bank enclosing a small rectangular area; while superficially similar in form to the medieval peasant houses, it is crisper as an earthwork, slightly larger than the houses and shows no evidence of doorways.

A square enclosure at approximately SE 8585 6482 (not plotted accurately for this investigation) survived as an earthwork in the centre of Ings Meadow until the onset of modern ploughing in the 1960s. This enclosure, slightly more than twice the area of that already described, was defined by a bank and ditch and had an entrance on the south side. Unlike the pen described above, it is not depicted on historic Ordnance Survey maps, possibly because it obviously did not represent a building, but it is clearly visible on earlier aerial photographs, where it can be seen to overlie the ridge and furrow of Field 1.

The identification of the third possible pen, at the north-eastern corner of the extended curia of the North Manor, is more open to question, although it has been identified as such previously (Hurst 1984, fig 4; Beresford and Hurst 1990, 47). Perception of the earthwork is confused somewhat by Boundary 12, the 18th-century field boundary dividing Ings Meadow from Cow Pasture (see Figure 25), which was laid out following the eastern boundary of the manorial curia. Within the curia lie vestigial traces of a rectangular enclosure or yard. Adjoining this on the east, that is outside the extended curia and encroaching well into Toft 22, but of approximately equal length to the 'yard', is the rectangular earthwork previously interpreted as a pen. This interpretation was reached primarily because at 29m long by at least 12m wide, the structure was several metres wider than any other recognised building and seemed too broad to roof. Were it not that it seems to some extent to relate spatially to the 'yard' within the curia, it could be added that its siting hints that it could post-date the demise of the North Manor and therefore be part of the late farm complex in Tofts 23/24. As such, although the original observation about the breadth of the building still holds good and points towards the structure being a pen, it would perhaps be unwise categorically to rule it out as an exceptionally large building, such as a stable block associated with the manor or a barn associated with the later farmstead.

5.12 19th-century and later remains

Wharram Percy Cottages

The basic structure of the single-storey south range of the 18th-century courtyard farm (described in Section 5.11) was retained when it was raised in brick and converted to a block of three two-storey cottages at some point between 1845 and 1851, to provide accommodation for farm labourers. The block was initially called Low House, to distinguish it from the High House at Wharram Percy Farm, but had become known as Wharram Percy Cottages by 1888 (Ordnance Survey 1854; 1890). Current Ordnance Survey maps refer to the cottages in the singular, but the earlier name has been retained throughout this report. Doorways were variously retained, blocked or inserted, and windows were inserted, to serve the subdivided interior. Every attempt was made to present a symmetrical and ornate outward appearance, but this was to some extent compromised by the incorporation of the earlier building. The red pantile roof is probably a modification dating to the earlier 20th century. Those internal fittings that predate the use of the building as a 'diggers' hostel' (primarily

cast-iron cooking 'ranges') span the late-19th to earlier 20th centuries. At the time of the fieldwork in 2002, the roof structure and internal plasterwork were deteriorating. There is a single storey outbuilding immediately to the east of the cottages; this presumably housed toilets and wash rooms, but was not examined.

The Malton and Driffield Junction Railway

The history and physical remains of the railway, whose last passenger train ran in 1960, have been thoroughly researched (Burton 1997). Although the line was peripheral to the medieval village, its construction had some impact upon the site. A detailed survey of the proposed course of the line made in 1845 indicates that in the event, the line was constructed only just within the predicted 'limits of deviation', the entrance to Burdale Tunnel lying some 50m west of the point originally envisaged (Bampton and Dykes 1845, plan 5). The tunnel was constructed at great expense between 1847 and 1853; its entrances were bricked up when the track was dismantled. The digging of the cutting that forms the approach to the tunnel necessitated the diversion of the Wharram stream and the destruction of any earlier remains which may have existed on the valley floor, including the northern end of Road 2B. However, as described in Section 5.9, the site of the more northerly watermill was probably not in fact affected, as has been suspected previously (Beresford and Hurst 1990, 67). The 1845 map confirms that what at first might be taken as the last natural section of the channel of the Wharram stream before it reaches the railway cutting is in fact an artificial diversion. A short stretch of the original natural channel was apparently filled in and can now be traced as a slightly sinuous depression no more than 0.2m deep. The addition of a timber bridge over the track also involved the construction of an earthen approach ramp, which encroaches into the Guardianship Area. Only those earthworks to the west of the cutting were recorded in detail by English Heritage and these primarily comprise a series of large dumps of spoil from either the adjacent cutting or the tunnel. To the east of the cutting and to the north of the extant timber bridge, a series of long 'finger dumps' up to c 1.5m deep suggest that most of the spoil was removed from the tunnel in hand-pushed or horsedrawn tram trolleys.

As noted by the earlier survey, the First Edition 6-inch scale map surveyed in 1850-1 marks the position of a 'pumping engine' in Nut Wood, close to the eastern side of the stream (Ordnance Survey 1854). Since it is not marked on the 25-inch scale map surveyed in 1888, it was evidently in operation for a fairly brief period, which can probably be equated to the construction of the tunnel (Ordnance Survey 1890). The navvies found that the band of Jurassic clay had turned the overlying layer of chalk, through which the tunnel was dug, into a natural reservoir (as on the south side of Drue Dale). The dumping of spoil from the tunnel in Nut Wood would only have exacerbated the drainage problem and, despite the cutting of a series of narrow drainage channels, the ground on the valley side remains boggy. The pumping engine, which seems to have drawn water both from a deep sump and from one of the surface drainage channels, appears to have been intended as a temporary solution to the problem while construction was under way. Although further documentary research would be necessary to confirm the theory, it is even possible that the planting of Tunnel

Plantation was a response to the problem, for the beech trees, once mature, would have taken up a considerable quantity of ground water.

A broad, circular, water-filled pit is probably the sump from which the pump drew water. Although the current depth of the pit is uncertain, a sizeable dump of spoil a short distance to the north-east seems likely to represent spoil from its excavation, hinting that it may originally have been several metres deep. The construction of a pumping engine would have been expensive and this would seem to imply that there was a considerable volume of water to remove, consistent with what might be generated by such a well. Nothing remains of the machinery of the pumping engine, but a scatter of large, dressed sandstone blocks may represent the disassembled remains of a stone bed supporting the engine. They appear to have been re-used and so perhaps originally formed part of some other major structure.

Sheep washes

At some point between 1851 and 1888, a sheepwash was built into the middle of the medieval fishpond dam (Ordnance Survey 1854; 1890). The sheepwash was extended at some point before 1909, but this did not involved any change to the shape and depth of the pond (Ordnance Survey 1910). The site of the sheepwash was visible as an earthwork in 1954, but it was not reconstructed following the excavation of the dam (see Figure 5).

The 19th-century sheep wash was presumably put out of use by the construction of a concrete sheep-dip on the western edge of Nut Wood, fed by a channel originating at a concrete sluice next to the 1935 pumping station, some 50m upstream, which is now breaking up into pieces. For much of its length, the channel represents a recut of a broader pre-existing ditch, shown as a watercourse on historic maps from the 1836 estate map onwards (Dykes 1836). Although there is nothing strictly diagnostic in either the form or the condition of the earthwork, the fact that the upcast bank on the west side of the shallow ditch carries a hedgeline hints that the feature may have originated as a post-medieval field boundary. As discussed in Section 5.9, it is possible that the valley floor was once boggy and that the ditch represents an 18th-century attempt to improve the land. Beresford and Hurst (1990, 67) have dated the construction of the concrete sheep dip to 'c 1927', but the evidence for this date is uncertain. Although it was still in regular use in 1953, the rapid growth of the surrounding Norwegian Spruce trees would have made access to the sheep dip progressively more difficult (Beresford and Hurst 1990, fig 19).

The pumping station

In the plantation to the north-east of Wharram Percy Cottages stands the derelict remains of a brick-built shed built by Norton Rural District Council in 1935 to house a pumping station designed to transfer water from the springs to Wharram Percy Farm (Beresford and Hurst 1990, 67). It has lain derelict since the mid-1980s. Water was drawn off from a small cistern sited at the southernmost spring and conducted along a cast iron pipe, via a manhole at the southern end of the pond, to the pumping station, where a water-powered pump moved it onwards (information from P Hoddy, Estate Manager).

6. SUMMARY AND DISCUSSION

A number of very important advances in the understanding of Wharram Percy arise from the English Heritage investigation of the field remains carried out in 2002. This said, major issues remain unresolved and the history of the Wharram Research Project amply demonstrates that many of the 'conclusions' presented in this report will in time come to be recognised as no more than stepping-stones to other, possibly very different, 'conclusions'. Collectively, the results of the new research can be said to introduce a greater degree of dynamic change into the picture of the landscape that can be inferred from the earthwork traces, a characteristic already clearly revealed at a smaller scale by the excavations of the individual elements of the site. Although this 'broad brush' conclusion is perhaps the most important outcome of the research, it is perhaps useful to itemise the key findings:

• The demonstration that many of the remains best preserved as earthworks relate – predictably - to the later stages of the village's existence.

• Recognition of an eventual encroachment onto what had been areas of public space, including tracks and the village green, especially in the latest stages of the village's existence.

 Development of the theory that some, perhaps most, of the village was laid out over earlier arable fields, whose date remains uncertain, but which may be associated with the earliest occupation of the village.

 Detailed re-appraisal of the pattern of roads and tracks and the consequent conclusion that patterns of movement through the village changed significantly over time, both reflecting and helping to shape changes in its form.

Clarification of the form of the *curia* of the South Manor and recognition of a possible large building platform which may have been a component of the manorial complex, although other possibilities must be considered.

 Addition of chronological depth to the understanding of the development of the North Manor, which seems to support its identification as the property of the Percy family, and reinterpretation of the form of individual buildings.

 Support for Stuart Wrathmell's theory that the planning of the village did not take place in a single episode and the tentative proposal of an overall sequence of development, with West Row (south) perhaps representing the earliest part of the planned village, perhaps on the site of an earlier, less regimented settlement.

• Recognition of what seems to have been a more regular pattern of tofts in West Row (south) than has previously been suspected and the consequent conclusion that the excavation of Area 6 may not have dealt with a single toft, as believed at the time.

 Clarification of the form and extent of East Row, leading to the conclusion that the plots were basically regular but did not continue as far south as the church, as previously suggested.

· Identification of the remains of numerous additional buildings throughout the village, making previous reconstruction paintings appear too sparse.

· Identification of two livestock pounds and numerous buildings on the village green, suggesting that the area was more intensively used than previously recognised.

 Identification of between three and five late courtyard farms, two or three with large farmhouses associated with them, which may collectively be interpreted as the final occupation of the medieval village.

• Revision of the assumption that the 'lynchet bank' can be treated as a single entity and rejection of the theory that any of it is of prehistoric origin.

• Rejection of the theory that the '*milndam*' documented in 1368 must have been destroyed by the railway cutting and the identification of what may be the actual documented dam, along with another possible example, for which there is no documentary evidence.

• The interpretation of the linear earthwork on the eastern side of the Wharram stream as a boundary possibly defining an area of managed woodland.

• The recognition of the physical remains of the field boundaries associated with the 18th-century farm and the explicit confirmation that post-medieval land-use has shaped the form and condition of what can be seen of the medieval village.

Contribution of new ideas to the debate surrounding the setting of the church.

The theme of continuity has lain at the heart of the understanding of Wharram Percy as presented in most previous discussions of the site. Yet, as stated in Section 4, the current theoretical expectation that a landscape's development will exhibit as much change as continuity has inevitably coloured the interpretations presented in this report. For example, it could now be argued that the evidence points to re-use, rather than continuity of use, of features dating to the late Iron Age and Romano-British landscape - if that can indeed be reduced to a single entity. Several features previously interpreted as being of that date, including Boundary 4, the northern boundary of the curia of the South Manor and Track 5b, have been re-assigned to later periods (see Beresford and Hurst 1990, fig 53). It now appears more likely that only part of a single field boundary (the northern part of Boundary 3) and the lines of the major through-routes were retained and so influenced the pattern of the medieval landscape; these may be regarded as exceptions to the rule. The new earthwork survey, coupled with the new geophysical survey, shows that within the early field boundaries (and in some cases transgressing them completely), there were numerous changes to the direction and extent of the ploughing. Parts of the established Romano-British throughroutes (Road 1B, 2A 3A) were retained, but most other sections, especially the topographically

awkward Road 3D, represent drastic modifications prompted by new developments. The evidence in support of the existence of Road 2C, prior to the time when East Row was laid out, is far from conclusive, but, if proven, this would represent another major shift away from the Romano-British or early medieval pattern, one that owed nothing to the influence of earlier features in the landscape.

Likewise, the founding of the village itself cannot be seen, on present evidence, as the inevitable consequence of a long-term evolutionary trajectory of land-use, but rather as an abrupt and still essentially unexplained new development. While documentary evidence suggests that the pattern of land holding recorded in Domesday Book remained basically unchanged until both manors were acquired by the Percy family in 1254, there are few clues as to how the pre-Conquest pattern came about. The intensity of the Middle and Late Saxon activity revealed by excavation in Area 10, spanning the period from the mid-7th century into the 10th century, seems to support the theory of an early medieval focus, of high-status, towards the northern end of West Row (south) or towards the southern end of West Row (north), depending on the interpretation of the village's subsequent development, but at any rate within what was to become the curia of the South Manor (Beresford and Hurst 1990, 77-78 and fig 54). Similarly, excavation has revealed a concentration of highstatus material on what was to become the site of the North Manor, perhaps suggesting that the seeds of nucleation had been sown. Excavation of Area 6 produced insufficient evidence to suggest that there was any direct precursor of West Row (south) as a formally structured settlement at that date, but a few 8th- and 9th-century artefacts, including a fragment of a stone cross, were present. A bank and ditch of similar date was revealed on the line of the frontage of the later row. This was initially interpreted as merely a boundary dividing off the arable fields on the plateau from the pasture in the valley, but was later thought to have defined a second religious enclosure, or perhaps the only one in existence at that date (Milne 1979b, 46; Hurst 1985, 88-89). The many slots and postholes, many of which could potentially have been interpreted as traces of Saxon or Anglo-Scandinavian buildings, were all consigned to the 11th and 12th centuries, but it was acknowledged that few of these features contained datable material.

To this inconclusive picture can be added the evidence from the new survey. It has been suggested in Section 5.6, largely on the evidence of the extent of the early cultivation ridges, that West Row (south) represents the earliest planned element of the village, as first proposed early in the Wharram Research Project (Hurst 1971, fig 25). If the inference discussed in Section 5.6 is correct, that West Row (south) underlies the South Manor, this would seem to offer a *terminus ante quem* of about 1175 for the establishment of West Row (south). Furthermore, the less regular appearance of West Row (south) overall hints at an even earlier, less formal structure and perhaps at organic development, implying that the planned row may have been imposed upon an earlier unplanned (or, at least, less carefully planned) nucleated settlement of broadly similar size. In short, an unplanned but nucleated settlement may have come into existence before the date initially inferred from the excavated evidence, perhaps after all in the late Saxon or Anglo-Scandinavian period, as has long been suspected. In this putative early form, whether or not there was really a religious enclosure



ENGLISH HERITAGE

Figure 27. Schematic plans of the conjectural development of the village

1. Earliest nucleated settlement (?late Saxon period)

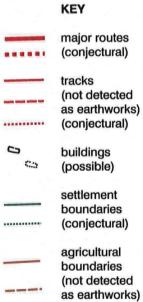
2. Establishment of an informal row; North Manor laid out over fields (?late Saxon/ Anglo-Scandinavian period)

3. Creation of formal rows; development of manors (?late 12th century)

4. Addition of East Row (?mid 13th century)

5. Final settlement (late 15th century)

6. The improvement farm (late 18th century)



settlement boundaries

(conjectural)

boundaries (not detected as earthworks) (conjectural)

ENGLISH HERITAGE

Figure 27 Schematic plans of the conjectural development of the village

WHARRAM PERCY 100

..........

on the plateau, the 10th-century church would seem to have been less remote from the settlement. Furthermore, the choice of location for the village could be described more justifiably as relating closely to the fresh water source.

The findings at Wharram Percy have contributed to a number of important discussions of later medieval domestic architecture and settlement units (Hurst 1971, 104-115; Wrathmell 1989, 41-45; Gardiner 2000). As noted above, the earthwork remains of the buildings in the individual tofts necessarily reflect most clearly their latest disposition prior to abandonment. Figure 17 offers a striking picture of how few of the buildings surviving as earthworks are similar in size to the few excavated examples which have underpinned so many detailed discussions. However, since the desertion of the village was evidently a prolonged and piecemeal process, the earthworks do not offer a straightforward 'snap-shot', so any discussion of the form of individual tofts or buildings runs the risk of not comparing like with like. The exception to this rule is perhaps the small number of courtyard farms which may be equated with those from which the last tenants were forcibly evicted in about 1500, discussed further below, although even these exhibit idiosyncrasies attributable to their differing developments. Generally, as noted previously, there seems to be a pattern on the western plateau of buildings aligned end-on to the frontage, perhaps replacing an earlier norm of buildings placed side-on (Hurst 1971, 122-4; Wrathmell 1989, 41-45). In East Row, this supposed general re-alignment does not appear to have taken place, and since the topography does not constitute an absolute determinant, this may indicate that the row went out of use at a relatively early date. The clearest patterning is to be seen in West Row (north), this regularity apparently in part reflecting the uniformity of their original layout, which perhaps dates to 1175, as discussed below. Toft 15 is the only one in the row that does not have at least one long building aligned at right angles to the frontage, perhaps reflecting its early abandonment and the subsequent development of Track 19. In Tofts 15 and 17, boundaries can be traced dividing the tofts into two equal halves, front and back. This same pattern of division can be inferred from the placement of the westernmost buildings in Tofts 14, 16 and 20, which seem to have either abutted or encroached beyond the boundary. Tripartite internal divisions are detectable in most of the longer buildings, though it seems improbable that all were domestic in function. It seems likely that one of these units, possibly that in Tofts 16 or 17, was occupied right up until the final desertion of the village.

Though the possibility had been raised before (for example, Hurst 1971, fig 25), Stuart Wrathmell's (1989) reasoned argument that the structure of the village as a whole could not represent the outcome of a single episode of planning represents a theoretical shift of considerable importance in understanding the development of the village. Acceptance of this possibility underpins the whole analysis of the settlement structure presented in this report, for it allows the differing characters of individual rows to be appreciated and a dynamic process of development to be inferred. This process is presented graphically in Figure 27, but the straightforward sequence of major changes is undoubtedly misleading, for organic development was almost certainly operating constantly on a smaller scale. Analysis of the plan suggests that West Row (north), the most strictly-planned row, was laid out in relation to the *curia* of the South Manor, therefore perhaps in about 1175, rather than in the 13th

century as suggested previously (Hurst 1971, fig 25). Its regularity appears deliberately to match that of the rectangular manorial curia. If, as discussed below, the expansion of the North Manor occurred at about the time that the Percy family effectively acquired control over the village c 1254, it can be inferred that North Row was already in existence by that date, for the expansion encroached onto the westernmost toft of the row. The creation of West Row (north) can perhaps be seen as an attempt by the Chamberlain family to use architectural design and civic planning as a vehicle for displaying their power and wealth essentially showing off to the minor landholder. The expansion of the North Manor may have been the Percy family's eventual riposte. Where East Row fits into this sequence of growth remains uncertain. If the suggestion of the existence of Road 2C is correct, the fact that this was diverted when the row was laid out suggests a considerable amount of will to make the change, although perhaps on the part of the peasants themselves rather than the landlord (Dyer 1985, 32). However, the determination is slightly at odds with the lack of care evident in the planning of the individual plots, which are very irregular in width as well as (more understandably) in length. The row appears to overlie strip fields of conventional ridge and furrow, but these are not developed to any great degree. Few of the plots seem to have seen the intensity of use that the rows on the western plateau experienced, so it seems likely that the row may have been laid out fairly late and gone out of use quite rapidly. It is possible that the whole valley side defined by the churchyard, West Row (north) and North Row was originally treated as a green, making best use of a steep and boggy area that was not wellsuited either to agriculture or to settlement. If East Row was a planned encroachment onto the original expanse, this might help to account for the eventual triangular form of the green and the awkwardness of the through-route from north to south. Collectively, later episodes of planning seem to have shifted the focus of the village northwards, away from its early core, but it is evident that some settlement continued in West Row (south) up until the final desertion of the village.

The almost complete disregard for the Wharram stream is a striking aspect of the village's form, the more so in the context of the oft-mentioned rarity of springs on the Wolds. In a local context, a string of medieval villages from Duggleby eastward are typical in straddling the course of the Gypsey Race. By contrast, at Wharram the newly-identified Track 18 provides the only tangible link between the main area of domestic settlement and one of the largest springs, the cleanest source of drinking water. The wide interval between the rear of the crofts of East Row and the watercourse, especially given that space to lay out this row was evidently at a premium, exemplifies the otherwise very curious absence of any obvious relationship between the village and the stream. The large number of water mills along the course of the Wharram stream in Wharram le Street parish seems to confirm that one of the stream's most valued assets may have been the power source it represented (information from Stuart Wrathmell). Nevertheless, this observation does not constitute an explanation for the dislocation between East Row and the Wharram stream, since there is no evidence for a millpond at this point.

Most previous attempts to marry the physical remains with the documentary evidence have concluded that the North Manor must represent that held by the Percy family, but the most

recent discussion has been more cautious, pointing to the poor understanding of the development of the North Manor (Roffe 2000, 3). At face value, the remarkable preservation of the North Manor suggests that it remained in use well after the destruction of the camera of the South Manor in the mid-13th century. The newly recognised evidence for the expansion of the complex also seems to fit well with the theory that this was the property of the Percy family. The context for this expansion may well be the period between the mid-13th and the mid-14th centuries, when the family was evidently investing considerably in their holdings at Wharram. The acquisition by Peter de Percy of the lordship of the whole townshipin 1254 is perhaps the most obvious specific occasion. By 1368, following the Black Death and the consequent death of Walter de Heslerton, although the manor house was still standing, it was in need of extensive repairs which made it worthless and the surveys of 1435 and 1458 refer only to the site of the manor. Yet the fact that Field 2 did not impinge on the manorial curia, though it encroached onto Road 1B and Track 1, suggests that the former manor retained some spatial integrity after its demise, perhaps through re-occupation by one of the late courtyard farms, as discussed below. It has been suggested that the former barn may have been converted to a sheephouse, following an observation made previously (Beresford and Hurst 1990, 47). If so, this building may have outlived the rest of the manor.

The documentary reference to the eviction of four families at the very end of the 15th century or the start of the 16th has long been regarded as an unimpeachable indication of the size of the village immediately prior to its desertion and the date of that desertion. However, as noted in Section 4, more prolonged and less partial consideration of the artefactual evidence, which includes Cistercian Ware, a jetton and other material of 16th-century date, seems to point to some degree of occupation, rather than mere activity, after the date suggested by the documentary source (information from Ann Clark). On the other hand, while it is notoriously difficult to marry specific items of documentary evidence with physical remains on the ground, the new investigation does suggest the existence of four, or possibly five, distinct late courtyard farms, which it is tempting to equate with the four documented farms. Those that can be identified with some confidence are: the farmyard in Tofts 2 and 3, with Building 5 as the farmhouse; that in the south-east corner of the former curia of the North Manor, with Building 19 or Building 23 as the farmhouse; that in Tofts 23/24, with Building 19 (or less probably Building 3) as a farmhouse; that in Toft 31, and perhaps Toft 32, comprising Building 3, but apparently without any other associated buildings. Toft 13 may fall into the same category, but the form of the latest (apparently) domestic structure within the toft (Building 10), as revealed by excavation, had little in common with the other buildings identified as farmhouses. Regardless of precisely when occupation ended, the picture often put across of this final phase of the village's existence seems to imply that the community was on its last leas and that its eventual 'snuffing-out' was almost inevitable. The pattern revealed by the new survey of the latest identifiable arable agriculture - arguably the lifeblood of the medieval village - depicts a very different story. Fields 2 and 4 had both encroached beyond their long-established boundaries, indicating above all the breakdown of the medieval distinction between public and private space, but perhaps also suggesting a more widespread expansion or intensification of agriculture. The various paddocks associated with the courtyard farms had far larger capacities for production than anything available to the inhabitants of

the planned rows. The subdivision of the crofts behind West Row (north) may have served to create two enclosed arable fields. Some of the other paddocks, for example the enclosure associated with Building 4 and that defined by Boundary 5, as well as that within the former *curia* of the North Manor, seem not to have been ploughed and may therefore have held livestock. This would seem to suggest that the tenants of the courtyard farms had diversified the economic base of their farming regimes by comparison with the earlier inhabitants. The form of the farmyards in Tofts 2/3 and 23/24, with buildings surrounding sunken yards, is suggestive of cattle byres, but it is entirely possible that they were for sheep. In the context of the burgeoning wool trade of the 16th century, this would mean that the tenants were keeping up with the times. In other words, had it not been for the evictions believed to have been carried out by Baron Hilton, the village might well have survived, and perhaps even gone on to grow and flourish once more.

Finally, the new survey has highlighted a few earthworks, relating to droveways, former hedgelines and livestock pens, that collectively represent the physical manifestation in the landscape of the five centuries of primarily pastoral activity that followed the desertion of the medieval village. These traces are of little importance in their own right and are easy to overlook, yet serve as a tangible reminder that the economic circumstances that ultimately led to the end of the village as a living community were also responsible for its survival and excellent preservation as an archaeological monument.

7. METHODOLOGY

The field investigation was carried out by Alastair Oswald, Abby Hunt, Trevor Pearson and Stewart Ainsworth, all of English Heritage's Archaeological Investigation team based in York. The analysis of Wharram Percy Cottages was carried out by Dr Ian Goodall of the Architectural Investigation team. A number of digital photographs taken by Alastair Oswald and Trevor Pearson are held on disk as part of the project archive.

A Trimble dual frequency Global Positioning Satellite (GPS) system was used to survey the unwooded parts of the site. The static base receiver was set up outside the western fenceline around the site (beyond the reach of cattle) on a temporary survey station. The co-ordinates of this were then calibrated to the National Grid (OSTN97) using Trimble Geomatics software, based on the position of the station relative to Ordnance Survey active GPS stations at Flamborough, Leeds, Newcastle, Nottingham and Daresbury. This offers accuracy of around 5cms. Two rover receivers (Trimble 4700 and 4800 models), working independently in realtime kinematic mode, were used to record various other data: to tie in to grid markers used by the earlier survey; to map fencelines and other hard detail; to model the natural topography; to record the simple earthworks (especially ridge and furrow); to establish the positions of several hundred temporary survey markers distributed across the site. In wooded parts of the site, where GPS would not function, a 'Total Station' electronic theodolite with integral EDM (Leica TC1610 model) was used to perform the same tasks, and the initial stations were related to the GPS data to ensure consistency. The temporary markers, placed in relation to the earthworks, were then used as the basis for a conventional graphical survey using hand-tapes. This technique, though no more technologically advanced than the methods employed by earlier surveys, was demanded by the complexity and subtlety of the slighter earthworks. The resulting plans were drawn up at scales of 1:500 and 1:1 000 scale as appropriate via Key Terrafirma 5, AutoCAD 2000i and Coreldraw 8 software.

A hand-drawn archive plan and various interpretative drawings were prepared by Alastair Oswald. The main AutoCAD-based plan was by Philip Sinton. The report was researched and written by Alastair Oswald, with a contribution on Wharram Percy Cottages by Dr Ian Goodall. Alison Deegan commented on the aerial photographic evidence and Louise Martin of English Heritage's Archaeometry Team on the geophysical evidence. Stewart Ainsworth, Paul Everson, Stuart Wrathmell and Ann Clark offered their thoughts on various drafts and the final report was edited by Stewart Ainsworth.

The survey archive has been deposited in English Heritage's National Monuments Record, Great Western Village, Kemble Drive, Swindon SN2 2GZ, to where applications for copyright should be made (reference number: SE 86 SE 4).

© English Heritage 2004

8. ACKNOWLEDGEMENTS

English Heritage would like to thank Dr Stuart Wrathmell of West Yorkshire Archaeology Service for proposing the research, facilitating the process and commenting on drafts of this report. John Hurst discussed many of the key issues on site while the fieldwork was still in progress and it is very much to be regretted that he was unable to contribute his comments on this report. Various other members of the former excavation team also provided useful information, in particular: Ann Clark, concerning the excavated material, and Dick Porter concerning the previous survey work on the site. Carl Camp, Rhona Finlayson and Rachel Cubitt all kindly assisted as volunteers at various stages of the fieldwork. Above all, thanks are due to the landowner, the Honourable Michael Willoughby, and to the Birdsall Estates Manager, Philip Hoddy, for their generous and enthusiastic co-operation.

9. BIBLIOGRAPHY

Allison, KJ 1976 The East Riding of Yorkshire Landscape. London: Hodder and Stoughton

Andrews, DD and Milne, G (eds) 1979 Wharram: A Study of Settlement on the Yorkshire Wolds: Volume I: Domestic Settlement 1: Areas 10 and 6 Society for Medieval Archaeology Monograph No. 8. London: Society for Medieval Archaeology

Aston, M 1989 'A Regional Study of Deserted Settlements in the West of England' in Aston, M, Austin, D and Dyer, C (eds) *The Rural Settlements of Medieval England: Studies dedicated to Maurice Beresford and John Hurst*, 105-128. Oxford: Basil Blackwell

Bampton, AH and Dykes, W 1845 'Plans and sections of an intended railway, to be called The East-Riding Junction Railway'. Manuscript volume held in the East Riding County Record Office, Beverley; ref QDP 141

Bell, RD and Beresford MW 1987 Wharram: A Study of Settlement on the Yorkshire Wolds: Volume III: The Church of St Martin Society for Medieval Archaeology Monograph No. 11. London: Society for Medieval Archaeology

Beresford, MW 1954 The Lost Villages of England. Edition of 1983. London: Lutterworth

Beresford, MW 1971 'An Historian's Appraisal of Archaeological Research' in Beresford, MW and Hurst, JG (eds) *Deserted Medieval Villages*, 169-181. London: Lutterworth

Beresford, MW 1979 'Documentary Evidence for the History of Wharram Percy' in Andrews, DD and Milne, G (eds), 5-25

Beresford, MW and Hurst, JG 1971 Deserted Medieval Villages. London: Lutterworth Press

Beresford, MW and Hurst, JG 1990 *The English Heritage Book of Wharram Percy Deserted Medieval Village* London: English Heritage and BT Batsford

Birkinshaw, JC and Dickens, AL 1845 'Malton and Driffield Junction Railway'. Manuscript volume held in the East Riding County Record Office, Beverley; ref QDP 142

Bond, EA (ed) 1867 Chronica Monasterii de Melsa Volume II. London: privately printed

British Geological Survey 1993 *Great Driffield* (England and Wales Sheet 64, Solid and Drift Geology). Nottingham: British Geological Survey

Burton, W 1997 The Malton & Driffield Junction Railway. Halifax: Martin Bairstow

Crawford, OGS and Keiller, A 1928 Wessex from the Air. Oxford: Clarendon Press

Dyer, CC 1985 'Power and Conflict in the Medieval English Village' in Hooke, D (ed) *Medieval Villages: a review of current work* Oxford University Committee for Archaeology Monograph 5, 27-32. Oxford: Oxford University Committee for Archaeology

Dykes, W 1836 'Plan of an Estate comprising Wharram le Street, Bella and Wharram Grange in the East Riding of the County of Yorkshire, the Property of Henry Willoughby Esq.' Plan held in The Borthwick Institute of Historical Research, York; ref PR WP 9/5

English Heritage 1993 Unpublished revision of Schedule entry for Wharram Percy

English Heritage 2002 'Wharram Percy Deserted Medieval Village: Conservation Statement'. English Heritage: unpublished report

Everson, PL, Taylor, CC and Dunn, CJ 1991 Change and Continuity: Rural Settlement in North-West Lincolnshire. London: HMSO

Gardiner, M 2000 'Vernacular Buildings and the Development of the Later Medieval Domestic Plan in England' *Medieval Archaeology* **44**, 159-79

Gates, T 1982 'Farming on the frontier: Romano-British fields in Northumberland' in Clack, P and Haselgrove, S (eds) *Rural Settlement in the Roman North*, 21-42. Durham: Council for British Archaeology Group 3

Greenwood, C 1818 'Map of the County of Yorkshire', surveyed 1815-17

Harris, A 1996 "A rage of ploughing': the Reclamation of the Yorkshire Wolds' Yorkshire Archaeological Journal 68, 209-23

Hayfield, C 1987 An archaeological survey of the parish of Wharram Percy, East Yorkshire. Oxford: British Archaeological Reports

Hey, D 1986 Yorkshire from AD 1000. London: Longman

Hodder, MA 1992 'Continuity and Discontinuity in the Landscape: Roman to medieval in Sutton Chase' *Medieval Archaeology* **37**, 178-82

Hurst, JG 1971 'A review of archaeological research (to 1968)' in Beresford, MW and Hurst, JG (eds) *Deserted Medieval Villages*, 76-144. London: Lutterworth

Hurst, JG 1979 'Conclusions' in Andrews, DD and Milne, G (eds), 138-41

Hurst, JG 1984 'The Wharram Research Project: Results to 1983' *Medieval Archaeology* 28, 77-111

Hurst, JG 1985 'The Wharram Research Project: Problem Orientation and Strategy 1950-1990' in Hooke, D (ed) *Medieval Villages: a review of current work* Oxford University Committee for Archaeology Monograph 5, 200-204. Oxford: Oxford University Committee for Archaeology Jefferys 1771, T Map of the County of Yorkshire, surveyed 1767-70

Linford, P and Linford, N 2003 'Wharram Percy, North Yorkshire: Report on Geophysical Surveys, 1984-2002' English Heritage Centre for Archaeology Report 28/2003

Milne, G 1979a 'Area 10' in Andrews, DD and Milne, G (eds), 26-41

Milne, G 1979b 'Area 6' in Andrews, DD and Milne, G (eds), 42-54

Milne, G and Richards JD 1992 Wharram: A Study of Settlement on the Yorkshire Wolds: Volume VII: Two Anglo-Saxon Buildings and Associated Finds York University Archaeological Publications 9. York: University of York

Neave, S 1991 Medieval Parks of East Yorkshire. Bridlington: University of Hull and Hutton Press

NMRa 1925 Aerial Photograph in the Crawford Collection, held in the NMR

Ordnance Survey 1854 First Edition 6-inch scale map sheet Yorkshire (East Riding) CXLIII SW, surveyed 1850-1

Ordnance Survey 1890 First Edition 25-inch scale map sheet Yorkshire (East Riding) CXLIII.9, surveyed 1888

Ordnance Survey 1910 Second Edition 25-inch scale map sheet Yorkshire (East Riding) CXLIII.9, revised 1909

Ordnance Survey 1966 Geological Survey of Great Britain (Sheet 64)

Ordnance Survey 1985 1:2 500 scale map sheets SE 8464/8564 and SE 8664/8764, surveyed 1985

Pearson, S, Barnwell, PS and Adams, AT 1994 *A Gazetteer of Medieval Houses in Kent.* London: HMSO

RAF 1946 Aerial photographs held in the NMR refs: CPE/UK 1839, frames 4158-61 13-Nov-1946

RCHME 1971 Aerial photographs held in the National Monuments Record, refs: SE 8564/ 12, frames 146-7 07-Jul-1971

RCHME 1979 Aerial photographs held in the National Monuments Record, refs: SE8564/50 – SE8564/62, frames 17 and 20-34 21-Aug-1979

RCHME 1997 'Ham Hill, Somerset'. Unpublished field survey report, held in the NMR

RCHME 1999 Recording Archaeological Field Monuments: A Descriptive Specification. Swindon: Swindon Press Richards, JD 2000 The Anglo-Saxon and Anglo-Scandinavian Evidence' in Stamper, PA and Croft, RA (eds), 195-200

Roberts, BK 1985 'Village Patterns and Forms: some models for discussion' in Hooke, D (ed) *Medieval Villages* Oxford University Committee for Archaeology Monograph 5, 7-25. Oxford: Oxbow Books

Roberts, BK 1987 The Making of the English Village: a study in historical geography. Harlow: Longman Scientific & technical

Rodwell, W 1981 The Archaeology of the English Church. London: BT Batsford

Roffe, D 2000 'Part One: The Early History of Wharram' in Stamper, PA and Croft, RA (eds), 1-16

Rowley, T 1978 Villages in the landscape. London: JM Dent

St Joseph, JK 1948 Aerial photographs held by Cambridge University Committee for Aerial Photography, refs BS 38-9 and 47-8, 22-Jul-1948

St Joseph, JK 1970 Aerial photographs held by Cambridge University Committee for Aerial Photography, refs BAG 80-87, 03-Jan-1970

Seymour, WA 1980 A History of the Ordnance Survey. Folkestone: William Dawson and Sons

Stamper, PA 1988 'Woods and Parks' in Astill, G and Grant, A (eds) The Countryside of Medieval England, 128-48. Oxford: Basil Blackwell

Stamper, PA and Croft, RA (eds) 2000 *Wharram: a Study of Settlement on the Yorkshire Wolds Volume VIII: The South Manor Area* York University Archaeological Publications 10. York: University of York

Stamper, PA, Croft, RA and Andrews, DD 2000 'Part Two: The Excavations' in Stamper, PA and Croft, RA (eds) 2000, 17-56

Stead, IM 1991 Iron Age Cemeteries in East Yorkshire English Heritage Archaeological Report Series 22. London: English Heritage

Stoertz, C 1997 Ancient Landscapes of the Yorkshire Wolds: aerial photographic transcription and analysis. Swindon: RCHME

Vyner, BE 1990 *Medieval Rural Settlement in North-East England* Architectural and Archaeological Society of Durham and Northumberland Research Report 2. Durham: Architectural and Archaeological Society of Durham and Northumberland

Vyner, BE 1994 'The territory of ritual: cross-ridge boundaries and the prehistoric landscape of the Cleveland Hills, north-east England' *Antiquity* **68**, 27-38

ENGLISH HERITAGE

WHARRAM PERCY 110

Waites, B 1968 'Aspects of Thirteenth and Fourteenth Century Arable Farming on the Yorkshire Wolds' *Yorkshire Archaeological Journal* **42**, part 166, 136-42

Wrathmell, SP 1996 Wharram Percy Deserted Medieval Village. London: English Heritage

Wrathmell, S 1989 Wharram: A Study of Settlement on the Yorkshire Wolds: Volume VI: Domestic Settlement 2: Medieval Peasant Farmsteads York University Archaeological Publications 8. York: University of York, Department of Archaeology

Wrathmell, S 1989 'Peasant Houses, Farmsteads and Villages in North-East England' in Aston, M Austin, D and Dyer, C (eds) 1989 *The Rural Settlements of Medieval England: Studies dedicated to Maurice Beresford and John Hurst*, 247-67. Oxford: Basil Blackwell