one fragment of a mortaria and cooking pot in nearly every one of the rooms of 3 and 5 and the different distribution of such vessels in the other three buildings supports their interpretation as barrack-blocks.

Before turning to analysis of these buildings, building 6 must be considered. No firm statement can be made about its function. There are several possibilities:

- a storehouse;
- an open compound for, say, fodder;
- it may have formed part of the officer's quarters of building 5, divided by a corridor;
- additional accommodation for horses (see below);
- it was not completed; its west end is not symmetrical and one possibility is that it was the eastern end of a barrack-block which was partially built, then demolished and moved a little to the north.

The crucial point is that building 6 cannot sensibly be taken into any discussion about the arrangement of the fort.

The literary evidence for the arrangement of men within barrack-blocks is non-existent. The nearest and indeed only useful source of information lies in the pages of a book on Roman fortifications by an anonymous writer usually known as Pseudo-Hyginus who described the arrangements for an army on campaign; unfortunately his work has been variously dated to the late first century or the second half of the second century (Frere 1980; Birley 1982). Birley acknowledged that the book contained material of different dates, and suggested that, while it may have been composed in the fourth century, part of it was certainly a description of the army of about the time of the Antonine Wall. Pseudo-Hyginus stated that an infantry century contained 80 men. He goes on to say (1–2) that in a century one tent was provided for the centurion and eight for the soldiers, eight men being assigned to each tent, with two tent groups on duty at any one time, taking over the accommodation of their comrades when they changed duties. This might seem a little strange to modern thought, but in fact beds were also shared in the British army of the eighteenth century when soldiers slept two or three to a bed. The equipment of the soldiers was placed in the space immediately in front of each tent.

Roman barrack-blocks erected for auxiliary soldiers such as those believed to have occupied Bearsden could contain any number of rooms between six and ten. Most, however, contained either eight or ten and were subdivided into a front and a back room (Johnson 1983: 166–76).

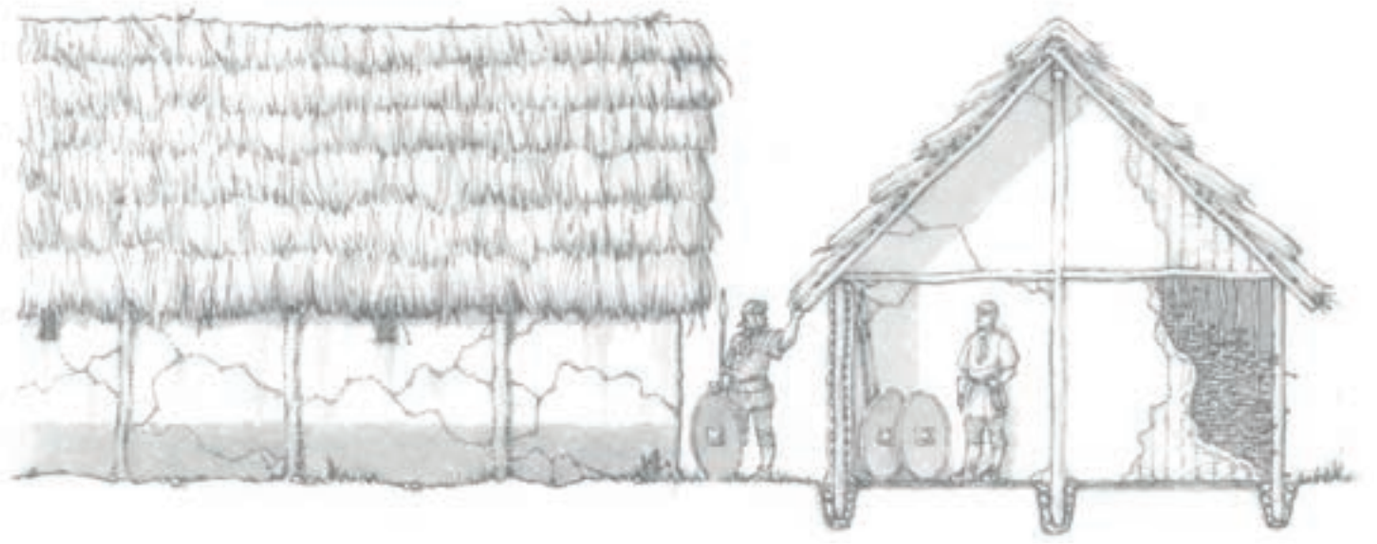

*Illustration 21.16*

A restored section and elevation of a timber building. The irregular setting out, variations in post-hole spacing, slight scantling of vertical posts and poor flooring all indicate that the majority of the forts buildings were 'jerry built'. This would suggest poor thatching, poor daubing, and possibly poor maintenance. The part elevation and section show the probable appearance of most buildings within a month or so of completion. Despite the poorly finished thatch and prominent cracking of the daub the buildings would be reasonably weather-tight. They may have been lime-washed on completion and provided with a contrasting ochre or dull red splash-band at the foot of their external wall faces. The wavering walls would make their conventional painting to represent the mortar lines of stonework an unlikely further decoration. Drawn and described by Michael J Moore.

On the basis of the description of Pseudo-Hyginus it is normally assumed that barrack-blocks with ten rooms were built for an infantry century of 80 men, eight soldiers occupying a double barrack-room, while barrack-blocks with eight rooms were occupied by two cavalry troops of 32 men in each, the 64 men being divided up again eight per room. The relationship between the two types of barracks can be seen at Corbridge where a barrack-block of ten rooms was replaced by one of eight when the regiment based there was changed (Bishop & Dore 1988: figs 72 and 73), and at Elginhaugh where the fort contained barrack-blocks with ten rooms and another apparently with eight (Hanson 2007: fig 12.3). It is also assumed that where double rooms occur, the rear room was used for sleeping and the front for storing equipment on the basis of the statement by Pseudo-Hyginus that the equipment was placed in front of the tent.

It is unclear where the two senior officers (and possibly others) immediately below the centurion and decurion lived. There is no evidence for separate accommodation (Breeze 1969), but it may seem unlikely that they shared the barrack-rooms of the ordinary soldiers. As a result, it has been suggested that they shared the accommodation of the centurion/decurion (Hodgson and Bidwell 2004: 134).

A further problem is the size of the troop. The literary evidence may be briefly stated.

- Arrian, governor of Cappodocia under Hadrian and therefore close in date to the building of Bearsden and author of three books about military affairs, refers to 64 riders and 128 riders thereby indicating a strength of 32 for each troop, while a subsequent passage suggests that the *duplicarius* and *sesquiplicarius* were part of the 32 (*Tactical Handbook* 18; 42);
- Vegetius (2.14), writing in the fourth century but using earlier material, stated each legionary cavalry troop contained 32 men;
- Psuedo-Hyginus is more complicated, indicating troops of different sizes for the 1,000-strong cavalry unit and the 500-strong unit, the latter, through simply arithmetic, being calculated as 31 strong, though the author does not specifically state that, while elsewhere he gives the figure of 240 cavalrymen in a larger mixed unit, which suggests troops 30 strong (16; 27).

The documentary evidence is more difficult to use as it is clear that Roman units could often operate below strength (Breeze 1984b: 264–8; Tomlin 1998: 46–8; Hodgson 2003: 86–90). Finally, Hodgson and Bildwell argued that the size of the troop was 30, on the basis of the archaeological evidence at Wallsend and South Shields, where three horses could have been accommodated in each of the nine rooms of the stable-barracks, a figure supported by the survival of three mangers in each of the stables at Gasr Bshir in Jordan; they placed the junior officers with the decurion (Hodgson & Bidwell 2004: 134; Kennedy & Riley 1990: 177). The major difficulty with this proposition is that even a troop 30 strong would have required space for 35 horses as the decurion and his two senior officers were assigned four remounts (Pseudo-Hyginus 16).

The difference in size between 32 and 30 is not that great to affect the discussion of the barrack-blocks at Bearsden and therefore will not be considered further. Here, the testimony of Arrian and Vegetius is preferred and it will be assumed that each troop consisted of 32 men, including the *duplicarius* and *sesquiplicarius*, and one officer.

At Bearsden the unusual feature is that the rooms in the barrack-blocks are so small. The average measurement in building 3 is 4.2m × 3.6m, that is an area of 14.4m$^2$, and in building 7 3.7m × 3.6m, an area of 13.3m$^2$. On the Antonine Wall, only Bar Hill is available for comparison and here the single barrack-room recorded in a timber building measured 7.4m × 3.6m and contained 26.6m$^2$; that is, it was about twice the size of an average barrack-room at Bearsden. The room at Bar Hill, however, had probably been subdivided into a front and back room. The barrack-rooms in the contemporary fortlet at Barburgh Mill varied in size but on average were 50% larger than those at Bearsden (Breeze 1974b). The barrack-blocks on Hadrian's Wall tended to offer more spacious accommodation than those on the Antonine Wall, as is demonstrated by the figures for Housesteads (illus 21.21). It seems possible therefore that only four soldiers, together with their equipment, occupied each barrack-room at Bearsden rather than the normal eight, and that each block was assigned to a single cavalry troop of 32 men, a total of 64 therefore being accommodated in the two certain barrack-blocks in the northern part of the fort.

**Table 21.3**
**Antonine barrack-blocks, room sizes**

| | | |
|---|---|---|
| Bearsden (average) B3 | 4.2m × 3.6m | 14.4m$^2$ |
| B | 3.7m × 3.6m | 13.3m$^2$ |
| Bar Hill (only one known) | 7.4m × 3.6m | 27m$^2$ |
| Barburgh Mill fortlet | 6.5m × 3.4m | 22m$^2$ |

Turning to the other buildings in the forward half of the fort, there are three long narrow buildings, similar in size to the barrack-blocks, but, as we have seen, without the same internal arrangements. Long narrow buildings are frequently, simply out of our ignorance, considered to be storehouses, but the most one might expect in a fort of this size is two, not four. If the interpretation of the barrack-blocks is correct, then stabling would be required somewhere. It should be noted, however, that any fort might be expected to include stables to house the pack animals whose existence is recorded by Roman writers (Caesar, *Gallic War*, 8, 45; Josephus, *The Jewish War*, 5, 4; Pseudo-Hyginus 1; Breeze 1988: 584), as well as other horses such as the commander's mount.

At Bearsden, no mucking-out drains, which might indicate their function, were found in any buildings (Hodgson & Bidwell 2004). Nor were they found outside. It might have been expected that drains would have been placed on the down-side of stables, but none existed, nor were pits of the type found at South Shields (Hodgson & Bidwell 2004: 136). As has been discussed,

*Illustration 21.17*

Stabling and pony food. Roman cavalry mounts, small agile animals less than 1.5m high at the withers, would be considered ponies rather than horses in modern equine parlance. The plan and section depicts one building reconstructed as a stable for some 35 ponies. They are shown in single or double stalls to reduce kicking and to help with feeding and mucking out, although evidence for partitioning within any of the putative stables is slight. The doors to the stable, one at each end, are shown on the down-slope end of each gable. The pony in the foreground is shown with hay, grain and water for one day. The stacks behind him show the grain (in sacks) and hay required to feed seventy or so ponies for one week. Watering the stabled ponies at least twice a day would be a major logistical exercise. There are several contemporary representations of civilian carts and wagons carrying very large barrels. Possibly the Roman army has its equivalent of the Victorian army's standard water carts for garrison use. Drawn and described by Michael J Moore.

the area of these buildings was sampled in the hope that high phosphate readings would result, or micro fossils might indicate, the presence of horses, but the work proved to be inconclusive. The outer east ditch, however, did yield one type of beetle which was associated with horse dung, though a link with cow dung is also possible, and there is no certainty that the beetle came from within the fort. There were also beetles in the ditch associated with mouldering hay and straw, and remnants of hay were found in the fort, but that is not proof of the presence of horses. Nor is a single horse shoe in itself indicative of the presence of cavalry as it may be modern and, if Roman, used to shoe a mule rather than a cavalry horse (11.3.5.222).

The size of the horses determines how many might fit into a stable. Unfortunately, there is no firm agreement on the size of Roman cavalry horses, the figures ranging from 12.7 to 14.9 hands (Hyland 1990: 68–9). One statement of army regulations stipulates that if the horses are picketed without partitions separating them, they should be 1.5m apart; if divided by partitions they could be as little as 1m apart (Regulations of the 9th Virginia Cavalry). Hodgson and Bidwell (2004: 133), citing Roman parallels in North Africa, suggested that 1.2m would be required for horses of 12.7 to 14.9 hands. Hodgson has also noted the width of the doors into the stables at the fort at Gasr Bshir in Jordan can be as narrow as 1m (Hodgson 2003,

*Illustration 21.18*

The mucking-out logistics. A working pony produces about 65.5 litres of waste, (solids, urine and spoiled bedding) each day, the equivalent of eight large bucketfuls. Each week 70 or so ponies would together produce about 35 cubic metres of stall-waste, when neatly stacked a mound of the size shown in the middle distance. The same 70 ponies would require some 20 cubic metres of replacement bedding each week, a stack of the size of that beyond the waste mound. Feeding, watering and the disposal of stable waste would be a major and continuing task for the soldiers. As elsewhere in the Empire, civilians may have been employed to assist with this work. The use of manure in farming was already understood and this by-product of a cavalry garrison may have been traded within the local agricultural community, who must have provided much of the fodder and bedding required by the garrison's ponies. Drawn and described by Michael J Moore.

90, citing Kennedy and Riley 1990: 177). Thus, at Bearsden, a building 35.5m long could accommodate 23 horses if 1.5m apart, 29 if 1.2m apart or 35 if only 1m apart. If the last measurement is correct, the horses of a single troop could occupy one building at Bearsden, though without the full complement of four remounts; if the second is appropriate, then the number is close to that argued by Hodgson and Bidwell. In this way the four main buildings in the northern part of the fort could accommodate two troops and their horses.

There is another way of looking at the barrack accommodation (illus 21.19 and 21.20). It is puzzling that the barrack-blocks do not correspond to the norm where each barrack-room is divided into two, the back room presumably used for sleeping and corresponding to the tent on campaign and the front room used for the storage of equipment and corresponding to the area in front of the tent assigned to that purpose by Pseudo-Hyginus (1). No traces of internal partitions were found; nor were they at Bar Hill and Barburgh Mill (Macdonald & Park 1905; Breeze 1974b). In seeking a solution, evidence by analogy, that is evidence from elsewhere in the Roman empire, may come to our aid.

The barrack-blocks at Bearsden are the equivalent, in timber, of the narrow stone barracks at Birrens. At Birrens the buildings are placed back-to-back (as buildings 1 and 2 at Bearsden), but it

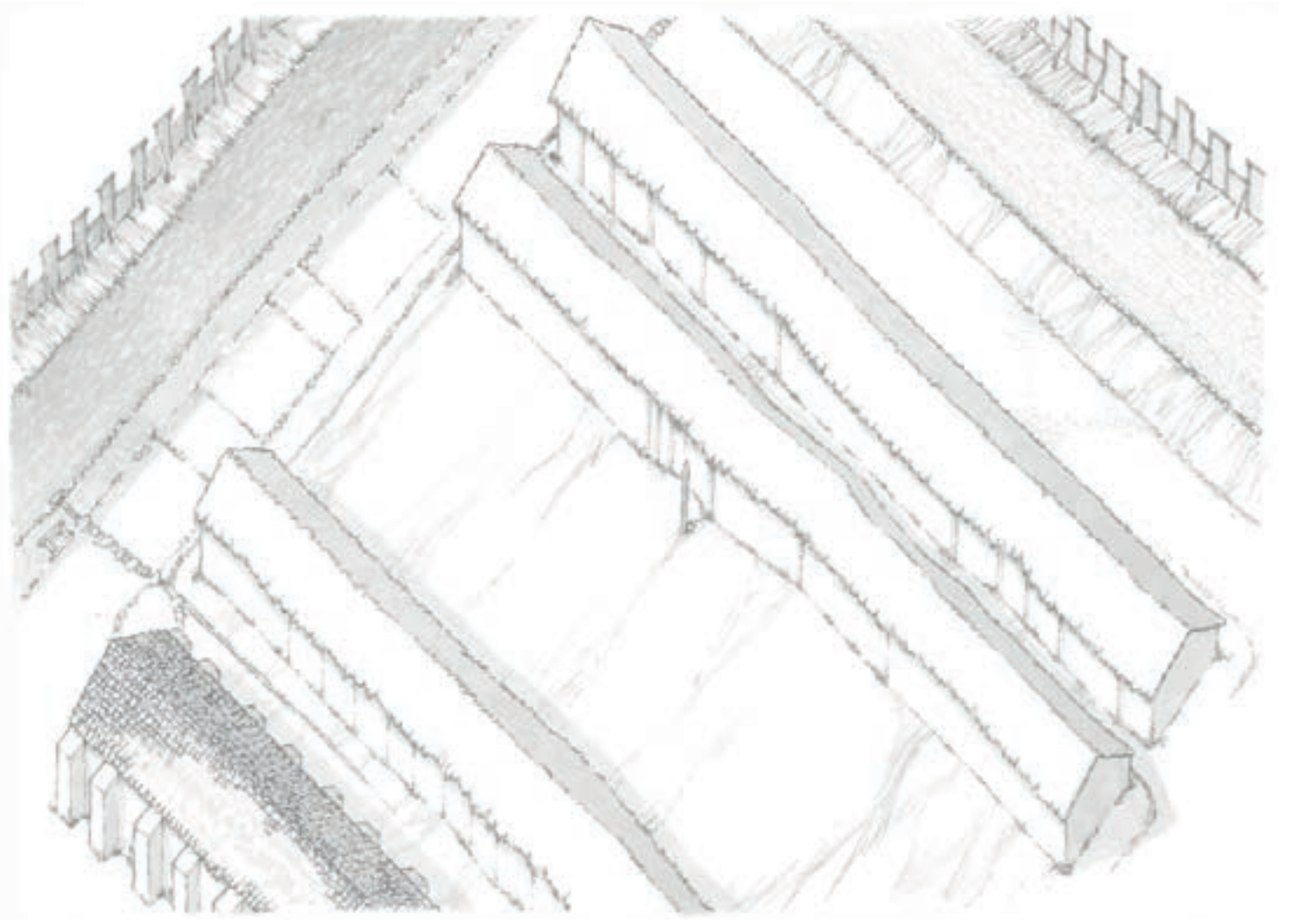

*Illustration 21.19*

A reconstruction of the buildings in the north-west area of the fort. In this illustration the buildings are shown in simple block form to emphasise their poor setting out, irregular post spacing and consequently rough and ready appearance. Despite the steep fall from north to south, there was little evidence of the extensive terracing that buildings of this size would ideally require. Consequently the ridge line of the timber and daub buildings snake across the site. No doors or fenestrations are shown in this view since there is no evidence of their type or position and the actual use of the buildings is conjectural. In contrast, the granary, partly visible in the foreground, is accurately set out and well built in rough-dressed stone. Conventionally it might be expected to have been roofed in stone slates or terracotta tiles. There was some evidence for tiles, but it remains possible that it and its smaller companion in the south-west quadrant were roofed with shingles. Drawn and described by Michael J Moore.

seems possible that these two buildings together did not form one complete barrack, divided by an eavesdrip, but rather the unit was formed of two buildings facing each other across a street, the sleeping quarters lying on one side of the street, and the equipment in the rooms on the other (illus 21.21).

Is it possible that the same arrangement pertained at Bearsden? Could the buildings be paired together, 2 and 3, 5 and 7? While the internal arrangements, so far as they are known, in buildings 2 and 5 suggest that they are not barrack-blocks, idiosyncratically placed internal partitions may be of less concern in the case of equipment rooms. The planning of the buildings might suggest that they were intended to function together, as both pairs measure half an *actus* across their outer walls. There are, however, two difficulties. First, the two buildings lie at different levels: for example, building 7 lay 1m lower down the slope than building 5. Building 3 lay 2m downhill from building 2. Whether this is significant or not is difficult to say. Second, both buildings 3 and 7 appear to have been orientated in the wrong direction for them to articulate with their putative pairs.

Nevertheless, these two pairs of buildings may have been associated and if so each room in buildings 3 and 7 would have held eight men and therefore each barrack-block will have held two troops of 32 men, a total of 128 in the northern part of the fort.

Apart from the difficulties already discussed, the accommodation for the two decurions in charge of the two troops in each barrack-block would appear to be unusually small.

One final problem is that while barrack-blocks containing eight rooms are usually associated with cavalry, some forts appear to have provided accommodation only for those soldiers permanently based there, ignoring those men in the unit who were based elsewhere (see Breeze 1977c: 459 for the suggestion of a similar arrangement at Birrens). Sometimes these outposted soldiers appear to have been a single century, while some detachments were drawn from different centuries and troops (Breeze 1977a). Accordingly, it is not impossible that if the unit based at Bearsden provided soldiers for service on outpost duty, accommodation was not provided for them at the fort and this might account for smaller barrack-blocks occupied by parts of infantry centuries rather than cavalry troops.

In summary, there are at least four ways of interpreting the buildings in the northern half of the fort:

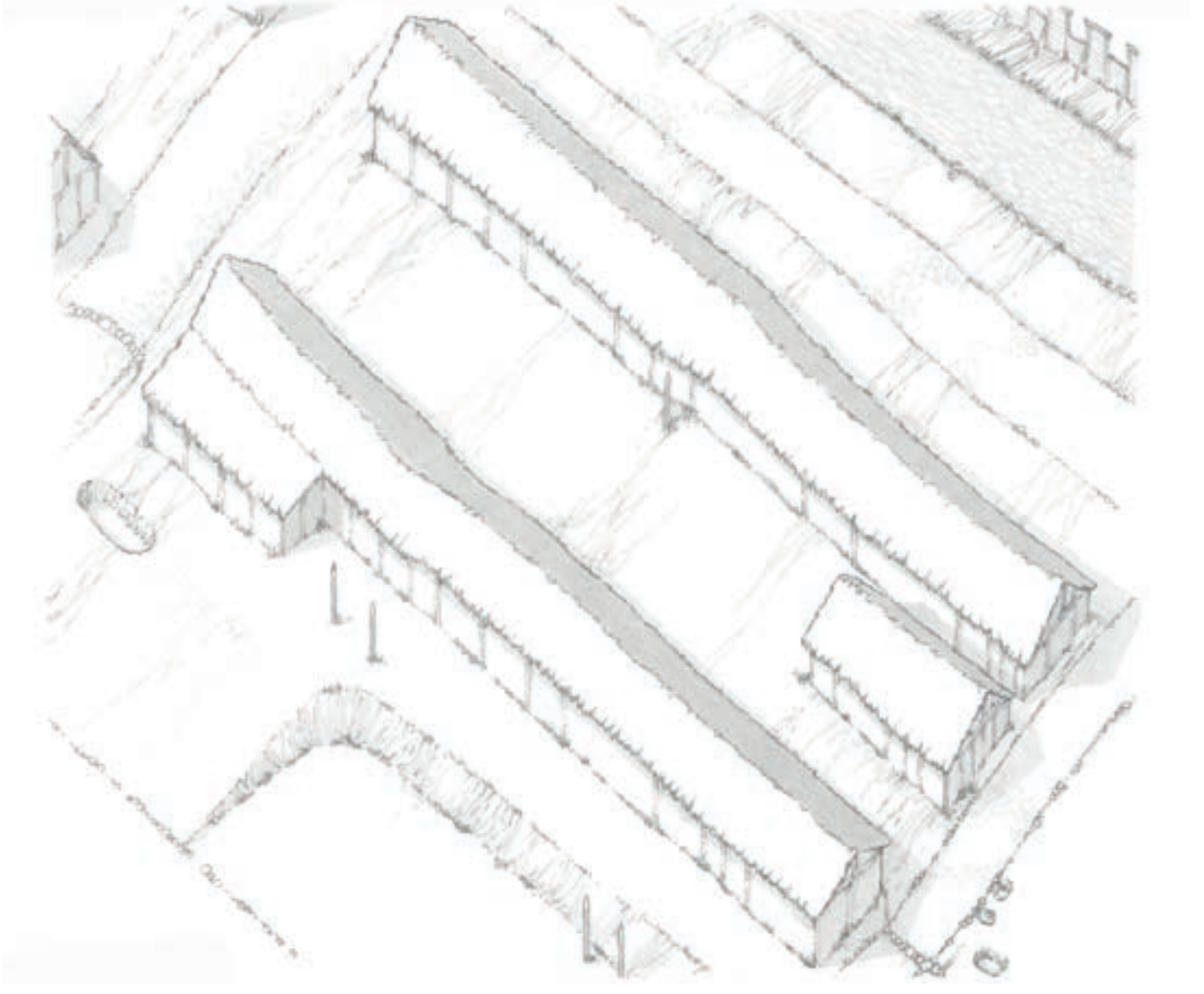

*Illustration 21.20*

A reconstruction of the buildings in the north-east area of the fort. As with the view of the north-west quadrant, these buildings are represented in simple block form without fenestration or doors. Again the poor setting out, irregular post spacing and undulating ridge lines are evident. The post-holes of the building in the foreground, possibly a barrack-block, are open to several interpretations. Here the building is shown with a lean-to extension at its western end, one possible explanation for the complex arrangement of post-holes found there. Several free-standing posts (of indeterminate purpose) are shown occupying post-holes which do not align with, or apparently form part of, the buildings shown. Drawn and described by Michael J Moore.

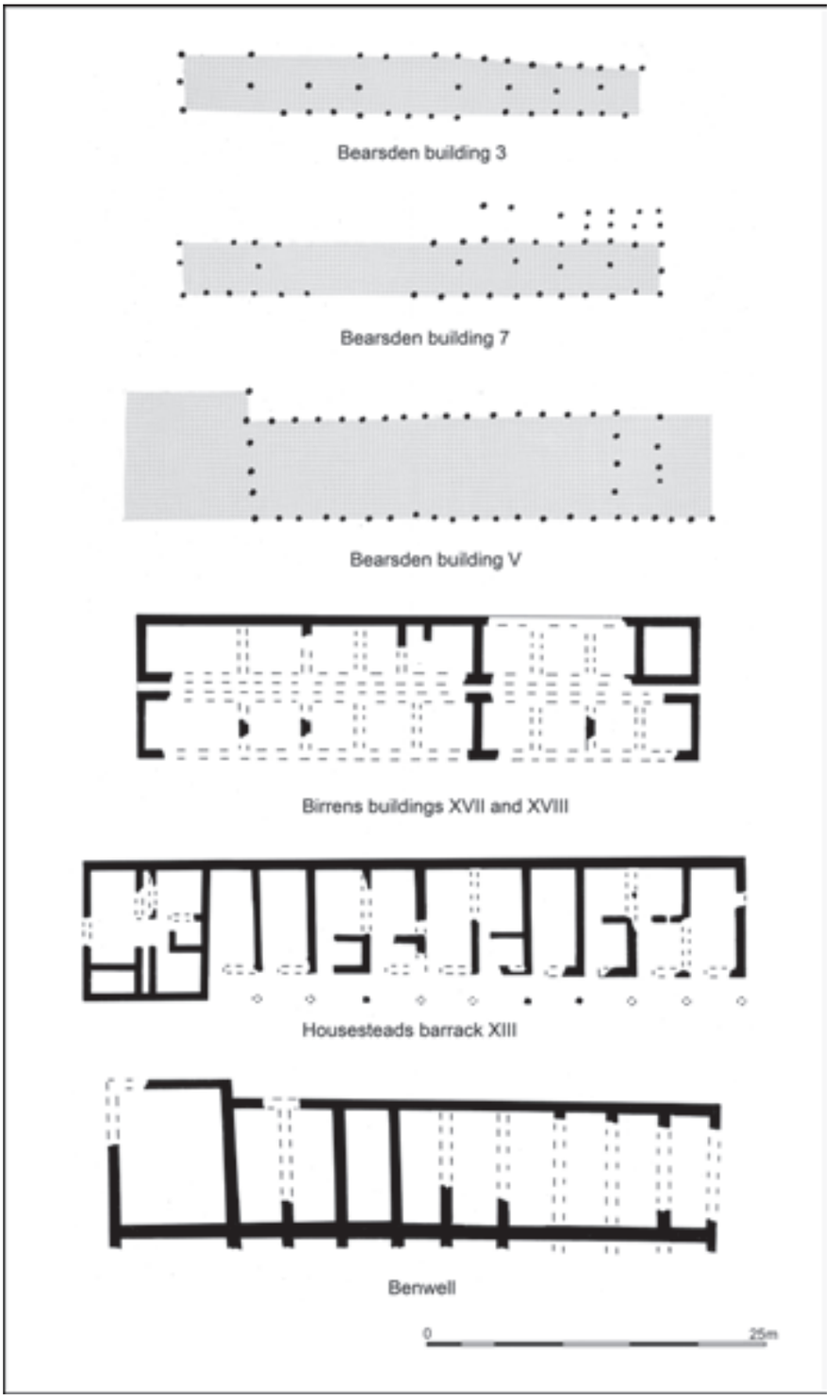


*Illustration 21.21*
Plans of barrack-blocks.

- there were two barrack-blocks, 3 and 7, each for 32 soldiers, the decurion and their equipment, with accommodation for most of the horses in buildings 2 and 5, a total of 64 men;
- each barrack-block consisted of two separate parts separated by an open space, with men in one and their equipment in the other thereby providing accommodation for four troops, a total of 128 men, plus four decurions, but with the horses stabled elsewhere;
- it is possible, if unlikely that building 2 was a barrack-block and therefore there were barrack-blocks for three troops, a total of 96 men;
- the barrack-blocks held parts of centuries from which men had been detached for outpost duty.

The preferred conclusion is the first: buildings 3 and 7 were barrack-blocks, each occupied by one troop of 32 men with their mounts in buildings 2 and 5. Space would have been required for fodder and hay; this could have been stored in the putative stables or in building 1.

It is unfortunate that so little can be said about the southern part of the fort. A close spacing of post-holes is usually interpreted as indicating a granary. There are, however, two stone granaries at Bearsden and a third and possible fourth might be thought not only superfluous but also strange to be in timber rather than stone, though there is a precedent at Old Kilpatrick where one stone granary and three timber granaries lie in the central range (Miller 1928; Robertson 2015: 118). The spacing of the post-holes in building 13 at Bearsden is similar to that in building Ix at Old Kilpatrick, about 1m, while the post-holes in building 14 and in buildings x and x I at Old Kilpatrick are rather more widely placed. But there the similarities end. At Bearsden, building 13 appears to be very short while the spacing in building 14 is the same as in building 5. The function of these two buildings must remain uncertain.

The lack of pottery in this area of the fort is striking and may be considered to mitigate against soldiers being accommodated here. In the areas of buildings 13, 14, 15 and 16, there were no mortaria, bowls, dishes or lids, only one fragment of a plate and two of cooking pots beside building 14 and eight in building 16. There were six fragments of cooking pots, bowls and dishes just to the south of building 9, the granary. The intervallum south of building 16 was more productive with five fragments of cooking pots and two of bowls and two sherds of samian. This paucity of pottery is in contrast to the northern part of the fort. Drawing together the above evidence, the linking of eight rooms in a barrack-block with cavalry is so strong that it is likely that the buildings at Bearsden were occupied by such soldiers rather than the rumps of infantry centuries. No barrack-blocks other than 3 and 7 can be securely recognised and it seems likely that 2 and 5 contained the horses for these two troops. It is difficult to see where other soldiers might have been quartered in the fort. Although there is space in the south-west corner, neither building 13 nor 14 convinces as a barrack-block.

There seems to be an over provision of granaries for such a small number of men. The two buildings on present theories would hold sufficient food for nearly 400 men (Manning 1975b: 115; Gentry 1976: 25). However, there are so many imponderables concerning the arrangements within granaries that it may not be wise to press this discrepancy between the proposed number of men in the fort and the granary capacity too far. It is possible that one granary held the fodder for the horses. It might be argued that if some of the buildings in the northern part of the fort were stables then the northern granary was carefully placed to hold fodder, but this seems unlikely in view of the discussion of the building of the fort and the likelihood that the granary was placed here simply because there was insufficient space in the central range.

The smallest appropriate unit in the Roman army was the smaller mixed infantry and cavalry unit, nominally 500 strong, but containing 480 infantry and 128 cavalry. The preferred interpretation of the buildings would only allow for 64 cavalry, leaving 544 men to be stationed elsewhere. It is possible that some of these were outposted to some of the fortlets on the Wall. It also seems possible that at the time Bearsden was amended and the other secondary forts were added to the Wall, the fortlets had changed their function by having their buildings removed (Breeze 2006: 94–5). They would therefore not be available for more than a handful of men. Nor are there any other fortlets known in the vicinity of Bearsden. The outposting of soldiers from Bearsden to fortlets, with a consequent impact on barrack accommodation, therefore seems unlikely. Even if mile fortlets were still occupied to each side of Bearsden, they would still only contain a maximum of 64 soldiers and possibly as few as 12. It is more likely that Bearsden had a special relationship with one or other of the forts to east and west along the Wall. No inscription has survived to indicate the nature of the unit at Balmuildy 4.5km to the east of Bearsden, though the plan of the fort suggests that it may have held a complete unit (Miller 1922). The reverse is the situation at Castlehill 2.5km west of Bearsden. An inscription found here records the Fourth Unit of Gauls, a 500-strong mixed infantry and cavalry unit (*RIB* 2195). The size of the fort is known from aerial photograph to be about 1.4ha, though no excavation has been carried out (Keppie 1980). A fort of this size would be too small to hold the Gauls. It is therefore possible that the unit was divided between Bearsden and Castlehill, and the presence of cavalry barracks at Bearsden would fit with this interpretation. If this was the case, it would appear that Bearsden served as the main base for the unit in view of the presence here of two granaries and, it has been argued, the headquarters building.

The division of units between forts is common in the Antonine period. Rough Castle on the Antonine Wall is too small to have held the whole of the Sixth Cohort of Nervians attested there (*RIB* 2144 and 2145), and it seems probably that as many as four of the six centuries of the cohort were outposted, some probably to the fortlets of Watling Lodge and Seabegs to each side of the fort. A similar situation existed in south-west Scotland, where the units stationed at both Birrens and Crawford had many men outposted to the fortlets of the Annan, Nith and Clyde Valleys (Breeze 1974b: 147–9 and 1977b, 459). Cavalry are not well represented on the Antonine Wall. The only 500-strong cavalry unit was based at Mumrills, close to the road leading north through the Wall past Camelon and to the north

(*RIB* 2142) . The remaining cavalry formed part of the 1,000-strong mixed unit of infantry and cavalry based at Castlecary, a fort placed on the watershed between the Forth and the Clyde basins, and the 500-strong mixed unit at Castlehill (*RIB* 2149 and 2195). The lack of cavalry may reflect the nature of the terrain, the broad valley to the north of the Wall flooding easily even today (Breeze & Dobson 1970). Bearsden, however, lay west of the Kelvin Valley in a very different landscape more suitable for cavalry.

Can anything be said about the unit which would have occupied Bearsden 1? This measured 150m × 113m over the ramparts and covered 1.69ha. As we have seen, this places it among one of the larger forts on the Wall, being similar in size to the primary forts of Castlecary, Balmuildy and Old Kilpatrick, and larger than any other secondary fort. A cavalry component in this fort therefore seems to be not impossible. The other crucial piece of evidence is the putative forehall to the headquarters building. A case has been made for this structure having been constructed as part of the original large enclosure with the forehall an integral part of the building. On the other hand, it might be expected that the radical reappraisal of the fort plan would reflect a significant change in the nature of the force based there.

The construction of forehalls has been related to the presence of cavalry. Johnson noted that 'of thirty-one forehalls known over half can be shown to have been connected with cavalry units, either *alae* or *cohorts equitatae*' while only one was associated with an infantry cohort (Johnson 1983: 125). This, however, may simply reflect the fact that about half the units in the Roman army contained cavalry. The reference to the cavalry drill hall at Netherby, occupied by a part-mounted cohort at the time, is usually taken to relate to the forehall in front of the headquarters building, though this building has not been examined archaeologically (*RIB* 978). Further, the discovery of a basilica of forehall type at Birdoswald in a different location from the headquarters has complicated the issue, though as the excavator noted, a 'comparative discussion of this building is hardly possible, as it is so far unique in auxiliary forts' (Wilmott 1997: 95).

In reviewing the evidence for forehalls in his Wallsend report Hodgson has suggested that the 'embracing of both granary and loading functions and the street joining in front of the *principia* [headquarters building] by the Wallsend Forehall suggest that the building served to give shelter to those conducting business at the doors of the granaries and to religious or ceremonial congregations of troops in front of the *principia* (perhaps gathering in the same way that a religious audience congregated before and not within a classical temple)' (Hodgson 2003: 182). In this he echoed the suggestion the forehalls were 'roofed places where soldiers could fall in' (Schönberger 1969: 169), and were not specifically related to the presence of cavalry.

The putative forehall at Bearsden, 30m × 11.2m, would be narrower that the size recommended by the British Horse Society for a cavalry exercise hall (Batty-Smith 2008: 410–11). This body suggests that one suitable for beginners should measure 30m × 20m while one for general teaching and the schooling of horse would need to be 40m × 20m in order to be the appropriate size for the British Horse Society examinations (larger halls, up to 90m × 30m, would be required for competition work and then can be divided into two for lessons). The lengths match between antiquity and the present day, but not the widths. This may reflect the smaller size of Roman horses (Hyland 1990: 68–9), or count against the Bearsden forehall being used by cavalry.

Forehalls are common in Germany, but rare in Britain. The only known examples are at Brecon Gaer in Wales, Ribchester in northern England, Newstead in Scotland and Halton Chesters and Wallsend on Hadrian's Wall (Johnson 1983: 120 and 314, n 61; Hodgson 2003: 178–82). Cavalry are attested at all these forts, though a direct link between the presence of the cavalry and the construction of the forehall cannot always be demonstrated. It should be noted, however, that in all forts apart from Wallsend a 500-strong cavalry unit is attested rather than the mixed infantry and cavalry unit which had a smaller cavalry component (*RIB* 403, 583, 586, 2121, 1299 and 1433). This fact, together with the evidence cited by Johnson, demonstrates that the link between the forehall and cavalry remains strong and we may accept that the appearance of a forehall at Bearsden is likely to indicate the presence of cavalry. Both forts may therefore have held cavalry.

### 21.7 THE BUILDING OF THE FORT AND ANNEXE

The relationship of the fort and annexe to a framework based upon a 5 × 4 *actus* grid has already been discussed. The execution of the plan based on the grid was not perfect and the result was that the framework of the fort and annexe was not square but a parallelogram. I discussed how this might have happened with Oswald Dilke, but he was unable to offer an explanation.

The presumption is that the west and east ramparts were constructed first and then the intermediate line drawn dividing an original large enclosure into fort and annexe rather than that the fort was extended to encompass an annexe. The crucial points of junction were not available for investigation, so this assumption is based upon the position of the presumed headquarters building, the rebuilding of the bath-house and the different widths of the ramparts. The west rampart of the fort and the east rampart of the annexe were both 4.5m wide. The rampart between the two enclosures, however, varied in width from 4.2 to 4.35m. The most straightforward conclusion is that the wider ramparts were constructed at the same time but the intermediate structure was of a different, and therefore later, date.

The bath-house would appear to have been amended after the construction of only one room (though possibly other parts of the structure were so effectively removed that they were not found) when it was decided to build the bath-house in a slightly different location. This entailed demolishing a room already roofed, though not finished internally and constructing a completely new building. It is difficult to be certain exactly why this occurred. Bath-houses are found in both forts and annexes on the Antonine Wall, so if the intention had been to divide an original large fort into two there would appear to have been no reason why the bath-house could not have stayed where it was. Possibly, the intention was to make better use of the site. It would appear that the original plan had been to build the bath-house north–south and presumably it was considered that better use

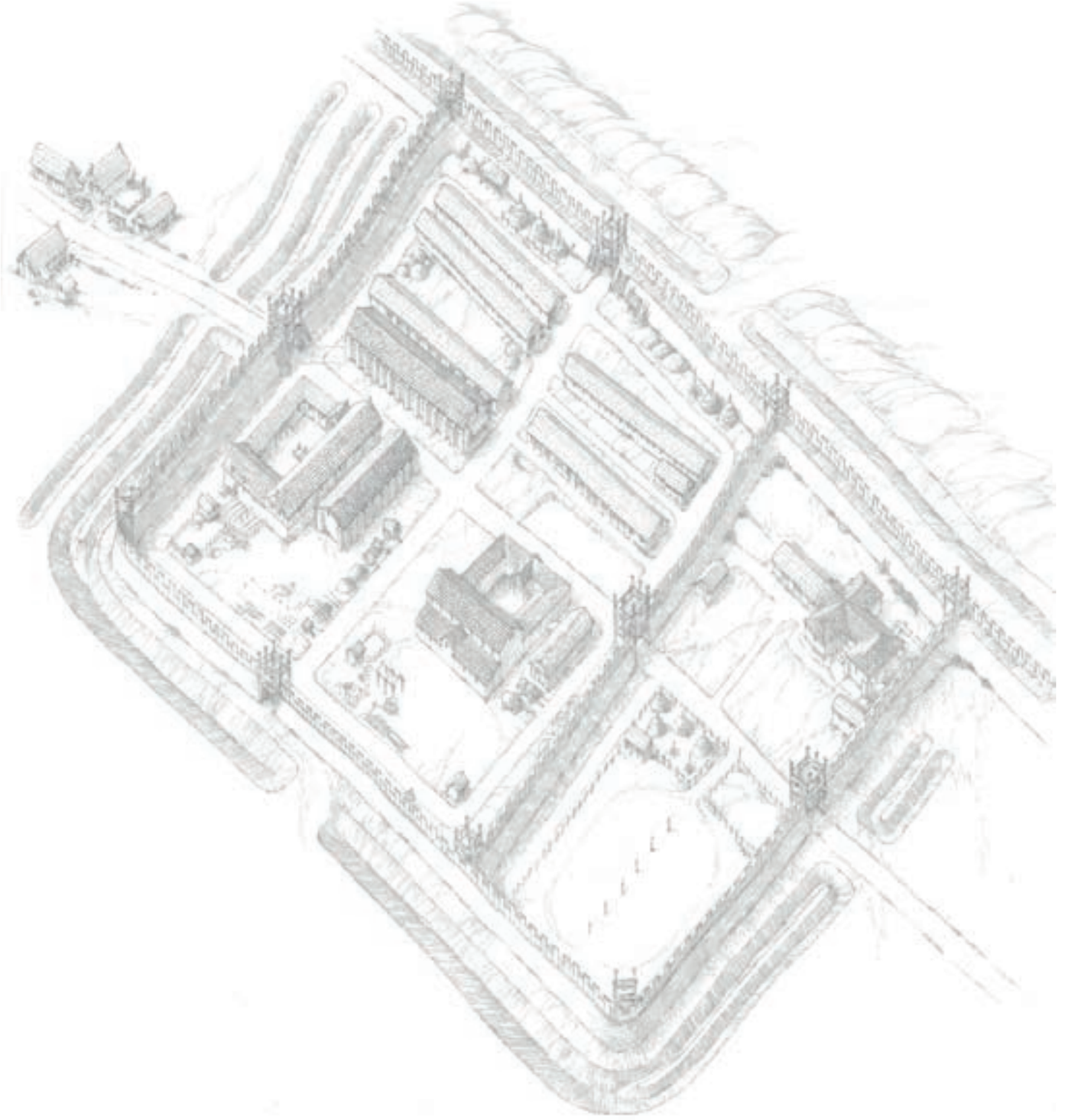

*Illustration 21.22*

An overview of the fort as it may have appeared in use. The awkward site, which slopes sharply from north to south and east to west, presumably affected the details of the layout. In the northern half of the fort a range of timber buildings straggle across the site. To their north, in the lee of the Antonine rampart, are postulated a kiln or oven, various sheds and several haystacks providing convenient supplies of hay for the garrison's ponies. The headquarters building shown here is typical of those found in the forts on the Antonine Wall with its clear-storied cross-hall and offices ranged round a small courtyard. Preparatory work for the construction of further buildings, perhaps feed-stores or more barracks has begun. The commanding officer's house has been provided with a two-storey residential range and its own vegetable garden, poultry and animals pens to the south. The bath-house and latrine occupy the northern half of the annexe. The southern half is shown as being used as a cavalry training ground with a central row of stakes for practising sword cuts at the gallop. Two small paddocks separate the exercise ground from the east–west road, one serving as a rick-yard. This interpretation is speculative; the area might also have been used for grazing, to provide space for the pitching of tents of units moving along the military way, or may have eventually been used for barns or store-houses. Beyond the fort's western gate can be seen a few small buildings and roadside stalls. Drawn and described by Michael J Moore.

could be made of the configuration of the ground if it was turned through 90°. Certainly the change required some effort, and a catalyst. The most ready catalyst might be thought to be a change in plan for the whole site.

The headquarters building, as we have seen, did not lie in the centre of Bearsden 2, but in the centre of Bearsden 1. The implication is that this building, together with the bath-house and the latrine, was one of the first buildings to be erected in the fort; possibly this was a normal procedure.

The lack of causeways outside the positions of the north and south gates of Bearsden 2, and the anomaly in the centre of the south side of the larger enclosure, combine to suggest that undug causeways were left in the centre of the north and south sides of Bearsden 1. In view of the planning of Bearsden 2, it seems likely that the locations of the north and south gates were moved to relate to the smaller fort. The site of either possible position for the north gate lay under 33 Roman Road and any traces of its remains are likely to have been removed. Nor was the ditch at the central point of the Bearsden 1 available for investigation. Macdonald (1934: 325) had recorded the uprooting of the south rampart yet excavations at both possible locations for the south gate were considered worth-while for post-holes might have survived such. In the event, no remains were discovered at either place.

The change in plan appears to have come early in the building programme. Work had begun on the bath-house, but only one room appears to have been built and that not completed. At the same time, the headquarters building had been or was being erected. A case has been made above for the granary in the central range also forming part of the plan for the larger fort. These three buildings, and possibly the storehouse to the right of the headquarters, related to Bearsden 1, while all other known buildings in the fort related to Bearsden 2.

In drawing up the plans of the fort, the existence of only three sections across the rampart between the fort and the annexe proved to be a handicap. Earlier plans show the rampart between the fort and annexe parallel to the west and east ramparts of the large enclosure, but on a plan prepared in 1982 it is at an angle. This resulted from too much weight being placed on the narrowing of the rampart north of Roman Road from 4.35m to 4.2m in one area as well as the paucity of fixed points. South of Roman Road, only one trench crossed the rampart. Here, the rampart appeared to be parallel to the adjacent building 12. In 2002 Gu ARD examined the rampart a little to the south, thus providing an alignment for the rampart south of the road, and confirming the alignment recorded during the 1973–82 excavations (Duncan & Leslie 2003).

Support for the presumed order of building comes from two points, one general and one particular. At all other forts on the Antonine Wall where the location of the annexe is known, the fort is surrounded by its own ditches with the annexe clearly being a separate enclosure. The only exception to this is Duntocher: here the fort and annexe were enclosed within the same lines of ditches. There may be two contributory causes for this. Firstly, both fort and annexe were secondary being constructed on the site of the pre-existing fortlet. At no other fort on the Wall is the relationship between fort and fortlet as well as fort and annexe so intimate. Secondly, the fort is very small (0.2ha internally). It is, in fact, the smallest known fort on the Antonine Wall, being a third of the size of the next smallest, Croy Hill (0.6 ha) and is closer to the size of fortlets than forts. Neither point fully explains the unusual situation at Duntocher, but, crucially, Bearsden is not a parallel to Duntocher in either its size (Bearsden is nearly five times the size of Duntocher) or in the existence of an earlier fortlet (strenuous efforts were made to search for one at Bearsden, but in vain).

Finally, we may note a consequence of the rearrangement of the enclosure at Bearsden on a different level of importance. Mention has been made of the planning of Duntocher. Putting aside the existence of the fortlet, the arrangement is very similar to Bearsden in that the ditches sweep round the fort and the annexe with no ditches between the two enclosures. Bearsden may therefore have been the model for the arrangement at Duntocher. This pattern did not occur at other forts, presumably because each fort was already surrounded by ditches when the decision to create annexes was taken.

## 21.8 THE DATE OF OCCUPATION

### *Background*

This is a fort which is primarily dated by the occupation of the Antonine Wall. The biographer of Antoninus Pius, writing 200 years later, stated that 'he conquered Britain through his legate Lollius Urbicus, and, having driven back the barbarians, built a new wall, this time of turf' (*Historia Augusta*, *Life of Antoninus* 5, 4). Victory was achieved by 1 August 142, the date of the first record of Antoninus being proclaimed *Imperator*, Conqueror, for the second time (*CIL* x 515 = *ILS* 340). and the event was celebrated by a coin issue in that year or early the next (*RIC* 742 = *BMC* 1637–9). Probably 142 was also the date of a speech given in the Senate by Cornelius Fronto, tutor to the prince Marcus Aurelius, and, in this year, consul. Fronto said, 'although he [Antoninus] had committed the conduct of the campaign to others while sitting at home himself in the Palace at Rome, yet like the helmsman at the tiller of a ship of war, the glory of the whole navigation and voyage belonged to him' (Fronto, *Speech on the War in Britain*). Our evidence is clear: the campaigning took place between the accession of Antoninus on 10 July 138 and 1 August 142. The date range can be narrowed even further. Inscriptions from Corbridge (*RIB* 1147 and 1148) record building work there in 139 and 140, probably in preparation for the campaign. An acclamation date of 1 August would place the end of campaigning before the traditional start of the season in May to allow time for the news to travel to Rome and the proclamation issued. Campaigning in Britain must therefore have ended in 141. It seems probable that campaigning was restricted to two years, 140 and 141, and possibly to the latter year only. Agricola appears to have dealt with the peoples of the Southern Uplands in just one season some 60 years before (*Agricola* 22) while we may note that the area had been under Roman surveillance since that date, so a single season of fighting may well have sufficed.

Finally, we should note the name of Lollius Urbicus on an inscription from Balmuildy (*RIB* 2191). This was one of the first

series of forts to have been constructed on the Antonine Wall and the name of this governor appears at no other installation on the Wall, suggesting that he started the building programme but left the completion of the project to his successor (Gillam 1976a). This would be in accord with the usual term of office of a provincial governor, three years. The earliest date for the construction of Bearsden is therefore 142. The building sequence for the Antonine Wall proposed by John Gillam in 1976 was for a series of forts each pair about 13km apart with fortlets probably at just over 1 Roman mile intervals in between, the number of forts being increased during the construction of the Wall with the spacing between each pair reduced to about 3km (Gillam 1976a). Several fortlets were replaced by forts and, in some other cases, the use of the fortlet changed, buildings being demolished and the interior cobbled. Primary forts and fortlets were either contemporary with or constructed before the Antonine Wall rampart. The secondary forts were generally built later than the rampart, though Duntocher, clearly a secondary fort, was erected before the rampart arrived at the site. The construction of the rampart was marked by stones known as 'distance slabs'. It has been suggested that the 20 Roman mile stretch of the Wall from Castlehill eastwards to Seabegs, forming exactly half the total length of the Wall, was built first (Hassall 1983). Then, perhaps, the eastern sector was erected, and finally the western 4 Roman miles (about 6.5km) was constructed, being measured in feet rather than the paces used elsewhere, and this would account for the fortlet and the fort being built at Duntocher before the arrival of the rampart. Bearsden lies towards the western end of the presumed initial 20 Roman mile stretch. The primary forts at Castlecary and Balmuildy were provided with stone walls suggesting perhaps an intention to build the Antonine Wall in stone, and an early date for Balmuildy is supported by the discovery here of the inscription recording building during the governorship of Q. Lollius Urbicus (*RIB* 2191). But the sequence merely indicates that the Antonine Wall rampart at these two sites was later. It remains possible that the rampart in the area of Balmuildy – and Bearsden – was constructed weeks or months after the building of the fort at Balmuildy, which may have been as early as 142.

The evidence relating to the division of one large enclosure at Bearsden into a fort and annexe has already been noted (pp 344–6). In his discussion of the significance of this, Bailey argued that Bearsden was the first fort where the decision to create annexes can be seen (Bailey 1994). He dated the action by reference to Mumrills where the west ditches of the fort were backfilled in order to create an annexe, the pottery found in the outer ditch suggesting a date of about 155–60 for this action (Steer 1961: 91). This coincides with the date for the end of the first phase of occupation at Inveravon fort (Dunwell & Ralston 1991; Bailey 1994: 304). Subsequently, Bailey (pers comm) has revised his position, suggesting that the infilling of most of the ditches at Mumrills in order to construct the annexe was undertaken earlier, the infilling of the outer ditch being a later action. Bearsden remains the earliest fort where the decision to create annexes can be recognised.

Vivien Swan supported the chronology advanced by Bailey in 1994 by reference to the style of pottery found at some sites on the Antonine Wall, including Bearsden, which suggested cooking in an African manner (Swan 1999). She took up a suggestion of mine, which is that soldiers from the army of Britain might have taken part in the Moorish War of the Emperor Antoninus Pius in the late 140s, returning with changed habits of cooking, African wives or servants who prepared food in their native style, or having acquired local recruits who continued to cook in their own manner, though there is no firm evidence for soldiers from Britain taking part in this war. Several theories relating to the occupation of the Antonine Wall have come and gone since the start of the excavations at Bearsden. When the excavations began in 1973, it was still believed that there had been two phases of occupation of the Antonine Wall; indeed up to less than a decade before it was accepted that there were three (Steer 1964). The discovery that there was only one period at Bearsden was therefore a surprise. At the time, various reasons for the existence of one period were considered. These included the possibility that subsequent periods of Roman occupation had been removed by later cultivation; this was rejected as in certain areas the protection afforded to the Roman levels was such that the evidence for a second period would have survived if it had ever existed. There was also the possibility that the fort was occupied throughout both Antonine periods without a break, as appeared to have occurred at other forts. The new evidence from Bearsden (as well as my earlier excavation of the fortlet at Barburgh Mill) was amongst the pieces of the jigsaw mapping the Antonine occupation of Scotland which was reassembled by Nick Hodgson (1995). He argued, persuasively, that there is no way of determining whether the different phases in the forts on the Wall were contemporary, but in any case the forts with evidence for two periods – Mumrills, Castlecary, Bar Hill and Old Kilpatrick – were the first series to have been erected and the changes there related to the reorganisation which followed the decision to add more forts to the Wall line (Hodgson 1995: 33–5). This argument has now been generally accepted, though Hodgson has changed his views on the dating of these changes (Hodgson 2009; see p 379 below). The lack of a second period in Bearden 2, therefore, occasions no surprise for it follows the 'normal' pattern of secondary forts on the Wall.

To turn to the end of the occupation. No Roman authority stated when the Antonine Wall was abandoned. A lost inscription from Hadrian's Wall dating to 158 refers to the rebuilding (*refecit*) of the Wall (*RIB* 1389; Hodgson 2011). However, a worn coin of Lucilla, wife of the Emperor Marcus Aurelius, was found in the fort at Old Kilpatrick: it was minted in 164. While the evidence appears to be contradictory, it could be reconciled if it is assumed that the rebuilding (or the completion of the building: Breeze 2012) of Hadrian's Wall took some time to complete and the abandonment of the Antonine Wall some years to achieve.

### *Bearsden*

At Bearsden, the primary evidence from the fort is provided by the coins. Ten coins were found, the latest (12.7) dated to 154–5, and is almost unworn (cf 12.9 of 153–4 or 154–5). This

brings us close to the date of rebuilding work on Hadrian's Wall in 158.

So far as the samian ware is concerned, Brenda Dickinson concludes: 'the dating evidence provided by this group of samian comes almost entirely from a relatively small number of decorated bowls and stamped plain vessels'. There are two early second century survivals, but otherwise the samian is Antonine, that is dating to about 138 to 161. The stamps on the amphorae found at Bearsden also appear at the great waste-tip known as Monte Testaccio in Rome dated to between 146 and 161. The coarse pottery is also Antonine in date.

## 21.9 THE HISTORY OF THE SITE

Little can be said about the history of the fort following its completion. The second bath-house was possibly modified during construction by the addition of a hot dry room, while it has already been noted that two rooms were modified, the cold room and on two occasions the first warm room. No buildings within the fort show evidence of rebuilding, though building 7 may have been amended by the addition of some timber uprights. There are also random post-holes elsewhere which may indicate amendments to buildings. None of these changes can be dated. The life of the fort was too short to measure any difference in the vegetation in its vicinity, though analyses of the ditch fills show little change in the open vegetation during the occupation.

## 21.10 THE CIVIL SETTLEMENT

Areas east, west and south of the fort were investigated for traces of civil habitation. South of the fort no indication of occupation was found on the steep slope nor on the flat ground beyond, now occupied by Jubilee Gardens. East of the fort no structures were found, merely a gulley running east–west. West of the fort, two lengths of cobble foundations were located; a pivot stone lay at the south end of one. No other feature, neither stone nor timber, was associated with these. It seems possible that these foundations formed parts of buildings, presumably of lean-to construction, and it is likely that they are of Roman date, in view of the Roman pottery, including samian and cooking pots, recovered from this area and in spite of the small fragment of medieval pottery found on the surface of one section of cobbles.Assuming that these are the remains of civilian buildings, they form a very rare survival along the line of the Antonine Wall. Elsewhere, fields have been recorded outside the forts at Carriden, Rough Castle and Croy Hill, while tombstones at Shirva imply the presence of a civil community and an inscription from Carriden proves the existence of a self-governing civilian body there (Keppie 2009: 1140–1). The lack of evidence for civil settlements outside the forts of the Antonine Wall has been noted by Keppie and linked to his argument that the Wall was lightly held, though he also suggested that the close spacing of forts along the Wall rendered the presence of a civil settlement at each unnecessary (Keppie 2009a: 1141). The paucity of evidence from outside forts on the Wall may be compared to the extensive civil settlement and field systems recorded further east at Inveresk (Bishop 2002; 2004). Possibly the existence of a civilian community at Carriden, which lies at the eastern end of the Wall, related to supply, but Tatton-Brown has argued that Camelon, about 12km further west, may have played a more significant role in this respect (Tatton-Brown 1980).

While structural evidence may be slight, it is clear that civilians were living in the area and manufacturing pottery which was used by the soldiers in the fort. Unfortunately, it is not entirely clear whether the potters were based at Bearsden or at a nearby fort, though the existence of misfired pottery at Bearsden indicates the operation of potters there.

## 21.11 LIFE IN THE FORT

### *21.11.1 Introduction to the distribution of artefacts*

The distribution of pottery and small finds within the fort was not even; in fact, it was noticeably unbalanced in several ways:

- little was recovered from the interior of buildings, whereas the gulleys surrounding them contained much material;
- the northern part of the fort produced signi cantly more material than the excavated areas to the south;
- the intervallum areas were artefact rich, with the east intervallum being particularly rich in pottery;
- the western area of the annexe between the fort/annexe rampart and the bath-house yielded considerable quantities of pottery;.
- the area to the east of the annexe was almost devoid of pottery, but some 20 sherds were recovered from west of the fort.

The lack of material in the interior of the buildings as opposed to the gulleys may relate to two factors: the buildings were kept clean and/or later ploughing may have removed the finds from the buildings but was not deep enough to penetrate the gulleys. The lack of floor surfaces in all fort buildings with but two small exceptions points to disturbance by the plough. Nevertheless, it might be expected that the pottery would have been disturbed but still remain in the brown soil between the Roman level and the topsoil. It seems likely therefore that there were actions to keep the interior of the buildings reasonably clean.

It is a reasonable assumption that some material would be discarded when the fort was abandoned. But would it be dumped in the gulleys? Could some of the material there have accumulated during the occupation of the fort? These questions are unanswerable.

The difference between the amount of pottery and small finds in the north part of the fort and the southern area may relate to the function of the buildings, as noted above, but in addition the topsoil was noticeably shallower to the south which was also a 'high' point within the fort and this may have resulted in the removal of material by the plough. The area with the highest quantities of pottery, and of all types, was that part of the annexe south-west of the bath-house. It would appear that it was used as a dump and this presumption is supported by the discovery

here of parts of two vessels also retrieved from within the fort (7.2.3.139; 168). The next area producing the most pottery was the eastern intervallum. Here was recovered one quarter of all the mortaria from the site, nearly all products of Sarrius from at least eight vessels, with many misfired, strengthening the case for this area being used as a dump. Both areas were in lower ground and while it could be argued that the material in the annexe was infilling a hollow, this is unlikely to be the case within the fort, not least because the pottery was recovered from above the Roman levels. Further discussion is included in the section on cooking and eating.

There are two other instances of parts of the same vessel recovered from different parts of the site: fragments of a pot found at the east end of building 3 and at the east end of building 7 (7.2.3.60) and of a glass vessel found in the officer's quarters of building 3 and beyond the west ditches (9.2.33).In the following section the distribution patterns of different types of artefact are considered. This is preceded by a general review of the whole finds assemblage by Lindsay Allason-Jones and closed by analysis of the distribution of the artefacts at Bearsden in relationship to their distribution patterns in other forts by Rikke Giles.

### *21.11.2 The small finds assemblage*

LINDSAY ALLASON-JONES

There is considerable diversity in the quantity and quality of the small finds which have been found through the excavation of forts in Scotland. Some of this diversity may be accounted for by the varying degrees of thoroughness with which these forts have been explored, as well as the date at which they were excavated. However, even taking these variables into consideration, it is noticeable that while the average fort in England, if such there be, will produce a reasonably predictable collection of objects in reasonably predictable amounts, depending on whereabouts in the fort the excavations are carried out, the forts in Scotland reveal no predictability at all. Indeed, Scottish forts tend to produce either a dearth or a glut of artefacts with no apparent happy medium. Sites which have produced large assemblages include Elginhaugh (Hanson 2007), Camelon (Maxfield forthcoming), Strageath (Frere & Wilkes 1989) and Newstead (Curle 1911) while the forts at, for example, Duntocher (Robertson 1957), Bar Hill (Robertson et al 1975), Carpow (Dore & Wilkes 1999) and the fortress at Inchtuthil (Pitts & St Joseph 1985) have produced hardly any small finds. This makes it very difficult to compare the assemblage from Bearsden with other Scottish forts of comparable date.

Scottish forts, whether they have large or small assemblages, often show a high number of vessels and vessel fittings (see for example Camelon (Maxfield forthcoming) and Strageath (Frere & Wilkes 1989) as well as Drumquassle (Masser et al 2004). These are noticeably missing from Bearsden but this is also reflected in the pottery assemblage which includes few drinking vessels. It is possible that flagons or tankards made solely of wood were used. The amphora assemblage indicates that some wine was being imported, albeit not in large quantities, so it is possible that the troops at Bearsden preferred quaffing beer rather than sipping wine.Also noticeable by its absence is any item of personal adornment, such as brooches, finger rings or bracelets, although there are two intaglios which are likely to have been worn in a finger ring. This group of objects is invariably found wherever the Roman army or civilians lived or gathered – even the Roman camp at Carronbridge produced a copper alloy trumpet brooch of first century date (Johnston 1995) – so this dearth at Bearsden is particularly noticeable. Scottish forts often show a preponderance of enamelled metalwork, no items of which were found at Bearsden. The use of enamelled bronze work may indicate a native element (see, for example, the enamelled harness fitting from Inchtuthil: Pitts and St Joseph 1985: pl x LV, fig 85) or reflect the flashy taste of the military (Allason-Jones 1991). Despite the conclusion that Bearsden appears to have held a cavalry unit at one stage in its occupation, there is nothing which can be firmly identified as harness equipment.

At Strageath, Camelon and Elginhaugh there is a bias towards the exotic, with griffin mounts at Strageath (Frere & Wilkes 1989: fig 74, no 50), panther-headed pins and mounts, openwork chapes, snake-headed finger rings at Camelon (Maxfield forthcoming) and a large Minerva head furniture mount, elaborately decorated harness pendants and a lead cherub lamp holder from Elginaugh (Hanson 2007). In comparison, the material from Bearsden leans more to the prosaic, such as agricultural tools and nails. The small finds assemblage at Bearsden provides little evidence to bring any of its individual occupants into clear focus. No items point to a known or suggested legionary or auxiliary unit; nor are there any artefacts which indicate the presence of women or children. The only artefact group at Bearsden that does stand out is that of weaponry. This preponderance of weapons is only shared in Scotland with the fort at Strageath, which produced a number of spears, although the Elginhaugh assemblage did include two pieces of ballista fittings. Bishop, in 2011, suggested there can be a 'measure of fuzziness' in the definition of military equipment and suggested three sub-sets: those that were definitely military, those that were equally definitely not, and those that might be depending on the context in which they were found (Bishop 2011: 115). In the case of the Bearsden weapons, all are unequivocally military with the possible exception of the 47 arrowheads, which may have been used for hunting purposes (11.3.1.15–61). The context in which they were found, however, plus the evidence that the diet of the soldiers at Bearsden was largely plant-based, suggests that the military personnel were not taking advantage of the hunting opportunities offered by the surrounding woodland to augment their diet with game and that these were for military use.Although the weapons stand out as a large group, it is important to note that it is still only a small assemblage given that the site was a fort and has been extensively investigated. It should be pointed out, however, that the average fort on Hadrian's Wall also produces few weapons and there are none at all from some excavations (Allason-Jones 2001). At Bearsden, its short lifespan may account for the small quantity of weapons. Soldiers would have been responsible for their own arms and armour and kit checks, such as that at Carlisle (Tomlin 1998: 57), and this would ensure that weapons were only discarded when no longer usable and then recycled if at all possible (Breeze 1976; Bishop 2011: 123). It must be presumed

that the rest of the weaponry as well as the personal belongings of the soldiers, were taken away when the fort was abandoned and what can be seen in the assemblage represents those items that were accidentally lost or deliberately dumped when the occupying unit left the fort.

### *21.11.3 Weapons and clothing*

The most important cache of weapons was found lying in the silt below the organic layer of the middle west ditch, where it may have been deposited on the abandonment of the fort. This group included six *pilum* heads and 47 arrowheads, mostly barbed (11.3.1.1–6; 15–61). The tips of the *pilum* heads, where they survive, are blunted or bent from use. On the other hand, the arrow heads showed no conclusive evidence for their use. They are an unusual find and Coulston has suggested that they were made locally for military purposes, or were for hunting (Coulston 1985).

Within the fort, four buildings yielded military equipment, the officer's quarters of building 7, room 1 of building 3 and building 13/14 each produced a spearhead while the hilt mounting of the pommel of a dagger was found in the northern range of the headquarters (11.3.1, 11–13; 7). All other items were retrieved from roads. The west intervallum produced two fragments of scabbard chapes of swords, part of the pommel of a dagger, a fragment of a spearhead and a shield boss (11.3.1.9; 10; 8; 14; 62). A second shield boss was found in the gulley beside building 2 (11.3.1. 63). Shield stiffeners were recorded on the west intervallum, between buildings 6 and 7, in a pit in building 16, and in the annexe (11.3.1.66–87). Seventeen fragments of leather footwear were found, all of the type of shoe known as the *calceus*. This adds support to the argument that this type of military shoe replaced the *caliga* during the Antonine period. Wear to the shoe led to hobnails being replaced, and many of these nails were found in the fort and the bath-house (11.3.6.224–34). Buildings 1, 3, 4, 5, 6 and 7 all yielded hobnails either within or immediately outside.

### *21.11.4 Tools*

The tools found included an agricultural hoe and a reaping hook (11.3.2.88; 89). Wood-working tools were few; blades and chisels, a punch and an axe, all fragmentary, and a possible anvil (11.3.2.91–95; 97; 99; 90). Each intervallum area yielded one blade or chisel, while a fifth was found between buildings 6 and 7 and a sixth in a post-hole in building 16. The axe and possible anvil both came from the west intervallum.

### *21.11.5 Cooking, eating and drinking*

The range of pottery vessels was largely normal for a fort. There are, however, some distinctive features, including a greater number of bowls, dishes and platters than might be expected and fewer flagons than are usual on contemporary military sites, though possibly larger jars served the same purpose. There were no Severn Valley ware tankards, but there is only one recorded on the Antonine Wall, at Old Kilpatrick, though there are two at Bothwellhaugh a few kilometres to the south in Clydesdale (Webster 1977: 168).

The distribution of various types of pottery has been plotted, and while there was no area with a preponderance of a particular type of pottery, the distribution patterns are still of interest (illus 21.23–21.29).

In her study of life in a Roman fort as indicated by the distribution of archaeological remains, Rikki Giles has noted that items relating to the kitchen and to food tend to be found in communal areas and buildings including roads, barracks, latrines, baths and the intervallum and not in places restricted by status or function such as the headquarters, commanding officer's house, the gates and the granaries (Giles 2012: 57). yet, within the areas related to cooking and eating there are differences. Eating took place within the barracks, 'while storage and food preparation seem to have been activities undertaken more often in the intervallum'. Jars found on 'roads may reflect tasks such as fetching water or other substances stored in jars (such as food from the granaries) … and the subsequent breakage along the roads between the barracks and the source of water or food' (Giles 2012: 57). She linked the presence of items relating to the preparation of food in the intervallum to the location there of fires and ovens. Granaries have a fairly high proportion of storage vessels.

One complication in relating the material remains at Bearsden to these overarching conclusions is the lack of ovens which are normally located in the intervallum (Bidwell 2007: 62). At Bearsden no ovens were found in spite of the intervallum being examined on all four sides of the fort in various locations. This might relate, at least in part, to the cooking in a North-African style recognised by Swan (1999), and discussed by Bidwell & Croom above (7.8). This style of cooking entailed the use of small braziers rather than large ovens and the debris would accordingly be more difficult to detect. Isolated post-holes were recorded by the south and east ramparts and cobbling inside the east rampart, which may indicate the presence of buildings or shelters in these areas.

The distribution pattern of pottery at Bearsden is also skewed by the considerably amount of mortaria recovered from the intervallum to the east of buildings 6, 7 and 8 and the eastern end of the path between buildings 6 and 7. While it might have been expected that this indicated that the intervallum was used for the preparation of food, supported by the discovery of a quern in both west and east intervallum areas (5.2.1; 4), the fact that many of the mortaria were misfired may suggest that this area was used a dump.

The distribution of mortaria within the buildings was significant (illus 21.23). Building 3 produced at least one sherd of mortaria from nearly every room while building 7 had a similar pattern. On the other hand, there were only two sherds of mortaria from building 1, and one each from both 2 and 5. This suggests a different function for these buildings. It also indicates the preparation of food in the barrack-blocks. The distribution of cooking pots in the barrack-blocks is similar to that of mortaria but generally has a wider spread across the fort, though neither has a strong presence in the intervallum spaces (illus 21.24).

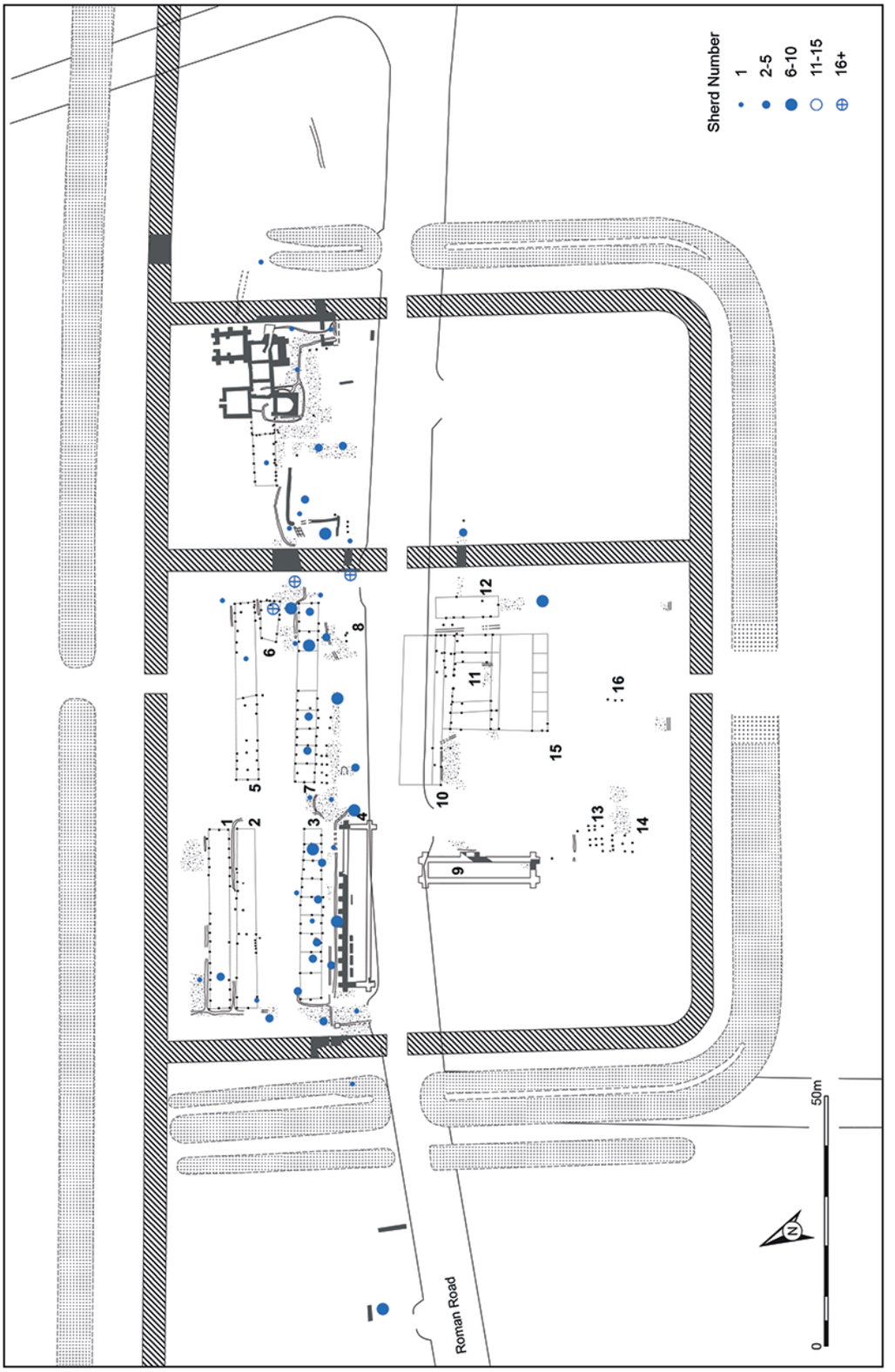


*Illustration 21.23*
The distribution of mortaria.

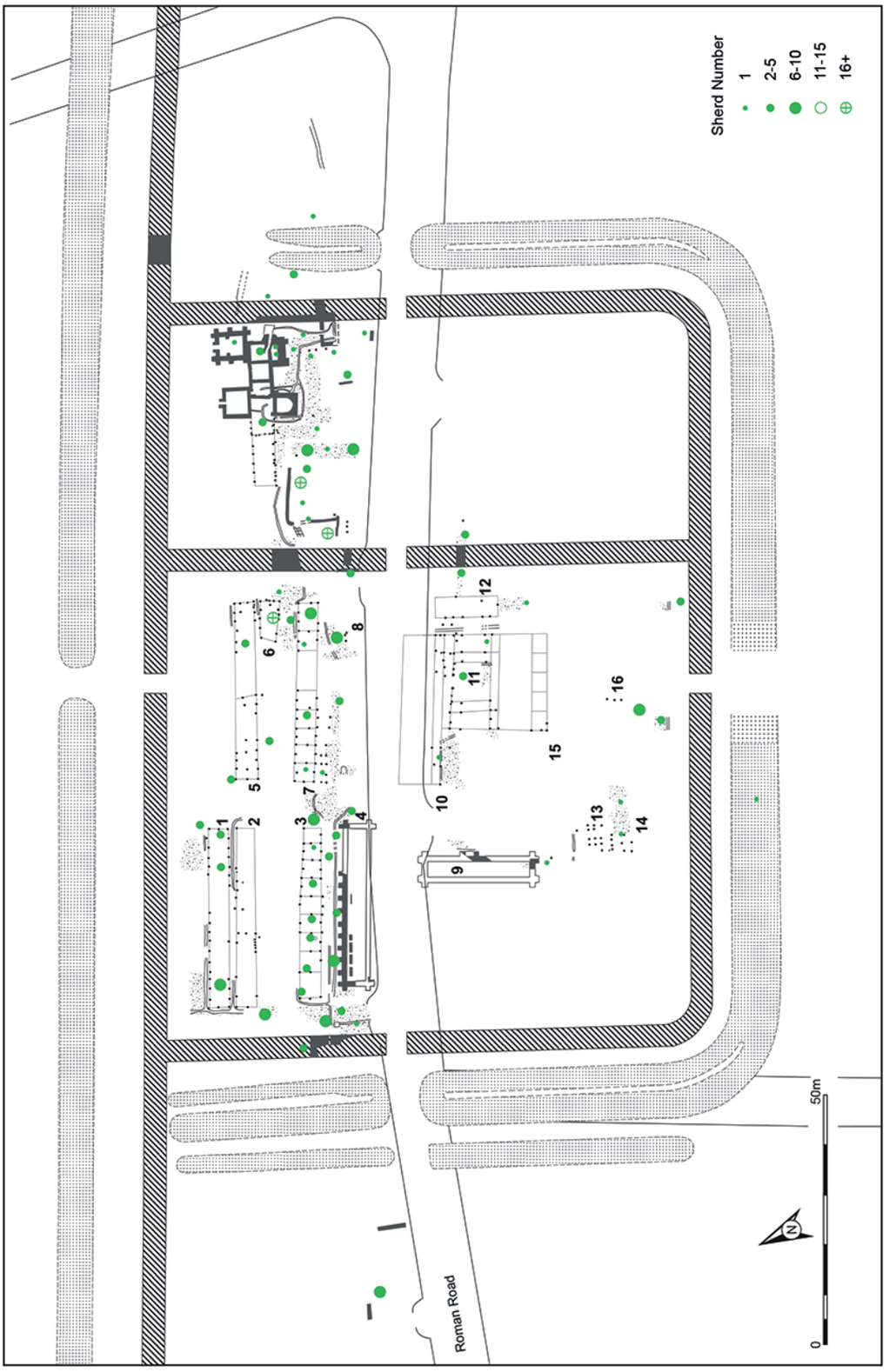


*Illustration 21.24*
The distribution of cooking pots.

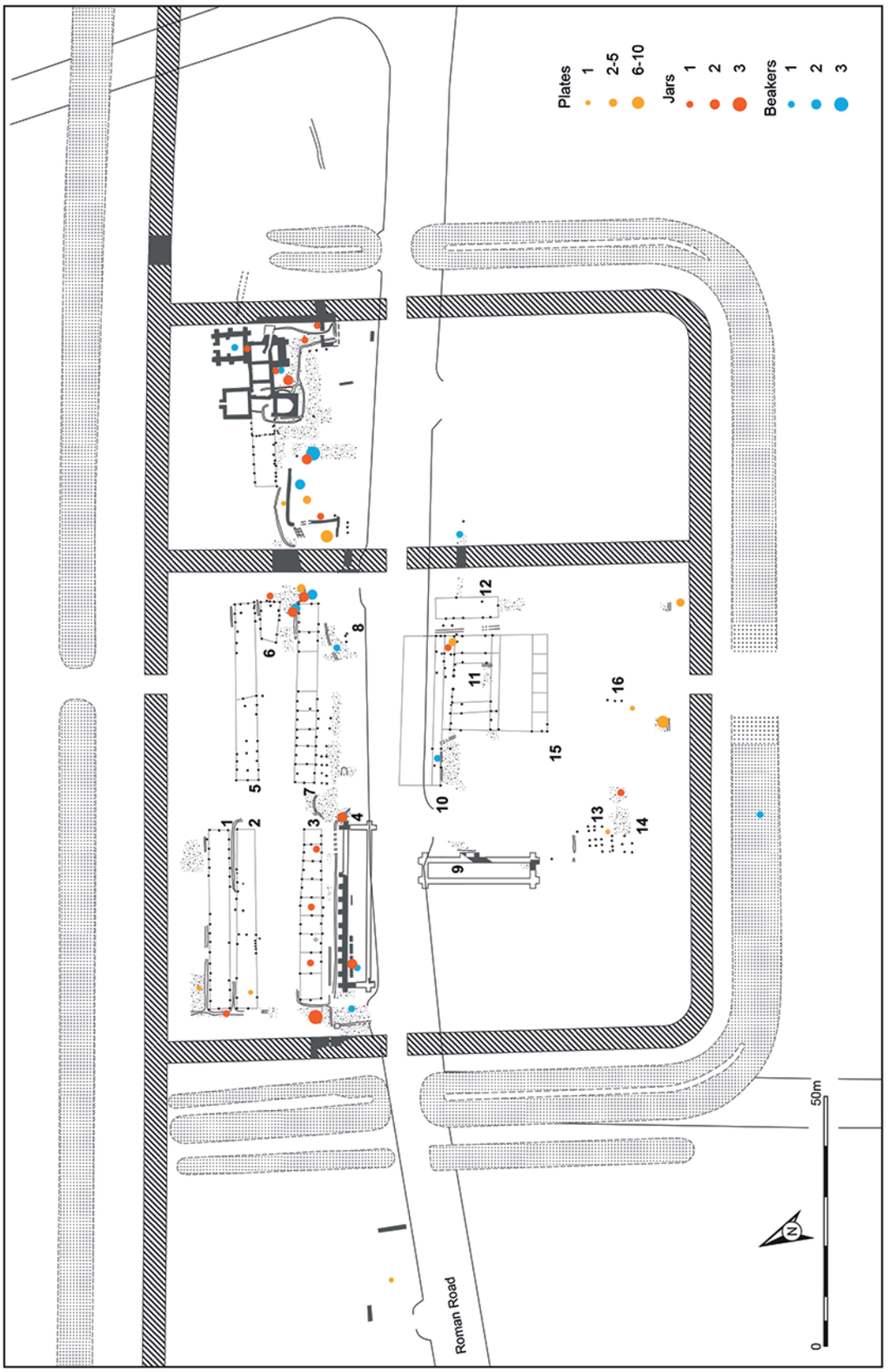


*Illustration 21.25*
The distribution of plates, jars and beakers.

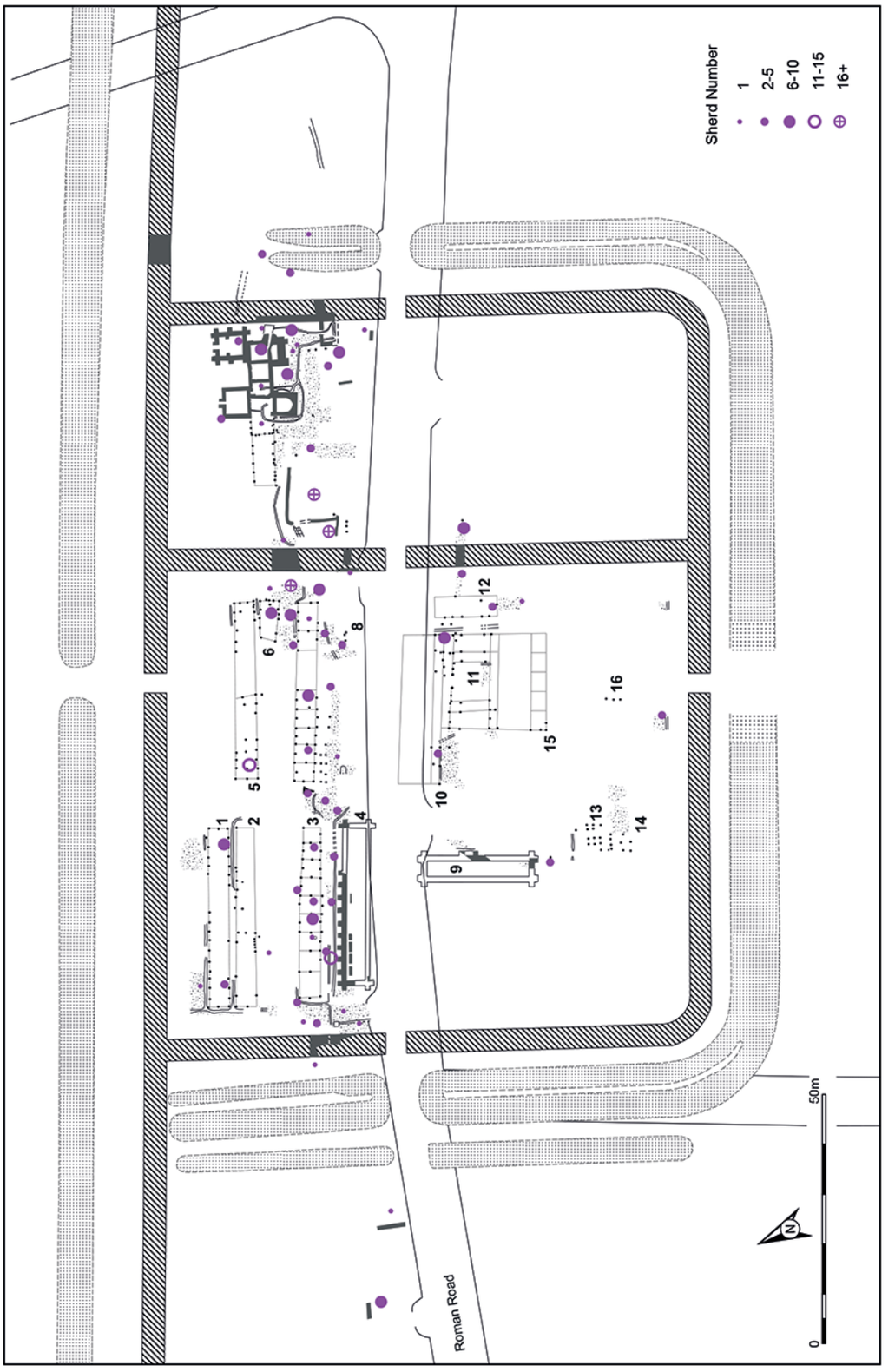


*Illustration 21.26*
The distribution of bowls and dishes.

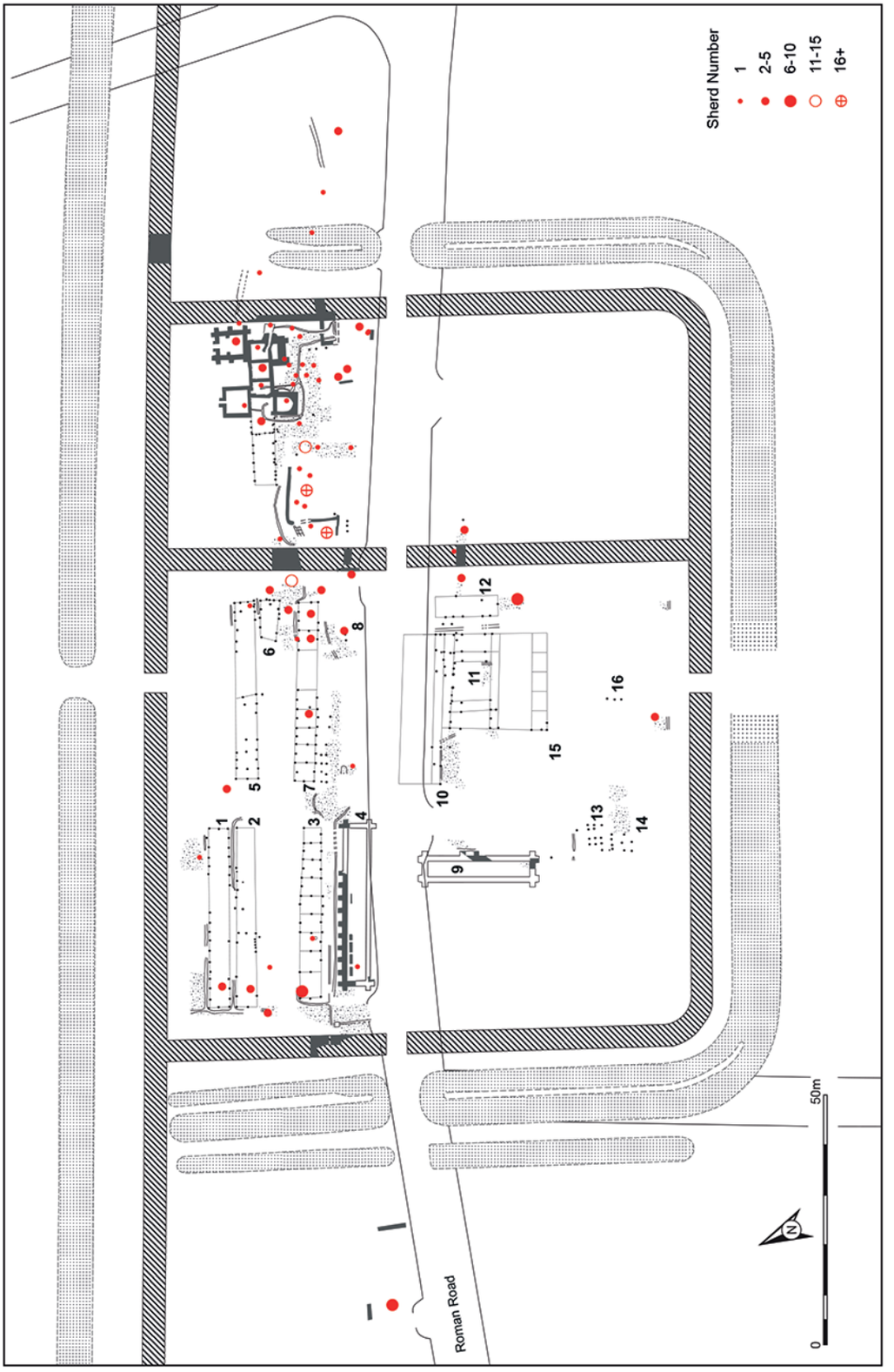


*Illustration 21.27*
The distribution of samian.

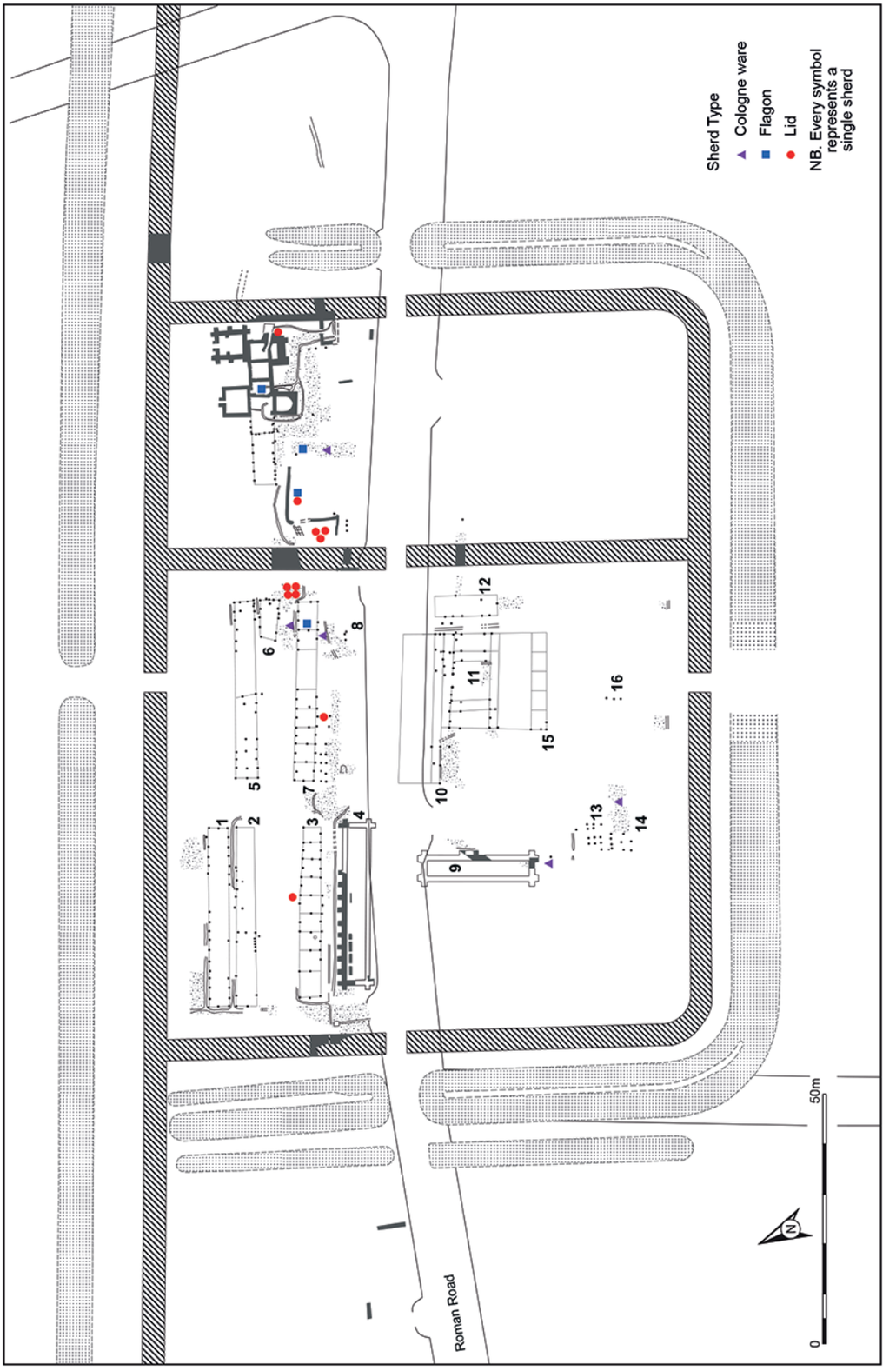


*Illustration 21.28*
The distributions of flagons, lids and Cologne ware.

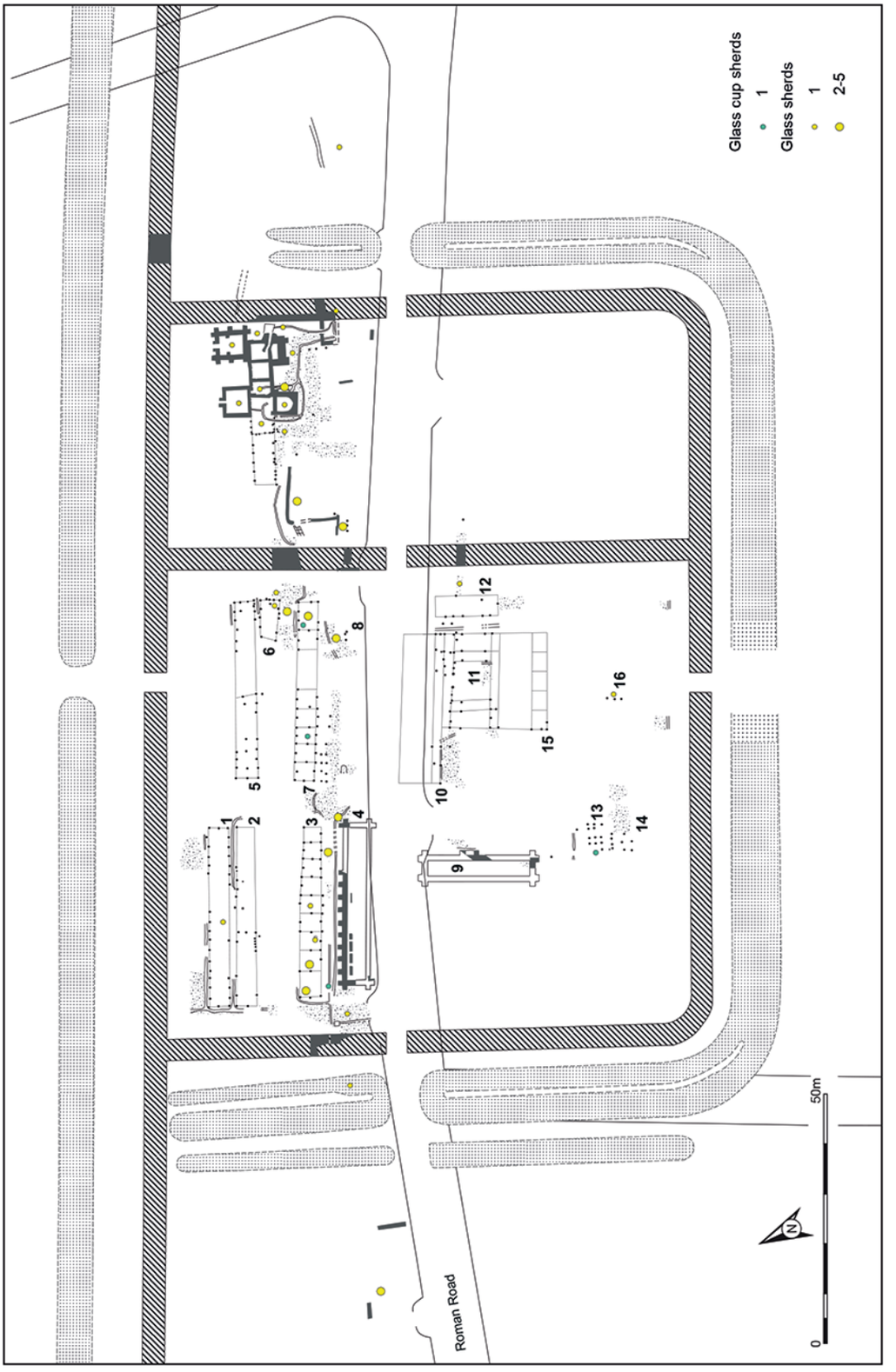


*Illustration 21.29*
The distribution of glass.

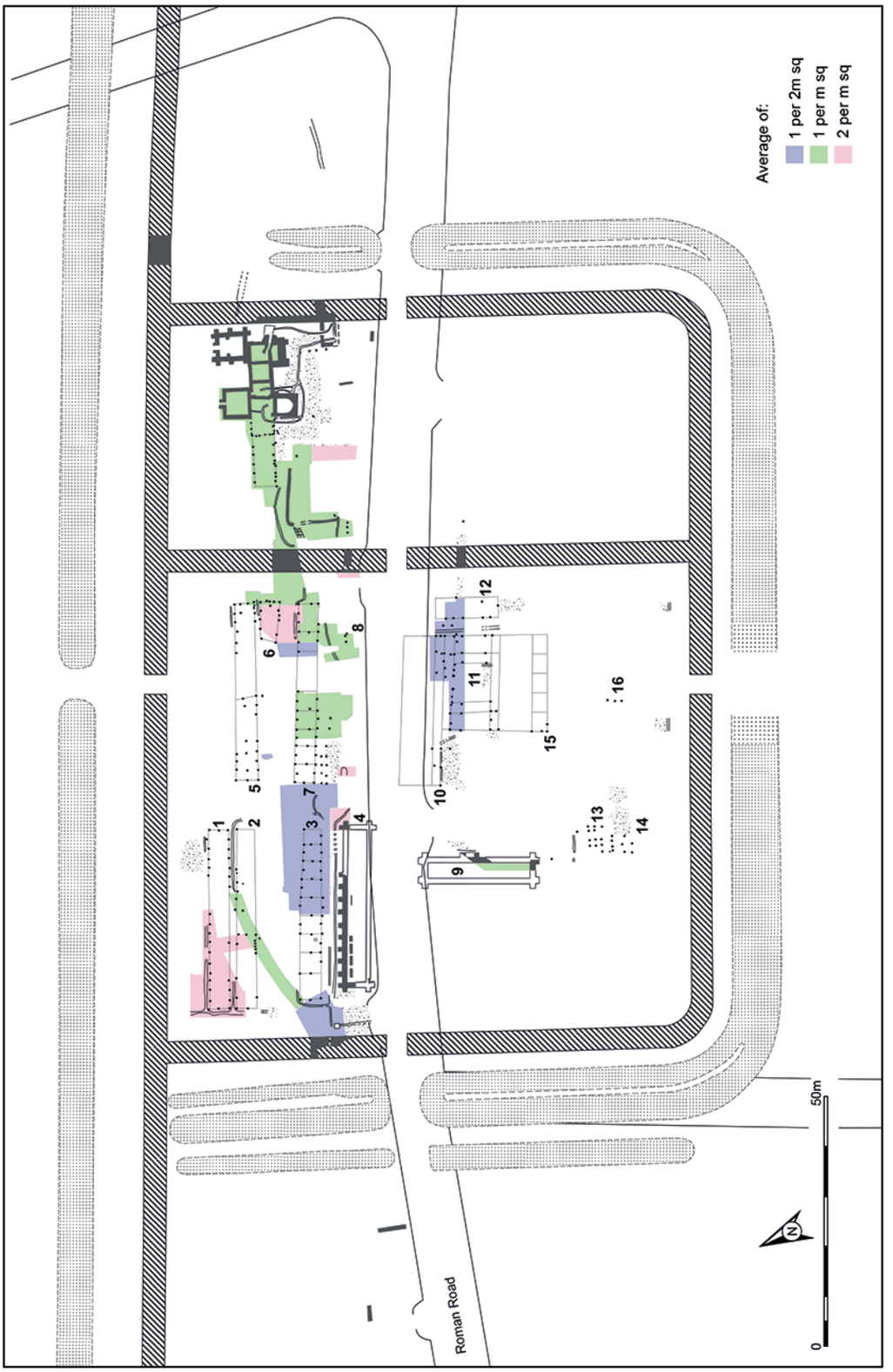


*Illustration 21.30*
The distribution of amphorae.

Bowls and dishes are also found in nearly every room in the two barrack-blocks, but in general show a wider distribution (illus 21.25). There are certainly significant numbers on the east and to a lesser extent the west intervallum, and others were found on the *via praetoria*, but every building in the fort has yielded at least one example, with the exception of 2 and 13/14. This may simply relate to their shapes for bowls and dishes could serve rather more purposes than a cooking pot. They are also found in quantity in the bath-house, as are samian bowls.

The distribution of three types of vessels are interesting, and support Giles' conclusions. Jars were preponderantly found on roads (illus 21.25). Two fragments were recovered from within the north granary and three from beside it. Building 3 produced three fragments and the headquarters one; the example from the bath-house was in the fill of the robber trench of the primary bath-house. The spread of beakers was similar with a fragment in the north granary, a second in the north range of the headquarters building, and a third in the primary bath-house, and all other examples on roads. Plates/platters are rarely found on Roman military sites. At Bearsden, buildings 1 and 12 each produce a single fragment, with two in the hot dry room (illus 21.25). The pattern was skewed by six examples on the south intervallum.

The pattern of mortaria, cooking pots and bowls/dishes in the barrack-blocks suggests the preparation of food, cooking and the consumption of food in both, but with the soldiers eating out of bowls/dishes rather than plates/platters. Drinking, however, is a problem. Each barrack-block yielded a fragment of one samian cup, but no beaker was found in any fort building (illus 21.25).

The distribution of vessels in a North African style is in contrast to the general distribution. Fragments of only 22 such vessels were recovered but, placing the seven from the annexe to one side, ten were found in the southern part of the fort (six beside the south intervallum) and only 5 to the north. Is this happenstance, or could it indicate different groups within the fort?

The querns are not as helpful as they might have been. The east and the west intervallum yielded one each, the topsoil above the granary a third, and the bath-house two, a distribution close to that identified by Giles, with the exception of the two bath-house examples. The final quern lay in the silt in the outer west ditch where it had presumably been dropped on the abandonment of the fort. Welfare has noted that the querns are few in number in comparison to other sites, but such forts were occupied for longer so the Bearsden assemblage may be a fair reflection of the number of querns in use in a fort with a short occupation (5.2.3). He has, however, also pointed out that some examples show considerable signs of wear being close to the end of their lives and therefore may have been abandoned at the end of the occupation of the fort with better items being taken away by the army.

Samian was recorded mainly in the western ends of building 1 and 3, the eastern ends of 5, 6 and 7 (though with two sherds elsewhere in the building) (illus 21.27). No samian was recovered from buildings 11 and 12, three sherds from 9, and two from 16. Turning to different samian vessels, the predominant forms were bowls (35 examples), dishes (31 examples) and cups (14 examples), together forming three-quarters of the samian assemblage. Twelve examples of cups (forms 27 and 33) were found within the fort while only one example was recovered from the bath-house. The pattern is different for the larger bowls (form 37) with six fragments from the fort and eight from the bath-house, and another eleven from the annexe. The representation of samian in the bath-house is particularly striking, with a fragment in every room, but a preponderance of bowls over cups. What were the bowls used for: quaffing large quantities of wine or beer, holding fruit or nuts (cf 13.9.7), or as chamber pots?

The Cologne ware (two sherds) was found outside the officer's quarters of building 7 and in three locations in the southern part of the fort (illus 21.28). A flagon sherd came from the officer's quarters of building 7. The only imported lamp was found in the officer's quarters of building 3; Bidwell & Croom have suggested that this may indicate the location of a shrine (p 177).

There was but a small quantity of glass at Bearsden and this had a limited range of vessels (illus 21.29). Nevertheless, it was found across most of the site, but in particular the annexe and the barrack-blocks. Fragments of a cup were found in the officer's quarters of building 7 and beside those of building 3, while a third was recovered from a room in building 7 and the fourth in area 13. The officer's quarters of building 7 and its vicinity yielded several fragments of flasks, as did the officer's quarters of building 3, but fragments of these vessels were spread more evenly through or beside this barrack-block. One sherd of glass was found in every part of the bath-house, while others were recovered from the area between this building and the fort/annexe rampart. There were no glass fragments in the headquarters building. The distribution of the higher quality pottery (samian, Cologne ware, and a flagon) and glass is weighted towards the officer's quarters of the barrack-blocks.

Amphorae were most numerous in buildings 1 and 6 (an average of two sherds per $1m^2$), with the next most popular areas being the west end of building 3, building 7, the eastern intervallum beside buildings 6 and 7, and the annexe (one sherd per $1m^2$) (illus 21.30). The least sherds of amphorae (one per $2m^2$) were in the men's rooms in building 3, the western intervallum beside building 3, and the headquarters building. One interpretation might be that amphorae were stored in building 1. The use of building 1 as a store may be supported by the quantities of cooking pots, bowls and dishes found there. Parts of amphorae were reused in, for example, hearths.

In summary, food preparation and consumption seems to have been focused on the barrack-blocks. The quarters of the officers yielded a higher quality of material culture (with two of the four coins from the fort being found close to the east end of building 7). Drinking vessels are rare in the barracks. At least one sherd of glass and fragments of samian and coarse ware bowls/dishes were found in every part of the bath-house, cooking pots were rare, only one sherd of mortarium (in the changing room) and of a jar and no plates suggesting that no food preparation took place here, though there was food consumption.

### *21.11.6 Comments on the distribution of artefacts*

RIKKE D GILES

*Introduction*

My database of artefacts from 17 Roman forts in northern Britain includes about 33,000 artefacts and their details assigned by functional groups and location in a 'standardised' model of a Roman fort (Giles 2012). The artefacts found at Bearsden have been added to my database, thereby allowing analysis of their distribution and comparison to other forts in the database. It is hoped that this database will soon be available on the internet.

*Methodology*

Information about the type and location of the artefacts found at the 18 sites studied was transferred from published excavation reports to the database with as much data left as intact as possible. The artefacts were assigned 'sectors' and buildings/features in a standardised fort design of the first-second centuries according to their findspots (Giles 2012: 37–42). This allows the analysis of the

**Table 21.4**
**Functional groups and their sub-groups used in this study; for more information on groups with sub-groups which are not featured in this study see Giles 2012**

| *Functional groups and their sub-groups* | | |
|---|---|---|
| KF: Kitchen/Food | Food: food remains | grains, seeds, nuts, etc |
| | Prep: Preparation items | *mortaria*, cooking vessels, mixing bowls, querns, cheese presses, meat hooks, etc |
| | Stor: Storage items | *amphorae*, large jars, etc |
| | Eat: Items for eating | dishes, bowls, spoons, wood bowls, platters |
| | Drink: Items for drinking | cups, glasses, beakers, drinking bottles, small jugs, etc |
| | Knif: knives, blades | knives, whetstones, etc |
| HC: Health Care | Wash: items for cleaning | basins, strigils, jars for water, soap, bath flasks ... |
| | Body: grooming items | cosmetics, unguent jars, perfume jars/bottles, glass bottles, mirrors, brushes, combs, tweezers, ear picks, nail cutters, ligulae, etc |
| | Surg: surgical | surgical instruments, etc |
| | Bone | human bone (animal bone its own group) |
| UT: Utilitarian | Utilitarian items | sub-groups not used in this study |
| ANML: Animal | Animal remains | group and sub-groups not used in this study |
| TR: Travel | Items for carts/harnesses/etc | sub-groups not used in this study |
| CL: clothing | Clth: clothing | leather clothing, textile clothing, neckbands, etc |
| | Shoe: shoes | shoes, hobnails from shoes, etc |
| | Jewl: jewelery | rings, bangles, intaglios, hair ornaments, metal armlets, stone armlets, brooches, charms, inlays, hair pins |
| | Oth: other | leather ties, furs, toggles, purses, bags, satchels, belts, buckles, button-loop fasteners, identify tags, cloak fasteners, etc |
| ML: military | Items to do with the military | sub-groups not used in this study |
| DA: architecture | Items to do with buildings | group and sub-groups not used in this study |
| RG: Religious | Items to do with religion | sub-groups not used in this study |
| CO: commerce | Coins and commerce items | no sub-groups |
| Unassn: Unassignable | Items that are too corroded or destroyed to identify | group and sub-groups not used in this study |

**Table 21.5**
**Relative ranking of functional group percentage means for the all-period (AP) and Antonine composite forts and functional group percentages for Bearsden**

| *Rank* | *AP Composite Fort (13)* | *Antonine Composite Fort (8)* | *Bearsden (1)* |
|---|---|---|---|
| 1 | KF (Kitchen/Food), 80.5 | KF (Kitchen/Food), 73.0 | KF (Kitchen/Food), 63.2 |
| 2 | UT (Utilitarian), 5.3 | UT (Utilitarian), 8.5 | ML (Military), 13.9 |
| 3 | CO (Commerce), 4.2 | CL (Clothing), 6.6 | CL (Clothing), 10.6 |
| 4 | ML (Military), 3.4 | ML (Military), 3.9 | HC (Health Care), 6.7 |
| 5 | CL (Clothing), 2.7 | CO (Commerce), 3.6 | UT (Utilitarian), 3.5 |
| 6 | HC (Health Care), 2.0 | HC (Health Care), 2.5 | CO (Commerce), 1.1 |
| 7 | TR (Transport), 0.6 | TR (Transport), 0.6 | TR (Transport), 0.2 |
| 8 | RG (Religion), 0.3 | RG (Religion), 0.1 | RG (Religion), 0.2 |

buildings and their contents as well as the creation of a 'composite' fort containing all artefacts studied. The composite fort forms a bench-mark against which information from actual forts can be compared. Next, all artefacts were assigned to functional groups (table 21.4) in an attempt to understand more about the differences in functions between the buildings and areas of the overall composite fort, or any individual fort under study, and the range of activities which took place in those buildings and areas (Giles 2012: 42–3). It is hoped that with the addition of enough data points the function(s) of a building, feature or area may be determined, in part, simply by the comparative percentages of different functional groups which form the artefact assemblage from a location, as well as by traditional methods.

The composite fort model was developed as a way of dealing with variations in the locations and extent of archaeological excavation at different forts. No Roman fort in Britain has been dug completely in modern times (Elginhaugh was published after the collection of the primary data: it is now being added to the data base). Putting the data from different archaeological excavations undertaken at different forts into one composite fort plan allows comparison between buildings and areas found (but not perhaps excavated) in those different forts and aids in smoothing out discrepancies created by individual and very real differences in the archaeological record, excavation techniques, artefact collection and analysis, and reporting for each fort (see Giles forthcoming).

*Bearsden*

In tables 21.5–21.9 the material from Bearsden is compared to that from the Antonine composite forts and the all-period composite forts. The former consist of Rough Castle, Birrens, Crawford, Castledykes, Strageath, Mumrills, Cramond and Bearsden, while the all-period composite fort contains the above with the addition of Newcastle, Carrawburgh, Housesteads, Bewcastle and Carpow; in all cases only forts with stratified assemblages are included in this analysis unless otherwise stated.

The addition of the data from Bearsden does not change the rankings for functional groups in the all-period composite fort from those determined in 2012. The addition of the data does slightly change the rankings for the Antonine composite fort from the 2012 determinations (Giles 2012: 48). With the addition of the Bearsden data the Military group switches ranks with the Commerce group to become fourth ranked in the Antonine composite fort. The Commerce group then becomes fifth ranked in the Antonine composite fort. None of the 2012 conclusions used above (21.11.5) in respect to the distribution of finds across the all-period composite fort have changed with the addition of the Bearsden data to that of the composite forts.

However, the ranking of functional groups for the Bearsden fort by itself is quite different from the rankings of those groups for the all-period and Antonine composite forts, even though the addition of the Bearsden data to the composite forts did not appreciably change the ranking of functional groups in those composite forts. The Health Care, Clothing and Military functional groups form a higher percentage of the overall artefact assemblage at Bearsden than at the composite forts. The Kitchen/Food group forms a correspondingly lower percentage of the overall assemblage at Bearsden than it does in the all-period and Antonine composite forts. These numbers reflect what is unique about Bearsden as known from current data. Bearsden produced more Military items (arrowheads, etc), more Health Care items (glass bottles) and more Clothing items (shoes/hobnails) than is generally to be expected from an Antonine fort. This may simply be a result of the areas examined by excavation (for example, many of the Military items come from the western ditch which had good preservation conditions for metals), or it might reflect actual differences in the activities at Bearsden, eg Health Care group items, or better recovery techniques.

BUILDINGS AND AREAS WITHIN THE FORT

Bearsden provides data from several of the buildings and areas which are normally found within a Roman fort, including

barracks, granaries and roads. The buildings and areas selected for the tables are those which produced a reliable minimum number of artefacts or more, that is, ten or more artefacts in the assemblage from each location.

The composite barrack-blocks (table 21.6), both all-period and Antonine, do not differ in functional group rankings from each other. Their actual percentage means are generally similar, varying within a percentage point or two. The assemblage from the barracks at Bearsden also features the same functional groups ranked in the first three positions. Minor variations in percentage means change the rankings of the next five groups, although they are all within 1 to 3 percentage points of each other. What is interesting about the results from Bearsden's barrack-blocks (buildings 3 and 7) is that the percentages for the first three ranked functional groups are far different from the corresponding percentage means for the same ranked functional groups of the all-period and Antonine composite barracks. The percentage of the Kitchen/Food group from the barracks at Bearsden is notably smaller than the Kitchen/Food group percentage means from the all-period and Antonine composite forts. On the other hand, the Health Care group percentage of the assemblage from the barracks at Bearsden is far larger than its percentage means from the all-period and Antonine composite forts. The same is true, although the difference is not nearly as large, for the Utilitarian group percentage from the barracks at Bearsden and Utilitarian group percentage means from the barracks at the all-period and Antonine composite forts.

In the granaries/storehouses from the all-period and Antonine composite forts the assemblages have functional group rankings which are basically the same for ranks 1 to 4 (table 21.6). This is also true for the functional groups from the granaries/storehouses (buildings 1, 4, 9 and 12) at Bearsden. The lower rankings from the granaries/storehouses at the composite forts are slightly different, but as with the lower rankings in the barracks, the functional groups are all within a few percentage mean points of each other. When the functional group percentages from the Bearsden granaries/storehouses are compared to the corresponding percentage means from the granaries/storehouses of the composite fort, some differences become apparent. The Kitchen/Food group percentage from Bearsden's granaries/storehouses is much larger than the percentage means for the same group from the granaries/storehouses of the composite forts. Bearsden also has a smaller Military group percentage from the granaries/storehouses and surprisingly, given the results from the barracks, a smaller percentage for the Health Care group when compared to the percentage means for those groups from the granaries/storehouses at the composite forts.

The ranking of functional groups for the ditches (table 21.7) at Bearsden is far different from the ranking of the functional groups for the ditches at the all-period and Antonine composite forts. In both types of composite fort the Kitchen/Food group is ranked first by a fairly large margin. However, at Bearsden the Military group is ranked first. The percentage of the assemblage formed by the Military group is larger than all the other functional group percentages by a margin that is normally to be expected to belong to the Kitchen/Food group. The Kitchen/Food group percentage from the ditches at Bearsden is extremely small. The size of the assemblage of artefacts from the ditches at Bearsden was not huge and the majority of the artefacts in that assemblage were from a bundle of arrowheads (11.3.1), thereby skewing the percentages.

The ramparts (table 21.7) were an area at Bearsden which yielded a small number of artefacts. The percentages of the rampart assemblage belonging to the various functional groups are presented in this table along with the percentage means for ramparts from the all-period and Antonine composite forts. What is interesting about the results from the ramparts at Bearsden is the lack of Health Care group items. However, the

**Table 21.6**
**Barracks and granaries/storehouses: relative ranking of functional group percentage means for the all-period (AP) and Antonine composite forts and functional group percentages for Bearsden**

| | *Barracks* | | | *Granaries/Storehouses* | | |
|---|---|---|---|---|---|---|
| *Rank* | *AP (9)* | *Antonine (6)* | *Bearsden* | *AP (4)* | *Antonine (4)* | *Bearsden* |
| 1 | KF, 82.2 | KF, 82.0 | KF, 67.7 | KF, 66.5 | KF, 69.4 | KF, 77.1 |
| 2 | HC, 4.0 | HC, 5.1 | HC, 15.4 | UT, 12.5 | UT, 11.3 | UT, 13.7 |
| 3 | UT, 3.7 | UT, 3.7 | UT, 5.3 | ML, 8.0 | ML, 11.2 | ML, 4.6 |
| 4 | CO, 3.7 | CO, 3.0 | CL, 3.2 | HC, 8.0 | HC, 6.1 | HC, 4.6 |
| 5 | ML, 2.2 | ML, 2.3 | ML, 3.2 | CL, 3.5 | TR, 1.2 | TR, 0.0 |
| 6 | CL, 1.8 | CL, 1.5 | CO, 2.1 | TR, 0.8 | CL, 0.8 | CL, 0.0 |
| 7 | TR, 1.3 | TR, 1.0 | TR, 1.1 | CO, 0.3 | CO, 0.0 | CO, 0.0 |
| 8 | RG, 0.0 | RG, 0.1 | RG, 0.0 | RG, 0.0 | RG, 0.0 | RG, 0.0 |

**Table 21.7**
**Ditches, ramparts and roads: relative ranking of functional group percentage means for the all-period (AP) and Antonine composite forts and functional group percentages for Bearsden**

| | *Ditches* | | | *Ramparts* | | | *Roads* | | |
|---|---|---|---|---|---|---|---|---|---|
| *Rank* | *AP (8)* | *Antonine (4)* | *Bearsden* | *AP (4)* | *Antonine (2)* | *Bearsden* | *AP (8)* | *Antonine (5)* | *Bearsden* |
| 1 | KF, 70.8 | KF, 62.0 | ML, 79.1 | KF, 76.0 | KF, 72.0 | KF, 83.9 | KF, 82.3 | KF, 84.2 | KF, 51.7 |
| 2 | ML, 10.3 | ML, 19.8 | CL, 10.5 | UT, 5.1 | HC, 10.0 | UT, 5.4 | CL, 5.6 | CL, 9.0 | CL, 40.7 |
| 3 | UT, 9.0 | CL, 8.5 | KF, 6.0 | HC, 5.0 | UT, 2.7 | ML, 5.4 | UT, 5.0 | UT, 3.2 | HC, 5.7 |
| 4 | CL, 4.0 | UT, 6.4 | UT, 3.0 | ML, 2.6 | ML, 2.7 | RG, 5.4 | CO, 2.8 | HC, 2.2 | UT, 0.9 |
| 5 | CO, 1.9 | HC, 1.6 | HC, 1.5 | RG, 2.6 | RG, 2.7 | CO, 0.0 | TR, 1.6 | RG, 1.1 | CO, 0.9 |
| 6 | HC, 1.5 | CO, 0.3 | CO, 0.0 | CL, 0.0 | CL, 0.0 | HC, 0.0 | HC, 1.4 | CO, 0.2 | ML, 0.0 |
| 7 | TR, 0.4 | RG, 0.1 | TR, 0.0 | CO, 0.0 | CO, 0.0 | CL, 0.0 | RG, 0.9 | ML, 0.0 | TR, 0.0 |
| 8 | RG, 0.3 | TR, 0.0 | RG, 0.0 | TR, 0.0 | TR, 0.0 | TR, 0.0 | ML, 0.3 | TR, 0.0 | RG, 0.0 |

total assemblage from the ramparts was so small that this result must be treated with caution.

The roads (table 21.7) at Bearsden produced a slightly different functional group percentage ranking than the functional group percentage mean rankings from the all-period and Antonine composite forts roads. The most apparent difference in the ranking is that the Clothing group percentage of the road assemblage at Bearsden is four to eight times higher than the same group's percentage means from the composite forts. This is due to hobnails found on the intervallum road at Bearsden (11.3.6). Interestingly, although the actual percentage of the Clothing group from the roads at Bearden is greatly changed by the large amount of hobnails in the assemblage from the intervallum road, the general ranking of that group is not different from that group's ranking from the composite forts. The Kitchen/Food group is still the highest ranked functional group from the roads at Bearsden, as it is from the roads of the all-period and Antonine composite forts. The Health Care group percentage from the roads at Bearsden is larger, and higher ranked, than the percentage means of that group from the composite forts. This is not surprising, given the elevated percentage of the Health Care Body sub-group found at Bearsden (see below).

The ranking of functional group percentages for the intervallum assemblage (table 21.8) at Bearsden is broadly similar to the ranking of functional group percentage means for the intervallum assemblages of the composite forts. As usual the

**Table 21.8**
**Intervallum and unknown/undetermined contexts: relative ranking of functional groups percentage means for the all-period (AP) and Antonine composite forts and functional group percentages for Bearsden**

| | Intervallum | | | Unknown/Undetermined | | |
|---|---|---|---|---|---|---|
| *Rank* | *AP (9)* | *Antonine (6)* | *Bearsden* | *AP (6)* | *Antonine (4)* | *Bearsden* |
| 1 | KF, 81.8 | KF, 80.5 | KF, 77.4 | KF, 82.7 | KF, 76.8 | KF, 80.8 |
| 2 | UT, 8.5 | UT, 11.3 | ML, 8.5 | CL, 4.3 | CL, 8.1 | ML, 9.0 |
| 3 | ML, 3.7 | ML, 2.4 | UT, 3.6 | CO, 4.3 | UT, 5.1 | HC, 5.6 |
| 4 | HC, 2.2 | HC, 1.4 | HC, 2.4 | ML, 3.7 | CO, 4.4 | UT, 2.3 |
| 5 | CO, 1.2 | CL, 1.4 | CL, 1.2 | UT, 2.6 | ML, 2.3 | CO, 1.1 |
| 6 | CL, 1.0 | CO, 1.0 | CO, 0.0 | HC, 1.3 | HC, 1.7 | CL, 1.1 |
| 7 | TR, 0.3 | RG, 0.4 | TR, 0.0 | RG, 0.1 | TR, 0.0 | TR, 0.0 |
| 8 | RG, 0.2 | TR, 0.0 | RG, 0.0 | TR, 0.0 | RG, 0.0 | RG, 0.0 |

Kitchen/Food group is the highest ranked, with the Military, Utilitarian and Health care groups all in the following three ranks. In Bearsden's intervallum assemblage the percentage of the Military group is larger than that group's percentage means in the intervallum of the all-period and Antonine composite forts. This reflects the overall higher percentage of the Military group from the assemblage at Bearsden than at many other forts.

Most reports on Romano-British forts include artefacts from areas between buildings or features whose usage is unknown, and are therefore of undetermined context for the purposes of this study; (identified as 'Unknown/Undetermined' in table 21.8); sometimes this is the result of poor recording. This is not the case at Bearsden, but the site has still generated a decently sized assemblage from areas between buildings and features, and hence called 'unknown'. As is normal for Bearsden, the rankings show that percentages of the Military and Health Care groups are higher than the percentage means of the corresponding groups in the composite forts. Bearsden's Kitchen/Food percentage from this area of the fort is on par with the percentage means of the Kitchen/Food group from the same area of the composite forts.

### ANNEXES AND B ATH-HOUSES

The excavations at Bearsden provided useful evidence relating to the fort's annexe. Only Cramond and Castledykes, amongst the 17 other forts studied, have such a wealth of information from their annexes (though the finds from the Cramond annexe may be post-Antonine); the only other annexe with artefacts from stratified contexts is Mumrills but their numbers are too small to be of much use (table 21.9).

Bearsden shows, as usual, a lower Kitchen/Food group percentage for the assemblage from the annexe than the percentage means of the Kitchen/Food group from the annexes at the all-period and Antonine composite forts. However, the Kitchen/Food group is still ranked first with the highest percentage of the assemblage from Bearsden's annexe by a wide margin. At Bearsden and the composite forts the Health Care group is ranked second. Bearsden unsurprisingly has a higher percentage of Military group items in its annexe assemblage, compared to the percentage means of the Military group from the annexes at the composite forts. Bearsden also has a higher percentage of Clothing group, and about the same percentage of Utilitarian group, although the latter is here ranked much lower than the group's percentage means are ranked for the composite sites. The higher percentage of both Military and Clothing items in the annexe at Bearsden may be the result of more favorable conditions for their preservation than in the fort.

There are not enough sites in the database with good reports from bath-houses in annexes to make any secure conclusions about the functional group percentage means from the assemblages from such buildings at the composite forts. The rankings of the functional groups for the Bearsden bath-house and the all-period and Antonine composite forts are offered here with little comment, not least because Bearsden's bath-house is the only Antonine annexe baths with an assemblage from stratified contexts. Bearsden's bath-house does have a far lower percentage of Utilitarian group items than the all-period composite fort. This may make Bearsden unique in regards to the Utilitarian group from the baths in the annexe, or it may be that the other annexe bath-house upon which the all-period composite fort percentage means is based, that at Cramond, is unique in having a higher Utilitarian group percentage than should be expected. It is impossible to determine which statement, if either, is true at this time. More study on bath-houses has to be done before it can be determined what is 'normal' for this building.

#### *Functional sub-groups: teasing out the differences*

Each excavation of a Roman fort is unique. Causes of variation include the habitation of the forts (different units, occupants, commanders, histories, martial skills, and so on), the aims, techniques, extent and areas of the fort excavated, differing

**Table 21.9**
**Relative ranking of functional group percentage means for the all-period (AP) and Antonine composite fort annexes and functional group percentages for Bearsden's annexe**

| | | *Annexe* | | *Baths in the Annexe* | | |
|---|---|---|---|---|---|---|
| *Rank* | *AP (4)* | *Antonine (4)* | *Bearsden* | *AP (2)* | *Antonine (1)* | *Bearsden* |
| 1 | KF, 83.5 | KF, 88.8 | KF, 77.4 | KF, 56.6 | KF, 60.9 | KF, 60.9 |
| 2 | HC, 4.2 | HC, 2.8 | HC, 6.2 | UT, 11.8 | CL, 10.3 | CL, 10.3 |
| 3 | UT, 3.6 | UT, 2.6 | ML, 6.0 | CL, 9.1 | HC, 9.7 | HC, 9.7 |
| 4 | ML, 2.7 | ML, 2.0 | CL, 5.5 | HC, 5.6 | RG, 2.9 | RG, 2.9 |
| 5 | CL, 2.4 | CL, 1.9 | UT, 2.5 | CO, 3.7 | CO, 2.6 | CO, 2.6 |
| 6 | CO, 0.7 | RG, 0.5 | RG, 1.5 | ML, 2.4 | UT, 1.5 | UT, 1.5 |
| 7 | TR, 0.4 | TR, 0.2 | TR, 0.0 | TR, 2.3 | TR, 1.5 | TR, 1.5 |
| 8 | RG, 0.4 | CO, 0.1 | CO, 0.0 | RG, 1.5 | RG, 0.0 | RG, 0.0 |

artefact survival circumstances and more. As discussed above under methodology the variance in functional group percentages from the assemblages of the forts studied is minimised by taking the mean of those percentages to create a composite fort with an overall assemblage constituting the assemblages from each individual fort. By design, forming composite forts removes the variance between forts. Sometimes this variance is important as it may be caused by humans, by the way they inhabit and use their environment, or by various processes acting upon the archaeological record. Attributing cause to these variances can be difficult because many factors may create the same type of variance in percentages of functional groups, as noted above. However, determining possible reasons for variance in functional group percentages is important and should be attempted. The fort at Bearsden is ideal for such an attempt, as its assemblage has variations which definitely can be attributed to known factors; for example mortaria manufacture on site or nearby (7.3.5; 7.8).

The functional groups discussed above have various sub-groups, the number and types of which differ depending upon their parent group. Examination of these sub-groups and how their percentages of the total artefact assemblage and their parent group vary across a site, can tease out differences in artefact usage, storage and loss. For Bearsden, it is the Health Care Body and Kitchen/Food Preparation sub-groups which are especially interesting. These sub-groups, therefore, are examined in detail and compared to the same sub-groups from other Roman forts.

### HEATHCARE BODY SUB-GROUP

Bearsden produced unusually large percentages of the Health Care Body sub-group, composed, in part, of glass bottles which were found in fairly large quantities in many of its buildings and areas. The bottles are mostly prismatic in shape, with some hexagonal and rectangular examples also present. Table 21.10 shows the percentages this sub-group form of the total artefact assemblage from various stratified Antonine contexts found at the forts of Bearsden and Crawford arranged by building or area.

Crawford (Maxwell 1972) produced a larger than expected percentage of Health Care Body sub-group items from Antonine period contexts. Unfortunately the total number of finds from Antonine period contexts at Crawford is quite small, and therefore the results from this site are tentative. Crawford, like Bearsden, produced a larger than expected percentage of Health Care Body sub-group items from the barrack-blocks. The Antonine headquarters building at Crawford also had a large percentage of Health Care Body sub-group items. Crawford had a Flavian occupation period as well as an Antonine one. It is interesting that the Flavian contexts at Crawford did not produce high percentages of Health Care Body sub-group items, in contrast to the high percentages produced by its Antonine contexts.

Amongst forts with non-Antonine contexts, that at Cramond (Rae & Rae 1974; Masser 2006; Holmes 2003) returned a high percentage of the total assemblage of Health Care Body sub-group artefacts from its annexe. Here the percentage of total assemblage made up by the Health Care Body sub-group in

**Table 21.10**
**Health care body sub-group, percentages or percentage means of total assemblage from stratified Antonine contexts found at the Antonine composite fort, Barsden and Crawford**

| | *Antonine composite fort* | *Bearsden* | *Crawford* |
|---|---|---|---|
| Overall | 2.5 | 6.7 | 6.8 |
| Headquarters | 5.9 | –[1] | 16.7 |
| Barracks | 5.1 | 15.4 | 7.7 |
| Granaries/Storerooms | 6.1 | 4.6 | – |
| Workshops | 3.8 | – | 0.0 |
| Ditches | 1.6 | 1.5 | – |
| Roads | 2.2 | 5.7 | – |
| Intervallum | 1.8 | 2.7 | 0.0 |
| Unknown | 1.7 | 7.5 | – |
| Annexe | 2.8 | 6.2 | – |
| Baths in the Annexe | 9.7 | 9.7 | – |

[1] The – mark, in this table and the tables that follow, indicates an area or building in a fort which was either not excavated, was not present in the fort, or if it was present and excavated, did not produce an assemblage of ten or more artefacts.

**Table 21.11**
**Kitchen/food functional sub-groups: percentage means or percentage of the kitchen/food group from stratified contexts at the all-period (AP) and Antonine (Ant) composite forts and Bearsden (Bear)**

| | *Drink* | | | *Eat* | | | *Knife* | | | *Preparation* | | | *Storage* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Location* | *AP* | *Ant* | *Bear* | *AP* | *Ant* | *Bear* | *AP* | *Ant* | *Bear* | *AP* | *Ant* | *Bear* | *AP* | *Ant* | *Bear* |
| Overall | 11.1 | 13.3 | 12.0 | 34.0 | 30.9 | 22.3 | 1.0 | 0.6 | 1.2 | 27.2 | 36.8 | 56.2 | 16.8 | 15.2 | 5.9 |
| Barracks | 8.9 | 11.6 | 14.1 | 42.0 | 42.9 | 29.0 | 0.3 | 0.4 | 0.0 | 28.4 | 27.6 | 47.5 | 17.2 | 16.1 | 6.3 |
| Granaries | 17.1 | 24.3 | 11.9 | 16.2 | 20.6 | 8.9 | 0.5 | 0.0 | 0.0 | 37.0 | 33.2 | 67.3 | 28.3 | 21.0 | 11.9 |
| Roads | 12.8 | 10.8 | 0.0 | 35.3 | 37.1 | 22.9 | 0.5 | 0.6 | 0.0 | 31.3 | 35.3 | 69.8 | 11.2 | 14.6 | 5.5 |
| Intervallum | 5.5 | 7.0 | 8.7 | 30.9 | 27.4 | 21.9 | 2.7 | 1.9 | 2.9 | 39.0 | 52.1 | 63.6 | 21.5 | 11.2 | 2.9 |
| Unknown | 8.9 | 14.7 | 20.9 | 34.4 | 28.0 | 17.4 | 1.9 | 0.3 | 1.4 | 24.5 | 22.3 | 47.7 | 24.0 | 21.0 | 11.2 |
| Annexe | 11.9 | 10.0 | 8.0 | 44.6 | 46.5 | 46.8 | 0.6 | 0.1 | 0.0 | 17.0 | 20.0 | 34.2 | 17.8 | 14.4 | 9.0 |
| Baths in Annexe | 18.5 | 15.7 | 15.7 | 40.2 | 53.1 | 53.1 | 1.5 | 0.0 | 0.0 | 19.6 | 23.9 | 23.9 | 20.3 | 7.2 | 7.2 |

the annexe is 8.6. Unfortunately the finds from the annexe at Cramond are generally only referred to as being of 'Roman' date in the excavation reports. The fort itself was occupied in both the Antonine and Severan periods and it is entirely possible the Health Care Body items found in the annexe here date to the Antonine period. The fort at Cramond had a very small amount of the Health Care Body sub-group; the sub-group is only 0.3% of the total assemblage excavated from the fort. The bath-house in the annexe at Cramond also had a very low percentage of health care body artefacts, the sub-group is 1.6% of the total assemblage from the building.

Wallsend (Hodgson 2003) provides useful figures, but as not all artefacts from the excavation were published the numbers are only indicative. The fort had a very large percentage of Health Care Body items from the artefact assemblages dating to certain periods of occupation. In Antonine period contexts, the Health Care Body sub-group composed 16.7% of all the items from the fort. The hospital, which produced most of the Antonine period artefacts found at Wallsend, 20% of its items as Health Care Body sub-group items. These items were almost all prismatic or hexagonal bottles, with one possible glass bath flask. In the late Antonine to Severan period the barracks at Wallsend produced a figure of 8.3% for the Health Care Body sub-group items, the figure for the hospital being 14.9%.

### KITCHE N/FOOD SUB-GROUPS

The Kitchen/Food functional group is divided into several sub-groups; amongst these are the Drink, Eat, Knife, Preparation and Storage sub-groups. The percentages or percentage means of the Kitchen/Food group for these sub-groups are given in table 21.11. Within the Kitchen/Food group the domination of mortaria (Kitchen/Food Preparation sub-group) at Bearsden is clear. As discussed elsewhere in this report (sections 7.3 and 7.8) mortaria were being made at Bearsden, and the remains of this manufacture appear as large deposits on the intervallum road, and the area north and east of building 7, a barrack-block, and in smaller amounts in every location of the fort and its annexe (see also section 21.11.5). This manufacture and discard is reflected in the percentages which the Kitchen/Food Preparation sub-group forms of the Kitchen/Food group from the assemblages in the granaries/storehouses, roads and intervallum. In these areas those percentages are the highest of those from all the studied buildings and areas, with the Preparation sub-group generally forming 65–70% of the Kitchen/Food group. The Kitchen/Food Preparation sub-group percentage is also dominant in the two barrack-blocks at Bearsden in contrast to the barrack-blocks of the composite forts where the Eat sub-group percentage means are largest (table 21.11) and, although the Preparation sub-group percentage is lower in the annexe than almost every other area at Bearsden, it is still greater than the percentage means of the sub-group from the annexe at the composite forts. It is only from the bath-house that the Kitchen/Food Preparation sub-group percentage at Bearsden can be considered close to that sub-group's percentage mean in the all-period composite fort (note that the Antonine baths in the annexe is the Bearsden baths, so the percentages are the same for both 'baths in the annexe' at the Antonine composite fort and Bearsden).

Building 7, a barrack-block, was very close to the major deposition of mortaria and where mortaria may have been made. The remains of these mortaria were strewn across the road and intervallum near building 7. Building 7 has an assemblage with a large percentage of Kitchen/Food Preparation sub-group items, which makes up over 50% of the Kitchen/Food group in the building.

Despite being slightly removed from the place of manufacture of the mortaria at Bearsden, the barrack-block across the street, building 3, also had a high percentage of the Kitchen/Food Preparation sub-group. The Kitchen/Food Preparation sub-

group is 41% of the Kitchen/Food group from building 3, higher than the typical percentage mean of 27.4% for the Kitchen/Food Preparation sub-group from the barracks of the Antonine composite fort.

Bearsden's Kitchen/Food Preparation sub-group percentages are generally the highest amongst the 18 forts in this study. This is because mortaria, which usually compose a vast amount of the Kitchen/Food Preparation sub-group, were being made at Bearsden, as discussed above. There are, however, other forts amongst the 18 studied which show relatively high percentages of the Kitchen/Food Preparation sub-group. All of these forts are Antonine or have Antonine periods of occupation. Unfortunately, none of them has seen large modern excavations, therefore, to obtain the fullest picture possible of their Kitchen/Food group percentages, the stratified and unstratified percentages of this sub-group are included in tables 21.12 and 21.13. As can be seen in table 21.12, every building and area excavated at Rough Castle (Buchanan et al 1905; Macdonald 1933; and MacIvor et al 1980) with the exception of the barracks, has a high percentage of the Kitchen/Food Preparation sub-group. When compared to the percentage means for the all-period composite fort and the Antonine composite fort in table 21.11, it is apparent that the Kitchen/Food Preparation sub-group is much higher from buildings and areas at Rough Castle than it is at the composite forts. We do not yet know the reason for this.

Crawford (Maxwell 1972) is another fort with an Antonine occupation period which shows high percentages of the Kitchen/Food Preparation sub-group. The percentages for Crawford's Kitchen/Food sub-groups are given in table 21.13. The overall number of artefacts produced by the excavations at Crawford is not large in comparison to excavations at the other forts included in this study and the percentages given in this table must be considered highly tentative.

The Kitchen/Food Preparation sub-group percentages at Crawford are quite high in every area/building except the barracks and the workshop. This is similar to the results from Rough Castle where the barracks also produced a low percentage of Kitchen/Food Preparation sub-group items. And it must be noted that despite the relatively high percentage of the Kitchen/Food Preparation sub-group in the barracks at Bearsden, that percentage is still lower than percentages for the sub-group from most other areas of the fort.

Items with a Flavian context at Crawford, which only number a small amount, do not produce Kitchen/Food sub-groups percentages which are dominated by the Preparation sub-group. This is contrary to the findings from Crawford for Antonine contexts. The overall numbers for the Flavian period at Crawford have the Kitchen/Food Preparation sub-group as 35.3% of the total Kitchen/Food group. The highest sub-group of the Kitchen/Food group was the Eat sub-group, at 41.2%. Flavian contexts from the barracks at Crawford, which only produced 11 items, are overwhelmingly Kitchen/Food Eat, with over 80% of the Kitchen/Food group belonging to that sub-group.

### ANALYSIS OF SELECTED BUILDINGS

Percentages of artefact functional groups for buildings 1, 2, 5, 6 and the headquarters (buildings 11, 15 and 10) (table 21.14) were computed in an attempt to learn more about those buildings. The functional group percentages from Building 1 match most closely those of a storehouse or granary in the composite forts (tables 21.6, 21.11), with a fairly large percentage of the Kitchen/Food Storage sub-group. Buildings 2 and 5 produced very few items and their functional group percentages do not correspond closely to those of any known building type. They may have been used for storage. Building 6 has an interesting spread of functional group percentages with a high percentage of the Kitchen/Food Drink sub-group which, in this aspect alone, resembles the high percentages of Kitchen/Food Drink items found in ovens or cooking areas (Giles 2012: table 13). The functional group percentages which result from analysing the very limited number of finds from building(s) 11, 15 and 10 do not contradict their attribution as the headquarters of the fort.

**Table 21.12**
**Rough Castle: kitchen/food sub-group percentages of the kitchen/food group assemblage from all contexts (stratified and unstratified) and stratified contexts**

| | *Drink* | | *Eat* | | *Knife* | | *Preparation* | | *Store* | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Location* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* |
| Overall | 13.1 | 17.6 | 36.1 | 32.2 | 1.3 | 0.0 | 40.1 | 42.9 | 8.4 | 7.3 |
| Barracks | 17.2 | – | 51.5 | – | 0.0 | – | 26.7 | – | 4.6 | – |
| Ditches | 8.0 | – | 28.0 | – | 0.0 | – | 56.0 | – | 8.0 | – |
| Rampart | 1.6 | – | 42.6 | – | 1.6 | – | 50.8 | – | 0.0 | – |
| Roads | 18.5 | 21.4 | 32.1 | 30.4 | 0.0 | 0.0 | 41.1 | 41.4 | 6.7 | 7.1 |
| Intervallum | 20.0 | – | 10.0 | – | 0.0 | – | 70.0 | – | 0.0 | – |
| Unknown | 13.8 | – | 27.6 | – | 3.5 | – | 37.1 | – | 17.2 | – |

**Table 21.13**
**Crawford*: kitchen/food sub-group percentages of the kitchen/food group from all contexts (stratified and unstratified) and stratified Antonine contexts**

| | *Drink* | | *Eat* | | *Knife* | | *Preparation* | | *Storage* | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Location* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* | *All* | *Strat* |
| Overall | 11.5 | 12.0 | 36.8 | 40.0 | 0.0 | 0.0 | 44.8 | 46.0 | 6.9 | 2.0 |
| HQ | 12.5 | 0.0 | 25.0 | 40.0 | 0.0 | 0.0 | 50.0 | 60.0 | 12.5 | 0.0 |
| Barracks | 12.5 | 18.1 | 45.8 | 45.5 | 0.0 | 0.0 | 41.7 | 36.4 | 0.0 | 0.0 |
| Granaries | 20.0 | – | 26.7 | – | 0.0 | – | 40.0 | – | 13.3 | – |
| Workshop | 7.7 | 11.1 | 46.1 | 55.6 | 0.0 | 0.0 | 46.2 | 33.3 | 0.0 | 0.0 |
| Ditches | 14.2 | 20.0 | 28.6 | 20.0 | 0.0 | 0.0 | 28.6 | 60.0 | 28.6 | 0.0 |
| Intervallum | 0.0 | 0.0 | 35.3 | 35.7 | 0.0 | 0.0 | 64.7 | 64.3 | 0.0 | 0.0 |

* There were no reported items from unknown sectors from Crawford.

*Conclusions*

Of the 18 forts in the study, statistics from Rough Castle, Crawford and Bearsden show that high percentages of the Kitchen/Food group in their assemblages were formed by the Preparation sub-group (mortaria). These high percentages occur during the Antonine occupations and only one possibly non-Antonine fort, amongst the forts studied, produced a high percentage of Kitchen/Food Preparation items. That was Carrawburgh (Breeze 1972) on Hadrian's Wall. However, the few stratified remains from this fort all show normal percentages of the Kitchen/Food Prep sub-group, and the unstratified artefacts from undescribed/unknown contexts which show a high amount of Kitchen/Food Preparation (51% of the Kitchen/Food group) were dug before 1907 and probably all come from outside the fort (Budge 1907; Allason-Jones & MacKay 1985).

At Bearsden the high percentage the Kitchen/Food Preparation sub-group formed of the Kitchen/Food group is due to the fort being the site of mortaria manufacturing. At Rough Castle and Crawford the reasons the Kitchen/Food Preparation sub-group forms high percentages of those forts' Kitchen/Food

**Table 21.14**
**Bearsden: functional group percentages from selected buildings and their immediate environs**

| *Functional Group* | *Building 1* | | *Building 2* | | *Building 5* | | *Building 6* | | *Headquarters (Buildings 11, 15 and 10)* | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL | | | | | 9.9% | | | | | |
| CO | 6.25% | | | | | | 4.6% | | | |
| HC | 6.25% | | 10.3% | | | | 4.6% | | | |
| KF | 87.5% | | 58.8% | | 80.3% | | 90.7% | | 86.1% | |
| KF Drink | | 14.3% | | | | 12.3% | | 30.7% | | 16.3% |
| KF Eat | | 35.7% | | 17.5% | | 24.6% | | 20.5% | | |
| KF Knife | | 7.1% | | | | | | | | |
| KF Preparation | | 7.1% | | 47.4% | | 50.9% | | 36% | | 67.7% |
| KF Storage | | 28.6% | | | | | | 12.8% | | |
| ML | | | 10.3% | | | | | | 13.9% | |
| UT | | | 20.6% | | 9.9% | | | | | |

groups are unknown. The barracks at all three of these forts return smaller percentages of Kitchen/Food Preparation items than other areas of their respective forts. In the two sites without evidence of mortaria manufacture, Rough Castle and Crawford, the barracks have closer to normal percentages of mortaria. This may be because the barracks were kept cleaner than the other areas of these forts (section 21.11.1), or perhaps the percentages of the Kitchen/Food Preparation sub-group from the barracks are lower because mortaria were not generally being stored in the barracks.

The case has been made for the manufacture of coarse wares as well as mortaria at or near Bearsden (section 7.8, see also Breeze 1986). The manufacture of these ceramics does not result in higher than normal percentages of various non-Preparation Kitchen/Food sub-groups; for instance the Drink, Eat or Store sub-groups, or higher than normal percentages of the Kitchen/Food group as a whole. Therefore, more mortaria were being made and/or stored and eventually discarded and lost at Bearsden, Rough Castle and Crawford than other coarse wares at those forts, for whatever reason(s).

As discussed above, Bearsden has greater than normal percentages from many areas and buildings for the Health Care Body sub-group. This sub-group in the Antonine period in northern Britain effectively consisted mostly of glass bottles. This high percentage of Health Care Body sub-group items is also found from Antonine contexts at Crawford. Another, possibly Antonine context which has a high percentage of the Health Care Body sub-group is the annexe at Cramond. However, the Antonine contexts from the fort at Cramond do not return a high percentage of this Health Care sub-group.

Bearsden, Crawford and Cramond may have been part of a trade or importation network for glass bottles in Antonine (or possibly Severan in the case of Cramond) Scotland.

One of the interesting points Bearsden, Rough Castle and Crawford share is that part of their garrisons were outposted (section 21.6; McIvor et al 1980: 278–83; Maxwell 1972: 175–80). Because the full unit was not in residence at these forts more room may have been left in each fort, even though all three forts were quite small, to store and protect trade items like mortaria and bottles. Rough Castle and Bearsden also had an annexe in which to store excess items. And, in the case of Bearsden, military weapons and shoes and their associated hobnails may have been stored and eventually lost or discarded as well.

At Bearsden and Rough Castle Roman occupation ended with systematic destruction by the occupiers of the forts as the Antonine Wall was abandoned. This may be the case with Crawford as well, which was not inhabited by the Romans beyond the Antonine period. The systematic destruction of the forts and their contents could account for many of the artefacts excavated from those forts, eg unusable or forgotten bundles of arrowheads tossed over the rampart into a ditch and items stored for use or reuse, such as hobnails, dumped in much the same manner in various locations. Any ceramics or bottles remaining could have been broken by the Romans upon their departure, or simply broken by the passage of time. As can be seen from this study, these assemblages, whether the result of actual use and discard, destruction at the end of occupation or something else, and the functional groups which form them, can reveal useful information about what happened at a fort, how it was used, and how its history and usage compares to other forts.

Artefact functional group analysis can be used to study what is normal amongst archaeological sites of the same culture, period and potential usage. The development of a composite site, such as the all-period and Antonine composite forts, allows the discovery of basic trends in artefact functional groups and their rankings. Variability amongst the sites forming the composite site can also be examined via this method, once a basic understanding of the composite site has been reached. Bearsden's buildings and areas, and the functional group percentages of the artefacts found within them, were examined in detail. Differences and similarities between Bearsden and other Antonine forts were discovered and are summarised above. Artefact functional group analysis was also used at Bearsden to reinforce conclusions about the usage of certain buildings based upon building typology, such as building 1 and the headquarters. The potential this type of analysis offers to archaeologists is great, especially in combination with traditional building typology and artefact distribution analysis (see sections 21.11.1–5) and should be explored further.

### *21.11.7 Diet*

The regular taking of sample columns from the ditches and other deposits resulted in the location of the sewage from the latrine, as it happens, before the latrine itself was found. This sample was examined by Camilla Dickson and subsequently analysed bio-chemically by Brian Knights.

Within the sewage, fragments of hulled wheats, probably from both emmer and spelt wheat, were identified, together with bran fragments from either wheat or rye: the bran formed about half the organic part of the ditch infilling. Rye and oats also appear, but may have been merely weeds in a wheat crop. In addition, the sewage contained barley grain fragments which had been ground with the wheat and also fragments which had been processed in a similar manner to pearl barley and probably used for thickening broth. The bulk of the grain would appear to be emmer and spelt with a little barley. Emmer could have been used for porridge, whereas spelt was probably made into bread. Durum wheat found as a residue on pots could also have been used with other wheats to make brown bread, but it does not appear to have been part of a cereal mix and therefore may have been used to make porridge or pasta.

It seems likely that the wheat was imported to Bearsden rather than grown locally, a conclusion reinforced by the durum (Spanish) spelt wheat, and supported by the presence of grain beetles in the sewage. The grain beetles could have either entered the ditch by the dumping there of contaminated grain, or through the soldiers eating contaminated grain. Isolated fragments of grain beetles were found elsewhere on the site. Two reasons have been offered for this:

- their presence in the sewage was the result of their being eaten (Osborne 1983); Camilla Dickson suggested to me that they were eaten with the pearl barley used to thicken soup (pers comm; cf Dickson et al 1979: 51);

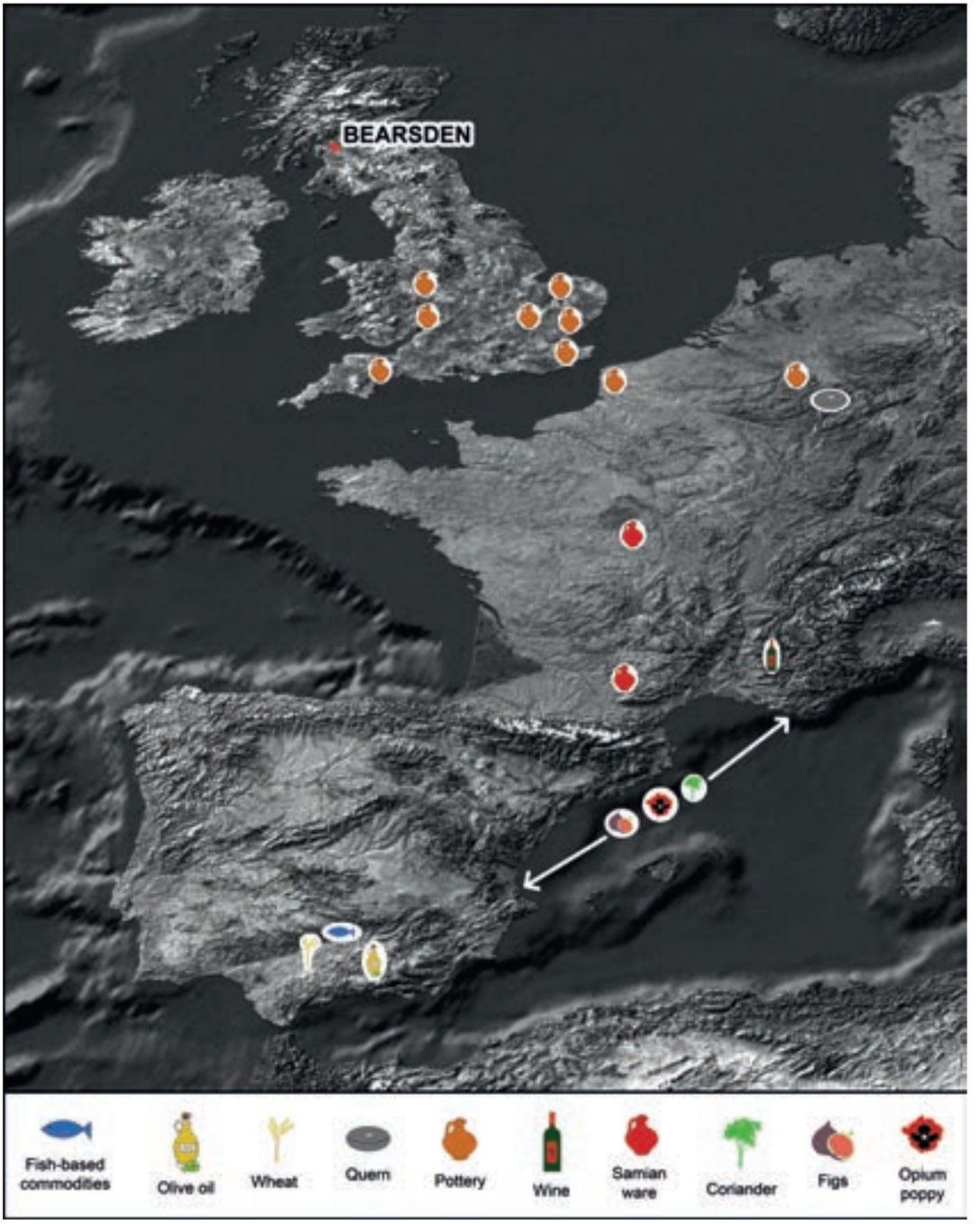


*Illustration 21.31*
The sources of supply.

- the beetles had been dumped in the ditch in order to dispose of damaged grain; perhaps the recording of four species of grain beetles may give some support to this proposal (17.2.1).

Other foods were found in the sewage. These include lentil, horse bean, linseed, fig, dill, coriander and opium poppy. Lentil may have been imported to Bearsden from southern Britain and fig, dill, coriander and opium poppy from the continent. Wild plants eaten at Bearsden include wild celery, wild turnip, wild or cultivated radish, common mallow, bilberry, wild strawberry, blackberry, raspberry, hazel nuts and purging flax. The flowering parts of common mallow were possibly eaten as a prophylactic,

while celery was considered to have had medical properties. This diet was uniform with the evidence from elsewhere in Britain and indicates that items such as cereals, pulses, figs, spices and oil seeds were standard supplies. The various containers found at Bearsden indicate that olive oil, wine and fish-based products were also consumed. The biochemical analysis undertaken by Knights hinted that the soldiers had a mainly plant-based diet (Knights et al 1983). This work was particularly important because, while it is known that Roman soldiers ate meat (Davies 1971: 126), the balance of meat within the diet was unknown. The work of Knights demonstrates that the vegetarian part of the diet was more important that meat. Unfortunately, at Bearsden the combination of acidity and aeration (as indicated by worming) had dissolved the bones.

### *21.11.8 Hygiene and relaxation*

The soldiers shared their environment with a variety of insects. Grain beetles were found in the west and east ditches as well as in building 7, a barrack-block. Aquatic beetles and waterside beetles lived in the main depression within the fort, while elsewhere there were beetles feeding on rotting hay, perhaps animal bedding, and on the dung of large herbivores, either horses or cows. The soldiers had worms. Examples of both *trichuris trichiura* (whipworm) and *ascaris* (roundworm) were present in the sewage, and it is possible that remains of these parasites were distributed across the fort. A single example of a human flea was also recovered from the sewage.

The latrine, as we have seen, could have been a health hazard, more so if there were wooden rather than stone seats, because the former are more difficult to clean. Sponges, commonly believed to have been used for personal cleaning would also have been dangerous, unless each soldier had his own, which seems unlikely. However, the discovery of moss in the sewage has led to the suggestion that this was used for cleaning and this would certainly have been more healthy if used only once.

There is little evidence to illustrate how soldiers passed their time at the fort, with the exception of the existence of the bath-house. Part of a gaming board was found in the north granary, and a possible counter in building 1 (5.2.5.82; 7.1.2.3). Bidwell & Croom have suggested the possibility of a shrine in the officer's quarters of building 3. Unfortunately, we do not know the name of any soldier based at Bearsden. The centurion Quin., recorded on a building stone, may not have been present with his men, while the names on the amphorae, AR, UMMID and VAG, may not have been of soldiers stationed at the fort. None of the artefacts relate to a known army unit, and none indicate the presence of civilians.

## 21.12 SUPPLY

The countryside around Bearsden provided a range of supplies for the soldiers. This included building materials: stone, turf, clay, timber and rushes for the buildings. The predominant stone was sandstone but of a type too common to identify locally. The vegetation of the area when the Roman army arrived was such that turf and rushes would be available locally. Alder, hazel and willow trees provided most of the timber found in the fort, with less oak and even less birch. Most of the wood, however, recovered was in the form of small branches used for wattles. Bracken and heather were gathered and peat bogs exploited for fuel. Grassland, marshes and fen would have provided meadow hay; there is some evidence for hay in the depression within the fort and in two of the ditches. Various items of food could have been obtained locally, as noted above. Water was presumably always available from the Manse Burn immediately to the north of the fort. The ground, as noted earlier, falls away to the north, east and south of the fort, but, after a level stretch of ground, it rise to the west. Water could have been drawn by means of a simple aqueduct from one of the streams flowing off this higher ground.

In addition, the purpose of the two depressions between building 7 and the *via principalis* may have been to collect water, perhaps for the horses. Care was taken in relation to the bath-house and the latrine to channel water downhill to flush the latter.

It would be too simple to assume that the collection of local supplies would have been carried out by the soldiers themselves. Much may have been undertaken by their slaves, or by local people who collected the produce on their land and sold it to the soldiers (Thorburn 2003 discusses the role of *calones*, probably slaves who undertook menial tasks such as collecting fire wood, foraging and transport, and the *lixae*, who appear to have been free merchants selling goods to the soldiers).

Clay was locally exploited to make pottery, notably by the potters of Sarrius who established a workshop in or near to Bearsden, using also local stone for the grits in his mortaria (7.4.2; 3; 4). Sarrius was a civilian and had his main workshop at the Mancetter-Hartshill complex in Warwickshire in the West Midlands, though he also had a subsidiary workshop further north at Rossington Bridge near Doncaster in South yorkshire and at an unlocated site in north-east England. It is probable that he sent one or more of his capable potters to work at Bearsden furnished with a copy of his most commonly used die. Other potters working locally may have included Mascello and Gica (or Cica), and possibly some from even further afield, Provence or North Africa, taking advantage of the disruption in supply occasioned by the move northwards of the frontier in the 140s and the abandonment of many forts in northern England to establish a market on the new frontier. Between them, they made a wide range of other pots; indeed about half of all the pottery used at Bearsden was locally made. It is unfortunate that it cannot be certain that the pottery was made at Bearsden itself, but the presence of misfired vessels, particularly in the dump in the annexe and in the intervallum area to the east of building 7, suggests that there were kilns close to the fort, or perhaps in the annexe (illus 21.32; 21.33). Analysis of the pottery from Bearsden, Bar Hill and Croy Hill has demonstrated that the products were not from the same kiln or workshop which also strengthens the case for a workshop at or close to Bearsden.

The mechanism which brought potters to work at or near Bearsden is not well understood. It could be argued that the army issued contracts to these potters to ensure a local supply of necessary vessels. In the early days of the occupation of a new area the army appears to have made its own pottery locally, at least up

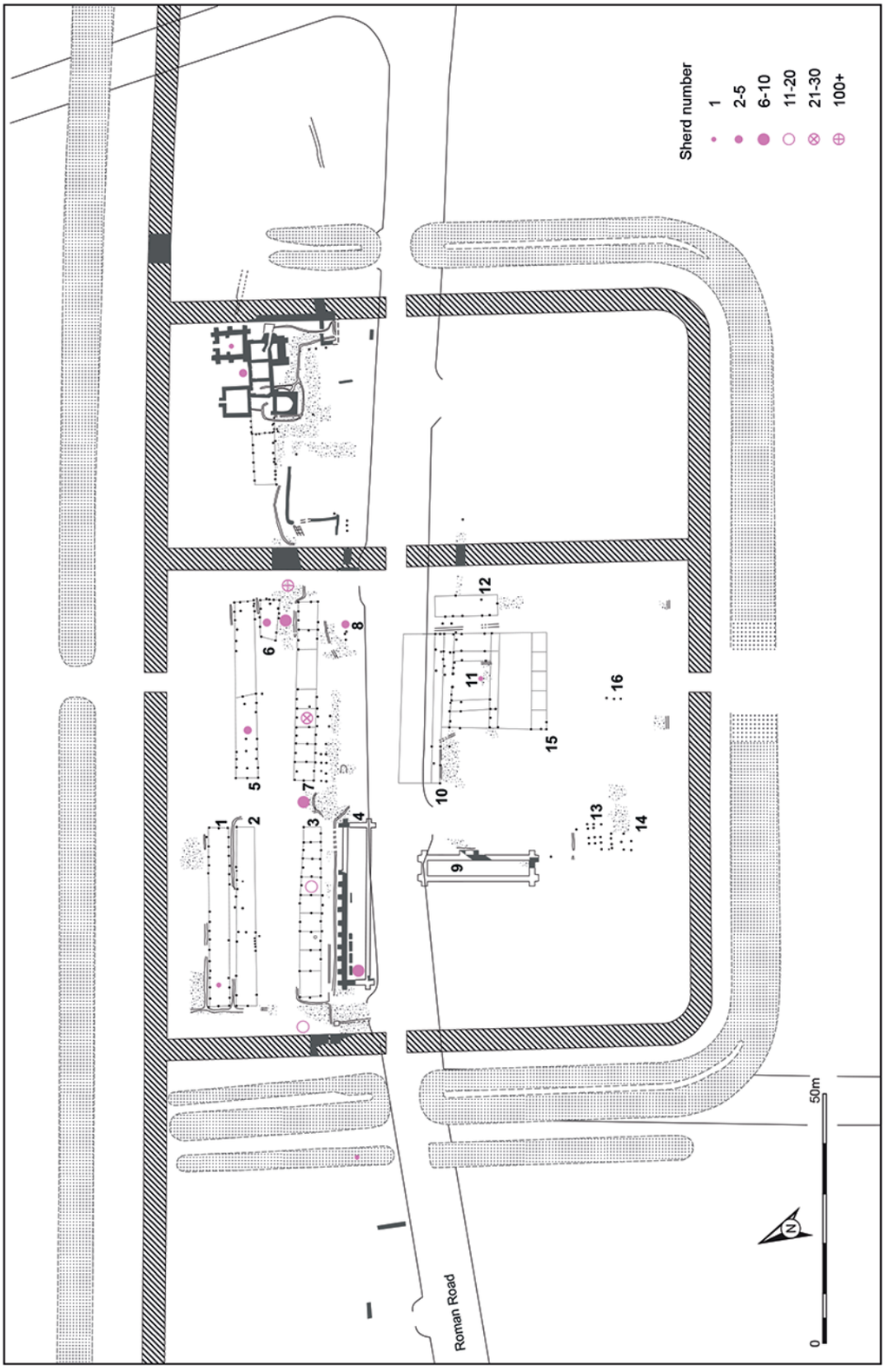


*Illustration 21.32*
The distribution of Sarrius' mortaria at Bearsden.

to the early second century; the arrangements at Bearsden could have been similar except that the military potters were replaced by civilian. The discovery of a fragment of a mortarium made by Sarrius in the burning around the hearth in the primary bath-house lends support to this hypothesis (cf p 139). On the other hand, there seems to be no reason why the process could not have been driven by market forces (Breeze 1977a), and this could equally account for the presence of potters at Bearsden at the time the fort was being constructed. It must be emphasised that no example of a contract issued by the state for the supply of pottery has been found.

The scale of the local production of pottery is one of the surprises of Bearsden. Local kilns provided 40% of the bowls, dishes and platters at the site, while mortaria were more numerous than usual in Roman forts presumably also due to local production. This implies a degree of specialisation, as can be demonstrated by analysis of the origin of other vessels. Only 24% of the cooking pots, for example, were made at Bearsden; the largest supplier, 44% of all cooking pots, was the industry producing black burnished ware 1 in Dorset, with the black burnished ware 2 kilns in Kent and the Colchester area furnishing 23%. The kilns in Kent and Essex, on the other hand, produced about 30% of the bowls, dishes and platters and Dorset 25%. The

*Illustration 21.33*
A mortarium bearing the name of Sarrius.

*Illustration 21.34*
Pottery vessels found at Bearsden. Upper row, left to right: cooking pot in BB1 from south-east Dorset (illus 7.5.120); mortarium made at Bearsden and stamped by Sarrius (illus 7.21.38); jar from northern Gaul (illus 7.8.219). Lower row: bowl in BB2, probably from Colchester, with rivet holes for a repair (illus 7.7.185) and another mortarium stamped by Sarrius (illus 7.18.12).

*Illustration 21.35*
Figs.

Severn Valley kilns provided over 75% of the narrow-mouthed storage jars.

The local kilns were therefore very important to the military community at Bearsden. Nor did they only make the basic pottery types of mortaria, bowls, dishes and platters, but examples of specialised items included triple vases, a spouted vessel and lamps, possibly for use in religious ceremonies.

Other pottery came from further afield. Samian came from two areas of Gaul, the kilns at La Graufesenque and Montans in western Provence and those at Lezoux and Les Marters-le-Veyre in the province of Aquitania, modern Averne. Kilns at Colchester supplied beakers.

This short review of the pottery emphasises that Bearsden, towards the western edge of the north-west frontier of the Roman Empire, was linked by supply lines to pottery kilns about 600km to the south and, as we will see, other points of production even further distant. In bringing the pottery to the fort, great use was made of sea transport. Black burnished 1 vessels and Severn Valley wares were shipped up the west coast, while black burnished 2 travelled up the east coast, then being transported across the isthmus to the western forts. As Gillam noted, the western end of the Antonine Wall is the only point where black burnished 2 vessels reached the west coast (Gillam 1976b: 58–9).

Some pottery vessels arrived at Bearsden as containers. These included amphorae. These large storage jars predominantly brought olive oil from the region of Seville, but also wine from southern France and fish-based products from southern Spain, all recognisable from the different forms of the containers. They also varied considerably in size: the olive oil amphorae contained about 70 litres, the wine about 31 litres while the fish-based products were carried in vessels only containing about 15 litres. Amphorae formed a higher proportion of the pottery at Bearsden than is usual at military sites in northern Britain dating to the second century. Several of the large olive oil amphorae were cut down and re-used.

It is possible that wine was also imported in wooden casks. Small pieces of silver fir found to the south of the forehall may be from such a barrel; an alternative explanation that they were from a writing tablet is unlikely owing to their thickness in spite of their location next to the headquarters building.

Glass vessels were also imported. Most were prismatic bottles, that is containers, so they presumably arrived at Bearsden with contents. One glass container had the inscription Gn. Asini(us) Martialis on the base, but the whereabouts of his workshop is not known. The fragmentary nature of the glass found during the excavations, and the lack of elements such as rims, has led Jenny Price to suggest that glass was recycled at the site, though where this occurred is not known.

Four quernstones for grinding the corn were manufactured in the Mayen area of the Eifel in western Germany while a fifth was from a quarry in Britain.

Wheat was almost certainly imported, presumably from southern Britain, and this is reinforced by the discovery of durum (macaroni) spelt wheat surviving as residue on pots. This type of wheat originates in Spain. While it might be thought that it was unlikely that grain was transported such a distance, in 44 the governor of the Spanish province of Baetica was expelled from the Senate for not sending grain to Mauretania across the Mediterranean, so export to Britain was not necessarily an impossible consideration (Dio 60, 24, 5; Erdkamp 2002a: 53). Lentils, too, were probably imported from beyond Britain. There is some pottery at Bearsden from East Anglia and this might have travelled north with British-grown grain. A jar from northern Gaul is another vessel which may have travelled with a cargo of supplies.

Amongst the various items of food surviving in the sewage are four which are not native to Britain: fig, dill, coriander and opium poppy; these may have travelled to Bearsden by ship from the Mediterranean. Also not native to Britain are rare finds of silver fir and spruce which may have been imported as artefacts. With the food came pests such as grain beetles and the golden spider beetle.

Swan (1999) suggested that soldiers cooking in a North-African style lived at Bearsden, possible having served in Mauretania during the war there in the late 140s, or recruited there, or having brought back African wives or slaves. Bidwell and Croom, however, have offered an alternative explanation for cooking in this manner, the move to Bearsden of potters from Gallia Narbonensis (modern Provence) who made vessels in the North African style. This may seem far-fetched, but wine came to Bearsden from the same area, and samian from the kilns a little distance to the west. Whichever interpretation is correct, it emphasises the wide-ranging links of Bearsden.

This is not the place for a wider discussion on the supply of Roman forts, but it may be noted that evidence suggests that soldiers could obtain their supplies in a variety of ways. Evidence

from across the empire indicates that sometimes soldiers were sent to collect supplies, at times from a different province; others were delivered or purchased locally; while the families of soldiers could send items themselves (Davies 1974, 51–2; Breeze 1984b; Erdkcamp 2002a; Monfort 2002; *Tab. Vindol.* 343 is an example from the north of Britain). It is clear that at Bearsden food such as wild fruits were gathered locally, presumably by the soldiers or their servants; goods such as pottery were manufactured locally by civilians and either sold directly to the soldiers or, less likely in my view, purchased by the military authorities on behalf of the soldiers; other items came from considerable distances, including grain and olive oil, and in this case the arrangements presumably being made by the provincial governor or the procurator. On the basis of evidence from elsewhere, it is likely that the soldiers stationed at Bearsden themselves travelled some distance to collect particular items.

### 21.13 THE END OF THE FORT

Gulleys in the fort were found to be choked with burnt wattle and daub, with many fragments of pottery and pieces of metal. No post-hole, however, was found to have been disturbed by the removal of its contents, for example by rocking, nor was there any evidence for posts being burnt in situ, though often the position of a post-hole was betrayed by the occurrence of flecks of charcoal in its mouth. It would appear, therefore, that the wattle-and–daub panels of the buildings were pulled down and the whole fort set alight (illus 21.36). Half-burnt and demolished buildings were then abandoned by the army. The state of the artefacts recovered during the excavations suggests that material of value would have been taken away. This included querns and window panes.

The sequence of deposits immediately east of the northern section of the rampart between the fort and the annexe is revealing. Immediately over the cobbled path to the east of the rampart lay a burnt deposit up to 120mm thick containing willow, alder and hazel branches. Overlying this is a small amount of fallen turfwork. This is the order which is to be expected if the burnt material formed a timber breastwork thrown down and burnt when the fort was abandoned with some disturbed turf from the rampart subsequently falling onto it.

Although the timber breastwork appears to have been pulled down and burnt, it is not clear whether or not the ramparts were otherwise slighted: there was certainly no attempt to backfill the ditches. The collection of metalwork in the middle west ditch a little to the north of the presumed causeway leading to the west gate of the fort may have been dropped or dumped as the army abandoned the fort. There can be no doubt that the fort was destroyed by the Roman army on its evacuation. This was normal practice, and is recorded by the late first-century writer Josephus in relation to Roman camps (*The Jewish War* 3, 90).

Two coins dating to 154–5 (one possibly 153–4) are almost unworn (12.7 and 9), suggesting a date soon after that for the abandonment of the fort. No other material helps tighten the date.

The excavated ditches demonstrate that after the abandonment of the fort the vegetation developed resulting in their eventual overgrowth by trees. The 19th-century maps indicate that the fort was divided into fields, but presumably cultivation of the site had started much earlier. This would account for the fact that most of the finds from the site came from the depressions and intrusions, including the gulleys round the fort buildings. Here, they were protected from the aggression of the plough.

### 21.14 SUMMARY OF THE HISTORY OF THE FORT

Bearsden is believed on spacing grounds not to have been a primary fort; excavation failed to reveal any evidence for a fortlet (a possible location for a fortlet lies 150m to the east of the east ditches of the fort, in the middle of a straight stretch of Wall with a slight turn at either end – a characteristic of early structures on the Wall – on the centre of which the Military Way – the modern Roman Road – converges; today the road takes a northerly turn at this point as recorded on the first OS map).

*Illustration 21.36*
Burnt wattle and daub from building 3 surviving under the stone tumble of the adjacent granary.

A large fort was planned and work commenced. The timber headquarters building with a forehall was constructed and probably one stone granary while a start was made on the bath-house and either the latrine was constructed or its sewer drain laid down. This fort, Bearsden 1, was laid out to a grid of 5×4 *actus*. The relationship of the ditches to this framework suggests that the outer west ditch was an addition to the original plan, or was dug in order to strengthen the western defences where the ground was flat.

After the construction of these initial buildings Bearsden 1 was divided into a fort and annexe. The headquarters building was retained, but the fort was otherwise planned on 'normal' principles, though the creation of the annexe on the site where the commanding officer's house would normally have sat may have led to its relocation to the west of the headquarters building and the placing of one granary in the forward part of the fort rather than the central range. An inscription from this granary recorded work by the Twentieth legion.

Four buildings in Bearsden 2 are an *actus* long and two measured half-an *actus* across; this may imply that the same builders who worked on the first fort stayed to plan, if not build, the second. The barrack-blocks contained eight rooms for the men and were probably built for cavalry. There was insufficient space for a whole unit so it is possible that the unit was divided between Bearsden and Castlehill where the part-mounted Fourth Cohort of Gauls is attested. The bath-house was demolished and its successor erected at right angles within the new annexe.

The bath-house was modified on several occasions. The hot dry room appears to have been an addition, perhaps during construction. The floor of the first warm room of the bath-house was lifted, the basement filled in and a new floor laid; this may have occurred at the same time as the addition of the hot dry room immediately adjacent. Subsequently, a second floor was laid in the former first warm room. A new floor was laid in the changing room over a thin layer of burning. Some posts were replaced in the fort buildings. The buildings were demolished and burnt; the ramparts slighted, probably with the timber breastwork burnt. None of these actions can be dated. It has been argued that the division of Bearsden 1 into a fort and annexe may have occurred in the late 150s on the basis of the evidence from Mumrills and Inveravon (Swan 1999). In view of the suggestions above about the close relationship between Bearsden 1 and Bearsden 2 this seems unlikely as it would stretch out the initial phase of the building programme to over 17 years (see below). Rather, a continuous process of building through Bearsden 1 and Bearsden 2 is envisaged.

### 21.15 SOME WIDER IMPLICATIONS

The present view of the history of the Antonine Wall is as follows:

- Hadrian died on 10 July 138 to be succeeded by Antoninus Pius. It would have been too late to take action in Britain that year so the governor charged with the invasion of southern Scotland, Lollius Urbicus, presumably arrived in Britain in 139 when he was recorded building at Corbridge (*RIB* 1147). Invasion followed (*Historia Augusta, Life of Antoninus* 5, 4) and victory achieved by 1 August 142, the earliest attestation of Antoninus taking the title *Imperator*, Conquerer (*RMD* 264; 392). In view of the length of time that it would have taken the news to reach Rome, it is likely that the victory was won in 141. Urbicus is recorded building at Balmuildy, a primary fort (*RIB* 2191); we may presume that he started the task of building the Antonine Wall in either 141 or 142, at the end of a normal three-year term as governor;
- there are three stages in the building programme: the first was for a rampart and ditch from sea to sea with six forts and fortlets at roughly mile intervals in between; it seems likely that the first stretch to be built was the 20 Roman miles from Seabegs to Castlehill, with the sector to the east of that next and the western four miles last (Hassall 1983); before the rampart and ditch through the western 4 miles was completed about 11 new forts were added; some or all of these may have been part of the original plan but built later (Poulter 2009: 146); annexes were added to forts, both primary (Mumrills, Castlecary and Balmuildy) and secondary (Rough Castle), with the exception of Bearsden where the existing enclosure was divided (the situation is not clear at Duntocher: Swan 1999);
- the Wall was abandoned following 158, when three inscription from northern Britain indicate the rebuilding of Hadrian's Wall together with the forts at Birrens and Brough-on-Noe (*RIB* 1389, 2110 and 283), and, it would appear, after the dropping of a worn coin of Lucilla (minted in 164) in the granary at Old Kilpatrick, but by 170 at the latest according to the evidence of the samian ware (Hartley, B R 1972).

*Illustrat on 21.37*
A coin of Antoninus Pius.

To turn to the evidence from Bearsden:

- the junctions of the ramparts had all been destroyed so it was not possible to determine the relationship between the fort and the Antonine Wall rampart;
- on spacing grounds it is presumed that Bearsden is a secondary fort;
- the annexe was created while Bearsden 1 was being built;
- the construction of Bearsden 1 within a framework of 5×4 *actus* and the use of the *actus* in measuring some of the buildings of Bearsden 2 suggests that the soldiers who worked on the first fort also laid out, and perhaps built, the second.

This is a relative chronology: there is no dating evidence from the site to create an absolute chronology, so it is worth exploring other evidence.

### *The date of the fort*

Since the publication of Gillam's hypothesis relating to the building of the Antonine Wall it has been assumed that Bearsden is a secondary fort. As there is no structural evidence for this, its position in the building sequence depends entirely upon its spacing. It is not, however, in its theoretical position, but 1km to the west. Castlehill lies half way between Balmuildy and Old Kilpatrick and Duntocher about half-way between Castlehill and Old Kilpatrick, which emphasises the dislocation of Bearsden, noteworthy also on a frontier so carefully measured to less than a pace, though measuring is a different issue from location (cf *RIB* 2186, 2193 and 2194). The half-way point between Balmuildy and Castlehill lies just to the west of the present-day New Kilpatrick Cemetery. There would appear to be sufficient flat ground here for a fort of the size of Bearsden.

Moreover, view-shed analysis demonstrates that more can be seen from this location, including, from the height of a soldier standing on a tower, the forts at Castlehill and Balmuildy, neither of which are visible from Bearsden, and where the view to the north is restricted by higher ground (illus 21.38). There may, however, have been other considerations. David Woolliscroft has reminded me of the modern significance of the fort site. It lies between two roads north (A81 and A909) as well as an east–west route (A807 and A810) and beside the railway running north to Milngavie; Poulter (2009, 108) also suggested that the location of the fort was 'dictated by the need to cover this potentially twin route of penetration into Roman territory'. The A909 is a route of some antiquity for it appears on the map prepared by Roy who also remarked on its location in 'a sort of gorge or pass' (illus 2.2). Bearsden may therefore have been located in order to control ancient lines of communication.

We should note that Bearsden 1 is large, being the largest secondary fort, and comparable in size to the primary forts at Castlecary and Balmuildy. It is also located in a strategic position being directly south of the Blane Gap which separates the Kilpatrick Hills from the Campsie Fells. Is it possible that Bearsden was a primary fort, placed in this significant position, or that its construction followed closely on the building of the primary forts for the same reason?

If so, it may not have been alone. There has long been doubt about which is the primary fort in the centre of the Wall, Auchendavy or Bar Hill. Gillam, in his identification of the two series of forts, could not decide between the two; his initial preference was for the former but, in discussion, I pressed on him the claims of the latter and so he offered both (Gillam 1976a: 52). The reasoning was and is straightforward; Bar Hill sits on the highest point of the Wall commanding views in all directions. However, geophysical survey at Auchendavy in recent years has provided some evidence to suggest that this fort is primary: the crucial evidence is the turn in the Antonine Wall rampart to east and west of the fort, a phenomenon only known at primary structures on the Wall (Jones, Leslie & Johnson 2006: 14). Even this is not entirely convincing for the fort lies at the very eastern end of the straight stretch of rampart whereas we might have expected it to sit in the centre.

Support for Bar Hill being a primary fort has been adduced. Twenty years ago, Nick Hodgson argued that the existence of two units in several Wall forts is not evidence for two periods of occupation in Scotland as a whole in the middle decades of the second century, but is a reflection of a change in the building plan for the Antonine Wall (Hodgson 1995: 32–5). The two units attested at Mumrills fall into this pattern for this was a primary fort. Castlecary is another a primary fort and there appear to be three units attested here, two thousand-strong auxiliary units, one with a cavalry component, and perhaps detachments of two legions. It has been argued that the legionaries were based at Castlecary in the period 175–90 (Mann 1963: 487–8), that is after the normally preferred date for the end of the Antonine Wall in the second half of the 160s. While this may have been the case, the greater point is the number of different troops based at the fort and the complicated military occupation of the fort. There are also two units recorded at Bar Hill, a 500-strong infantry unit was replaced by one of the same size. This would characterise it as a primary fort on Hodgson's 1995 criteria. The excavators working at Bar Hill over a hundred years ago recognised timber buildings, but of only one phase. Is it possible therefore that the change in unit took place at an early stage in fort building, as at Bearsden? It is therefore possible to argue that at two places along the Antonine Wall, Auchendavy/Bar Hill and Balmuildy/

**Table 21.15**
**The building of the Antonine Wall**

| *Phase* | *Antonine Wall* | *Bearsden* |
|---|---|---|
| 1 | Primary forts and fortlets | not occupied |
| 2 | Secondary forts added<br>Some fortlets modified | fort of 1.69ha started |
| 3 | Annexes added to forts,<br>Some units changed? | annexe created by subdividing the fort, with implications for unit in residence |

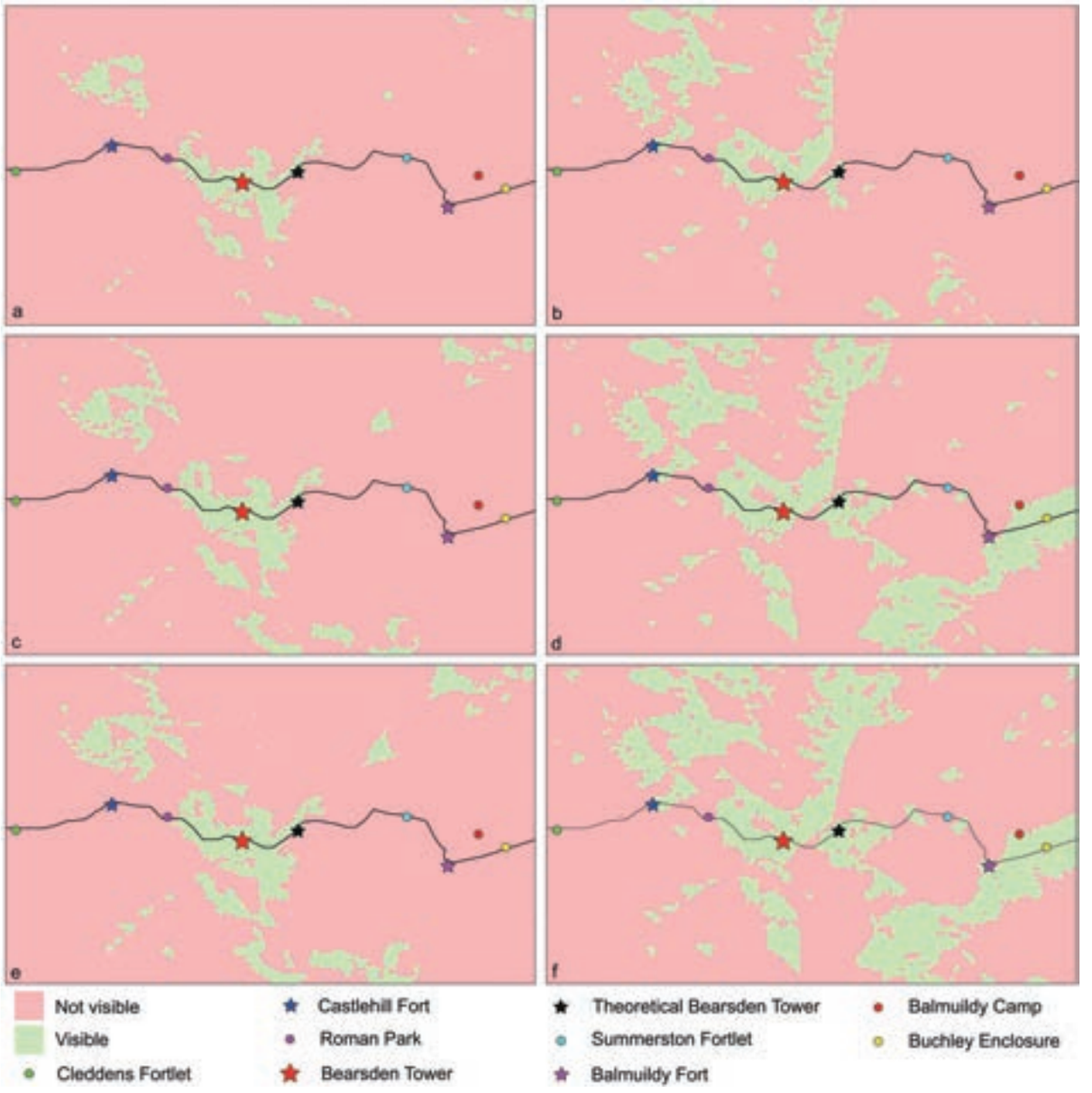


*Illustration 21.38*
View shed analysis from the fort at Bearsden and the theoretical location of the fort: (a) Bearsden 2m high person; (b) theoretical Bearsden 2m high person; (c) Bearsden 7m high tower; (d) theoretical Bearsden 7m high tower; (e) Bearsden 9m high tower; (f) theoretical Bearden 9m high tower.

Bearsden there were either two primary forts or two forts added quickly to the building programme, that is before the other secondary forts.

John Poulter has offered a different interpretation of the relationship of the forts to the Wall, arguing that the secondary forts were planned from the beginning but built later (Poulter 2009: 146). This does not necessarily affect the position of Bearsden in the building programme, but merely suggests that the fort was planned from the beginning.

### *The date of the annexe*

Vivien Swan argued that the introduction of cooking in a North African style at Bearsden and elsewhere on the Antonine Wall was the result of soldiers of the army of Britain returning from service in the Mauretanian War of the late 140s, though acknowledging that there was no evidence for such service (Swan 1999). She linked it to the annexe decision primarily on the basis of the date of the infilling of the west ditches at Mumrills

to create the annexe, the material including a coin of 154–5 and pottery of the second half of the 150s (Steer 1960). The result of her argument was to date Bearsden 2 to the late 150s. New factors have cast doubt on Swan's hypothesis. It has been assumed that all the west ditches at Mumrills were filled when the annexe was created, but Bailey (pers comm) has suggested that the outer west ditch may have been filled at a different time from the others; this area was in any case badly disturbed (Steer 1961: 90–1). Bidwell has offered an alternative reason for the presence of cooking in a North African style, the migration from Provence of potters who made vessels in this style (7.8). The argument that Bearsden 2 followed Bearsden 1 seamlessly further makes it unlikely that the annexe was not created until the 150s. Other factors might be thought to argue against the creation of the annexe at Bearsden to the late 150s. Such a date would require that work stopped on building the Wall for perhaps ten years from the mid-140s to the late 150s which would have resulted in the western end of the curtain being uncomplete for that time, while several forts show evidence for changes, particularly in their bath-houses, which would seem difficult to squeeze into a short occupation restricted to the years from the late 150s to the abandonment of the Wall. It therefore seems preferable to stay with an early date for the addition of annexes to the forts.

### *The implications for the building of the Antonine Wall*

The reduction in size from Bearsden 1 to Bearsden 2 presumably had an impact on the number of men stationed at the site; this may relate to a wider change of plan for the Wall. Hodgson subsequently retracted his explanation of the existence of two units at these Wall forts, suggesting that the impetus for the change in units was the return to Hadrian's Wall in 158 which may have been a protracted operation (Hodgson 2009: 190). It seems to me that the earlier proposal has more to be said in its favour than its successor. The addition of as many as 11 new forts to the existing six is an event which might have had consequences for the existing forts. It might also seem unlikely that the army would change units in some forts in the late 150s, at time when it was known that all forts on the Wall were to be abandoned.

The evidence from Bearsden, that the original plan for the fort was changed during construction, would appear to support the earlier Hodgson proposal. It might have been expected that when the fort was constructed the original plan for the site was followed through. Instead, there was a significant change, the reduction in the size of the fort and therefore, we must presume, the number of men to be stationed there; in other words a change in military deployment. If this could have happened at one fort, then presumably it could have happened at others, including the primary forts of Mumrills and Castlecary.

To return to the construction of the fort at Bearsden. There are two interesting points: the placing of a large fort here and its apparent occupation by cavalry. The placing of a large fort, larger than any other secondary fort, at Bearsden raises a question: why? In topographical terms its position is of some importance as it lies to the west side of the Blane Gap, the pass through the Campsie Fells and Kilpatrick Hills. It could be argued that it had a particular role in supporting Balmuildy in guarding this gap. In this case, the placing of a unit containing cavalry at Bearsden may be significant.

The reduction in size of the fort cannot in itself be explained, though the apparent retention of cavalry is noteworthy. It is worth reminding ourselves of the rarity of cavalry on the Antonine Wall, with only one cavalry unit, at Mumrills, and two mixed infantry and cavalry units, including that at Castlehill (*RIB* 2142, 2149 and 2195). All other known units were infantry. The appearance of cavalry at Bearsden is therefore noteworthy.

There are, therefore, a number of possibilities:

- Bearsden 1 was a primary fort;
- Bearsden 1 was a secondary fort but an early addition to the primary forts;
- Bearsden 2 was a secondary fort.

In seeking to determine which is likely to be correct the three crucial factors are:

- annexes are additions, not just to the primary forts, but also to at least one secondary fort;
- the creation of the annexe at Bearsden was during the building programme;
- Bearsden 2 would appear to have been planned and possibly constructed by the same team as Bearsden 1.

In the light of these factors, it is unlikely that Bearsden 1 is a primary fort or an early addition to the Wall because its construction would have preceded the addition of the secondary fort at Rough Castle, to which was later added an annexe; if Bearsden 1 was primary, we would expect Rough Castle to have been built with an annexe. Accordingly Bearsden 1 should be a secondary fort, with the change in the number of troops based at the fort relating not only to the creation of the annexe but a more widespread reorganisation of units on the Antonine Wall. The large size of the fort may still have related to a function of guarding the Blane Gap.

If an attempt is made to add dates, and accepting victory in Scotland in 141, then work will have begun on the Wall in that year or the next, with the first phase perhaps stretching over two seasons and Bearsden being added and amended the following year, 143 or 144.