

## The Roman Gask system tower at Shielhill South, Perthshire: excavations in 1973 and 1996

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### ABSTRACT

*Excavations conducted to clarify earlier work by J K St Joseph revealed a double-ditched Roman timber tower with at least two structural phases. A single sherd of Roman glass was recovered, of late first- or early second-century date.*

### THE SITE

Shielhill South lies at NGR: NN 850 115 (illus 1) on the crest of a low glacial ridge, with excellent views in all directions, especially to the south. It sits immediately to the north-west of the Roman road from Ardoch to Strageath, and has every Roman installation between Ardoch and Kaims Castle in sight. To the north-east the ground (including parts of the site's outer ditch) slopes down steeply into the valley of a small burn. No trace of the site can be seen on the surface, but the Roman road remains visible where it crosses the burn, as a low embankment on the southern side and a cutting to the north.

### ST JOSEPH'S 1973 EXCAVATIONS

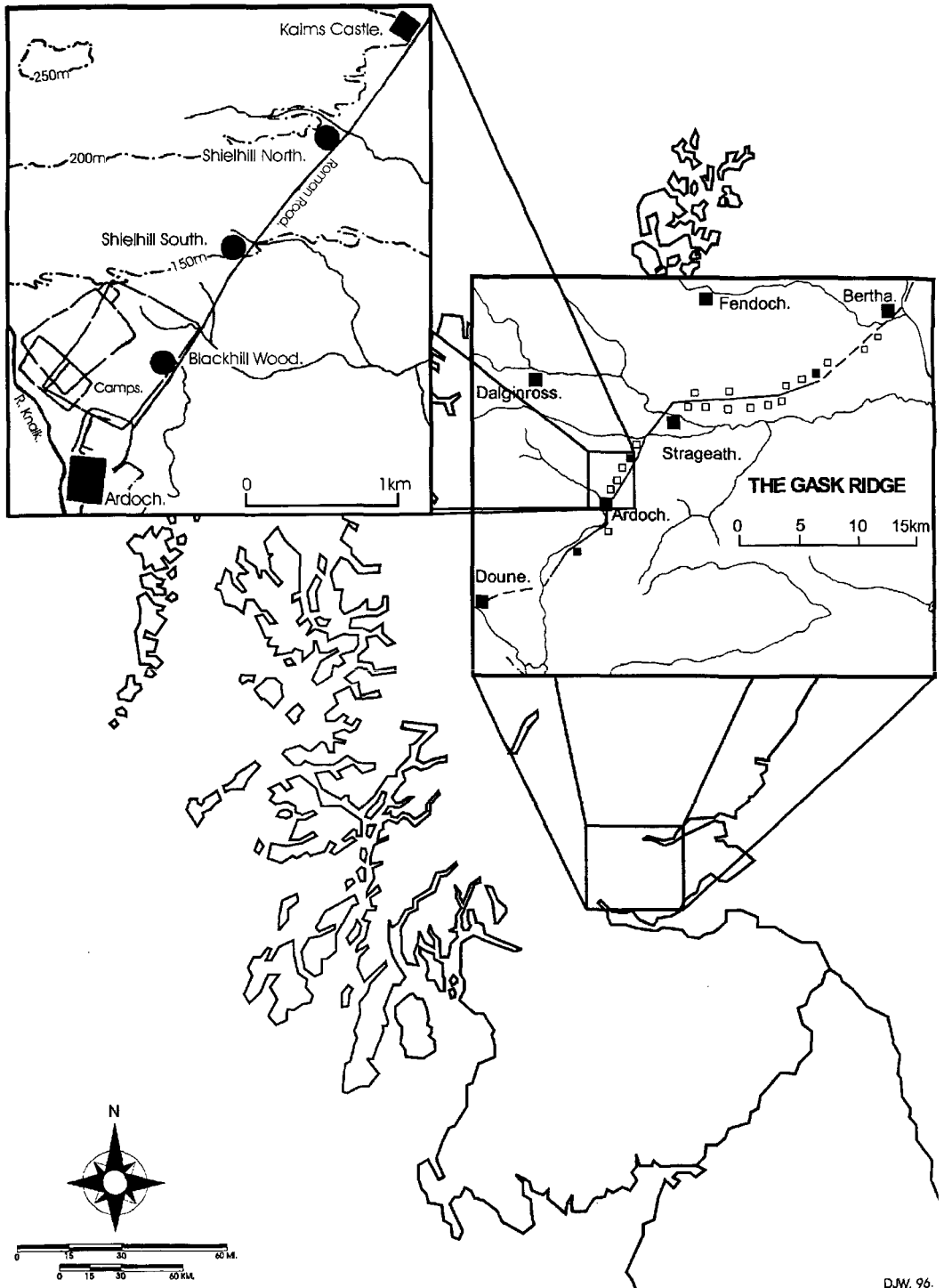
The site was discovered from the air in 1973 by J K St Joseph (CUCAP: BOJ2, 3–5, plus BOQ38) as a faint crop mark, representing the south-eastern half of a double-ring ditch. The inner ditch showed noticeably more strongly. In the same year St Joseph undertook trenching on the site which confirmed the presence of a double-ditched Roman tower. But, although brief accounts of this work were published soon after (St Joseph 1976, 22f; Maxwell 1974), the excavator died with the full report still unwritten and the writers undertook to complete it. The following account describes the structures as perceived by St Joseph although, as will later become apparent, some of the results differ markedly from those obtained by our own 1996 excavation.

### 1973 EXCAVATION RESULTS

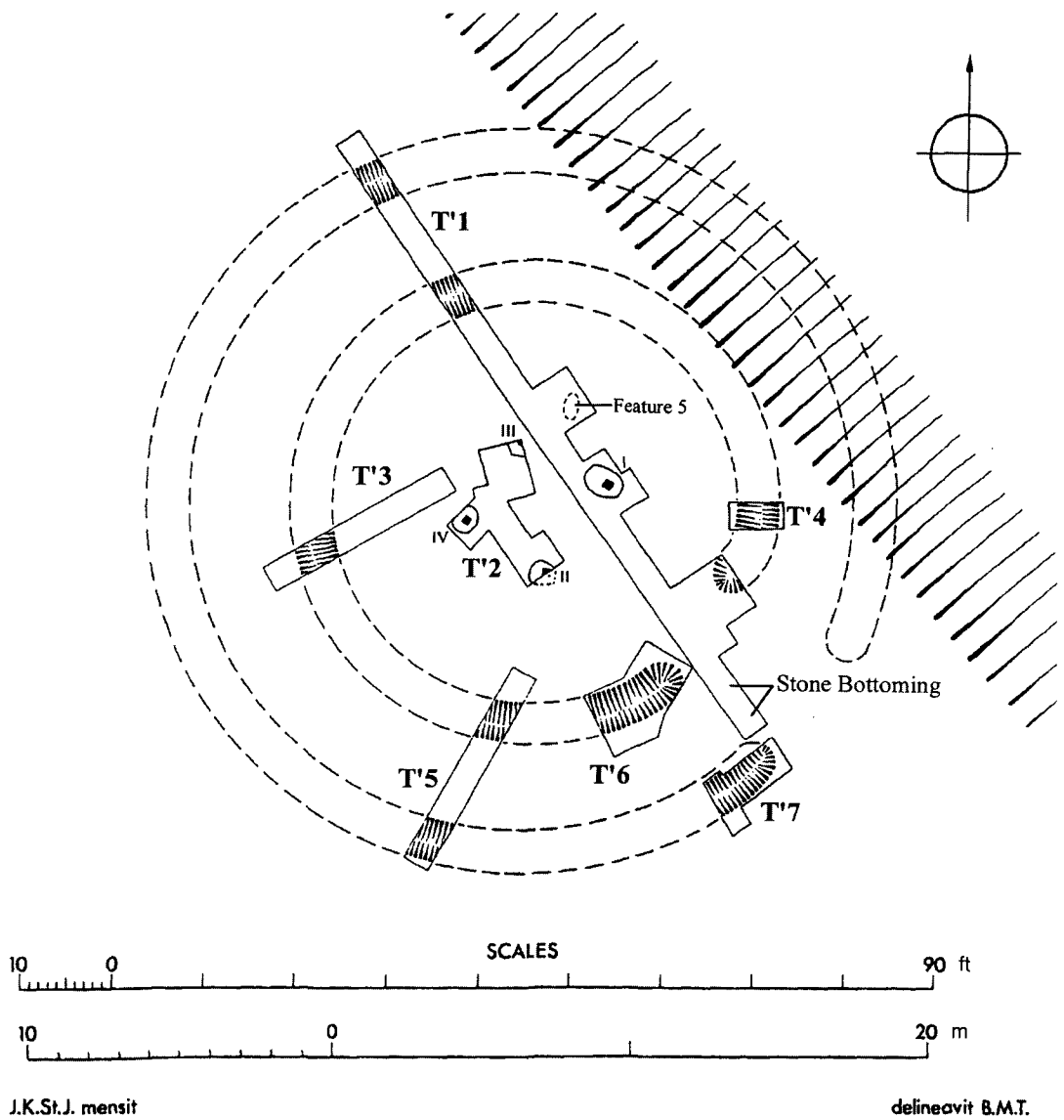
**The ditch system** was examined in plan by a total of six trenches (illus 2), of which one (T1) was deepened to obtain a section. There was no cut across the site's full width, but the inner and outer ditches were reconstructed as circular and approximately 16.3 m and 25.4 m respectively in external diameter, while the

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ILLUS 1 Site location map. (Based on the Ordnance Survey © Crown copyright)



ILLUS 2 J K St Joseph's 1973 excavation trenches and site plan

section (illus 5) showed them to be of the normal V-profile, if somewhat diminutive in size. The outer ditch was 1.47 m wide and 0.38 m deep, whilst the inner ditch was 1.18 m wide and 0.44 m deep. The single entrance break faced south-east, towards the Roman road, and was 3 m wide at the inner ditch. The outer ditch entrance may have been somewhat wider, although this was not confirmed, and both seemed to share the same orientation. The entrance had a top layer of heavy stone rubble, which was taken to be the bottoming of a laid track from the tower to the Roman road.

**The interior** yielded a four-post timber tower, which was drawn as having one side of 3.55 m and three of 3.17 m. Unlike some Roman towers (eg Woolliscroft & Swain 1991), this faced directly towards the entrance

and was placed more or less centrally within the internal area. Only two of the post-holes were sectioned, but in both cases the timbers were stone chocked. Post I (illus 8, O–P) was badly damaged, but appeared to have been c 0.36 m across, square sectioned and 0.82 m deep. Post IV was also square in section (illus 9, Y–Z), 0.28 m wide and set 0.54 m deep.

There were clear signs of demolition at the end of the tower's occupation. The post in PH I had been rocked and rotated to allow its extraction, causing earth and a number of chock stones to be displaced into the former post-pipe. A saucer-shaped hollow had thus been left at the surface which had been neatly filled in with a mixture of clay, cobbles and ash (illus 8, L'1), in which were found a nail (of unrecorded section) and a fragment of daub. The post in PH II had been pulled out after a small amount of digging around its top, and once more the resulting hollow had been deliberately filled in, this time with clay and turf. Only a small part of PH III was uncovered, although again, the post-pipe had been capped with clay, but PH IV had clearly been dug out, since a substantial disturbance was found to the north-east of the post-pipe (illus 9, L'5 & L'9) which had removed about half of the packing on that side. Again, however, the resulting hollow had been backfilled and capped with a mixture of clayey, turfy earth and a few cobbles (illus 9, L'6), from which what is described as a fragment of native pottery was recovered. Sadly, the latter seems to have disappeared, making a more accurate identification impossible. All of the posts are recorded as being set well into the body of their post-pits and entirely surrounded by packing stones. The only exception is the post in P II which is shown as set hard against its pit's north-eastern side.

To the north-east of PH III a possible fifth post-hole was recorded in plan (illus 2, F'5), but no other reference is made to this feature in the surviving site records.

#### RESISTIVITY SURVEY

In addition to the above, the writers also undertook to complete St Joseph's reports for similar operations at the neighbouring towers of Blackhill Wood and Shielhill North. But as the records for all three sites proved difficult to interpret on occasions, it was decided that re-excavation was needed at one of the towers, with Shielhill South being selected as representative.

Unfortunately, although St Joseph left survey data to allow his trenches to be fixed *inter se*, he did not survey them into identifiable fixed points in the field. Since they are no longer visible at the surface and have not shown on subsequent air photographs, their positions were, therefore, unknown. There were also reasons to doubt St Joseph's reconstruction of the sites' ditch systems as circular, as his own first air photograph of Shielhill North (CUCAP BOJ–5) and past plans of Blackhill Wood (Roy 1793, pl XXXI; Macdonald 1936, 313f) show both sites to be sub-rectangular. The air photographs of Shielhill South were, admittedly, less than clear, but it seemed likely that this site might also be sub-rectangular/sub-circular. To clarify the matter, while searching for the 1973 trenches, a resistivity survey was conducted.

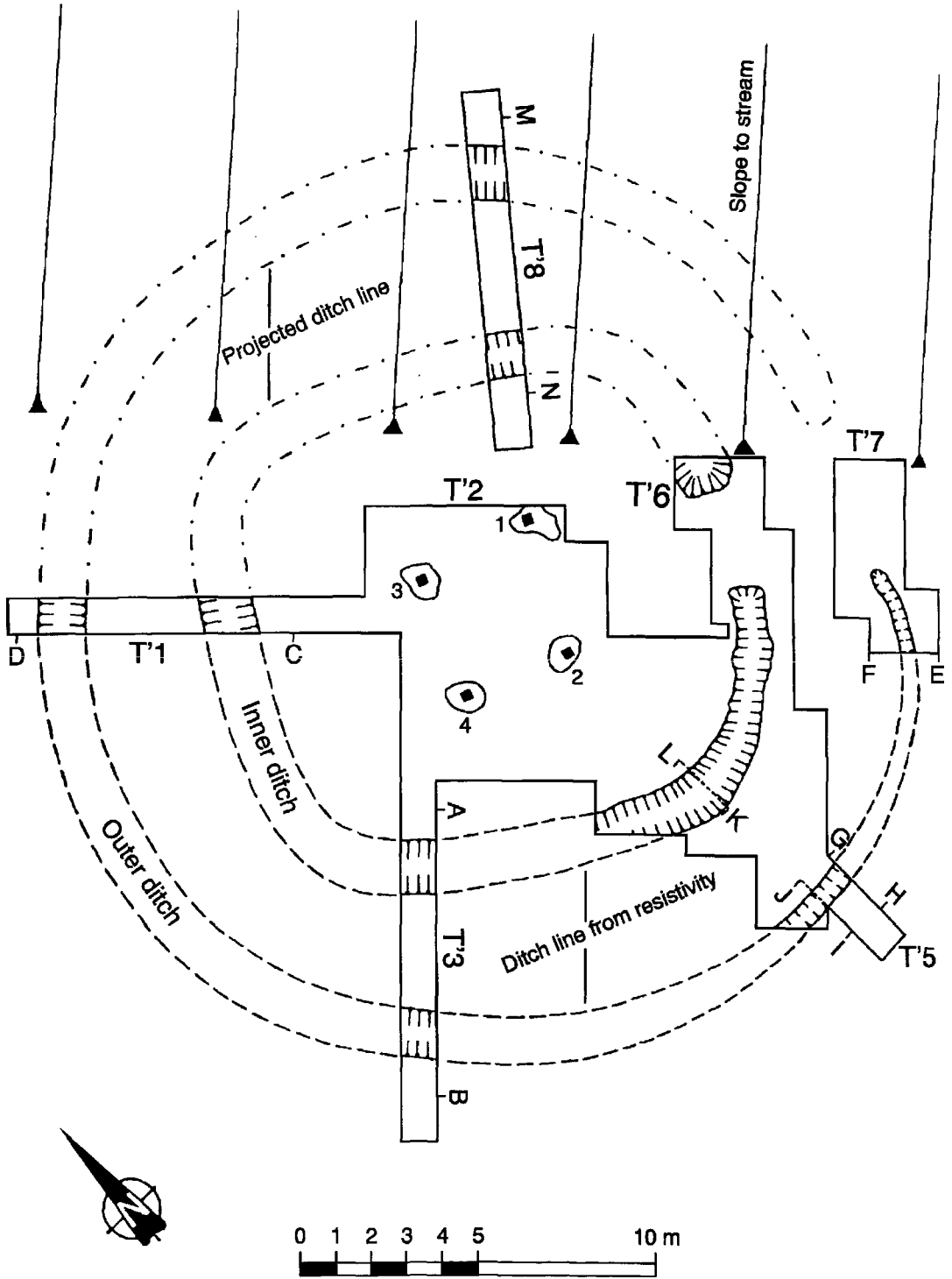
Despite the fact that the site was partly obscured by the remains of a field wall, the survey produced a number of useful results (illus 3), albeit while failing to locate St Joseph's trenches. In particular, it did indeed show the inner ditch (at least) to be sub-rectangular in plan. The site proved to be a few metres further to the north-east than had been anticipated, so that the outer ditch ran outside the survey area in that direction. Otherwise, the site seemed much as the 1973 records had described it, at about 25 m in external diameter, with an inner ditch diameter of 15–16 m and with a single entrance orientated south-east towards the Roman road.

#### NEW EXCAVATIONS IN 1996

The 1996 excavation strategy involved locating and re-opening all of St Joseph's trenches, except for one small cut across the inner ditch to the north-east of the entrance (illus 2, T'4), which was



ILLUS 3 Shielhill South: resistivity



ILLUS 4 Shielhill South: site plan

replaced by a full section across both ditches slightly further to the north (illus 4, T'8). St Joseph's central trenches were considerably expanded.

#### DITCH SECTIONS

In all, four sections were cut across both ditches (illus 4, T's 1, 3, 5 & 8), with an additional cut through the outer ditch only, south-west of the entrance break (T'7). The presence of two ditches was confirmed. Both had the typical Roman military V-profile (if without the usual 'ankle-breaker' sump), although both proved to be unusually slight, something St Joseph's section had already shown. In all cases except T's 1 and 7, however, the sections showed one or both ditches to have been re-cut. As with all of the Gask towers excavated to date, no signs of palisading were uncovered, either inside, between or outside the ditches.

The inner ditch was markedly sub-rectangular in plan. It varied in width between 1.3 m and 1.1 m, averaging 1.16 m, whilst its depth ranged between 0.64 m and 0.33 m and averaged 0.47 m. Its average outer diameter was 15.6 m, which left an internal area averaging 13.3 m wide.

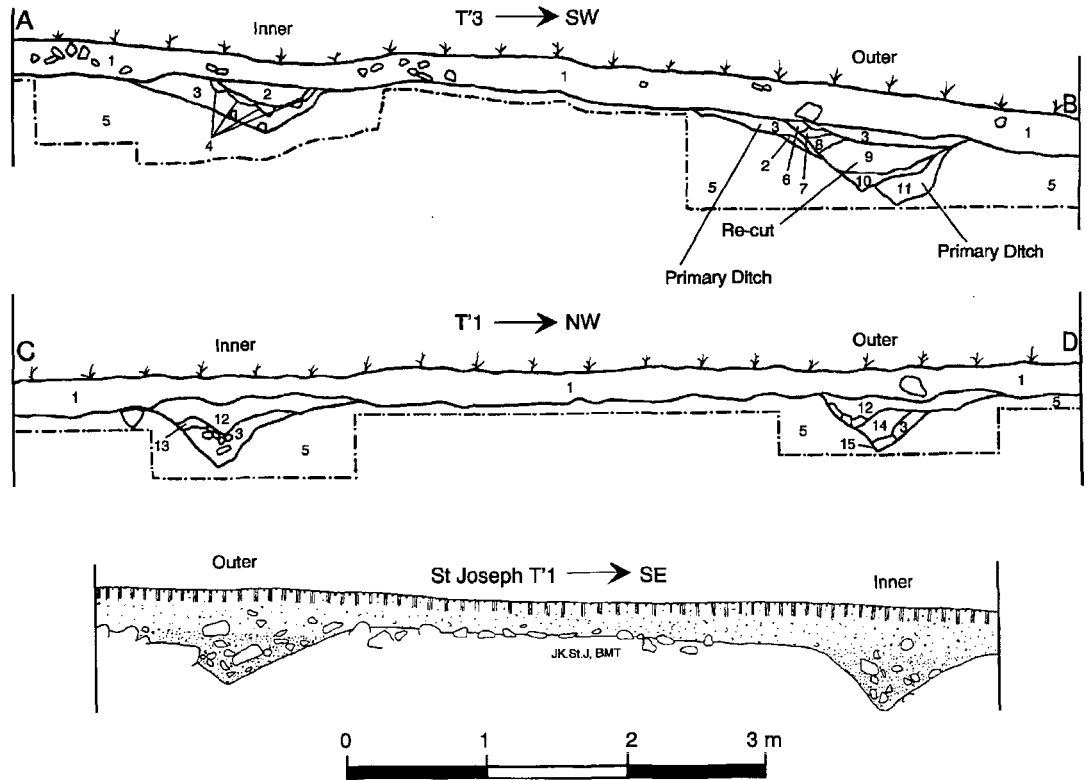
The outer ditch was on average 24.3 m in external diameter and left an inter-ditch spacing averaging 3.5 m. But its size fluctuated rather more than that of the inner ditch, with its width varying from 1.64 m to 0.54 m and averaging 0.99 m, while its depth ranged from 0.47 m to 0.24 m and averaged 0.36 m. The fact that its average dimensions were somewhat smaller than those of the inner ditch would explain why it shows less strongly on both air photographs and the resistivity plot. This ditch appeared to be more circular in plan, although still tending towards the sub-rectangular. But it must be stressed that a smaller proportion of its circuit was excavated than was the case with the inner ditch and, since both the aerial and geophysical survey results offer only a tenuous guide to its line, its reconstructed course as plotted on illus 4 must be treated with some caution.

Details of individual trenches are described below.

**Trench 1** was intended to re-open St Joseph's only full section, but in the event no previous archaeological activity was detected. Nevertheless, the results (illus 5) were broadly comparable and the two trenches must be very close together. The inner ditch was 1.1 m wide and 0.43 m deep, as opposed to 1.18 m wide and 0.44 m deep on St Joseph's drawing. The outer ditch was considerably narrower than the broad, 1.47 m cut reported in 1973, at 0.70 m, but identical in depth at 0.38 m. The inner ditch held a shallow layer of brown silt at its bottom (L'15) but, otherwise, both ditches had filled largely with stony brown sand or loam deposits (L's 3 & 14). This material was directly overlain by a layer of grey loam (L'12) almost indistinguishable from the modern plough-soil, except over a small area of the interior side of the inner ditch where L'12 was underlain by a light brown loam, which may have been degraded turf. Neither the 1973 or 1996 trenches produced any signs of re-cutting.

**Trench 3** also found no trace of its 1973 predecessor. The inner ditch here was a broad (1.3 m) shallow (0.33 m) hollow with a semi rounded bottom only tenuously classifiable as V-shaped (illus 5). The external face was, however, noticeably steeper than the inner, making this ditch a *fossa punica* in miniature. As in T'1, it had largely filled with a stony brown loam (L'3), with the upper fill being made up of a grey-brown loam (L'2), similar to the plough soil, overlying a number of lenses of degraded turf (L'4).

The outer ditch was more conventionally V-shaped, 1.26 m wide and 0.47 m deep, and had filled with a number of sandy loam layers (L's 6–10), which were similar in texture, but richer in humus than the ditch fills elsewhere on the site. This had, however, cut an earlier ditch which also appeared to be of *fossa punica* type (L's 11 & 3). The latter had been wider than the secondary cut at 1.94 m and slightly deeper at 0.53 m. Its bottom was slightly (0.25 m) outside (south-west) that of the secondary ditch.



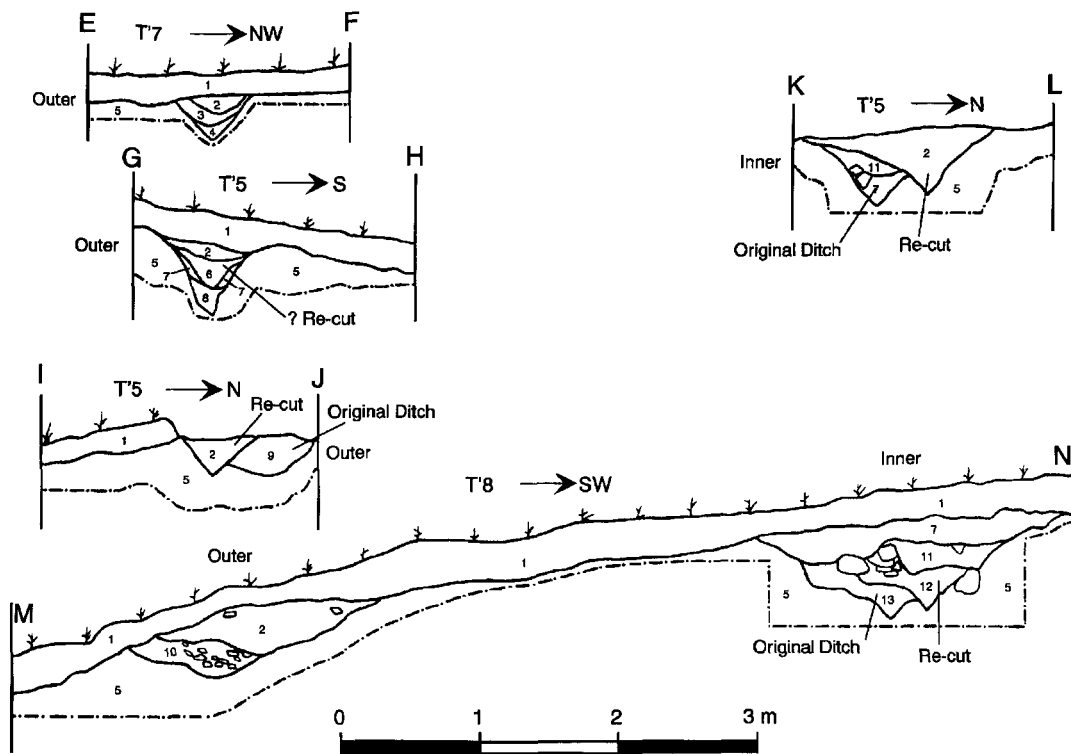
ILLUS 5 Shielhill South, ditch sections

1. Turf and topsoil. 2. Grey brown loam. 3. Stoney brown loam. 4. Degraded turf. 5. Natural sand, clay and gravel aggregate. 6. Brown loam. 7. Brown grey sandy loam. 8. Grey brown sandy loam. 9. Dark brown sandy loam. 10. Brown sandy loam with clay patches. 11. Orange brown gritty loam. 12. Grey sandy loam. 13. Light brown loam with pea gravel. 14. Brown sand with gravel. 15. Gritty brown silt

**Trench 5** did locate the edges of its St Joseph precursor which had, as expected, revealed the ditches only in plan. Here both ditches proved to have been re-cut. The primary inner ditch (illus 6, section K–L) was 0.49 m deep, and of uncertain width. As in T'3, it appeared to have its external face at a steeper angle than the interior, although the effect was rather less clear. At its bottom was a fairly thick (0.21 m) layer of loose slightly pink, brown clay with gravel (L'7), above which the full surviving depth was filled with a layer of beige clay and gravel (L'11). This feature had been cut by a more normal V-shaped ditch whose centre lay 0.39 m outside (south) that of the primary cut. It was filled with a single layer of grey loam (L'2) whose material showed signs of gradation, with an increasing concentration of gravel towards the bottom, while above, the layer became progressively more stone free until, at its top, it became difficult to distinguish from the plough soil.

The outer ditch here was unusual in design, with substantial differences encountered between the sections on opposite sides of the 1 m wide trench. It was, however, consistently smaller than in T's 1 and 3. To take the west section first (illus 6, section I–J); the initial ditch had been a shallow-saucer shaped depression 0.28 m deep and probably 0.75 m wide, which had filled with a homogenous layer of pea gravel and sand (L'9). This had been cut by a narrow V-shaped groove so slight (0.54 m wide and 0.24 m deep) that it was initially mistaken for a palisade slot. The second cut's centre line lay 0.36 m outside (south) that of the primary feature and its fill consisted of a uniform layer of gravely grey loam (L'2), similar to the plough soil. On the eastern side of the trench, a more normal, if still narrow, steep sided V-shaped ditch was found (illus 6, section G–H), 0.67 m wide and 0.49 m deep. This had a bottom fill of loose, plum-coloured





ILLUS 6 Shielhill South, ditch sections

1. Turf and topsoil. 2. Dark grey loam with gravel. 3. Gravel with dark brown sand. 4. Dark brown gritty sand.
5. Natural sand, clay gravel aggregate. 6. Buff sandy clay. 7. Pink/grey loam with pebbles. 8. Plum clay with stones. 9. Grey brown sand and pea gravel. 10. Stones with dark grey loam. 11. Beige clay with gravel.
12. Yellow/beige clay with gravel. 13. Silty grey clay with gravel

clay with stones (L'8) overlain by a thick layer of a slightly pink grey loam (L'7). This feature had again been cut by a second V-shaped ditch, but with the same centre-line. The latter was broadly similar (if a little larger) to the re-cut on the opposite side of the trench, at 0.58 m wide and 0.31 m deep, but had a slightly different fill pattern, with a sandy clay bottom fill (L'6) underlying an identical grey loam (L'2).

**Trench 7** exposed the southern part of the outer ditch entrance in plan and a section was cut against the trench's south-western baulk, 2.27 m from the butt end (illus 6, section E-F). Here the ditch was V-shaped and, as in T'5, extremely small, at 0.56 m wide and 0.31 m deep. There was no evidence for a re-cut. The feature was filled with layers of brown sand and gravel (L's 3 and 4), overlain by the usual grey loam (L'2), which again directly underlay the plough soil. An identical top fill was found in the ditch over the rest of the trench where it was only revealed in plan.

Elsewhere in T'7, the natural aggregate subsoil contained numerous larger stones, which ranged up to head sized boulders. St Joseph interpreted these as bottoming for a metallised surface, but they proved in fact to be part of a natural band of stones which passes right across the eastern half of the site.

**Trench 8** was designed to section the ditches on the steeply sloping, less plough damaged, burn valley side, in an attempt to recover stratigraphy between the two ditches to see whether or not they were contemporary. No such stratigraphy had survived, but more evidence for ditch re-cutting was recovered.

The inner ditch was initially dug as a shallow, somewhat flared V-shaped feature 0.67 m deep (illus 6, section M–N), which had filled with a uniform layer of loose gravel and sandy clay (L'13). This had been cut by a second, similarly shaped ditch, something over 0.8 m wide and 0.64 m deep, whose centre lay 0.27 m inside (south-west) that of the primary cut. The secondary ditch had a filling of clay and gravel (L's 11 & 12) topped by the usual grey loam (L'7), which itself underlay the plough soil. Towards the north-east end of the section, the loam layer proved to be somewhat deeper than elsewhere, giving the impression that a third feature, perhaps a small pit, had been cut into the ditch top.

The outer ditch was 1.64 m wide and 0.44 m deep, and showed no sign of re-cutting. The ditch is here on a steep slope and took the form of a step-like depression cut into the valley side, presumably to provide a steepening of the natural incline, rather than a conventional ditch. Nevertheless, with its shallow depth and gently rounded bottom, such a feature can never have presented a serious defensive obstacle. The bottom fill was made up of a pile of stones 0.24 m deep (ranging from gravel to slightly larger than fist size), in a grey loam matrix (illus 6, L'10), above which was a stone-free layer of grey loam which itself underlay the plough soil.

**Infilling and re-cutting** There is little sign from either our own or St Joseph's results that the ditches had been backfilled when the site was abandoned. On the contrary, none of the ditches showed obvious dump layers and, with the exception of the inner ditch re-cut in T'5, all produced fillings that were obviously derived from erosion of the natural sand and gravel aggregate sub-soil. Indeed, the 1996 excavation saw the beginnings of very similar deposits being formed in the open sections, through the agencies of mole action and weathering. It thus seems likely that the ditches silted naturally, which would fit well with the fact that the 18th-century antiquarian Pennant reported them as still visible at the surface in his own time (Pennant 1776, 101ff).

It was noticeable, however, that the topmost ditch-fill layers were almost indistinguishable from the plough soil and it may be that the final infilling took place through ploughing in relatively recent times. St Joseph rightly reports the presence of turf fragments in these loam layers and interpreted them as the remains of an internal rampart, shovelled into the ditches as part of a demolition process. But they are just as easily explained as pieces of former field-turf, ploughed in and covered to a depth at which they would not then have been broken up further by subsequent ploughing. One might have expected a true demolition deposit to have been more randomly distributed throughout the ditch profiles, rather than just in the very topmost layers of otherwise fully silted ditches, and although it could be argued that this means that the ditches were simply in urgent need of another re-cut when the site was abandoned, that would conflict with Pennant's account. Plough damage would also explain the flared top of the inner ditch in T'8, where the loam layer has cut into the silting layers beneath it, and probably widened the ditch top.

The fact that the primary ditch had almost completely silted when the re-cut was dug suggests that a considerable time had elapsed between cuts, which might in turn suggest either a single prolonged occupation, or two occupations separated by a substantial hiatus. But, although a reasonable time-span must indeed be allowed, it need not have been quite as long as might at first be supposed. The ditches are, after all, unusually small for a Roman tower and the aggregate subsoil, while hard, is relatively friable and weathers surprisingly quickly. By the end of the two weeks of the 1996 excavation, T'8, the first to be opened, had already acquired between 10 mm and 30 mm of sediment and although such a rate of infilling would slow down markedly as the material approached its natural angle of rest, the ditches might well have been in need of a re-cut after little more than a year or two.

#### THE INTERIOR

The central trenches (T's 2 & 6) examined the tower itself, a substantial length of the inner ditch, which included its entrance break, and parts of the inter-ditch area. The inner ditch top fill continued to be grey loam with turf patches along the entire length exposed, but no attempt was made to empty the feature further. The entrance was 2.76 m wide (probably narrower than the

outer ditch break) with the butt ends to either side almost square rather than the more usual rounded shape. Again, there was no sign of metalling in the entrance but, as in the outer ditch break, it is easy to see why the stony subsoil should have misled St Joseph, with his much smaller trenches, into thinking there was. Only 1 m of ditch top was uncovered to the north-east of the entrance, but an 8.7 m stretch was followed to the south. This ran almost straight for c 3.8 m before turning and heading for the section seen in T'3. The site's only datable find, a blue-green body sherd from a late first- or early second-century Roman cylindrical glass bottle (Isings form 51), was found at the interface between the plough soil and the inner ditch fill, just south-west of the entrance, along with a square-sectioned nail.

The subsoil continued stony in a broad band right across the eastern part of the site, although the west was relatively stone free. Many of the larger stones in the interior (but not the inter-ditch area) had been roughly hacked flat (with a wide-bladed tool), presumably to provide a level platform. Moreover, although the entire interior was plough damaged, traces of a thin surfacing of compacted clay and gravel had survived in the immediate area of the tower and showed signs of severe burning. Numerous past and present rabbit burrows (illus 7) were located, but there was no sign of past tree root activity.

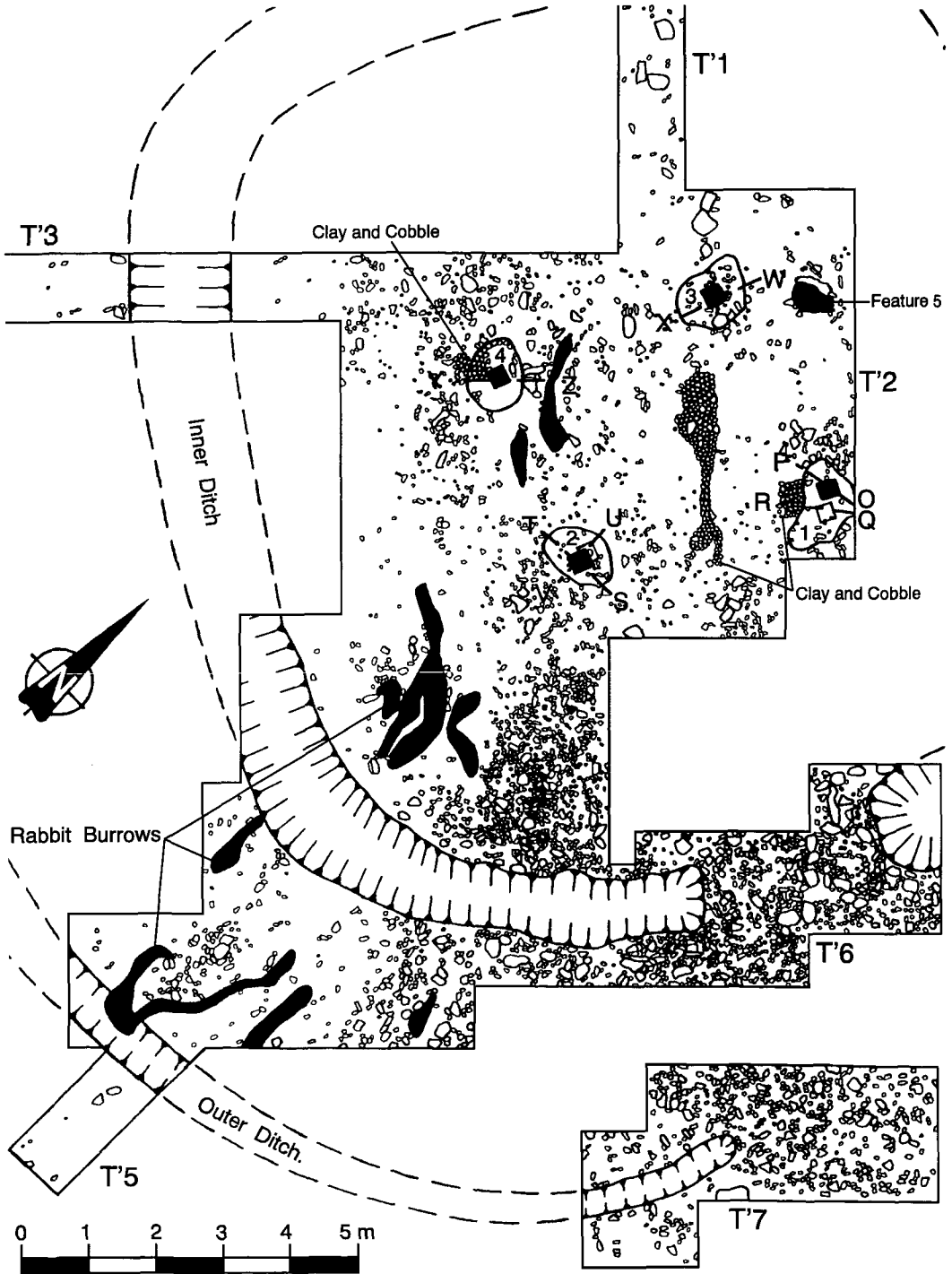
The tower itself was an irregular rectangle with four posts and sides of 3.45 m (west), 3.6 m (north), 3.7 m (east) and 3.1 m (south), slightly larger than recorded in 1973. The tower was set back 4.6 m from the inner ditch entrance, making it very slightly (0.25 m) south-east (forward) of centre within the internal area and, like all of the Gask towers except Greenloaning (which has its tower facing a few degrees north (clockwise) of the entrance), it was accurately orientated to face the ditch entrance break.

All four tower posts had already been located by St Joseph and his original designations were retained. The use of square-sectioned posts was confirmed, at least where the evidence had been preserved, but the post-pits were rather less regular in shape than the 1973 drawings would suggest. Two of the corner posts showed evidence for two structural periods, but the situation at the other two could not be determined. Detailed descriptions of these features follow below.

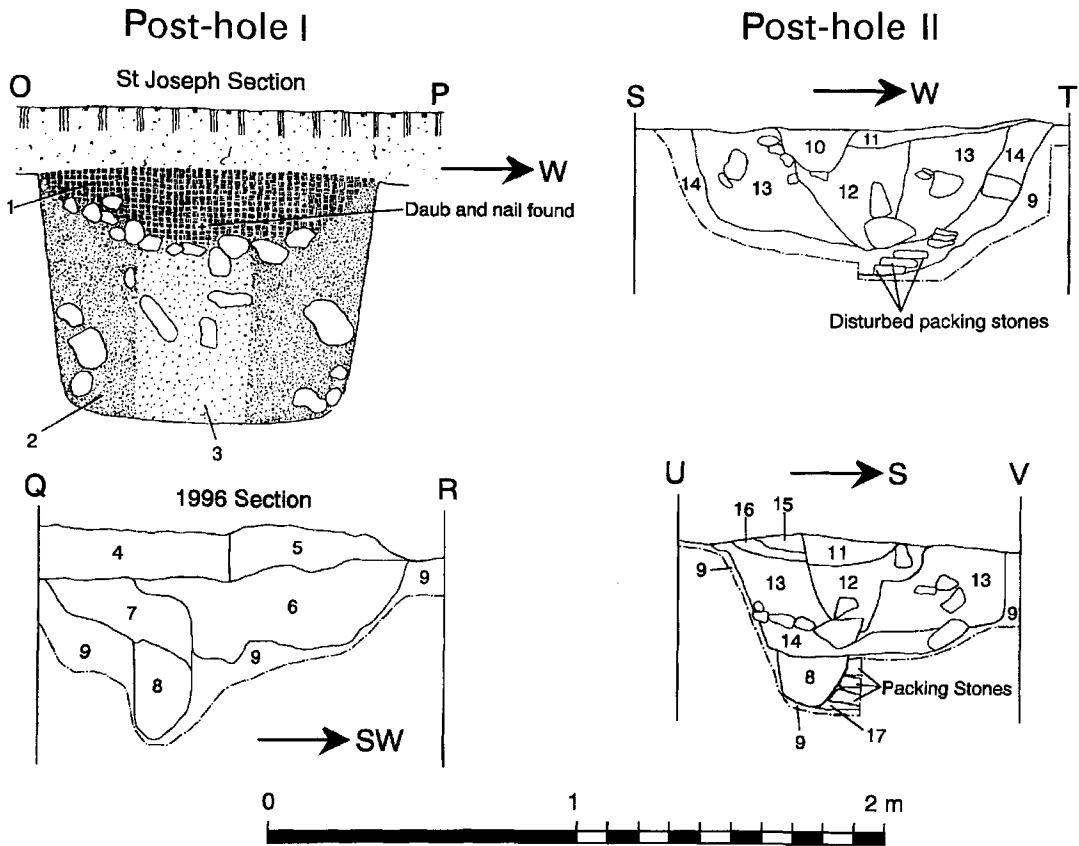
**Post-hole I** No sign whatever could be found of St Joseph's section (illus 8, O-P) through this feature, which indeed produced some of the least disturbed stratigraphy in the internal area. But the post-hole he reports was found, in a badly damaged state, and the impression gained was that the post-pipe had been emptied and the rest of the section simply extrapolated, an impression reinforced by the fact that the regular, near square, post-pit drawn in 1973 bears little resemblance to the pit's true profile. What survived was a near half rectangle of packing stones to the south of St Joseph's section line. The 1973 notes report that the post had been twisted out, and although this could not be confirmed in 1996, it had certainly been removed, since the chock stones were more badly disturbed than might be expected simply as the result of the previous excavation. St Joseph also reports cobbles at the bottom of his section, which were presumably either original stone bottoming or disturbed packing stones, but these do not now survive.

Because of the doubts over the 1973 results, a second section was cut in 1996, a few centimetres further north (illus 8, Q-R). This was designed to avoid the remains of the 1973 post (to prevent its total destruction) and sought only to investigate its setting. The results showed St Joseph's post to be set in an irregular oval post-pit (illus 7) 0.9 m wide, and otherwise filled with a brown loam (L'6), overlain by a layer of clay and cobble surfacing 0.14 m thick. The latter had been so heavily burned that the clay towards its top had been baked almost to the consistency of brick (illus 8, L'5).

The entire feature had, however, cut an earlier post-pit. This held a square-sectioned post (L'8) set 0.69 m into a brown stony loam (L'9) without packing stones. The exact size of the timber could not be confirmed and the section did not cross its widest point, but it was probably c 0.25 m wide. At some point this primary feature had been cut by a hollow (L'7), possibly to extract the post, and it was only when this



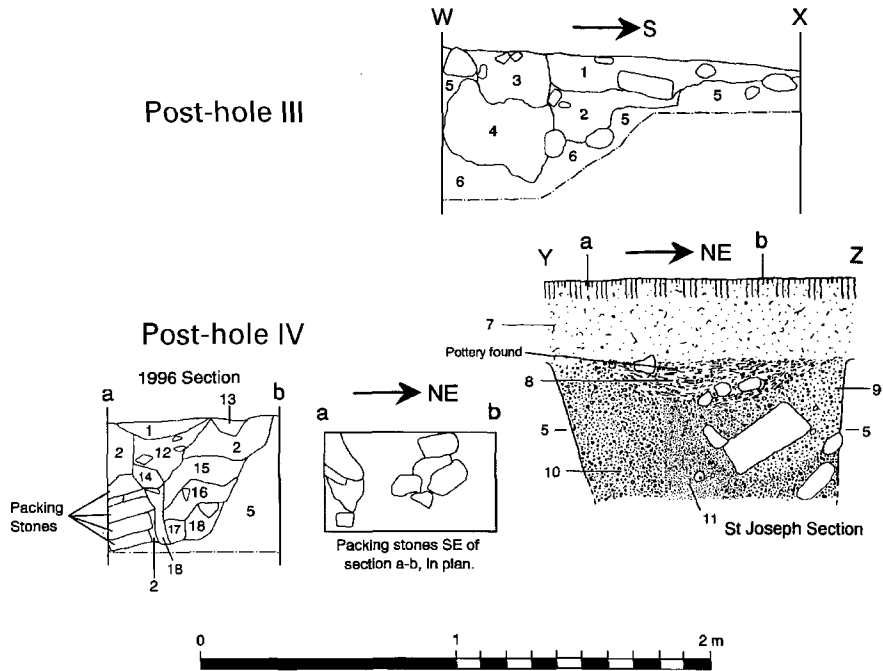
ILLUS 7 Shielhill South: central area  
The primary posts in post pits I and II are represented by open squares



ILLUS 8 Shielhill South: Post Hole I and II, Sections  
 1. Clay with ash. 2. Gravel. 3. Dark loose gravel. 4. Grey loam with gravel. 5. Burnt clay with cobbles. 6. Rich brown loam. 7. Dark brown loam with stones. 8. Loose dark brown loam. 9. Natural orange brown sand and gravel aggregate. 10. Brown loam. 11. Grey loam with charcoal. 12. Pink grey loam with gravel. 13. Brown sandy clay with stones. 14. Grey brown loam with gravel. 15. Burnt red sandy clay. 16. Burnt turf. 17. Rich brown sand

hollow had itself filled in, or been backfilled, that the secondary post-pit (L'6) was dug. The bottom of the primary post pipe, however, survived well, with a filling of loose but clean brown loam, and there was no burning associated with the destruction of this feature. Interestingly, after the secondary post was removed, the resulting hole had been neatly filled in, to the level of the clay and cobble surfacing, with a layer of gravelly grey loam (L'4), quite distinct from the plough soil above it, and since this contained no signs of burning, even at its top, this was presumably done after the rest of the area had been burnt. This material was initially suspected of being 1973 backfill, since St Joseph reported clay and ash, rather than loam, as sealing his post-pipe (L'1). But the material did appear to be outside the area disturbed by the earlier dig and was certainly well consolidated.

**Post-hole II (illus 8, S-T & U-V)** appeared quite undamaged by previous work. The feature was located exactly as indicated in the 1973 trench drawings, but its internal plan differed markedly. In particular, St Joseph set the post-pipe hard against the north-east side of the pit, whereas it was actually more or less central.



ILLUS 9 Shielhill South: Post-Holes III and IV, Sections

1. Loose dark grey loam with gravel. 2. Loose brown loam with gravel. 3. Pale orange/pink clay. 4. Air space (animal burrow). 5. Natural orange sand/gravel aggregate. 6. Natural, as 5, but disturbed by animal burrows.
7. Turf and topsoil. 8. Clayey turf. 9. Loose gravel. 10. Rammed gravel. 11. Earth and fine gravel. 12. Brown gravelly clay. 13. Grey gravelly clay. 14. Brown clay. 15. Orange clay. 16. Orange gravelly clay. 17. Sandy, grey gravelly clay. 18. Grey pea gravel

The feature consisted of a near circular pit, 0.95 m wide, containing a square sectioned post-pipe 0.23 m wide and 0.27 m deep. The latter had filled with pink/grey loam and with gravel, containing charcoal flecks (L'12), as had a slot dug in from the south-west, presumably to remove the post. The uppermost part of this filling (L'11) lacked the pink coloration and contained much more charcoal, in larger pieces. The rest of the pit had been filled with a mixture of brown sandy clay and gravel (L'13) and was bottomed with a thin layer of stones, on which the post itself had sat. Unlike the secondary post in PH I, the post's sides had not been supported by chocking stones. Above the bulk of the pit filling was a thin (30 mm) layer of burnt turf (L'16) overlain by a small lens of heavily burnt red sandy clay (L'15) identical to the clay from the internal surfacing found around PH I.

The feature had, however, been cut into an earlier post-pit. This consisted of a square-sectioned post-pipe, 0.25 m wide by 0.56 m deep, (L'8) which had been wedged against the north-east side of its pit by heavy stone packing. As in PH I, this had eventually been cut by a substantial hollow (L'14), possibly to dig out the post, and it was into this that the secondary post-pit had been dug.

**Post-hole III (illus 9, W-X)** was clearly identifiable in plan but had been largely destroyed by rabbit activity deeper down (ie below the level drawn in illus 7). Consequently, little more can be said other than that a square-sectioned post-pipe 0.25 m wide and of uncertain depth (at least 0.35 m) was set 0.3 m from the north-eastern end of a near rectangular pit, also of uncertain depth. The post-pipe was filled with loose, dark brown loam with gravel (L'2), overlain by a loose, dark grey loam (L'1); what survived of the post-pit was filled with a light orange/pink clay (L'3). The uppermost part of both the pit and, to a lesser extent, the

post-pipe showed signs of burning. The most severe rabbit damage took the form of a large burrow (L'4), with tunnels radiating from it, which lay 0.2 m below the top of the post-pit. Above this, the feature was in a good state of preservation, but little archaeology had survived below it and so no search could be made for evidence of an earlier post.

**Post-hole IV** was sectioned by St Joseph and the resulting disturbance was easily traceable. The 1973 section drawing (illus 9, Y-Z) proved to be roughly correct, although the 1996 observations (illus 9, a-b) revealed a number of discrepancies. For example, the original section had been dug 0.1 m further north than would have been ideal, and so caught only a corner of the square post, making it appear only 0.07 m across (a-b, L'18), although St Joseph drew it as being 0.3 m wide (Y-Z, L'11). Fortunately, however, most of the lowestpacking stones had survived and their pattern (illus 9, plan a-b) suggests that the timber would actually have been around 0.22 m square. This post had been set 0.5 m deep, towards the middle of an oval post-pit measuring 0.8 m wide by 1.08 m long.

St Joseph's section also shows a slot (Y-Z, L'9) cut into the north-east side of the post-pipe at a time when it had filled with 'earth and gravel', ie after the post had gone). His field notes, however, state that the post had been dug out by means of this hollow. The two records are clearly incompatible and the 1996 excavation team was particularly keen to resolve the matter since the possibility of a secondary pit was the only hint in the 1973 records that the site might have more than one phase. In fact, it is St Joseph's notes that are correct. The post had indeed been dug out by means of a pit from the north-east but, far from being cut into a backfilled post-pipe, the pit's fill layers had apparently slumped into the air space created as the post was removed (a-b, L's 15 and 16).

St Joseph recorded the rest of the post-pit as being packed with rammed gravel, although both his section drawing and notes do record one large packing stone as having been tilted over when the post was dug out. This stone could not be found in 1996, but our own section revealed a very different picture with heavy stone packing round the post-pipe, surviving well in the areas away from the demolition pit. There does, however, seem to have been an admixture of a fine pea gravel in the gaps between stones and what little remained of the post-pipe had also been filled with this material (L'18).

Interestingly, the uppermost layers of this post-pit showed no signs of burning which, given the situation elsewhere, suggests that it may have been a primary post. Certainly, there were no earlier features within the area of the section, and a secondary post-hole further to the north-west might explain why the south-west side of the tower appears so short (3.1 m). It had been agreed in advance that, in the interests of preservation, nothing more should be done here beyond re-opening the 1973 section, and so no further data could be sought. But there is one tenuous hint that a second post might be found. A hollow 0.2 m wide and up to 0.28 m deep (L'12) had been cut into the uppermost fill of the demolition pit (L'2). This had been filled with a brown gravelly clay and had itself been slightly delved into and covered by a thin layer of grey loam (L'1), which resembled the capping layers over the secondary posts in PH's I and II. This latter material may once have been turf and St Joseph, who describes it as such, found a fragment (now lost) of 'native pottery' in it. The layer appears as no more than a small lens on the section drawings, although St Joseph shows it as rather larger than it appeared in 1996, but it does in fact cover almost all of the remaining central parts of the post-pit. This made it impossible to look for any additional structures in plan as this could only have been done by removing it. But it was noteworthy that the outer fringes of the post-pit were overlain by patches of clay and gravel surfacing and that, as elsewhere, this was missing in those places where the possible capping layer was present. Moreover, this surfacing did show signs of burning, although of lower intensity than elsewhere. It is by no means impossible, therefore, that L'1 does indeed represent the capping for a secondary post, lying to the north-west of the excavated area, although admittedly the evidence is fragile.

**Stone-hole** Finally, St Joseph's plan shows a fifth feature, to the east of PH III (illus 2, F'5). This was located without difficulty in 1996 (illus 7, F'5), but proved to be no more than a loam and clay filled hollow where a heavier than usual stone had been pulled free from the subsoil by the plough.

## INTERPRETATION AND PARALLELS

Despite the paucity of dating evidence, there seems no reason to doubt St Joseph's interpretation of the site as a double-ditched Roman tower and, as such, it would form part of a group of four such towers at the southern end of the Gask system. To this account, we can now add evidence that the site had at least two structural periods; interestingly, Greenloaning, a fellow member of this four-tower group, has recently revealed a similar history (Woolliscroft & Hoffmann forthcoming), albeit with no signs of ditch re-cutting.

We might also, however, glean other structural pointers from the combined 1973 and 1996 data. For example, St Joseph reports finding daub and a nail (of unknown section) above the secondary PH I, whilst in 1996 significant quantities (39 pieces) of hazel charcoal, (the only species present) were recovered from the burnt surfacing around PH's I and II, along with a square sectioned nail. This combination would suggest that the tower had wattle and daub side cladding, to give what would otherwise have been an open framework a usable interior space. Given the climate and the tower's exposed position, such a provision would make a very great deal of sense.

The evidence from the tower interior also has implications for the rest of the site. Specifically, it had originally been thought that plough erosion might account for the extremely slight form of the ditches. But, although this may be to some extent true on the burn valley side in T<sup>8</sup>, the survival of the internal surfacing layer around the tower, albeit in a fragmentary state, would suggest that little has been lost of the original ground surface elsewhere and, thus, that the ditches were found in more or less their original form. If so, this would again parallel the results from Greenloaning, where the internal surfacing was in better condition, and the ditches were much the same size.

Despite many obvious parallels between Shielhill South and Greenloaning, however, these do on occasions break down. For example, Greenloaning produced no sign of wattle and daub despite its better preserved interior, whilst the tower at Shielhill was only about half the size of Greenloaning's, at c 11.9 sq m as opposed to c 23.3 sq m. The Shielhill tower is far more normal in size for the Gask system as a whole, however, whose mean tower area (excluding Greenloaning) is c 10.7 sq m. Indeed Greenloaning is the largest four-post Roman timber tower of which the writers are aware. The Greenloaning tower is also set much further back within the internal area, with its south-western corner post little more than 1 m from the internal ditch.

There are also differences in the two sites' internal surfacing layers which may have wider implications. The surfacing at Shielhill South was only found inside and immediately around the tower, while at Greenloaning it covered the entire internal area. As the Shielhill surface is poorly preserved, this could be an accident of survival. But, since there is no obstruction and no greater depth of soil around the tower that might have differentially protected this particular area from the plough, we might well be looking at an original effect. If so, the remainder of the internal enclosure would have been unsurfaced and, in the absence of palisading or other structures, apparently unused.

Given the fact that Shielhill South contained a smaller tower placed more centrally within a slightly larger enclosure than Greenloaning (diameter 13.3 m as opposed to 12.5 m), there might, however, just have been room for the sort of internal turf rampart found further north on the towers on the Gask Ridge itself. This might at first sight seem unlikely, for although the ridge-top towers only have single ditches, they are only slightly smaller in external diameter than the double-ditched group and would thus have had far more internal area available to host such ramparts. This is to a certain extent true, and the average tower size on the ridge is also rather



smaller (9.57 sq m as opposed to 15.84 sq m for the southern group (13.35 sq m without Greenloaning), which frees up more internal space. But the ridge towers have far more substantial ditches, sometimes as much as 4 m across, which cut their usable internal diameters to an average of just 15 m, with the smallest, Witch Knowe, only 0.1 m wider than Shielhill South at 13.4 m (Christison 1901, 26). Shielhill would, therefore, almost certainly have had room for such a feature, albeit only just.

The best that can be said though is that no firm evidence for a rampart was found. But such negative evidence may not be decisive since the presence of plough damage severe enough to ruin a baked clay and cobble surface would make the survival of turf work unlikely. Turf fragments were found in plenty in the inner ditch (and, interestingly, not in the outer), but again these may have been ploughed in from the normal ground surface and so, in the absence of additional evidence, the matter is probably best left open.

The site's occupation history is ambiguous, but a number of points can be made. Firstly, as ever on the Gask towers, the evidence for an absolute date is meagre. Until now, only two dated finds have ever been published from the tower chain: a fragment of Flavian mortarium from Gask House (Robertson 1974, 20f) and a piece of less certainly Flavian pot from Westerton (Hanson & Friell 1995, 506) and even these are less helpful than they might have been since both were from ditch backfill and so effectively unstratified. The fragment of glass from Shielhill South came from an even less helpful context. But the site does at least add some small additional support for the traditional Flavian date, and is the first of the double-ditched towers to do so. It is to be regretted that St Joseph's 'native pottery' from PH IV has gone missing, since that was recovered from a stratified deposit.

Rather more can be said about the site's structural sequence. As at Greenloaning there are at least two structural periods, but the relationship between them requires analysis. There is, for example, the question of whether the tower re-build and ditch re-cut represent two separate occupations or just one, of sufficient length for refurbishment to become necessary. In particular, we need to examine the possibility that the towers, like the forts in this area, were in use in both the Flavian and Antonine periods.

At Greenloaning it was possible to say that there appeared to be no prolonged gap between periods. There were no obvious abandonment deposits, and the internal surfacing, which had been damaged by the removal of the primary posts, was neatly repaired and retained in use after the secondary tower had been built. The much poorer state of preservation at Shielhill South rules out such confidence, and the best that can be said is that the internal surfacing was laid over the post-pits of the secondary tower, right up to the timbers themselves, with no underlying abandonment deposits. But no evidence for repairs had survived and, indeed, there can be no guarantee that surfacing had even been present in the primary phase.

The fact that the ditches had filled almost completely before being re-cut might be taken to suggest a significant gap between periods, but we have already seen why this need not be the case: given their small size and the friable nature of the sub-soil, they may have filled in a matter of years, rather than decades. There is in any case no compelling evidence to relate the tower re-build to the ditch re-cut, natural as it may be to assume a connection. Both may simply have been in-service maintenance chores and need not have been done together.

There are also two positive reasons to deny Antonine activity on the site. The first is the simple fact that no Antonine material has ever been found on the Gask system outside the forts, although, given the weakness of the Flavian evidence, this is hardly an irresistible argument. Far more compelling, however, and in the writers' opinion conclusive, is the positioning of the secondary tower posts. For at both Shielhill South and Greenloaning the posts from the two

tower periods are in almost exactly the same positions. This could, of course, be coincidence. An Antonine building party could simply have cleared out a still visible Flavian ditch system and, by pure chance, erected its own tower in such a way as to re-open the original post-pits. But the chances of this happening twice seem remote, especially on these two sites. For Greenloaning is, as we have said, abnormally large and in a somewhat unusual, off-centre position within its ditches, yet the re-build follows both its size and location faithfully, and there seems equally no reason to doubt that the Shielhill re-build followed the original's size and (less marked) off-centre position even though it may have corrected its odd shape. Yet how else but by coincidence could an Antonine work detail have located the posts of a timber structure which, by then, had been abandoned for fifty or more years? It thus seems most probable that both periods are Flavian and that the secondary tower was built as a direct replacement for the primary one, either immediately or after only a short intermission.

This leaves the matter of the likely length of the tower's occupation. There is no direct evidence from the site, since no occupation deposits have survived. Moreover, the paucity of finds is such a universal feature of Roman timber tower sites that it might reflect military manpower practice, rather than length of occupation. For example, Shielhill South is only 20 minutes' walk from the fort at Ardoch (and about the same from the fortlet of Kaims Castle) so that the tower crews could easily have been deployed on a shift basis while continuing to sleep in the forts. If so, then nobody would have lived in the towers and there would be little reason for much pottery, glassware or coinage to have been present.

Less direct evidence, however, might suggest prolonged occupation. Assuming that the primary tower served out a reasonable working life we might expect a structure set on such substantial posts to have lasted for quite some time, with five to ten years seeming far from unreasonable even if less than suitable timber such as unseasoned alder had been used (Hanson 1978, 296). There is always, however, the possibility that the tower did not survive so long if, for example, the Gask was subjected to the sort of military/administrative vacillation that might have resulted in its being built, abandoned and then re-commissioned within the Flavian period and after a much shorter primary life span.

The length of the second occupation is still more uncertain as there are again no occupation deposits. There is evidence from elsewhere that the end of the system may have been both sudden and unexpected: because the fortlet at Midgate (Woolliscroft 1993, 307) seems to have been abandoned part-way through a ditch re-cut, something that would surely not have been started if the garrison had known that they were shortly to leave. It would, thus, have been perfectly possible for Shielhill South to have been demolished and deserted almost as soon as it was re-built. But there is one possible hint that the life of the second period may actually have been quite prolonged and there is even tenuous evidence for a third structural period. For both L'7 in PH I and L'14 in PH II (illus 8) have clearly been cut into the primary post-pipes, before being cut in turn by the secondary post-pits. The most obvious explanation might be to argue that these layers represent the demolition pits by which the primary posts were removed and the overall shape of L'7 does look compatible with this scenario. But there are problems with this explanation: in both post-pits, the stumps of the post-pipes beneath these layers have a uniform but different fill, while the feature marked by L'14 seems much too large for the purpose. It would thus seem more probable that the primary posts had already gone when these features were formed. Nor can it be argued that these layers represent deposition while the secondary post-pits lay open awaiting their posts, for section S-T (illus 8) leaves no doubt that the L'14 pit had been filled to the top when the secondary post-pit (L'13) was dug. Interestingly, a similar feature was found in PH'1 at Greenloaning, where it was tentatively interpreted as a sign that the secondary post may have

needed re-setting for some reason, either because of a mistake during construction, or during running maintenance over the tower's service life. The Greenloaning remains were, however, very slight and similar features could easily have been destroyed altogether in the other surviving post-holes, which means that the presence of such features in both of the only two Shielhill South post-holes to have yielded significant stratigraphy might well be significant. For unless the Roman military builders were so incompetent that two posts on the same tower had required immediate re-setting, we are left with only two other options: either the secondary occupation was long enough for the tower to require significant maintenance, or we have a third tower period and thus, presumably, a still longer life span for the site.

Finally, the neatness with which the site was cleared at the end of the final tower period is itself noteworthy. In particular, it seems odd that the Romans should have taken the trouble to fill in the slight depressions left by the final period posts if they were planning immediate withdrawal. It is tempting to wonder whether there might have been some intention (whether acted upon or not) to maintain the site still further, in some role that no longer required a tower.

## CONCLUSIONS

The discovery of a multi-period tower at Greenloaning in 1995 (Woolliscroft & Hoffmann 1997), while interesting, need not have had wider significance. There are numerous reasons why an individual site might have needed re-building in service, which would carry no connotations for the system as a whole. But the appearance of an almost identical sequence at Shielhill South brings a rather different perspective. Accidental damage, poor construction, or any of a number of other scenarios might be perfectly plausible for one site but, with the exception of wide-ranging storm damage, they begin to sound rather more fanciful for two. The alternatives are that the Gask towers either had two or more periods of Flavian use: or, perhaps more probably, that the Gask System lasted rather longer than has previously been thought (*inter alia* Breeze 1982, ch 4 and Hoblely 1989), possibly well over a decade; or, at the very least, that it lasted the full currently envisaged span of the Flavian occupation of the area from c 80 to 86/7 (Hoblely 1989) and was thus in use at the same time as the so-called Glen blocking line of forts to the north, a scenario which has often been seen as unlikely (Breeze & Dobson 1976, 127).

Whatever the true story, however, there remains one additional problem. Both Greenloaning and Shielhill South belong to the same double-ditched southern tower group. This may be irrelevant since the double- and single-ditched towers could simply be the result of different construction teams building slightly different variations on the same basic theme. But this is not certain as yet and so we cannot guarantee that the two groups shared exactly the same history. For example, it is perfectly conceivable that the double-ditched sites might have come into use earlier or stayed in use longer than the rest of the line. This means that even the discovery of multi-period towers on all of the southern group sites would still not entitle us to extrapolate the same pattern for the rest of the system. It is to be hoped, therefore, that at least one of the single-ditched towers further north on the system (the further north the better) will be excavated in the near future with the results from these southern sites in mind.

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