7 Excavations at the Hadrian’s Wall fort of Bowness-on-Solway (Maia), Cumbria: 1988
by Paul Austin
with contributions by John A Davies, Brenda Dickinson, John Humble and David Starley

Introduction
Two housing developments took place in 1988 in the village of Bowness-on-Solway within the supposed area of the Roman fort attached to Hadrian’s Wall. In response to these the author carried out excavation of one site and a watching brief at the other for the then Central Excavation Unit. This paper is the report of the results of this work.

Previous survey and excavation
The village of Bowness sits on a clay knoll approximately 15.2m above sea level and is one of the few conspicuous such high points formed geologically on the south shore of the Solway Firth above the surrounding salt marshes. As such, it formed an obvious location for the westernmost fort on Hadrian’s Wall, with the next two forts to the east being similarly sited on higher ground above the tidal flood plain of the Solway marshes at Dumburgh and Burgh-by-Sands.

The position of the fort was recorded by antiquarians, from William Camden onwards, with accounts of the slight traces of the south defences common to all reports. The survey carried out by Henry MacLaughlan for the Duke of Newcastle in 1858 provided a confident calculation of the size of the fort as “about 240 yards [219.46m] by 110 [100.85m], giving an area of 5.5 acres [2.23ha]”, although by then much of the east side had been built upon. MacLaughlan’s calculation forms the basis of the delineation of the outline of the fort on the Ordnance Survey maps of Bowness (Fig 427).

Most excavation hitherto, with the exception of T Potter’s work in 1976, has been concentrated at the western end of the fort. These interventions are shown by dates in Fig 427. In 1930 Eric Birley carried out excavations on the west and south defences. He established the position of the north guard chamber of the west gate, and discovered that the width of the fort was greater than MacLaughlan’s estimation (Birley 1931). The south wall lay a little to the south of where MacLaughlan had calculated its position, and he also disproved MacLaughlan’s supposed line of the north defences. The west wall continued north towards the Solway and disappeared at the top of the present scarp, indicating that the Solway had eroded the north side of the fort’s defences. By locating the south wall and the west gate in the centre of the west side, Birley was able to calculate accurately the width of the fort as 410ft (124.97m).

In 1955 Charles Daniels carried out trial trenching to the west of the fort in advance of the building of buildings bounded by it (Mohamed 1968). This revealed a sequence of buildings constructed in timber, with evidence of quarrying for clay.

Drumburgh and Burgh-by-Sands.

Even before the present excavations there were a number of indicators that suggested that these two assumptions were incorrect and that the actual dimensions of the fort could be more accurately calculated. The first indicator is the usual ratio of the length to width of most auxiliary forts of 3:2. In relation to the established width of 124.97m, a length of c. 187.45m might have been expected rather than 220m (720ft). If there was any consistency in planning when the Wall forts were constructed, the fort might be expected to face east, as did the two other forts – Great Chesters and Housesteads – which were turned parallel to the Wall for topographical reasons.

The size and orientation of the fort
The limited extent of previous excavation at Bowness had not permitted hitherto the full extent of the fort to be determined beyond doubt. It has always been known that the fort’s long axis was east–west, parallel to the line of Hadrian’s Wall, in common with Housesteads and Great Chesters. Birley’s and Potter’s excavations established the width of the fort, but the precise location of the east defences had not been confirmed by either excavation or by survey of visible indications, and MacLaughlan’s estimated length of 720ft (219.46m) had not been hitherto questioned (thus Bellhouse 1968, 38).

The size of the fort, based on the work of MacLaughlan, Birley and Potter, was thought to be 7 acres (2.83ha). It has also always been presumed that the fort faced west (Daniels 1978, 55).

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The excavations

Church Lane

This site comprised the location of former outbuildings of a small farm sold for private housing developments. Church Lane, bounded on the south by the churchyard wall. A watching brief was arranged to coincide with the excavation of the foundations trenches in April 1988. The design of the house entailed four foundations, likely to be similar to those at Birdoswald, where the south gate and the east gate were determined by an obstacle near the churchyard wall. In relation to the overlaid plan of the modern road, the excavations were east–west across the site at 10m intervals. Excavation revealed the foot of the ditch, with part of the churchyard wall and part of the ditch fills, and the depth of the defences. The excavations revealed a sequence of phases including those pre-dated the establishment of the Roman fort. The area was occupied in the Roman period.
The two earliest features on the site were cut into the natural boulder clay and sealed by a clay loam soil layer, on average between 70mm and 100mm deep, varying from greyish to yellow-brown clay loam. This occurred across most of the site except where later features had been cut through it, and appeared to be an old ground surface pre-dating the establishment of the Roman fort.

A short length of a square-cut trench (Fig 428, 55) (north-south, 400mm wide and 250mm deep) was exposed in the area behind the fort wall, approximately midway in the excavation area. It was filled with hard red clay (56), the compacted nature of which suggested that it was deliberate backfill and rammed down as a structural foundation. No traces were found to the north where it was obscured by later structures — in particular the clay and cobble base of the fort wall — which were not removed in the excavations.

A second feature was a shallow sub-circular scoop (101), at least 2m across and 210mm deep, 7m north of the trench above, and filled by a mixed reddish-yellow sandy clay soil, flecked with charcoal (100). The eastern edge lay just east of the later fort wall, but its full extent could not be defined within the excavated area. Its purpose is uncertain. The fill yielded a worked flint (p 406, No. 1). A second flint (p 406, No. 2) was recovered from the overlying old ground surface covering the berm between the fort wall and fort ditch.

The desire to leave later structures intact where possible meant that areas where the features were sealed by the old ground surface were extremely confined. Therefore no coherent plan could be determined or drawn. Interpretation of the individual features was impossible, but their significance is that they demonstrated pre-Roman occupation of the site, possibly Neolithic or Bronze Age in date, based on the characteristics of the two flints.

Phase 2: establishment of the Roman fort (Fig 428)

The earliest features that could be associated with the fort were two isolated patches of turf. The first (62), seen within the later interval tower (64), was a thin layer of smooth greyish turf-like soil, which included a rectangular patch of silver-grey clayey turf-like material approximately 300mm square, most likely a complete turf. The second trace (63: 280mm thick; light silvery grey with horizontal streaks of darker grey) occurred in the confined area between the edge of the excavations and the fort wall south of the interval tower. It directly overlaid the old ground surface (57), and the foundations for the interval tower cut both layers. These turf patches are interpreted as surviving traces of the primary turf rampart. Excavations at the west gate in 1973 also noted traces of the primary turf rampart, consisting of turfs and clay, around four substantial timber post settings (Potter 1974b, 34).

A berm 3.5m wide separated the rampart from the innermost and largest (30) of the two fort ditches found in the excavation. It was first noted as a relatively stone-free band running down the centre of the site. This V-shaped ditch, between 4.2m and 4.6m wide, and 1.5m deep in the central north-south through the excavated area. Two sections were excavated across it, separated by a 0.5m baulk. This ditch was traced for 32m within the excavated area. It was slightly narrower than on the west side of the fort, where it was 6.1m wide (Mohamed 1967; Potter 1975). There appeared to be a small step in the profile of the ditch on its inner side, which appeared to stop the fills to represent widening of the ditch after a small amount of silting had occurred.

Immediately west of this main ditch ran a much smaller V-shaped ditch (33; 2m wide and 600mm deep). Its line was marked initially by a compact deposit of large, mostly rounded, cobble stones (6). It was difficult to assess whether this ditch was contemporary or earlier than the larger ditch (30), but considering the spacing it seems more on balance that they were contemporary.

This outer ditch (33) contained a homogeneous clay fill (32) without tip lines, suggesting deliberate filling, at a time when the inner ditch was still open. There was no dating evidence to place this filling in sequence, but a cobble layer (9) stopped at the outer edge of the larger ditch (30), suggesting that the smaller ditch was filled while the larger ditch was left open, and probably before the accumulation of stone debris over both ditches (see below: Phase 9).

Phase 3: construction of stone fort wall (Fig 428)

The foundations of the fort wall (27) between 1.45m and 1.60m across were exposed over a distance of 23m from the north-west corner of the excavations to where the archaeological deposits had been destroyed by more recent horticultural activity at the south end of the excavations (Fig 429). Its sandstone faces had been almost entirely robbed, but the elaborate foundations, constructed in a shallow construction trench (58) cut into the old ground surface, were well preserved to a height of 450mm. Its construction tallied exactly with the descriptions of its construction on the west side of the fort (Butler 1930; Mohamed 1967; Potter 1975). It consisted of three layers of cobbles separated and bonded by alternate layers of red clay. The lowest course of large flinty cobble stones (97; averaging 200–250mm across) was covered by a layer of red clay (96) approximately 80–100mm thick. On top of this was laid the middle course of cobbles (24), mostly smaller in size and more rounded than the base layer. This was covered with a further bonding layer of clay (95; between 150mm and 200mm thick), on which was laid the uppermost layer of cobbles (94), significantly larger than either the bottom or middle course with an average size of 340–500mm. A final bed of red clay (10), by which the fort wall was initially recognised during the course of excavation, supported the first course of yellow and red sandstone facing stones (36) and core, although only six facing stones of the west face survived in situ in the whole
length of the fort wall exposed. The surviving facing stones all sloped outwards, indicating settlement and the ultimate collapse of the wall. Subsequent repair of the fort wall was evident at a point immediately south of the interval tower where the foundation consisted entirely of a 500mm raft of red clay with no cobble courses. The use of clay rather than mortar as the bonding agent is significant and reflects the absence of suitable lime sources at the western end of Hadrian’s Wall.

There was no direct stratigraphic relationship between the stone fort wall and the remains of the turf rampart described above, but it is likely that the stone fort wall was constructed by cutting into the front of the earlier turf rampart as a secondary modification of the fort’s defences. There were numerous parallels for this sequence in other Roman forts initially built with turf and timber defences. More significant in this particular fort, the sequence of the replacement of the turf and timber defences by stone walls, and of the gates and towers, was firmly established by the discovery of post holes for the timber west gateway, which appeared to be associated with this cobbling. These features suggested the removal of the rampart backing here to construct new timber buildings, leaving the fort wall freestanding.

Part of an interval tower (64) built onto the rear of the fort wall was found by extending the excavations 2m west to the adjacent property boundary. The tower was c. 30m north of the supposed position of the east gate. Significantly, this close to a quarter of the previously demonstrated width (124.97m) of the fort ascertained by Birley (1967). As an interval tower might be expected halfway between the east gate and north-east angle, it is further confirmation of the overall width of the fort, with the northern part eroded by the Solway.

The tower was 5m wide overall. The side walls were traced for up to 1.3m, although the rear wall lay beyond the available boundary (Figs 429, 430). A patchy soil (40) of sandstone and small cobbles was found inside the tower, although this appeared to have been substantially disturbed in more recent times and may even be a more modern feature. The primary foundations of the tower were laid out butted against the straight face of the fort wall (27). This could reflect that the foundations of the tower were laid out after those of the fort wall within the same overall construction phase. Alternatively it may indicate that the site of the tower was added later, after the stone fort wall had been completed.

The foundations for the north wall of the tower (43; 1.50m across) comprised a single course of large rounded cobble boulders, bonded with red clay (Fig 430), with a course of smaller cobbles and broken sandstone chips on top. The primary foundation of the south wall was identical to the north wall (37). However an upper layer of clay and sandstone chippings (103) did not butt against the fort wall but merged imperceptible with the clay foundations of the fort wall at this point (99). This indicates later rebuilding of the south wall inside the tower and the adjacent length of fort wall. Both walls were constructed within in a foundation trench cut into the underlying earlier rampart material (63). In plan, the tower was not square on to the rear of the fort wall, but was slightly askew.

The berm between the fort wall and the main ditch contained five post holes, all cut into the pre-fort ground surface. The spacing of the three most northern post holes (70, 72, 74) indicates that they were related to the interval tower. The central post hole (70) was directly opposite the centre of the tower. The other two post holes were respectively 3m to the north (72) and 4m to the south (74). All three were 1.5m away from the outer face of the fort wall (Fig 431).

Each post hole was circular in plan, packed with cobble stones protruding above the surface, between 250mm and 450mm deep, and filled with dark brown clay loam. The central post hole, void was 600mm wide at the end nearest the fort wall, narrowing to 1.2m at the other end. It was directly opposite the interval tower described above. As it clearly dug after the construction in stone of the interval tower and the fort wall, as it cut the southern half of one of the scaffolding post holes (70).

This pit’s precise purpose was not ascertained, although the primary silt fill (59) at the ditch end contained sand, ash and slag, suggesting an industrial process (Fig 432). A roughly circular deposit of charcoal and burnt clay (54; 61) was found 1.5m north of this pit. It was up to 120mm thick and contained small quantities of slag, and its proximity and identical stratigraphic relationship indicate that it must have originated from the pit. Both the pit and the slag deposit were sealed by a cobbled surface (9) subsequently laid across the berm. The slag indicates ironworking, with fragments of vitrified heath lining and a small quantity of matrix derived from the interval tower. The slag therefore appears to have been associated with iron working, possibly to house a
the risk of accidental fire among the predominantly timber fort buildings, in the same way that ovens were usually built into fort ramparts away from buildings.

The pit was subsequently filled with red clay mixed with loam (46) containing cobbles, suggesting that this action was deliberate, before cobbling of the berm, as the outline of the pit was only revealed after removing the cobblings.

Phase 6: cobbling of berm (Fig 433)

The entire area of the berm between the fort wall and the main ditch (30) was covered with a cobbled surface after filling the metalworking pit (47). Several context numbers (9, 11, 21, 23) were used to record slight variations in its nature, but it later became obvious that these represented a single event. An isolated patch of this same cobbling (55) survived farther south in the trench, where the state of preservation was generally less rewarding.

The surface of small- to medium-sized rounded cobblestones and gravel was laid directly onto the red-deposited clay of the berm. It covered the infilled post holes (70, 72, 74) associated with the building of the interval tower, and the metalworking pit (47), and was therefore laid after some considerable activity had taken place. The probable reason for cobbling the berm was suggested during the course of excavations, when the ground surface became wet it was slippery, and cobbling might have afforded better footing to the Roman soldiers, as it did to the excavators.

Phase 7: gully (Fig 433)

Just under 2m south of the metalworking pit, a shallow gully (52) emerged from under the fort wall and ran across the berm, feeding into the fort ditch (30). It was 850mm wide and 270mm deep with a rounded profile and fairly straight sides. It was cut from above the old ground surface on the berm. It was presumably originally culverted under the fort wall.

The relationship between this gully and the cobbled surface (9) is unclear. The line of the gully was initially indicated by an area of coarser cobbles (22) laid over its fill, which were distinctly different in character from the cobbling to either side of it. The berm cobbling might have been laid around the open gully or, alternatively, the gully might have been dug later, cutting through the cobbling. However, clearly demonstrates that the gully was open and in use after the berm was cobbled, unlike the metalworking pit described above.

The primary gully fill (53) was a dark, reddish-brown sandy silt, with small cobbles. The sandy silt filling the gully suggests gradual filling by erosion. The presence of small cobbles in the gully fill also suggests gradual filling by erosion along the edges of an open gully. In contrast, the upper gully fill (51) was a dark brown sandy loam containing sandstone fragments, suggesting that it was deposited deliberately to fill the gully simultaneous to the repair of the fort wall opposite (see below).

Phase 8: collapse and rebuilding (Fig 434)

The gully described above is presumed to have been culverted under the fort wall immediately south of the interval tower. This coincided with the position of the pre-Roman shallow pit (101) described above. However, while the foundations of the fort wall comprised carefully placed alternate layers of cobbles and red clay, their character was different in this 2m section. Here the foundations consisted entirely of a solid raft of reddish-brown clay (99) 200mm thick, containing patches of soil, charcoal and sandstone fragments. This blocked off the course of the gully beneath the fort wall, and there were no evident structural remains of a culvert.

The uppermost archaeological deposit consisted of an extensive spread of broken sandstone rubble (31) approximately 500mm deep covering the berm between the fort wall and the ditch, and sealing the cobbled surface (9, 11, 23). There were five distinct clusters of sandstone at approximate...
The finds

Flint

by Jon Hulme

Two striking flints (not illustrated) of likely Neolithic or Bronze Age date were recovered during the excavations. The nearest chalk outcrops are in eastern Yorkshire, Midl and Northern Ireland, so the raw material was probably from a locally available secondary source of flint, most likely pebbles collected from the Solway Firth. They are of fine-grained, medium brown flint with frequent small cherty inclusions, in unarticulated condition.

1. From fill of Pit 101. A plumping flake (42mm length, 15mm width, 1mm thick) struck from the keel of a keeled core, with the edge of the keel showing signs of preparation prior to striking. Macro-tulking on the dorsal surface at the proximal end of the left hand side is consistent with use-ocar.

2. From old ground surface (57) across the berm between the fort wall and inner ditch. A broad flake (42mm length, 32mm width, 5mm thick) with a fine-grained medium grey-brown flint, with occasional cherty inclusions, in fresh, unarticulated condition. The distal end is hinge fractured and the nicking of the edges appears to be the result of post-depositional damage.

The primary clayey, silty fill (40) was mostly with masonry tumble (Figs 432, 433) interspersed by accumulation of wind-blown sand against the still upstanding fort wall, interspersed by growing vegetation.

Metalworking debris

by David Stanley

A small amount of material, totalling about 2kg, was recovered from fill of Pit 47 on the berm and an associated deposit 1.5m north of the pit. The material was examined visually and not quantified by type. Most of the material was undiagnostic and included in the assemblage. A small amount of material, totalling about 2kg, by David Starley

A small amount of material, totalling about 2kg, uncovered by a layer of pale yellow sand (35) with dark, horizontal bands approximately 10mm apart. The shallow nature of these horizontal sandy bands and the continuous nature of the dark bands indicate that they represent a gradual accumulation of wind-blown sand against the still upstanding fort wall, interspersed by growing vegetation.

Excerpts from the excavation report:

The discovery of an old ground surface beneath the fort was 30m shorter than had hitherto been assumed on the basis of Macaulay's survey, and together with the evidence from Birley's 1930 excavations, the precise dimensions of the fort are now known to be 2.38ha Bowness is still by a small margin the second largest fort on Hadrian's Wall, but is surpassed by Bannaun and Chesters. The bulk of the excavation was carried out in advance of new houses infilling the remaining open spaces within the area of the fort. Taken together, the results enable a number of broad conclusions about the fort to be drawn.

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Conclusions

All excavations within the fort at Bowness have been small in scale, necessitated by the buildings of the modern village overlying most of the area of the fort. Four of the five excavations have been driven by strata and the state of development, carried out in advance of new houses. The quantity of the Bowness metalworking slag is small, accounting for 21% of it. Approximately 90% of the assemblage is from the Central Gaulish factory of Lezoux and the rest comes from East Gaulish kilns. Only 9 vessels could derive from the Hadrianic occupation of the site. The bulk of the Antonine material is later than AD 160. Nearly all the potters represented by the decorated ware and potters' stamps have been noted in later 2nd century contexts on Hadrian's Wall, and the presence of contemporary plain forms such as 3IR, 7R, 80 and grisaille, suggests that Bowness is a further evidence of date. The East Gaulish assemblage is consistent with the finds from other Hadrian's Wall and associated forts, both east and west of Hadrian's Wall. As a result of the work at Bowness, the bulk of the excavation is from Rheinzabern (3 vessels), with lesser amounts from Trier (6 vessels), and lesser amounts from Rheinzabern (38 vessels), the Argonne (2 vessels), La Madeleine (1 vessel) and other sites.

The Bowness sample, though small, strongly suggests that the fort was either abandoned, or held on a care-and-maintenance basis, during the period of use of the Antonine Wall. Thoroughly, a few of the sherds could be early-Antonine and a piece of a decorated ware, should have reached the site in the period AD 40-166, and particularly the absence of any bowls by the Cerialis ii – Cinnamus ii group, whose work so strongly features in Scotland (Harker 1972, 3), suggest that the earliest pieces in this collection are Hadrianic rather than early-cod mid-Antonine.

The strategic position of Bowness at one end of the Wall would seem to require continuous occupation throughout the Hadrianic and Antonine periods, but the evidence of the samian suggests otherwise.

Coarse pottery

The excavations produced a small assemblage of coarse pottery, weighing 3.65 kg. Nearly all the material came from either topsoil or unstratified contexts, and the very small amount recovered from stratified contexts was unfortunately entirely lacking in characteristics that could be used to date these contexts. The assemblage as a whole produced no surprises in terms of fabrics and forms, with most cooking pots, dishes and bowls being BB1 vessels. Several of these were characteristically Hadrianic with flan-milled bowls and dishes, and bowls with deep, chamfered bases. Nene Valley colour-coated wares was made up most of the finds. There was a single body sherd of Severn Valley ware.

Notably absent were any vessels that could be dated to the 4th century.

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Potter's excavations at the west gate showed that the fort was first built in turf and timber, and although the 1988 excavations produced no direct evidence of this, its results do not contradict it. The probability is the fort defences were converted into stone at the same time as the Turf Wall was replaced in stone at some date in the second half of the 2nd century AD. The samian pottery assemblage strongly suggests that the fort was not occupied while the Antonine Wall was in use in the middle of the 2nd century. After the construction of the stone defences, the excavations demonstrated a sequence of events within the excavated area, including a metalworking pit that was subsequently filled, a cobbled surface laid over the berm, and a localised collapse and rebuilding of a section of the fort wall and the southern part of the adjacent interval tower. The absence of 4th century coarse pottery might be significant, although the small size of the assemblage may be misleading.

The final collapse of the fort's defences provided building material for houses of the modern village. The evidence from these excavations and from earlier ones on the west side of the fort shows that the inner fort ditch had been re-profiled and was still substantially open as a ditch when collapse occurred. On the west side of the fort, this was associated with medieval pottery.

The revision of the understanding of the position of the eastern defences from the present excavation confirms that the course of the modern road through the village was established while the defences and both the east and west gates were still standing and passable. Through comparison with the plan of Housteads, the main village street appears to run around the position of the principia of the fort, which was probably a stone building. The implication is that the defences were sufficiently maintained to provide a defensive enclosure and that the Roman stone buildings were re-used, or survived as standing ruins, probably for a considerable period after the primary use of the Roman fort had ended.

These excavations therefore add to the growing body of evidence for continuity of settlement and post-Roman adaptation of the forts and structures of Hadrian's Wall.