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# Anatomy of an Iron Age Roundhouse

The Cnip Wheelhouse Excavations, Lewis

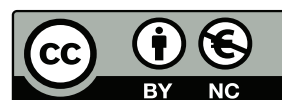
Ian Armit

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## Chapter 2

### Excavation results

#### 2.1 INTRODUCTION

The full stratigraphic report on the site is contained in the site archive. In that report, every stratigraphic context encountered during the excavations is listed and its place within the overall site stratigraphy detailed. What follows here is a summary report organized according to the three main chronological phases of occupation.

Each phase is introduced with a summary site plan, following which the stratigraphy is discussed by structure or group of deposits. Although sufficient information has been recorded to relate these summary discussions to the primary site archive, contexts are individually discussed only where they contribute to an understanding of the overall sequence, or where they contain significant artefacts or ecofacts mentioned in Chapters 3 and 4.

The inclusion of significant context numbers in the text and on the illustrations should allow the published descriptions to be related seamlessly to the more detailed context-by-context descriptions, in the site archive.

It should be stressed from the outset that the occupation of the site was apparently continuous. Even short periods of abandonment, or buildings left unroofed, would have resulted in incursions of windblown sand. The final abandonment of Structure 8 shows exactly this phenomenon, as does the build-up of sand over abandoned buildings during Phase 3 (see Sections 2.5.1.4 and 2.6.1). That this does not occur elsewhere is testimony to the unbroken nature of the occupation.

Given this manifest continuity, the phasing should be seen as a tool for analysis, rather than as having any implications for major cultural changes or breaks in occupation. Phases 1 and 2 in particular show clear continuity. Although the 'core' of the settlement changed from a monumental wheelhouse (Phase 1) to an increasingly unstable and non-monumental element within a larger cellular settlement (Phase 2), there was probably no single point in time at which the change could ever be said definitively to have occurred.

Phase 3 is rather more distinct, as it involved the abandonment of all earlier structures and the construction of a wholly new structural form, yet again it seems to have followed Phase 2 with no break in occupation.

The phasing of the site, therefore, although important in understanding the development and eventual decline of the settlement, should not override the basic impression of continuity and stability, over several centuries.

#### 2.2 NOTES ON THE RECORDING SYSTEM

##### 2.2.1 CONTEXTS AND BLOCKS

Each identifiable entity encountered during the excavation, whether a sediment, cut, or element of masonry etc, was allocated its own context number. As the excavation progressed, the individual contexts were grouped into related batches which have been termed 'blocks'. For example, the masonry elements which together formed Wheelhouse 1 are grouped together as Block 6.

These blocks form, in effect, detachable elements from the overall site stratigraphy. They were defined initially in the field and their numbers are entirely arbitrary. The original numbering system has been retained in order to enable this report to be used in conjunction with the site archive.

The Site Matrix (Ill 2.1) indicates the stratigraphic relationships between the various blocks and the relationships of the blocks to interpretative phases (Table 2.1). It is thus the starting point for an understanding of the stratigraphy of the site. Matrices for individual blocks have not been included, for reasons of space, but these can be consulted in the site archive.

In general, each individual context within a given block will have an identical stratigraphic relationship to any context within any other block. Thus all contexts within Block 5 (the deposits within Wheelhouse 1) are earlier than all contexts within Block 1 (the deposits within the later Structure 8).

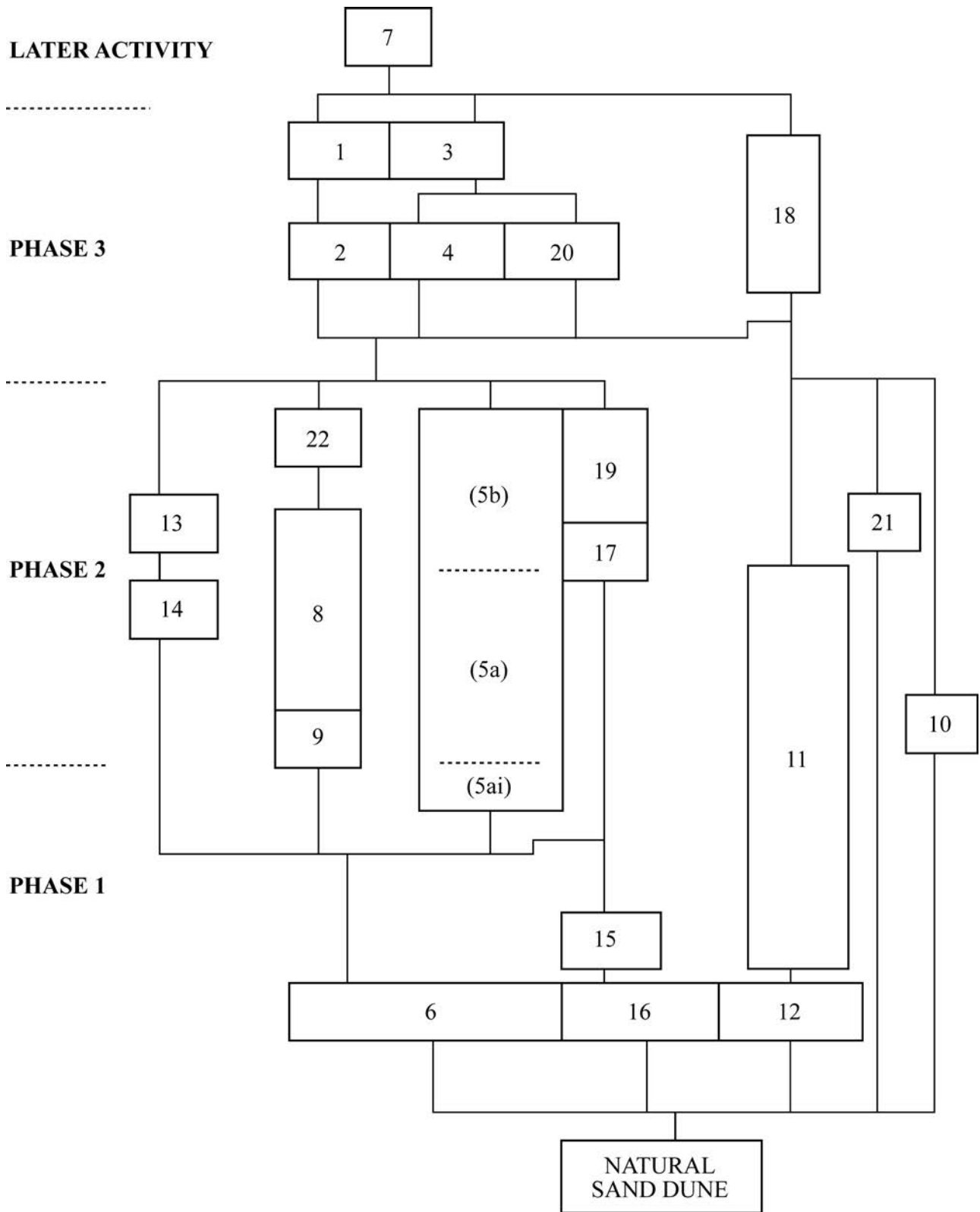


ILLUSTRATION 2.1

Site Matrix, showing the relationship of stratigraphic blocks to interpretive phases (see Table 2.1 for key to blocks).

2.2.2 PHASING

The system of phasing is not a primary part of the site record (Ill 2.1). It is probably best thought of as an interpretative overlay. In most cases, any given block will fall entirely within a single phase, but there are some important exceptions. For example Block 5, the fill of Wheelhouse 1, formed as a discrete and sealed sequence of contexts during both Phases 1 and 2. The precise boundary between the two cannot be determined stratigraphically, although it can be demonstrated, to a reasonable level of confidence, by other means (see Section 2.3.1).

Some elements of the phasing are better-defined than others. Looking at the Site Matrix (Ill 2.1) it is clear that certain blocks, for example Block 21, could ‘slide’ up and down the vertical axis to lie in either Phase 1 or Phase 2. This indicates that there is no strict stratigraphic evidence to prove that Block 21 lies in Phase 2 (there is in fact evidence of a different kind, but this will be discussed below, see Section 2.4.6). Note, however, that the stratigraphic ‘bottleneck’ which separates Phases 2 and 3 prevents any such re-arrangement of the blocks on either side, thus confirming the stratigraphic integrity of Phase 3.

A fuller assessment of the stratigraphic issues relating to individual phases is given in the relevant sections below.

2.2.3 OTHER INFORMATION

The following sections also incorporate, where relevant, the results of physical, chemical and magnetic analysis carried out on individual soil samples by Dr Mike Church, Department of Archaeology, University of Durham. The full report on this work is lodged in the site archive.

Where it is material to the discussion, reference is also made to artefacts and ecofacts. This information is by no means exhaustive, however, and fuller accounts of these aspects are available in the following chapters. Radiocarbon dates have been appended wherever they occur, although these again are discussed more fully in Chapter 6. Unless otherwise noted, these are quoted calibrated, at 1 sigma. Some of the dates have been statistically adjusted using the methodologies described by Magnar Dalland in Chapter 6 (and shown in Table 6.4): adjusted dates are indicated as such wherever they are used.

Data are also presented relating to the quantities, characteristics and size ranges of pottery sherds

TABLE 2.1

Stratigraphic blocks: phasing and summary description.

Block	Phase	Summary description
1	3	Structure 8, internal deposits
2	3	Structure 8, masonry and construction
3	3	Structure 8, entrance passage deposits
4	3	Structure 8, entrance passage, masonry and construction
5	1/2	Wheelhouse 1, internal deposits
6	1	Wheelhouse 1, construction and masonry
7	N/A	Post-abandonment activity
8	2	Structure 4, internal deposits and Structure 9
9	2	Structure 4, masonry and construction
10	2?	Pits
11	1/2	Wheelhouse 2, entrance passage deposits
12	1	Wheelhouse 2, entrance passage, masonry and construction
13	2	Structure 5, internal deposits
14	2	Structure 5, masonry and construction
15	1	Wheelhouse 2, internal deposits
16	1	Wheelhouse 2, masonry and construction
17	2	Structure 3, masonry and construction
18	3	External midden deposits and Structure 10
19	2	Structure 3, internal deposits
20	3	Structure 8, sump
21	2?	Structure 6
22	2	Structure 7

within various blocks and context. This information was assembled during the preliminary sorting of material following excavation, and there are inevitable discrepancies between the crude data recovered by this method and the more precise counting and analysis carried out by Dr Ann MacSween for the formal pottery report. Nonetheless, it was felt that the crude results of the pottery quantification exercise were sufficient for the purpose of examining broad scale variation of pottery deposition and sediment taphonomy between the various blocks and contexts. It was also felt that any minor increase in precision to be gained by repeating the initial quantification exercise would not justify the time and resource implications of carrying out the work.

Tabulated data on pottery quantification for all blocks and contexts on the site are included in the site archive. It is only for Block 5 and its various subdivisions (the fill of Wheelhouse 1), where internal pottery variability is a major issue, that the full tabulated data are presented in this report. Elsewhere,

occasional reference is made to particular aspects of the assemblage as appropriate but the site archive should be consulted for further detail. Where reference is made to the percentage of 'large sherds' within a block or context, it refers to the proportion of sherds with at least one dimension greater than 50mm.

### 2.3 PHASE 1: THE WHEELHOUSE SETTLEMENT

The Phase 1 deposits appear to have been founded on an unoccupied site with no evidence for earlier

human activity, at least within the excavated area. This phase comprises the construction and occupation of Wheelhouses 1 and 2, of which the latter appears to have been unfinished (Ill 2.2).

Blocks 6, 12 and 16 comprise the construction of, respectively, Wheelhouse 1, Wheelhouse 2 and the expanded entrance passage of the latter (Ill 2.1). The degree to which the fabric of the walls is interconnected suggests contemporaneity, although it is possible to detect parts of the sequence of construction. The attribution of each of these blocks to Phase 1 is secure.

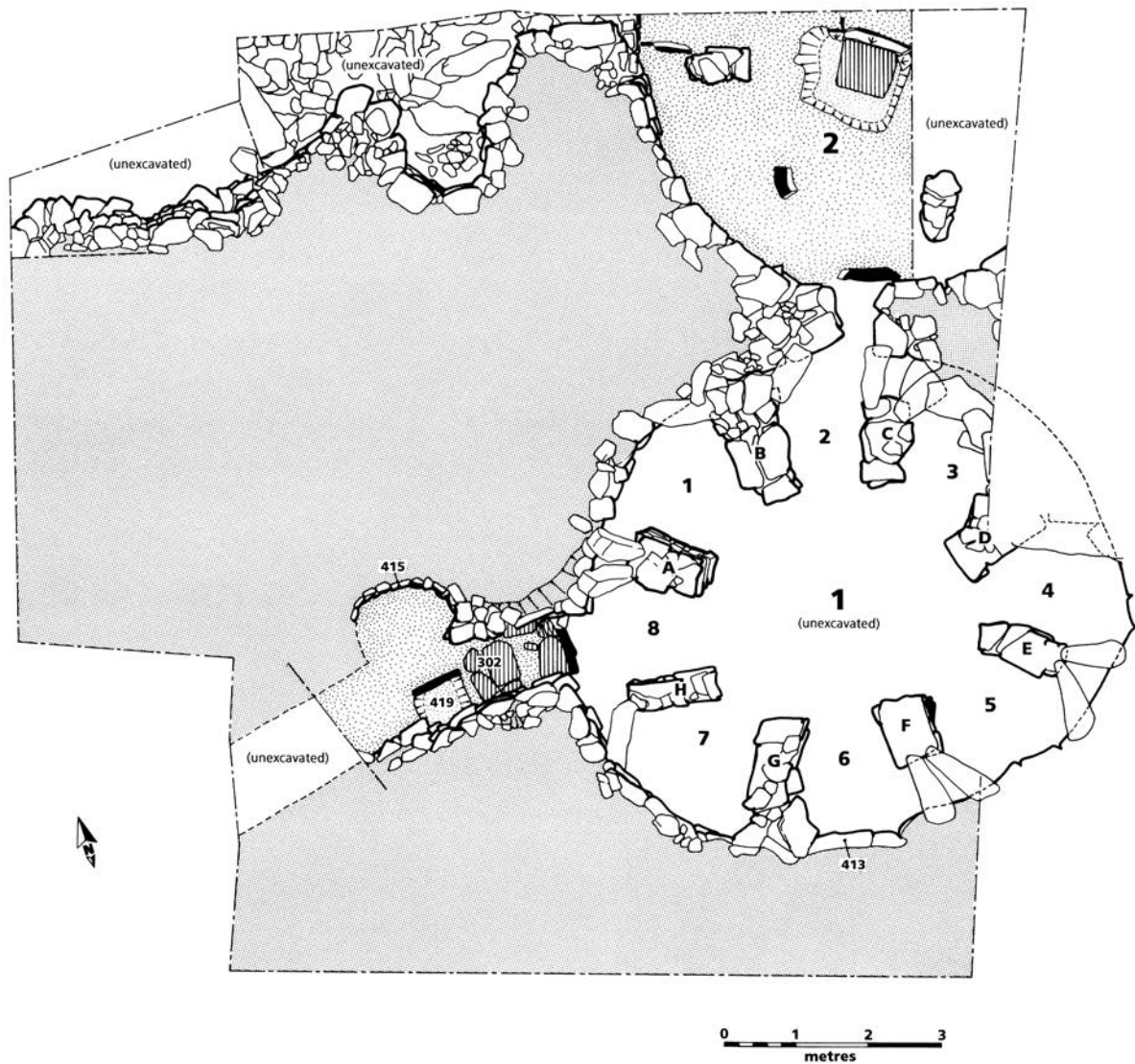


ILLUSTRATION 2.2

Phase 1 summary plan, showing numbering of bays and piers in Wheelhouse 1. This drawing also shows the context numbers of the Wheelhouse 1 entrance passage features; note that elements of paving (C302) have been removed over the pit (C419).

More difficult is the phasing of the deposits within these structures. Blocks 11 and 15 relate to the deposits within Wheelhouse 2 and its entrance passage. As the construction of a later building (Structure 3) over the infilled Wheelhouse 2 is one of the prime determinants of the Phase 2, these deposits (Block 15), by definition, belong to Phase 1. It is probable, however, that later material found its way into Block 11 (the fill of the Wheelhouse 2 entrance passage) as this area was not subsequently built over and the upper masonry was still visible as late as Phase 3. It can be seen from the Site Matrix (Ill 2.1) that Block 11 could slide up and down the matrix between Phases 1 and 2 without prejudicing the stratigraphic relationships between the blocks. Although described here entirely under the heading of Phase 1, it should be remembered that part at least of the upper fill of the Wheelhouse 2 entrance passage almost certainly belongs to Phase 2.

Within Wheelhouse 1, the picture is less clear. It is not possible definitively to relate particular contexts within Wheelhouse 1 to the re-ordering of the settlement which comes in Phase 2. It appears, however, that apart from a restricted series of deposits in two of the wheelhouse bays (sub-block 5ai) all of the excavated deposits within Wheelhouse 1 relate to Phase 2. Earlier deposits were clearly present but were not fully excavated. The justification for the division between Phases 1 and 2 is discussed below in the section dealing with Wheelhouse 1.

As can be gauged from this discussion the separation between Phases 1 and 2 cannot be determined with absolute precision on all parts of the site. Therefore, only those blocks which belong definitively to one or the other have been used in comparisons of artefactual and other material between blocks. The phasing of the structures themselves is clear.

### 2.3.1 WHEELHOUSE 1: BLOCKS 5AI AND 6

Wheelhouse 1 was of a type which has been described as an 'aisled roundhouse' (Scott 1948) because of the presence of the gap, or 'aisle', between the enclosing wall and the outer ends of the radial stone piers, which would have allowed the possibility of access between the bays. It was approximately circular, although markedly asymmetrical. It was divided internally by eight radial piers which defined seven bays in addition to the main entrance bay. A second entrance gave access into Wheelhouse 2 (and later into Structure 3). The bays and piers are labelled on Ill 2.2, and

these numbers will be used to structure the following discussion.

The internal diameter of Wheelhouse 1 varied between 7.9m from the entrance to the back of Bay 4, to 6.9m between the backs of Bays 2 and 6 (the smaller dimension is estimated since Bay 6 was not excavated to its foundation course, but the figure is not likely to be more than 0.1m out). The central area was similarly slightly oval with dimensions of 3.9m by 3.2m. The open sides of the bays were mostly close to 1m wide at ground level. The only bays to depart noticeably from this pattern were Bay 7 (*c* 0.75m) and Bay 4. However, Bay 4 was not excavated to anywhere near its base so its unusually narrow open side of *c* 0.6m would undoubtedly have widened as it descended, although probably not to as much as 1m.

Time and safety considerations prevented the excavation of the primary deposits of Wheelhouse 1. Two major episodes of floor reorganization were excavated, both of which appear to relate to periods when the wheelhouse was already beginning to show signs of structural instability. The deposits pre-dating the second reorganization form the sub-block 5a, and those post-dating it, 5b.

It was originally thought that sub-block 5a might relate to Phase 1 occupation, and 5b to Phase 2. This seems, in retrospect, to have been rather simplistic. Instead, the presence of unexcavated deposits below the first recognized floor, the radiocarbon dates and detailed morphological comparisons with features in Structure 4 (see Section 2.4.3), all combine to suggest that both of these episodes relate to Phase 2 in the overall site sequence. The only excavated deposits which seem likely to relate to the primary use of Wheelhouse 1 are thus those pre-dating the first recognized floor reorganization (although even these *might* belong to Phase 2), and these have been grouped under the rather clumsy heading of sub-block 5ai. It is those deposits alone which will be discussed in this section, with the remainder being discussed under Phase 2.

#### 2.3.1.1 Construction: Block 6

The processes of wheelhouse construction are discussed in considerably more detail in Chapter 5 of this report. This section, therefore, provides only a limited description of the structural remains of Wheelhouse 1.

The first stage in the construction process was the excavation of a large circular pit (C414) into the natural sand dune, with a linear extension forming an

entrance passage (although see Chapter 5 for a more detailed discussion of the various alternative modes of construction). The sides of this pit were then lined with a stone wall (C413) of blocky, angular stones and occasional better quality building slabs. The lower courses of this wall seemed to have been built directly against the cut in the sand dune, but a series of deposits had been placed as packing material between the sides of the pit and the upper courses, from around 1.5m above the sand floor.

This packing material was extremely heterogeneous, ranging from compact inorganic sand (C107, C119) to bright orange-red peat ash (within C032, C106) to organic-rich midden debris (C129) and stained sand (C095, C123). This material may derive from a number of sources and certainly implies the use of occupation debris brought from off-site. A sample from C032 produced plant macrofossil evidence for the burning of part of a cleaned barley crop, represented by cereal caryopses. This was an unusual piece of evidence for a single-episode of discard on the site, and may represent either material derived from another settlement, or else from a cooking episode during construction. The same context contained several large angular stones (see Section D in Ill 2.39). Part of the packing material behind the wall in Bay 1 (C123) had slumped forward to cover part of the collapsed rubble in the upper part of the bay when the wall gave way at the end of Phase 2. This material had been revetted by the wall backing of Structure 8 (Ill 2.39).

Little of this packing material could be excavated, as the wall of Wheelhouse 1 was not taken down. The excavated deposits, therefore, come from the tops of the walls and were only partially excavated. Despite the low volume of material excavated, these deposits contained 140 sherds of pottery.

More notable was the range of metal-working debris (see Section 3.11) as well as a perforated iron sheet (SF54) and a fine bronze fitting (SF31) for an organic object of some kind. This material was overwhelmingly concentrated in one deposit (C108), a grey-brown sand some 50mm thick which appeared to constitute a single-episode dump in the wall-packing behind Bay 5 of the wheelhouse. Also present within the packing material were an unfinished spindle whorl (SF256), worked antler (SF37, SF290), a bone and antler handle (SF250, SF60), a bone point (SF53), and a bone modelling tool (SF91) (see Chapter 3).

A warning note is sounded by the radiocarbon date obtained from a sample of bone found in C129. This yielded an uncalibrated date of  $1570 \pm 140$  BP which

is the latest on the site by far and clearly long-post-dates the construction of the wheelhouse (see Section 6.1.2). As this group of wall-packing deposits lay close to the modern, pre-excavation, ground surface, they were exposed by the initial machine removal of sand from the site. It seems highly probable that machining has obscured some later, probably post-abandonment disturbance of the upper layers, from which the dated sample was obtained. This group of contexts as a whole, however, does not pose a problem in stratigraphic terms, as their relationship to the Wheelhouse 1 wall was unambiguous during excavation. We must, nonetheless, be wary of possible contamination in the finds assemblage as well as that indicated by the radiocarbon date for the bone assemblage, since material from the initial cleaning of the deposit may be contaminated. C108, however, which contained the bulk of the metal-working debris, was securely stratified.

It was possible to observe in section that a mixed and heterogeneous deposit of midden and sand lenses (C502) rose over the tops of the corbelled bays (Bays 4 and 5), and filled the gaps between the upper parts of the Wheelhouse 1 and 2 walls (Ill 2.20). The banding of the lenses within this material was highly irregular, suggesting that they had been put in place by human action, rather than forming naturally over the roof. They were presumably the remains of material used to seal the tops of the stone corbelled roofs. These deposits had been horizontally truncated, presumably by wind erosion (Ill 2.20). Interestingly it appears that there have been multiple episodes of horizontal truncation within this deposit, as the section shows that the uppermost band of sediment in the northern part of the combined C502 seals a series of truncated deposits, but is itself sealed by similarly truncated deposits over the southern part of the wheelhouse. It seems most likely that these layers together represent the remains of numerous re-roofing episodes of Bays 4 and 5, possibly extending as late as Phase 3 (when these bays formed part of Structure 8, see Section 2.5.1). This complex deposit could only be recorded in section (Ill 2.20) where its upper parts appear to overlie part of the Phase 3 midden (C012) which itself overlies Wheelhouse 2. This context appears, therefore, potentially to span all three phases of the site, and has accordingly been kept out of Block 6, and not formally allocated to any block. No artefactual material was recovered from it.

The wheelhouse wall was continuous in construction with an entrance passage which led westwards from a

doorway some 0.8m wide, for a distance of at least 3m where it ran into the limit of the excavated area. This passage had been heavily disturbed by subsequent structural modifications, particularly on its north side which had been substantially removed. Three to four courses survived of the southern passage wall in places. The passage measured some 0.8m wide at its inner end, perhaps widening to 1m at the furthest point traced.

A small cell (C415) was constructed on the north side of the entrance passage. It was C-shaped, opening onto the passage, and measured approximately 1.2m east to west by 0.9m. It had been heavily truncated by later constructions and its west side had lost all of its stonework, being identified only by a cut into the sand. It survived to no more than two courses in height. The north side of the passage had also been removed beyond this point during the construction of Structure 4 in Phase 2.

The interior of the wheelhouse was divided by eight radial stone piers, each around 1.3m to 1.5m long at their bases, which seem, from the limited excavation of the earliest deposits, to have been bedded directly onto the sand floor. The piers rose from a narrow base, only one stone wide, to between 0.5m and 1.5m, at which points they were joined to the enclosing wall by paired lintels. The piers, lintels and wall around each bay then formed the base for the individual corbelling of each cell, as could be seen from the preserved corbelling over Bays 4 and 5 (Ill 2.3).

Pier A (C069), which survived to only approximately 1.3m high (it had to be progressively dismantled during excavation so some of the later photographs show it substantially reduced in height) and had slumped dangerously to the south where it had been incorporated in the wall of the later Structure 8, was fully excavated to its base. This revealed that the front of the pier at its base was formed by a vertical slab bedded into the sand floor. Above this rose five surviving courses, each formed at the front of the pier by a single stone, each slightly wider than the one below, thus widening from around 0.3m at the base to 0.55m at a height of around 1.3m. The paired lintels

which joined the pier to the enclosing wall were set at a height of only some 0.5m above the sand floor.

Pier B (C078) survived to around 1.6m, its upper portion being joined to the enclosing wall by a pair of lintels above an aisle some 1.3m high (Ill 2.4). Preserved on the lintels was a deposit of rubble which seemed to form the base of the infill of the corbelled roof of the adjoining bays. Pier B was also excavated almost to its base, which narrowed to 0.2m in width.



ILLUSTRATION 2.3

Wheelhouse 1, general view from north-west during the excavation. Bays 3–6 can be seen at the limits of excavation.

Pier C (C077) survived to approximately 1.6m in height, by 1.4m long. It too was connected by paired lintels to the enclosing wall. Unlike the other piers, however, the northern of the two lintels, adjacent to the entrance to Wheelhouse 2 (C163), ran straight back to join the enclosing wall, rather than running at an angle to the pier (Ill 2.2). This seems unambiguously to suggest that Pier C was deliberately designed so as not to block the connecting entrance to Wheelhouse 2, thus confirming that the two wheelhouses were built as elements of one overall design.





ILLUSTRATION 2.4  
Wheelhouse 1, Pier B.

Piers D and E (C023, C035) survived intact to their corbelled roofs (Ill 2.5), but the unstable masonry prevented excavation within the bays around them (Bays 3–5). Their precise dimensions, and the form of their lower coursing, are thus unknown. This part of the wheelhouse, nonetheless, was of crucial significance for the understanding of the roofing of the structure, and will be discussed in more detail in Section 5.3.3. These bays extended under the main south-east section of the excavation trench, hence the projection of the Wheelhouse 1 floor-plan outside the limits of the main excavation trench. The ground above rose sharply at this point to the drive-way of the adjacent house, and no extension of the excavated area was possible.

Piers F and G (C128, C098) could also not be excavated for safety reasons, and indeed were so badly collapsed that their dimensions could not be accurately gauged. The ends of these piers had been incorporated into the wall of the later Structure 8, and this walling was so precarious that it could not be safely dismantled. It could be seen from limited excavation on plan that both piers were bonded to the enclosing wall by paired lintels as elsewhere.

Pier H (C070) formed the southern entrance pier. It was the worst-preserved of all, standing only some 0.6m in maximum height, and 1.3m long, but it had been joined by a lintel to the enclosing wall at a much lower level than the other observed piers (*c* 0.5m) with the exception of Pier 1 which also flanked the entrance.

#### *2.3.1.2 Occupation deposits: Phase 1: Block 5ai*

As has been discussed, the only deposits which can be associated with the primary use of Wheelhouse 1 are those which form the limited sub-block 5ai. This sub-block is defined as those contexts which underlie an extensive laid sand floor deposit (C274, C288, C286) which covered much of the central area and extended into the bays. It should be borne in mind that even earlier deposits may have underlain the recognized elements of sub-block 5ai, which need not be absolutely primary to the use of the structure.

Deposits relating to sub-block 5ai were excavated only in Bays 2 and 7. In Bay 2 the sand floor deposit (C274) was underlain by a distinct layer of orange peat

ash and midden debris (C275). Adjacent to this was a similar deposit (C290), also restricted to Bay 2, which contained a higher density of organic material. The latter contained 47 sherds of pottery including 17 per cent large sherds.

Within Bay 7, the equivalent sand floor (C286) overlay an organic-rich ashy deposit (C293) which extended into the central area, and which in turn overlay a similar but lighter coloured ashy material (C297). Below this was an area of more compressed and trampled peat ash (C298). Only the northern half of Bay 7 was excavated, yet these limited deposits still produced 51 sherds of pottery. The deposits within Bay 7 had a distinct bowl-like surface.

#### *2.3.1.3 The entrance passage deposits*

The entrance passage deposits associated with Wheelhouse 1 were extremely disturbed, much of this material having been removed in the construction of Structures 4 and 7, and subsequently by the excavations for the linear sump of Structure 8 in Phase 3 (see Section 2.5.1.3). They were also excavated in conditions of near total panic on the final evening before the excavation ended. This meant that they could not be properly planned at a primary level, and relevant sections of the plan presented in Ill 2.2 have been based partly on photographs.

The earliest feature identified was a small pit (C419) cut directly into the clean dune sand in the passage outside the entrance passage cell. This was approximately 0.8m in diameter and some 0.5m deep and partly sealed by the entrance paving above (C302). It was lined on its south and west sides by single slabs, and had irregular sloping sides on its north and east. Its fill comprised mixed stained sand (C418), small stones in moderate density and no cultural material.

A single layer of primary paving slabs (C302) lay along the passage to a distance of 3.2m from the wheelhouse entrance. They lay directly on the natural dune sand, partly sealing the pit (C419), and had been reached in places by the later trench cut for the linear sump in the passage to Structure 8 (see Section 2.5.1.3.). A narrow stone-sided gully (C312) some 0.1m wide, ran for a short distance along the north side of the passage (not shown on plan). Its relationship with the paving could not be resolved. A series of discontinuous ashy sand deposits (C294, C295, C277, C260, C211), all extremely compacted, lay above these assorted primary features and below the reach of the later sump. They appear to relate to activity within the wheelhouse but cannot be assigned to any particular period.

#### *2.3.1.4 Interpretation*

Wheelhouse 1, although small in diameter by the standards of Hebridean wheelhouses, was a monumental construction built to a high standard despite unpromising building materials. The survival of the corbelled roofs over Bays 4 and 5, which were empty to a depth in excess of 1m when discovered during excavation, is testimony to the strength and stability of at least some elements of the structure. The graceful shape of the piers, best demonstrated in excavation by Pier B, soaring upwards from a single stones width, and gradually widening to form a corbelled arch with the adjacent piers (Ill 2.4), would have been a remarkable sight. The process of construction will be discussed in more detail in Chapter 5.

There is little doubt that Wheelhouse 1 was intended as a domestic building, even though the earliest deposits could not be excavated. What was seen of the presumed primary floor debris suggested peat ash and midden material similar to that from the secondary reorganization, which was unambiguously domestic (see Section 2.4.1.2). Wheelhouses elsewhere, as will be discussed later, have also produced a great deal of evidence to support their interpretation as a monumental but essentially domestic structural form.

The architecture of the building created a series of well-defined zones which would have structured daily life inside. The central area would presumably have had a hearth, as it did during Phase 2, and seems to have been the domestic as well as architectural focal point of the building. As well as the entrance passage, this area gave access to seven bays which, from the limited evidence available, were neither kerbed nor otherwise sealed off from the interior. The bays were accessible one from another through the low but easily passable gaps or 'aisle' which ran behind them, around the enclosing wall. Only the piers on either side of the main entrance were linked to the wall at a level too low for an adult to pass comfortably through. This suggests that access was perhaps not intended to be allowed from the entrance passage directly into the bays. Everyone thus had to pass through the central area.

Bay 2 contained the entrance to Wheelhouse 2, which, as we shall see below (see Section 2.3.3.3), was never completed. It is not clear to what extent Bay 2 was used in the primary occupation as a passage, and to what extent it was simply another bay of the wheelhouse. This entrance was walled-up during the early part of Phase 2, and this walling may well have been put in place as early as Phase 1. It was dismantled

later in Phase 2 to give access to the newly constructed Structure 3.

As we have seen, there are very few excavated deposits that can be attributed to the primary use of the wheelhouse, and these are restricted to Bay 2 and the excavated half of Bay 7. These ‘primary’ deposits are sufficient to indicate that there was some build-up of occupation debris within the structure, principally peat ash and organic material, prior to the deliberate deposition of a clean sand layer across the wheelhouse interior at the start of Phase 2 (see Section 2.4.1.1). They are insufficient, however, to enable any assessment of the nature or spatial distribution of the activities



ILLUSTRATION 2.5  
Detail of upper corbelling of Bay 4, looking up from the front  
of the bay.

involved, or to enable any estimate of its duration. It may well be, for example, that the wheelhouse interior was kept scrupulously clean for many years while it retained its original monumental appearance, and was only allowed to build up substantial floor deposits once structural failure had begun to rob it of its original grandeur.

### 2.3.2 WHEELHOUSE 2: BLOCKS 11, 12, 15 AND 16

Wheelhouse 2 lay immediately to the north of Wheelhouse 1 to which it was connected via the lintelled door-way from Bay 2. Only around half of

Wheelhouse 2 was preserved, the remainder having been lost to coastal erosion, and only around two thirds of what survived could be safely excavated. Enough was preserved to indicate that it was of similar size and shape to Wheelhouse 1 (Ill 2.6).

The long and complex, independent entrance passage to Wheelhouse 2 was similarly bisected by erosion. Indeed it was highly fortuitous that a small part of the main entrance to Wheelhouse 2 was detected, running into the edge of the excavation trench on the north of the site. Without this, it would have been far from obvious that these complex masonry remains did actually represent the remains of an entrance passage associated with Wheelhouse 2, rather than, say, part of a later figure-of-eight building.

It was clear early on that Wheelhouse 2 had undergone a completely different structural and depositional history to that of its neighbour. Indeed it appears that Wheelhouse 2 was never completed, at least to its original design, and never formed more than an out-building to Wheelhouse 1. It was deliberately infilled during Phase 1 and replaced by a smaller cell, Structure 3, during Phase 2.

#### 2.3.2.1 Construction: Blocks 12 and 16

As with Wheelhouse 1, the construction process for Wheelhouse 2 is discussed in detail in Chapter 5. This section, therefore, describes the physical evidence from the buildings without addressing detailed questions of constructional technique.

Estimating from the surviving portion, the pit dug to accommodate the wheelhouse appears to have been around 7m in diameter, and adjoined the linear trench (C403) cut for the accompanying entrance passage (this section). The cut for Wheelhouse 2 sliced through packing material for Wheelhouse 1, demonstrating that the latter was already in existence prior to the construction of Wheelhouse 2, although the design of the piers of Wheelhouse 1 clearly demonstrated that the two structures had been planned as one overall design (see Section 2.3.1.1). Indeed, Wheelhouse 1 need not necessarily have been completed by the time work on Wheelhouse 2 began.

A stone-lining, one stone in thickness (C116), was constructed against the sides of the pit, forming the wall of Wheelhouse 2. The stones were graded with the smallest towards the base (Ill 5.2). No packing was used up to the surviving height of the wall, at around 1.7m. Indeed, all of the structural features, walling and piers, rested directly on the natural sand floor with no indications of any packing or foundation material.

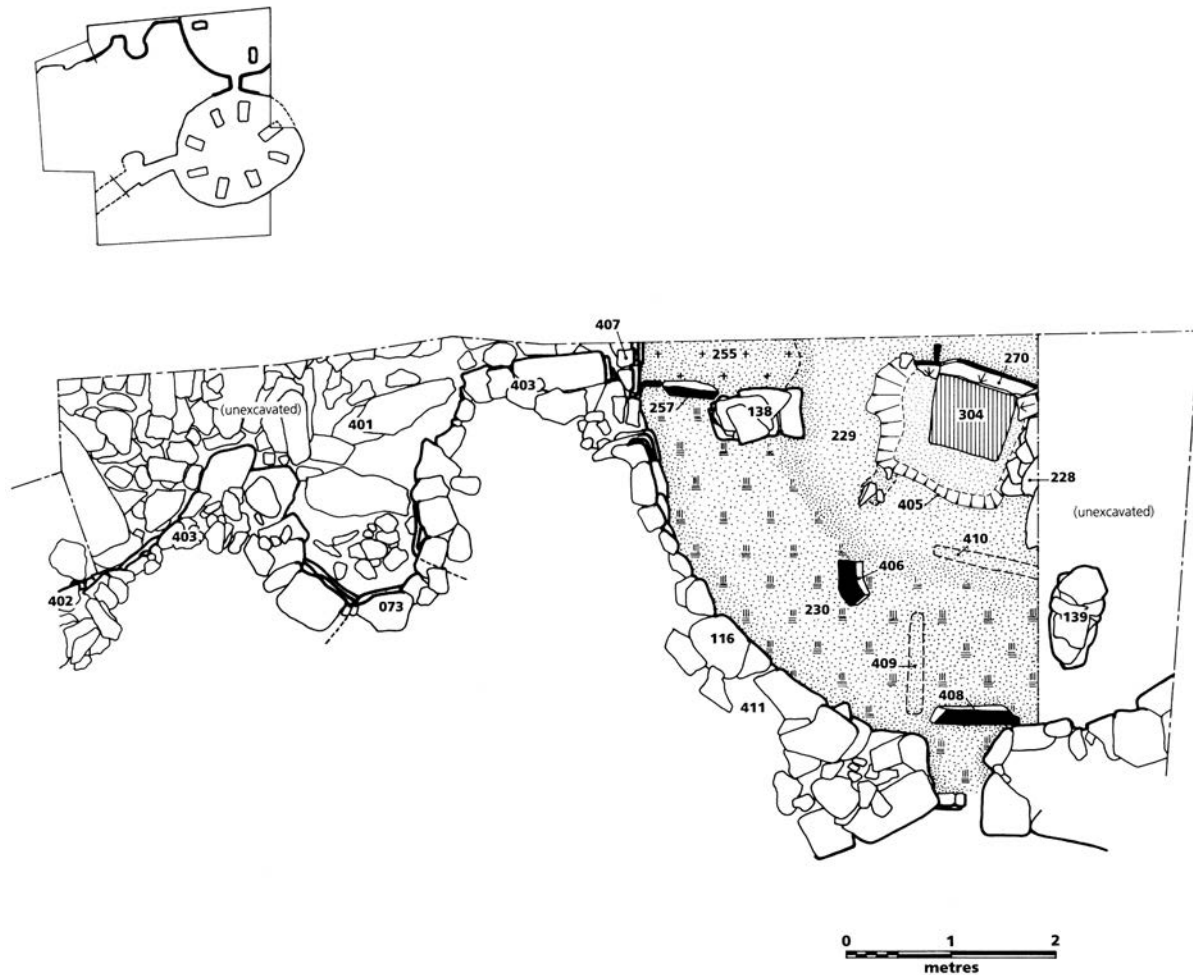


ILLUSTRATION 2.6  
Wheelhouse 2, plan of internal features and entrance passage.

An entrance (C163), built into the south-west arc of Wheelhouse 2 connected the structure to Wheelhouse 1. This was capped by a substantial stone lintel at a height of approximately 1.5m and was 0.8m wide at the base, narrowing to 0.4m below the lintel. The entrance, and indeed the lintel, had been re-used for the later Structure 3, but there were no signs of secondary modification to the surviving features. An edge-set slab (C408) was set into the natural sand transversely across the connecting entrance between Wheelhouses 1 and 2, to form a threshold on the Wheelhouse 2 side of the entrance. This slab was set in such a way as to form a prominent inverted V (Ill 2.17) and formed rather an irregular obstacle to passage between the two structures.

The other access into Wheelhouse 2 was the main, north-west facing entrance, leading into the

entrance passage. This was bisected by the edge of the excavation trench and its width cannot be judged. Its lintel did not survive. This entrance had been blocked by coursed walling (C407) surviving to five courses (approximately 0.45m) in height (Ill 2.7). This blocking walling, too, was set directly upon the natural sand floor, and seems to have been put in place soon after the construction of the main wall (C116).

The excavated portion of Wheelhouse 2 also contained two radial piers (C138, C139) and part of (or a marker for) another (C406). The pier to the south-west of the main (blocked) entrance (C138) was one stone in width, and measured approximately 0.7m high by 0.9m long (Ill 2.7). It ran approximately south-east to north-west and was founded directly onto the natural sand floor of the construction trench. It had been built



ILLUSTRATION 2.7  
Wheelhouse 2, view of blocked entrance from interior.

of moderately flat slabs. There were no indications of collapsed masonry deriving from this pier.

In the southern part of the excavated area were the remains of second pier (C139) running approximately north-east to south-west. This again was only one stone wide and around 1m long, and founded on natural sand. Although not excavated for safety reasons, it was recorded in section, and survived to 1.2m in height (Ill 2.8; note that the section was deliberately cut back somewhat from the area excavated on plan to allow for recording of the pier). The base of the front (interior) end of the pier was formed by a large orthostat with five courses of surviving masonry above it.

Between these two piers was a single orthostat (C406), 0.35m high, set into natural sand in exactly the position where an intermediate pier would have been expected. Assuming a regular spacing of piers as found in other wheelhouses, no further piers would have been expected to be found within the confines of the excavation trench.

Despite the lack of packing material behind the Wheelhouse 2 wall, several items were found between the stones and their sand-backing, and can only have been placed there deliberately during construction. Cattle vertebrae (see Section 4.2), the head of a great auk (see Section 4.3), two potsherds (V2531, Ill 3.4e, see Section 3.2.6), and a complete decorated pot (V1366, Ill 3.5a, see Section 3.2.6), were

all recovered from around waist height in the small section of walling taken down (a length of only 1.5m extending southwards from the main entrance). These presumably ritual deposits are discussed in more detail later in this report. The cattle vertebrae (C116) yielded a radiocarbon date of 615–255 BC, at one sigma (GU-2754). The reliability and significance of this rather early date is discussed in Section 6.3.2.

The construction of the entrance passage to Wheelhouse 2 (Block 12) appears to have been undertaken as a single event, possibly contemporary with the construction of the wheelhouse itself. The walling of the entrance passage was bonded into the main wall of Wheelhouse 2 (Block 16) and formed a stone-lined approach, at least 9m long. It was set into a trench (C403) cut into the natural sand dune, the sides of which had been sheared to receive the stone lining. A small amount of stained sand, presumably derived from construction activity, had become incorporated behind the passage walls (C124/111).

A short passage, some 1.8m long, led north-westwards from the door-way to Wheelhouse 2. This gave access to a small cell (C073) which opened out to the south-east and survived as an irregular oval. The walls of this cell were formed of angular boulders, a single stone thick, and stood to around 1.4m high. The walling contained the broken upper stone of a rotary quern (SF133, Ill 3.25a, see Section 3.6).

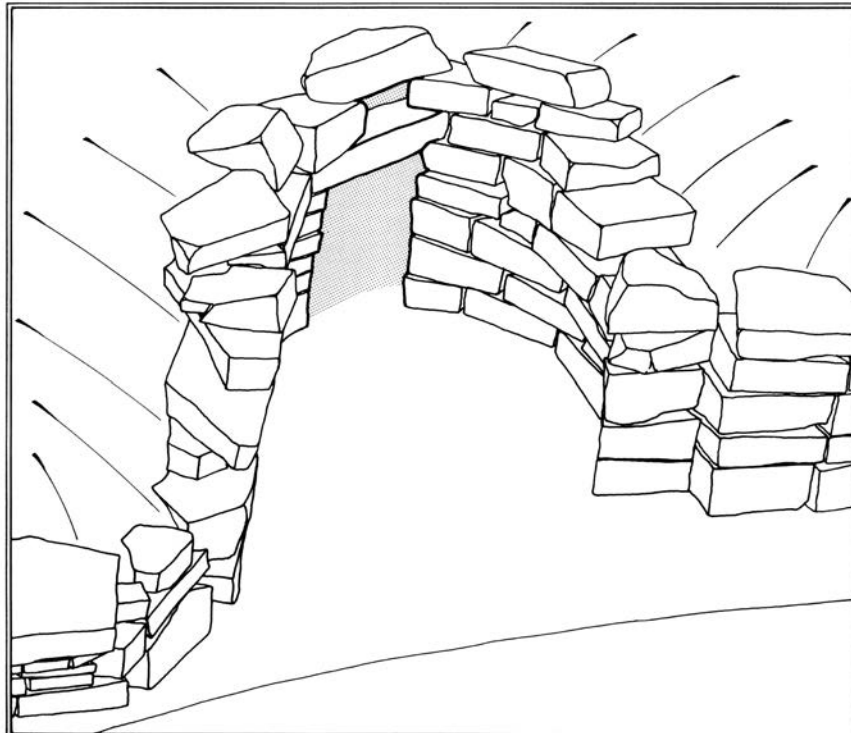


ILLUSTRATION 2.8  
Wheelhouse 2, unexcavated pier in section.



ILLUSTRATION 2.9

Wheelhouse 2, 'false entrance' leading off entrance passage cell. The accompanying drawing highlights the structural features, including the small, square, weight-relieving void above the entrance.



The cell measured little more than 1m wide internally, by at least 3m transversely, across the entrance passage. Built into the south-east wall of the cell was a peculiar feature which appeared as a low, lintelled entrance. This feature was around 0.6m high by 0.4m across and had a distinct ‘void’ above its lintel some 0.2m by 0.2m, seemingly intended to relieve weight stresses above the lintel. This ‘false’ entrance did not lead to any further cell or passage, but simply backed into the clean, unmodified natural sand dune (Ill 2.9).

Westwards from this cell, the passage opened out somewhat to a width of not less than 2m. This outer entrance passage was at least 5m long and survived to a height of around 1.2m. It reduced in height somewhat towards its western end. While the inner entrance passage may well have been lintelled, and the cell (C073) seems to have been intended for corbelling, this outer passage (C402) was of a rough coursed construction, incorporating many rather unstable water-worn stones, and may never have been intended for roofing. Indeed, if its northern side bowed out as much as the surviving southern side, it may well be better interpreted as some form of open, sand-revetted yard, fronting the entrance passage proper. Its rough construction would probably have suggested a separate and later addition to the entrance had not the evidence for abandonment during construction been so strong (see Section 2.3.3.3).

The upper parts of the dune sand revetted behind this westward extension of the Wheelhouse 2 entrance passage contained a small scatter of small stones, perhaps indicating some dumping of excavated material as wall-packing, although the boundary between the natural and potentially modified levels could not be established with any certainty.

A small assemblage of pottery (22 sherds) derived from material incorporated behind the entrance passage walling. While none of this material in itself suggested deliberate deposition, the possibility should not be ignored, particularly in view of the deposits behind the wall of Wheelhouse 2. The high proportion (32 per cent) of decorated sherds may suggest some deliberate selection of material.

### 2.3.2.2 *Internal deposits: Blocks 11 and 15*

As mentioned above, the entrance to Wheelhouse 2 was deliberately blocked, by the construction of a coursed blocking wall (C407, above, Section 2.3.2.1), before any deposits had formed in the entrance passage (Ill 2.7). It appears most likely that this was done as

soon as the plan to complete the wheelhouse had been abandoned.

The other primary deposits and features within the abortive wheelhouse are amongst the most problematic on the site. They comprise a pit (C405), an overlying stone stack (C228) and a series of residual internal divisions and deposits (Ill 2.6).

The pit (C405) was dug into clean sand in the centre of Wheelhouse 2 prior to the formation of any deposits within the structure. It measured approximately 1.2m wide by 1m long at its base as excavated, although it would presumably have been rather longer originally as it disappeared into the edge of the excavated area. It was around 0.65m deep.

The base of the pit was formed by a large flat slab (C304) which extended just short of the drawn section (Ill 2.10). A series of at least three vertically set slabs (C270) formed the north-east edge of the pit. These had been inserted after the basal slab, but at least one had been rammed down into the sand (C229) below the original base of the pit. The largest of these slabs was some 0.75m long and had traces of a boulder-clay capping (C276). C276 yielded two radiocarbon dates with ranges of 40 BC–AD 85 and 925–600 BC respectively, at one sigma (GU-2755 and GU-2756). The significance of these widely divergent dates is discussed in Section 6.3.2. It seems probable that the sample yielding the earlier date contained bone which was old at the time of deposition.

The pit gave no immediate clues as to function. It was not water-tight, as its sand sides were unlined for much of their length, and it had no evidence of in situ burning. Filling the lower portion of the pit was a series of ashy dumps (C285, C296) comprising a loose, crumbly, orange-red peat ash. Analysis of a sample from C296 concluded that the deposit was of the common, mixed type found throughout the site sequence and deriving from a range of domestic debris.

Above this level the pit was almost wholly filled with a carefully constructed stack of building stone (C228) quite distinct from the disorganized rubble contained in the deposits which sealed it (this section). The stone deposit filled and overlapped the pit, standing directly on clean sand (C229). Overall the deposit comprised up to nine courses of stacked stone, rising some 0.5m above the sand floor (visible in Ill 2.10 and 2.20). The lowest courses (C271) appeared to be arranged in such a way as to corbel over the base of the pit, leaving a void which had largely filled with the loose ash deposits mentioned above (C285, C296).



ILLUSTRATION 2.10  
Wheelhouse 2, view of central pit, excavated.

Two shallow linear cuts were also identified in the clean sand floor (C229) of Wheelhouse 2. The first (C409) ran approximately north-east to south-west from the west side of the door-way connecting Wheelhouses 1 and 2. It was approximately 0.05m deep by 1m long by 0.15m wide, and appears to have been the setting for a former slab partition. A second cut (C410) ran approximately south-east to north-east, parallel to the southern edge of the central pit (C405) but set around 0.4m back from it. This cut was again around 0.05m deep by 1m long by 0.15m wide, and was probably the setting for another slab partition.

There were other concentrations of activity within Wheelhouse 2, mainly around the southern and western periphery of the structure. The southern periphery contained a series of thin, ashy-clay deposits (C230), deepest close to the entrance to Wheelhouse 1, although discontinuous and not visible in the drawn section (Ill 2.20). These deposits stopped short of the central stone stack and were badly disturbed by rubble in the deposits above them. They appear to represent trampled occupation deposits, presumably derived from Wheelhouse 1. A particular concentration (C216, C213) was identified immediately south of the pier at the main entrance to Wheelhouse 2 (Ill 2.6). No sign of any hearth was traceable in Wheelhouse

2 nor indeed was there any direct sign of burning in situ.

A further group of deposits formed close to the blocked entrance to Wheelhouse 2. Over the clean sand floor (C229) was a thin layer of stained sand (C255) into which were set two small orthostats (C257). These closed the gap between the northernmost pier of Wheelhouse 2 (C138) and the blocked entrance. A thin lens of sterile windblown sand (C254) subsequently accumulated, followed by a series of stained sands with some evidence of organic material (C252, C246). This area, on the whole, seems to have witnessed less human activity than the area close to the connecting entrance with Wheelhouse 1.

All of the contexts so far described can be related to the primary use of Wheelhouse 2, whatever that use may have been. All could conceivably have formed within a few days or weeks, although they may occupy a rather longer period of deposition. All were to be sealed by a major deposit of voided rubble and mixed sand (C130, C131) which appears to represent the deliberate throwing down of the walls into the interior. The deposit was deepest against the walls (Ill 2.11), but covered virtually the whole of the interior, including the stone stack (C228). C131 yielded two radiocarbon dates, with ranges of 56 BC–AD 130 and



480–165 BC respectively, at one sigma (GU-2757 and GU-2758). These divergent dates repeat the pattern seen in the dates from the earlier C276 in the same block. It seems likely that the earlier date has been contaminated by the presence of bone which was old at the time of deposition, most probably derived from the wall-packing which was cast down into the structure along with the upper masonry.

The quantity of voided rubble in this collapse horizon (C131/130) suggests a single-episode of destruction. The fact that this material was not



ILLUSTRATION 2.11

Wheelhouse 2, view of collapsed stone in western part of interior.

restricted to any single part of the structure seems to imply deliberate human action, in other words a concerted attempt to level the structure. It may have been intended as a preparation for the construction of Structure 3 (see Section 2.4.2), although the formation of a series of subsequent deposits seems to suggest that the area lay vacant for a considerable period.

The latest series of deposits which accumulated in Wheelhouse 2 during Phase 1, comprised a thick series of mixed stained sands (C031) with ashy inclusions, and episodes of windblown sand (C036, C049). They probably represent an essentially natural

accumulation which incorporated a certain amount of domestic debris as a result of their proximity to the occupied building. It is impossible to judge over what period these deposits formed, but it may have been decades or even centuries rather than years (contra the interpretation given in the interim report: Armit 1988, 17, which mistakenly referred to an absence of naturally accumulated windblown sand in these deposits). It is particularly interesting that numerous episodes of windblown sand are identifiable in these deposits. This appears to confirm that there was some

wind erosion of the machair close to the settlement even during Phase 1, and further highlights the absence of any windblown sand deposits within the fills of the main structures, which might otherwise denote temporary or seasonal abandonment of the roofed structures.

One find of particular importance was made in the upper part of the infill of Wheelhouse 2 (C031). This was the upper part of an adult human skull (HB01, see Section 3.4) and two sherds of pottery (V2513 and V2454, Ill 3.3 d and e, see Section 3.2.6), one with a zigzag cordon, placed together in a hollow scooped out of the surface of the sand and rubble. It lay directly below the later Structure 3, the construction of which had removed the upper sands from this area of the interior. Despite being set into the destruction deposit of Wheelhouse 2, therefore, it is probably best seen as associated with the construction of Structure 3, placed

in position after the trench for this later structure had been excavated, removing the upper sands.

The deposits within the entrance passage to Wheelhouse 2 could not be fully excavated because of the density of stacked building stone combined with the limited working area between the passage wall and the edge of the excavation trench. These deposits were not subsequently sealed by further structures and, after the initial deposition of slabs (this section), cannot be definitively assigned to Phase 1 or 2.

The earliest deposits identified comprised a stack of slabs (C401) which occupied almost the whole of the passage, and were particularly densely packed towards the east (wheelhouse) end (Ill 2.12). These were recorded on plan and by photograph, but could



ILLUSTRATION 2.12

Wheelhouse 2, view of stacked stone in entrance passage. The recessed butt-joint of the Wheelhouse 2 wall and its entrance passage can clearly be seen.

not be removed. They were contained, at their eastern extent, by the wall blocking the Wheelhouse 2 entrance (C407). They are interpreted as deposits of building stone stacked ready for use, but abandoned when construction of the wheelhouse was aborted (see Section 5.3.2).

This stone deposit was sealed by a series of thin layers of ashy domestic refuse (C089, C090, C110, C072, C122). Analysis of a sample of one of these (C090), from the westernmost extension of the entrance passage, suggested that this deposit was essentially a single-episode discard of hearth waste, with a high charcoal content, and with some admixture of other domestic refuse. This group of deposits may thus be interpreted as deriving from floor clearance within Wheelhouse 1 or, less likely, Wheelhouse 2. The same context also contained the greater part of the hind limb and all of the fore limb of a sheep of around six months old which appears to have been deliberately deposited (see Section 4.2.3.2). The initial deposition of this material must have followed rapidly on the abandonment of construction of Wheelhouse 2, as no sand deposits seem to have accumulated around and between the stacked stones.

Finally, a dark, organic, stained sand (C086/218) accumulated within the entrance passage up to a depth of at least 0.6m. This homogenous deposit contained relatively little pottery (74 sherds) for its volume, and is interpreted as a slowly accreting mixture of windblown sand with limited inputs of domestic waste from Wheelhouse 1 and other structures. The much smaller volume of sediment from the ashy dumps below contained far higher concentrations of pottery.

The depression and upper walling of the entrance passage were partly visible during Phase 3, at which point they were filled and covered over by the midden deposits of Block 18 (see Section 2.5.3). It is possible that the passage had simply not filled in completely by Phase 3. It is also possible, however, that it had entirely filled during Phase 2, but had been re-exposed by soil movement during Phase 2 (see Section 2.4.7). The absence of clean windblown sand lenses within this deposit is intriguing, particularly given the evidence of such deposits in Wheelhouse 2. It appears to suggest that multiple episodes of deposition and erosion may have removed traces of Phase 1 natural deposition from this area.

One particular find from this group of deposits should be highlighted. This was an iron spade-shoe (SF23), retaining part of its wooden haft, found in context 072; a mixed deposit of stained sands formed over the stacked stone in the inner entrance passage between the small cell (C073) and the Wheelhouse 2 entrance. While this may represent the casual discard of a broken tool, its position, just outside the blocked entrance to Wheelhouse 2, is suggestive of a formal closure deposit. A date obtained from the wooden haft provides a range of AD 25–130 at one sigma (AA-29767). The context probably formed during Phase 2 but an earlier formation, during Phase 1, is not excluded as a possibility by either the stratigraphy or radiocarbon dating.

### 2.3.3.3 Interpretation

Wheelhouse 2 appears never to have been used as a domestic building. It contained no hearth, at least within the excavated area, and no build-up of domestic debris such as has been identified in Wheelhouse 1 and all of the other inhabited structures on the site. The size and shape of the structure, however, and the presence of at least two radial piers and a ‘marker’ for another, all suggest that the structure was designed and laid out as a wheelhouse on a similar plan to the adjoining Wheelhouse 1. Indeed, if one super-imposes the plan of Wheelhouse 2 onto that of Wheelhouse 1, aligning the entrances of the two, they are an almost exact fit: the two piers of Wheelhouse 2 line up exactly over the equivalent piers in Wheelhouse 1, and the ‘marker’ stone stands exactly on the line of the intervening pier.

Yet there are several strands of evidence to suggest that the construction of Wheelhouse 2 was abandoned well before completion:

1. Had the wheelhouse been completed it would have required a further radial pier between the two which were identified (C138, C139) in order to support its superstructure. This pier would have stood on the west side of the entrance which connected Wheelhouses 1 and 2. Any pier which had stood here must have been removed before any of the thin ashy deposits (C216, C213, C230) which covered the sand floor in this area had formed. It seems highly improbable that the removal of a pier, and thus of the stone corbelled roof of the bay, could have been effected without leaving any trace of rubble, trampling or other disturbance in the smooth sand floor. Either the pier was

never built, or else it was removed prior to the completion of its upper corbelling. In either case, the structure could never have been roofed as, or have functioned as a wheelhouse. The ‘marker’ stone (C406), standing in the position where a pier would have been expected, may have formed part of the laying out of the structure, or all that remains of a dismantled pier.

2. The careful walling-up of the main entrance to Wheelhouse 2, before any deposits had formed in the interior or the passage, suggests that the structure was reduced to a cell, accessible only from Wheelhouse 1, at an early stage in its structural history. As this walling seals off deposits of stacked building stone in the passage, it would appear that it was built immediately on abandonment of construction, and that the passage of Wheelhouse 2 was never again used for access.
3. The deposits of large stones, both in the passage (C401) and in the stack (C228) above the central pit (C405), are difficult to interpret other than as material deposited ready for construction, but never apparently used.
4. The ‘false entrance’ leading southwards from the Wheelhouse 2 entrance passage cell (C073) seems to have been intended to lead into a cell or passage which was never built. A trench cut into the sand behind this cell found that the area comprised nothing but undisturbed dune sand.

It would appear, therefore, that the construction of Wheelhouse 2 was abandoned at a stage where the wall had been constructed to rather more than 1.7m (the amount of rubble in C130 and C131 might suggest that some 2m of walling was originally present although this is no more than a scale order estimate), but before all of the piers had been built.

Quite why the project should have been abandoned is unknown, but a wide range of reasons are possible, ranging from death or injury to the builders or intended occupants, structural failure of the walls or piers (though there is no sign of such problems in the excavated masonry), to a lack of resources for completion. We will obviously never know. The original intention, to construct two adjoining wheelhouses, was an extremely unusual one, and the implications of this will be explored in later sections of this report.

The complexity of the entrance passage to Wheelhouse 2 is worth noting. This is particularly important as it has sometimes been thought that such entrances were cumulative constructions, extended to prevent sand build-up around the door-way (eg at Sollas, Campbell 1991), or to add to the monumentality of the wheelhouse. In the case of Wheelhouse 2, however, it appears that the entrance passage was laid out, in all its complexity, at a relatively early stage in the construction of the wheelhouse.

Assuming then that Wheelhouse 2 was never completed and never occupied as a domestic building, it remains to account for the deposits which were found within it. Our understanding of these is of course greatly hampered by the limited area available for excavation. The features seem unusual and inexplicable, but this may be at least in part a result of the incomplete plan which is available.

It seems unlikely that Wheelhouse 2 was ever roofed. Roofing could presumably only have been achieved by resting the rafters of a conical roof behind the wall-head. Such a roofing mechanism would have required timbers of much greater length than those required for Wheelhouse 1. Although not impossible, therefore, it seems intuitively highly unlikely that such scarce and valuable resources would have been directed to what seems to have been effectively an out-building.

It is possible that partial roofing might have been achieved using the partly built radial piers as supports. This might explain the retention of at least two piers which were otherwise structurally redundant. It is at least equally possible that no part of Wheelhouse 2 was ever roofed, and that the structure was simply left open for a short time as a yard accessible from Wheelhouse 1 (during which the small quantity of deposits formed within its interior), with the intention that it might at some stage be completed. It was presumably infilled when that idea was finally abandoned.

How long Wheelhouse 2 stood open, and what, if anything, it was used for over this period is unclear, but from the lack of sand accumulation in what was effectively a deep pit in an active machair system, it seems improbable that it was open for more than a few years. The few deposits relating to this period are uninformative and seem most likely to derive from Wheelhouse 1 floor clearance. Aside from the ceramic assemblage the few other finds are restricted to fragments of cetacean and antler-working debris, a bone pin (SF73), a hammerstone (SF206) and a rotary quern stone (SF133) (Table 2.2).

TABLE 2.2

Finds (excluding pottery) from Wheelhouse 2 (Phase 1).

Internal deposits	Entrance area
Whalebone (SF128)	Iron spade (SF23)
Worked antler (SF71a)	Whalebone (SF301)
Antler roughout (SF71b)	Rotary quern stone (SF133)
Bone pin (SF73)	
Hammerstone (SF206)	
Human skull fragment (HB01)	

The stack of stones within the interior filled and sealed the partly slab-lined central pit (C405), which had presumably, therefore, been dug during the initial period of construction. The pit was positioned more or less where one would normally expect the central hearth of a wheelhouse to be located, and its function is entirely unknown (given that few, if any, primary central hearths have been removed from wheelhouses, it is entirely possible that similar pits have gone undetected elsewhere). The stones around its sides were unburnt so it was apparently not a disturbed kiln or cooking pit, although there were small fragments of charcoal of indeterminate species within its fill (C296). The sides of the pit, although partly lined, were not clay-luted, so it is not comparable with the water-tight tanks found on some Atlantic roundhouse sites. No unusual finds came from the fills, which appear to have percolated through the voids in the stone stack above. During the period when Wheelhouse 2 lay open, the pit would have been buried below a stack of building stone which stood at least 0.5m above the sand floor surface.

The closest parallels for the pit are probably the primary pits below the floor of the Sollas wheelhouse in North Uist (Campbell 1991), although no overtly ritual deposits survived within the Wheelhouse 2 example. It may well be that the pit would have been back-filled and covered over with a central hearth had the construction of Wheelhouse 2 been completed.

The closure of Wheelhouse 2 seems to have been a pre-meditated act involving the toppling in of the upper walls of the structure. The interior was by no means filled and the substantial hollow left in the sand was subsequently filled by a series of predominantly natural deposits of sand, the varying organic components of which seem to reflect the varying conditions and speed of deposition.

### 2.4 PHASE 2: THE CELLULAR STRUCTURES

Phase 2 represents the period in the life of the settlement during which Wheelhouse 1 ceased to be occupied in its original monumental form and the settlement was progressively modified to create a cellular layout. Occupation continued inside the wheelhouse, although some of the bays were blocked and parts of the roofing propped up, altering the spatial arrangements of the settlement. At broadly the same time a second domestic building, Structure 4, was built adjacent to, and accessed from, the wheelhouse entrance passage. Later in Phase 2, a small cell, Structure 3, was built over the remains of Wheelhouse

2, accessed directly from the surviving Wheelhouse 1. A series of smaller structures and features are also associated with this phase.

This phase has been divided for descriptive convenience into sub-phases 2a and 2b (Ills 2.13–2.14) which relate to two successive re-orderings of the interiors of the two main structures; Wheelhouse 1 and Structure 4. This division should not be allowed to obscure the continuous nature of the development of the settlement during Phase 2.

Also of interest is the apparent evidence for soil erosion during Phase 2. This appears to have resulted in the removal of any midden or other material which

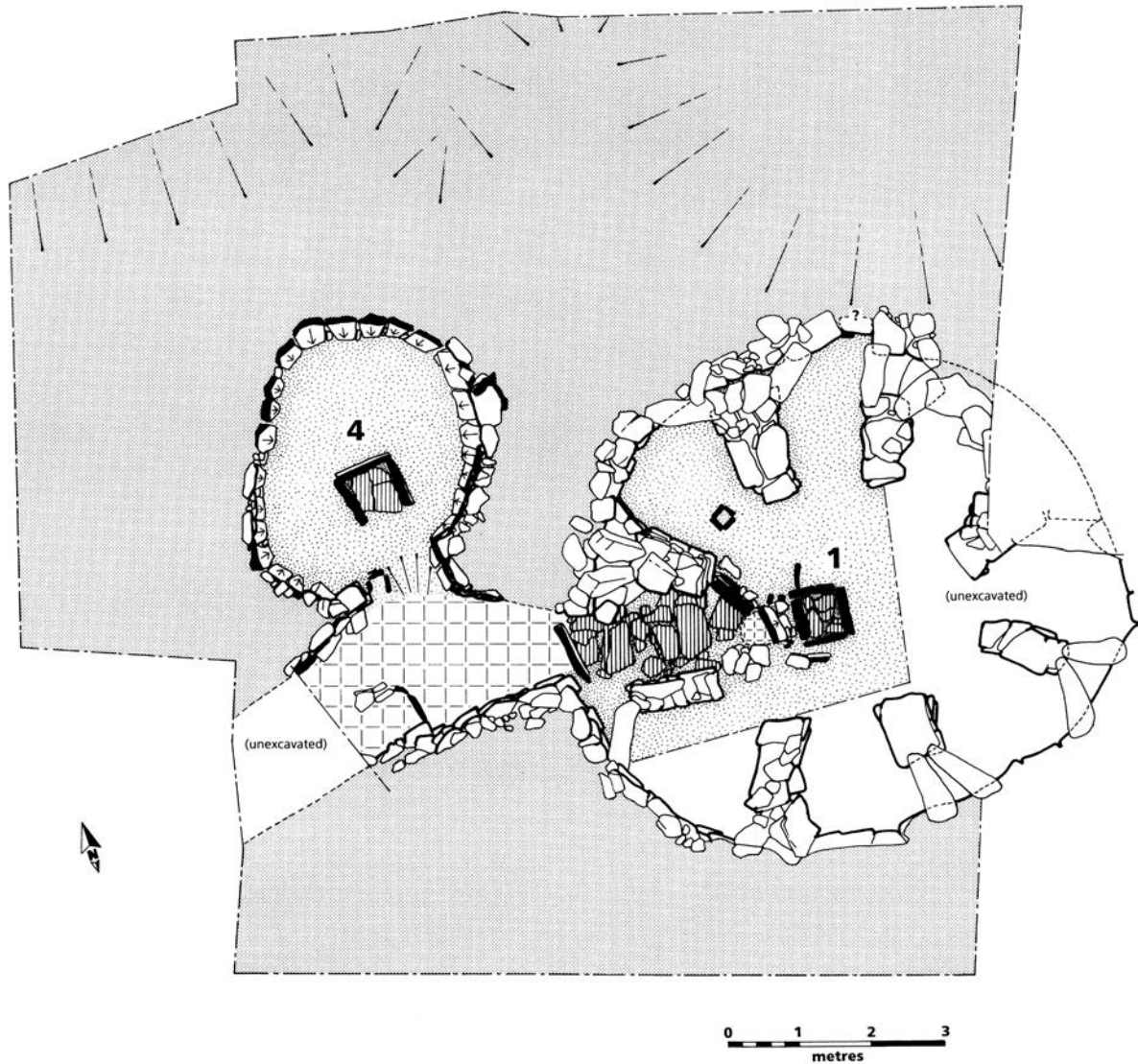


ILLUSTRATION 2.13  
Phase 2 summary plan No 1.

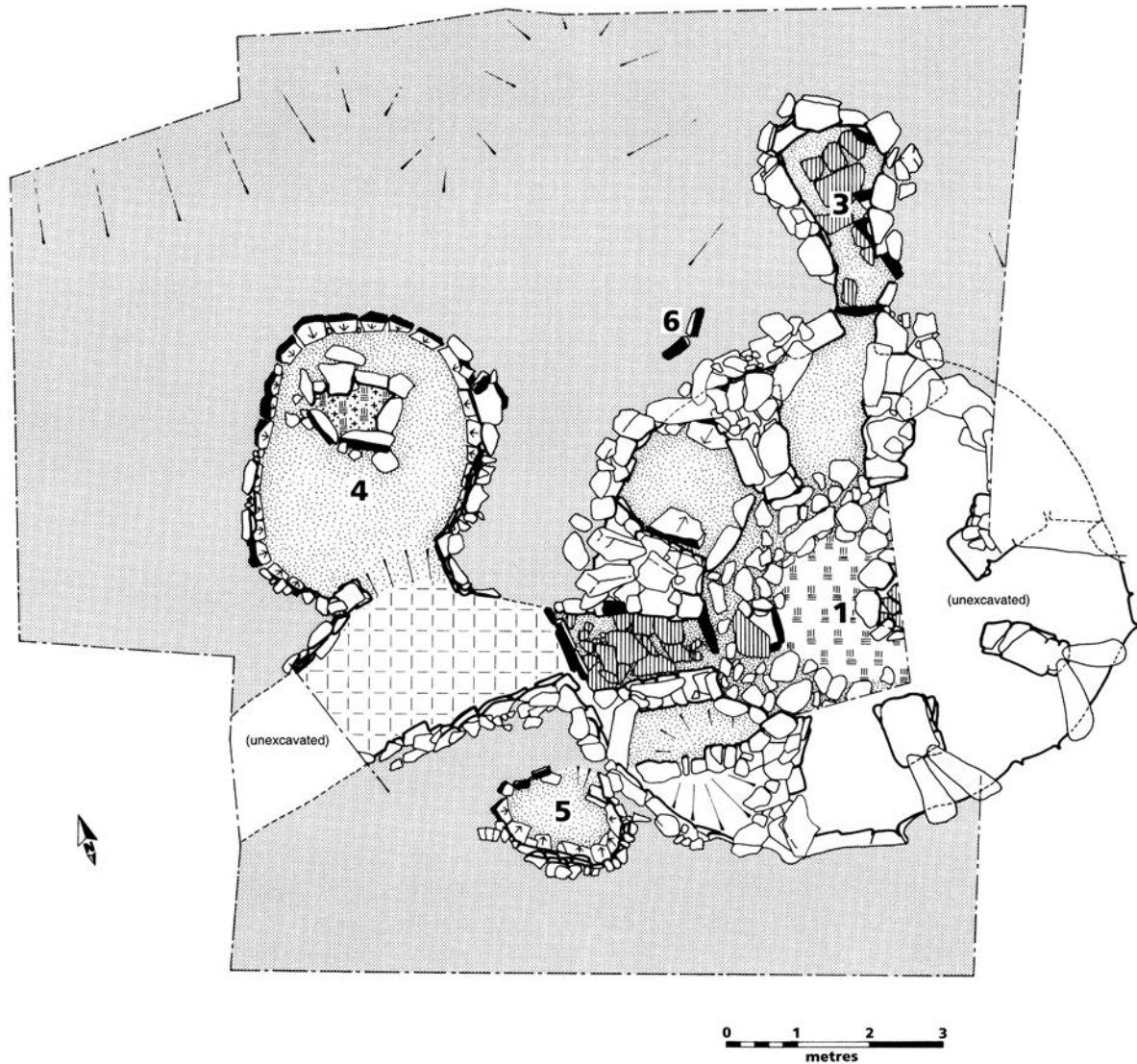


ILLUSTRATION 2.14  
Phase 2 summary plan No 2.

may have been deposited around the Phase 1 and 2 buildings, as well as the partial destruction of certain Phase 2 structures.

The main changes can be summarized as follows:

1. The settlement no longer had a 'monumental' character, and the wheelhouse was now an increasingly unstable and progressively modified structure.
2. Activity was spread around a greater number of smaller structural foci, giving the settlement a cellular character.

3. Slab-revetting was adopted as the predominant structural technique.

4. There were, for the first time, definite signs of soil erosion around the structures.

Block 5, the internal deposits within Wheelhouse 1 (Blocks 5a and 5b), continued to form during Phase 2 (Ill 2.1). Blocks 8 and 9, representing the construction and occupation of Structure 4, also relate entirely to Phase 2. These blocks were sealed by deposits of Phase 3, and clearly post-date deposits of Phase 1. Block 22 represents Structure

7, a secondary cell built over Structure 4 after its abandonment, but still within Phase 2. Blocks 17 and 19 represent the construction and use of Structure 3 which is also sealed by Phase 3 deposits and which itself seals deposits of Phase 1.

The remaining blocks (Blocks 10, 13, 14 and 21) relate to two stone-lined pits, Structures 5 and 6, and two further pits. All are sealed by Phase 3 deposits, but only Block 14 has a direct stratigraphic link with deposits of Phase 1 (it is clearly later than the construction of Wheelhouse 1). Structures 5 and 6 are assumed to belong to Phase 2 because of their similarities in construction with Structures 3 and 4, and because the original roofing of Wheelhouse 1 appears incompatible with the presence of Structure 5.

### 2.4.1 CONTINUING OCCUPATION OF WHEELHOUSE 1

There was no apparent break in occupation between the Phase 1 activity in Wheelhouse 1 and that of Phase 2. Phase 2 deposits comprise the overwhelming majority of the material excavated from within the wheelhouse and lay to a depth of around 0.6m in the central area, with even deeper accumulations in some of the bays.

#### 2.4.1.1 *The first reorganization and subsequent occupation – Phase 2a: Block 5a*

Following the Phase 1 occupation of the wheelhouse interior, the entire central area and parts (if not all) of the bays were covered with a deposit of clean white sand (C274, C286). The deposit was devoid of cultural material and seems to have been intended simply to create a new floor (similar to the natural sand floor originally present when the wheelhouse was first constructed). This deposit was not fully excavated.

It was on this floor surface that a substantial rectangular hearth (C235) was constructed (Ill 2.15). Overall, the hearth measured some 1.1m north-north-west to south-south-east by 0.8m. The larger, south-south-eastern sector was well-paved with flat slabs and carefully kerbed, with external dimensions of around 0.8m north-north-west to south-south-east by 0.8m. The north-north-western sector was smaller, comprising an area of rougher paving only some 0.2m by 0.6m, enclosed between the kerbing of the south-south-east sector and by a small upright slab.

The hearth was set close to the centre of the wheelhouse and was aligned on the entrance bay. Its fill comprised numerous lenses of heavily burnt and friable peat ash (C236), and a spread of similar peat-

ash-rich material (C237) lay around it. This material produced an assemblage of some 65 sherds of pottery. Two slabs (C503), one edge-set, to the south of the primary hearth seem to have related to some form of structure, perhaps a seat or bench adjacent to the hearth.

A floor division some 1m long, formed of two principal edge set slabs, and further smaller stones (C504), was also set into the laid floor (C274). This seems to have been the base for a slab or more likely a timber partition which would have blocked entry to the northern half of the wheelhouse from the entrance. This would have forced anyone entering the building to turn to their right and enter anti-clockwise.

The first hearth was replaced by a second (C222) in the same location but with a rather different design (Ill 2.15 inset and 2.16). The new hearth was again rectangular, slightly larger, and with a base formed by a new layer of heat-cracked slabs. It retained the former bipartite division. The larger sector was re-kerbed with a mixture of edge-set slabs and small, water-worn beach pebbles, and widened to 0.85m. The upright slab between the hearth and the entrance was retained, and further smaller slabs were added to fully enclose this part of the hearth. Further somewhat rounded stones were used to re-pave this smaller sector.

This second hearth seems to have been the source for a major and extremely compact deposit of trampled ash and sandy occupation debris (C204) which formed over the whole of the interior. This deposit was up to 0.15m in maximum depth but more commonly 0.05m deep. It lapped up markedly against the inner edges of the piers and mounded towards the centre of the building. It formed only a thin covering of a few centimetres over the second hearth (C222), which it also filled. The central area deposits of Block 5a produced a total of some 295 sherds of pottery.

C204 yielded two radiocarbon dates, with ranges of AD 70–135 and AD 30–105 respectively at one sigma (adjusted) (GU-2751 and GU-2752).

The superimposition of the two hearths, and the formation of deposits associated with them, created a distinct mounding in the centre of the wheelhouse interior which accentuated a slighter mounding present in the laid floor deposit (C274). The latter is perhaps most likely the result of an underlying hearth below the excavated area.

During the period of activity associated with these hearths, a rather more complex series of deposits formed within Bay 1. The interpretation of these deposits was

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## Excavation results

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hampered by mixing and distortion in the western part of the bay, seemingly caused by the outward slumping of Pier A in towards the entrance bay. The lowest level reached in Bay 1 was formed by two flat paving slabs (C510), set within the centre of the bay (their positions

are dotted on Ill 2.15). Above these lay a dark stained sand (C292) which had formed across the whole of the bay, with a central 'bowl'. The gap or aisle between Bay 1 and the entrance bay had been roughly walled-up (C509) during or before the formation of this

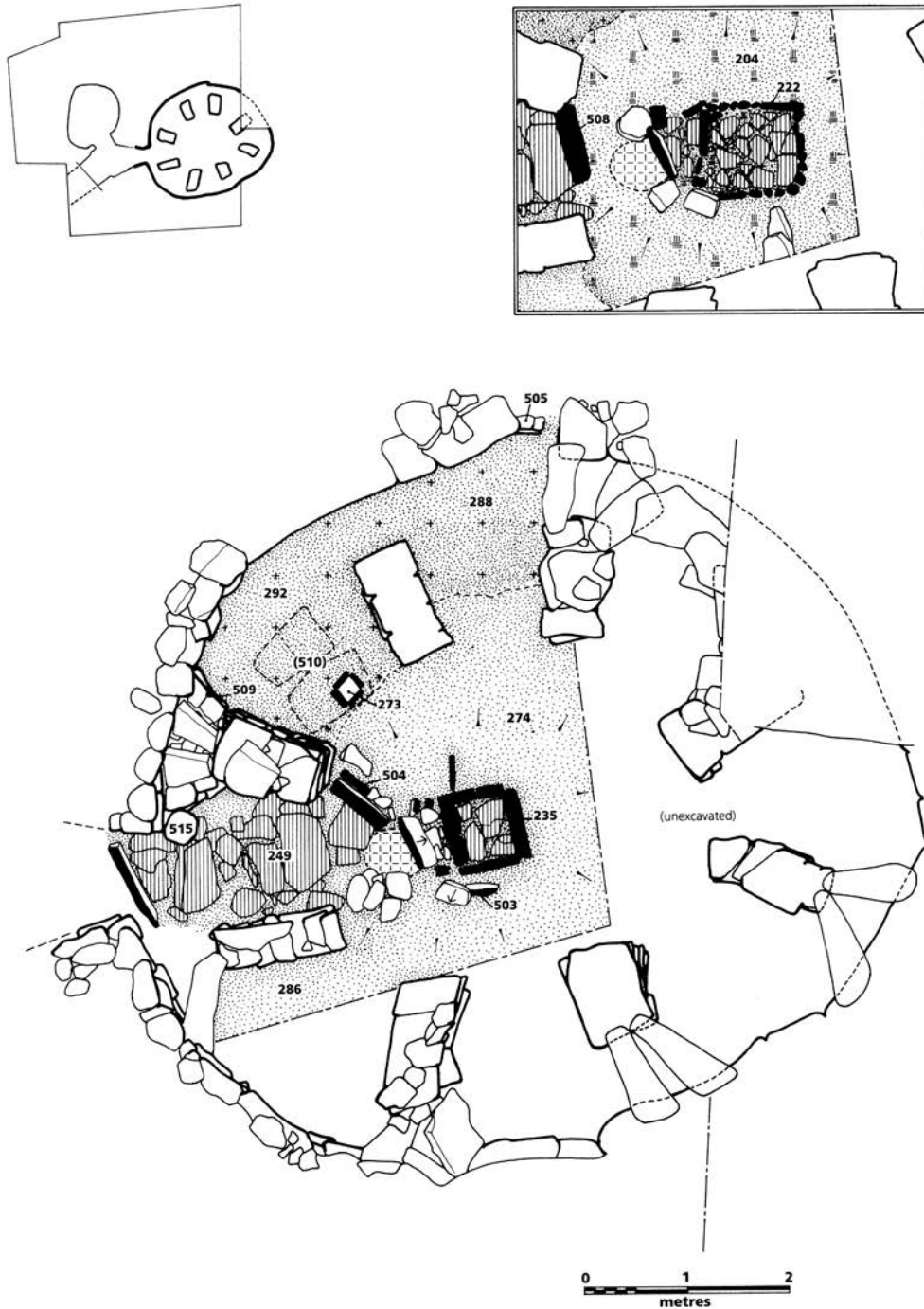


ILLUSTRATION 2.15  
Wheelhouse 1, Phase 2a floor. The inset shows the second Phase 2a hearth and part of the secondary paving.





ILLUSTRATION 2.16

Wheelhouse 1, the second Phase 2a hearth from the east. Not all of the elements in this photograph are stratigraphically in phase. The Phase 2b stone features in Bay 1 have been only partly removed, as have those around the periphery of the central area, while the entrance buttress and Bay 7 kerb stones also belong to Phase 2b. The hearth shown here is thus rather earlier than most of the other visible features.

material. The bowl within the bay deposits seems to have been deliberately filled by the deposition of a lens of clean sand (C503) to level the surface of the cell, before sinking again to allow the formation within the bowl of a further layer of occupation debris (C291). This was sealed by a compact stained sand, perhaps another laid floor (C272).

Seemingly at this point a post-setting (C273) was inserted at the front of the bay. This was nearly square, some 0.3m by 0.35m in size internally, although the slabs had been slightly displaced, perhaps by removal of the post, or by downwards pressure. Its position suggests that it was intended to hold a post some 0.3m in diameter propping up the front of the corbelling over the bay. This may be supported by the shallowness of the post-setting (0.2m) which implies that the post must have been held in place by pressure from above.

The final deposit in Bay 1 prior to the next reorganization was a layer of vivid orange peat ash, which extended into the central area where it was sealed by the extensive floor deposits (C204). The total amount of pottery within these Bay 1 deposits was relatively small (88 sherds).

The deposits of Bay 2 in this first period of Phase 2 activity were similar to those in Bay 1. All formed against a wall of small to medium coursed stones (C505) which blocked the lower portion of the entrance between the two wheelhouses (Ill 2.17). This wall seems to have been dismantled to the level of the top of these deposits (assuming that it originally extended higher) during the next phase of reorganization (see Section 2.4.1.2). It was presumably inserted when the building of Wheelhouse 2 was abandoned, and removed when access was required to the later Structure 3 (see Section 2.4.2).

The laid sand floor (C274) extended slightly from the central area into Bay 2, where it rapidly thinned



ILLUSTRATION 2.17

View through connecting entrance from Wheelhouse 1 towards Wheelhouse 2, showing three courses of residual blocking wall. Note also the triangular threshold stone on the far side of the entrance.

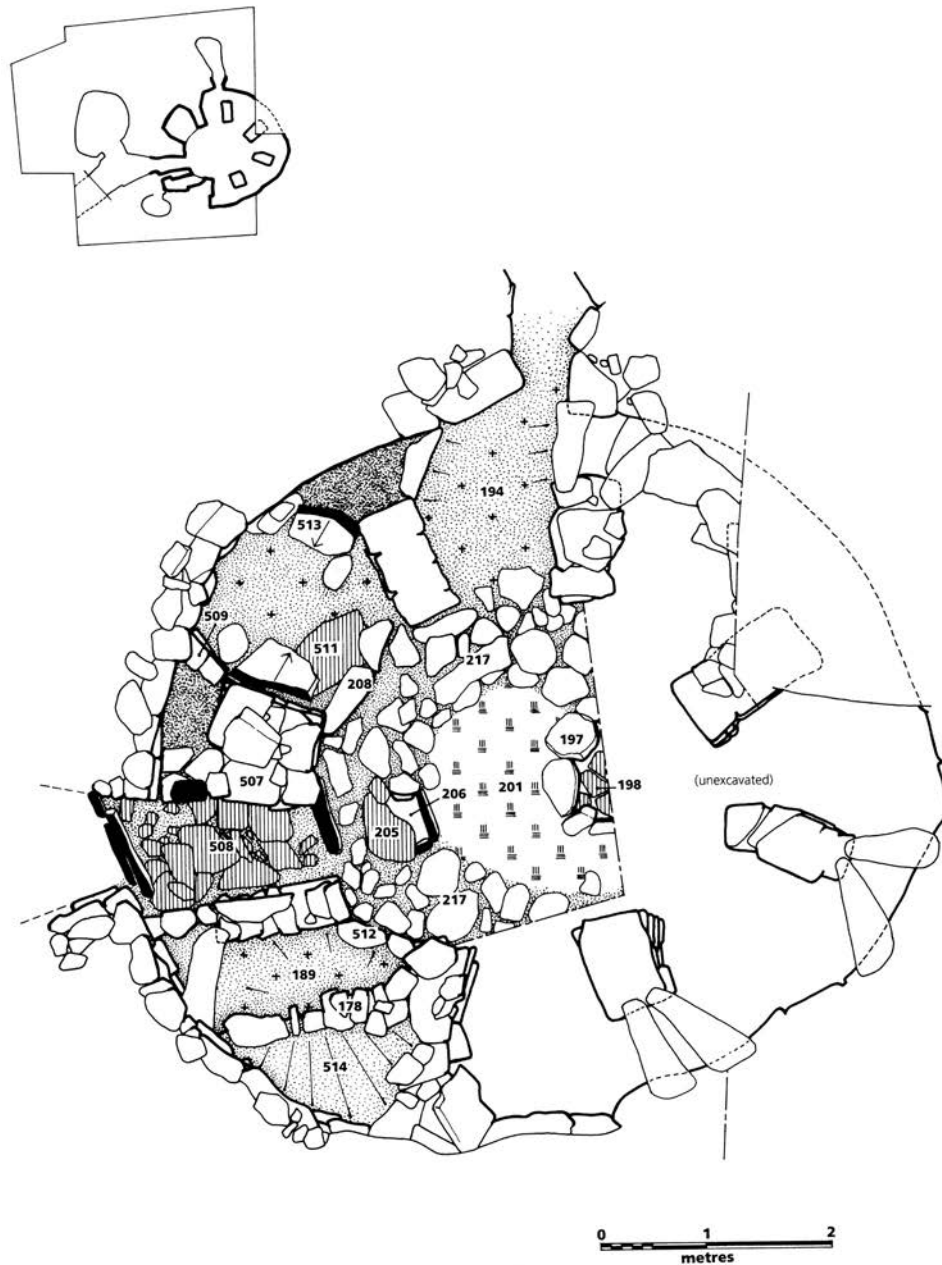


ILLUSTRATION 2.18  
Wheelhouse 1, second Phase 2 floor.

and fragmented. The remainder of the bay was filled with a discontinuous, burnt, reddish peat ash layer (C288), which also extended in places into the central area. The relationship between C288 and C274 could not be established with any degree of confidence. Above these layers was a deposit of orange-brown peat-ash and organic-rich material (C265) which was continuous with the similar deposit across the central

area (C237), and which seemed to derive from the primary hearth (C235). An upper deposit of peat-ash-rich material (C261) subsequently formed with a distinct bowl at its centre. This was then levelled with a greenish, clean sand deposit (C256), before the laying of a fine, white shell sand (C242) across the whole of the bay, banking up into the aisles behind the piers. This layer was then sealed by the ubiquitous

floor deposits (C204) which extended over much of the interior.

Bay 2 contained almost five times as much pottery as Bay 1 despite its comparable volume of sediment, and the density of ceramics seems to have been relatively constant throughout the build-up of deposits. C265 yielded two radiocarbon dates; one spanned 40 BC-AD 55 at one sigma (adjusted) (GU-2749), while another at  $6800 \pm 80$  BP (GU-2750) was clearly a rogue date.

The deposits within Bay 7 seem to have been broadly continuous with those of the central area. After the deposition of the white, laid sand floor (C274, C286) a layer of orange peat ash deposits (C287) formed, continuous with those in the interior (C237), which seemingly derived from the primary Phase 2 hearth (C235) This was overlain by a further deposit of peat ash (C289) which underlay the extensive floor deposits (C204), mentioned above, in each of the other bays and the central area. Like the other two excavated bays, the deposits of Bay 7 formed in a distinct bowl-like formation. The assemblage of pottery from Bay 7 (167 sherds) is comparable with the large assemblage from Bay 2, as only half of Bay 7 was excavated.

### 2.4.1.2 *The second reorganization and subsequent occupation – Phase 2b: Block 5b*

The second reorganization was marked by the construction of an entirely new hearth (C197) directly onto the underlying trampled ashy floor (C204). This hearth was only half excavated, the other half extending under the section which had to be left in place to avoid destabilizing the corbelled Bays 3, 4 and 5 (Ill 2.18).

This new hearth was set off-centre within the wheelhouse interior, with its western edge adjacent to the east end of the earlier hearth. Its position suggests that it would have made access to Bay 4 rather constricted.

The hearth was formed by laying an irregular oval of water-worn boulders some 1.3m in approximate diameter. Unlike the earlier hearths there was no formal kerbing and no paved base. The construction and dimensions of this hearth, as well as its position away from the entrance, are strikingly similar to the secondary hearth in Structure 4 (see Section 2.4.3.2). It was filled with a greasy, orange-black peat-ash (C198) deposit up to 0.3m deep, which spilled over the earlier floor deposits.



ILLUSTRATION 2.19

Wheelhouse 1, Phase 2b, the covered pit and entrance pier buttress from the east.

There was no trace of a laid sand floor as had been deposited at the beginning of Phase 2. Indeed, a stained sand deposit (C217) containing numerous angular stones was found over the earlier, ashy floor deposits (C204), around the periphery of the central area (Ills 2.18–2.19). This layer also contained numerous stones which defy detailed interpretation but which were clearly deliberately laid rather than a random accumulation of rubble. There was more than one layer of laid stones present in places, and large stones were set at the front of Bays 1 (C208) and 7 (C512), acting as raised kerbs. This deposit appears to have been deliberately set in place at the time of the construction of the new hearth.

These stones may have formed components of some form of internal furniture, such as timber benching around the hearth, or perhaps formed a discontinuous and irregular paving or cobbling. The quantity of stones within the floor deposits of this phase of activity contrasts sharply with the lack of stones in the preceding period, as is clear from the drawn section (Ill 2.20). They also made it extremely difficult to link the sequence of deposits within each of the bays with those of the central area.

Above these deposits, the central part of the central area, west of the hearth, was covered by a layer of compact trampled material (C201), which analysis suggests is derived predominantly from organic debris, with a high ecofactual content, and with only a limited input of ash. This rather contradicted the field interpretation of the deposit as a predominantly ash-derived sediment. A sub-sample from the same context was identified as an inorganic sand lens, containing no ecofacts, presumably dumped as flooring during the period of occupation. This overall deposit then would appear to derive from a range of domestic activities.

The only other feature identified within the central area at this time was a small stone-lined pit (C206), set into the sand and stone layer (C217) between the hearth and the entrance (Ill 2.19). The east side of the pit was formed by the upright hearth slab from the primary hearths which had been left in place. The interior of the pit measured some 0.3m by 0.2m and had been capped using a small, slightly displaced slab (C205). One of the wall slabs was formed of a quarter fragment of a rotary quern (SF171, Ill 3.25b, see Section 3.6.2). The floor of the pit was unlined and cut through the earlier ashy deposits (C237). Although a certain amount of ashy material (C210) had percolated into the interior, the pit was largely empty when discovered. Similar pits in similar positions have been

discovered on other wheelhouse sites, for example Sollas (Campbell 1991) and A' Cheardach Bheag (Fairhurst 1971).

A further extensive layer of peat ash and mixed occupation debris (C177) covered these internal features and was sealed directly by construction deposits associated with Structure 8 (see Section 2.5.1.1).

Despite a broadly equivalent volume of material, the second period of Phase 2 use in the central area produced only 75 sherds of pottery, as opposed to 295 in the earlier period. This included 25 per cent large sherds as opposed to 20 per cent previously, perhaps because of the relatively sheltered environment between the laid stones from which many sherds were recovered.

Within Bay 1, the earlier post setting (C273) had been covered over by a large flat slab (C511) set at the front of the bay. It is possible that this slab acted as a post-pad and thus superseded the former post. Set over the front of this slab was a kerb formed by two edge-set slabs (C208). This seems to represent the first time at which the interior of the bay was formally separated from the interior, although part of the reason for the insertion of this kerb may have been to protect a post, if the flat slab was indeed in use as a post-pad. The setting of the kerb made the relationship between deposits inside and outside the bay extremely difficult to assess. The deposits which formed behind the kerb were a series of variously stained sands, incorporating varying quantities of peat ash (C196, C195, C188) and quantities of blocky rubble built up in the gaps connecting Bay 1 with Bay 2 and the entrance bay (C509, C513).

Above these was a thick dump of orange peat ash (C187), which had been piled up to completely block the aisle to Bay 2. The deposit did not extend into Bay 2, being separated from it by a void under the lintels which connected the intervening pier to the enclosing wall. Analysis of a sample of this material confirmed that it derived from the repeated dumping and compacting of peat ash. This in turn was sealed by a complex series of striated bands of level sandy deposits (C172), up to 0.5m deep, seemingly reflecting multiple successive laid bay floors.

This whole group of deposits contained some 386 sherds, significantly more than accumulated in the earlier period (88 sherds) and five times the quantity recovered from the central area. The high proportion of large sherds (34 per cent) seems to indicate only limited trampling and activity in this bay.

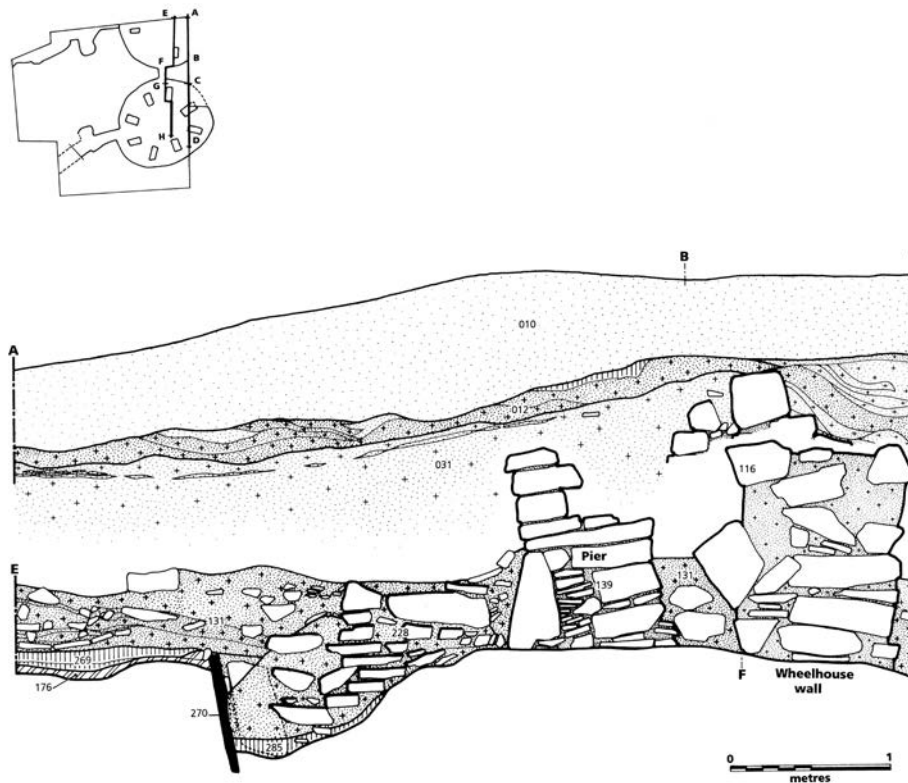


ILLUSTRATION 2.20 (a)

Section through Wheelhouses 1 and 2. *Note 1:* the upper part of the section is drawn along a line set back from the lower part. This was due to the impracticality, for safety reasons, of extending the initial site section downwards. The 'join' between the lower and upper parts is shown on the attached sections. The split does not prejudice any of the stratigraphic relationships shown. *Note 2:* the northern part of the section extends slightly north of the area excavated on plan, as time was available to quickly extend this part of the excavation before the section was drawn. *Note 3:* the section through Wheelhouse 2 clipped the edge of the pit in the centre of the structure. The fill has been projected on, and the slab which lines the side of the pit has been dotted. *Note 4:* the lower part of the section through Wheelhouse 1 shows all layers excavated after the removal of Structure 8. The cut for Structure 8 is reflected in the profile of the uppermost layer shown in this part of the section (C177).

Finally the bay was sealed by a thick and unconsolidated deposit of loose sand and rubble (C120, C145) which appears to derive from the collapse of the building at the beginning of Phase 3 (see Section 2.4.1.4). This material contained no pottery.

Bay 2 contained a series of variously stained sand layers (C194, C173, C168), each backing up against the aisles to either side and containing a relatively small amount of pottery (124 sherds), less than a third of the amount from Bay 1. They appear to represent a series of trampled sand floors. Analysis of a sub-sample from C173 identified it as boulder clay, with a pH value (7.05) outside the range of almost all of the other samples from the site. These deposits were above the level of the earlier blocking wall (C505, see Section

2.4.1.1) and abutted the threshold to Structure 3 (see Section 2.4.2.1) which appears to have been in use at this time. The final deposit in Bay 2 was a deep mix of sand and rubble (C146) similar to that in Bay 1 (C120, C145).

A series of predominantly sandy deposits also formed within Bay 7. The first two of these (C232, C234) were extremely rich in decayed shell and may represent a single-episode of discard. Also of note was a small deposit of boulder clay (C238) adjacent to Pier 8. An accumulation of densely stratified sands and peat ash deposits then formed (C231, C226, C225, C224, C219, C189), together up to 0.25m deep, and compressed into a bowl in the centre of the bay, before a rough boulder wall

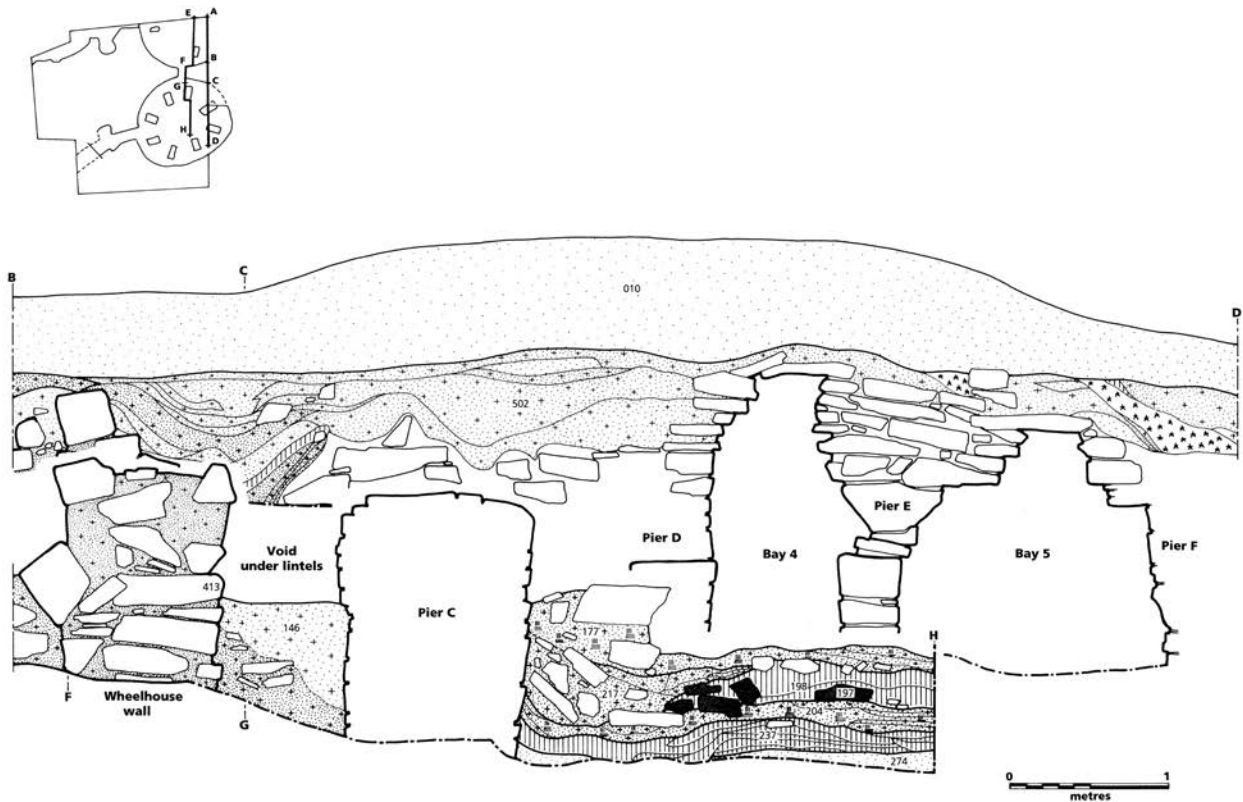


ILLUSTRATION 2.20(b)  
Section through Wheelhouses 1 and 2.

(C178), up to three courses high and one stone thick, was constructed diagonally across the bay. This wall revetted a mixture of sand and rubble (C514) which presumably represents some form of structural collapse from the enclosing wall or Pier 7. This short length of walling was subsequently robbed and partly re-used in the construction of Structure 8. A dump of loose rubble in front of the wall (C180) may represent further collapse. It was sealed by a lens of peat ash (C179) before the collapse of sand and masonry (C096, C137) associated with the commencement of Phase 3.

Given that only half of the bay was excavated, the amount of pottery (357 sherds) from Bay 7 is extremely high, almost equalling that from Bay 1, and almost three times as much as was recovered from Bay 2.

#### 2.4.1.3 The entrance bay deposits

Deposits within the entrance bay cannot be easily related to those within the interior, largely because of the density of stone paving and the homogeneity of the sediments presumably caused by trampling.

The earliest deposit encountered was a deposit of paving slabs (C249). This extended from a threshold stone, some 1m long, set across the entrance itself, to almost abut the hearth (C235) and partition (C504) in the central interior, turning south (right) as it passed through the entrance bay into the interior. On the left, just inside past the threshold stone, was a rounded, flat-topped block some 0.2m across its surface (C515), set at a slightly higher level than the remainder of the paving. This appears to have been deliberately placed. The threshold stone itself rose approximately 0.2m above the paving. The paving was not removed in its entirety, although it appeared from visual inspection to relate to the laid floor (C274) which marked the beginning of Phase 2 within the wheelhouse. This paving was overlain by a series of compact trampled ash and sand deposits (C248, C245, C247, C192).

A second layer of paving (C191) was subsequently put in place, including the lower stone of a rotary quern and a faceted hammerstone (see Section 3.6.2 and 3.6.3), and seems to have been added to with

further slabs (C508) as occupation continued. This retained the outer threshold stone, but also added a new threshold slab across the inner end of the bay, between the two piers. These together defined an area of paving slabs some 1.6m in length. The new, inner threshold stone abutted Pier 1 to the north side of the entrance, but stopped slightly short of Pier 2 on the south side. It seems most probable that this re-paving equates broadly to the second Phase 2 reorganization of the interior, although it may have been emplaced while the second Phase 2a hearth remained in use (Ill 2.15 inset). A faceted hammerstone (SF188, Ill 3.25f, see Section 3.6) was incorporated into this paving.

Resting directly on this paving, and climbing over the inner threshold stone at its inner end, was a substantial stone buttress (C507) which abutted Pier 1 (Ills 2.16–2.19). As we have seen, Pier 1 had slumped dangerously towards the entrance passage, and it appears that the construction of this buttress was a response to that problem. It was similar in construction to the piers themselves, being some 1.6m long and 0.4m wide. It stood to a height of approximately 0.5m (some three to four courses of angular masonry) but it may

have been partially dismantled during the construction of Structure 8. Its upper surface remained visible in Structure 8, projecting as a slight ‘bench’ from the north wall.

A final layer of paving slabs (C506) was subsequently laid in the entrance bay, abutting the buttress and covering over both the inner and outer threshold stones. This paving remained in use until the end of Phase 2b (Ill 2.19).

A total of 94 sherds of pottery were recovered from the entrance bay of which only 13 per cent were large sherds, again reflecting the degree of disturbance to deposits in this area.

#### 2.4.1.4 *The decay of the wheelhouse during Phase 2*

Throughout Phase 2 there were signs of instability within the wheelhouse. By the beginning of Phase 2, if not earlier, the aisle between Bay 1 and the entrance passage had already been walled up (C509), presumably to stabilize the pier. The post-setting (C273) at the front of Bay 1 was inserted slightly later, suggesting a need to provide increased support for the roof of the bay (Ill 2.13). Later still, a stone buttress (C507) was added along the side of the pier in

the entrance bay, presumably again in an effort to halt the southwards slumping of the pier (Ill 2.21). Each of these chronologically sequential acts seems to indicate a continuing concern with the structural stability of Bay 1, a concern which originated no later than the start of Phase 2. The pronounced slumping of Pier A, which was so visible during excavation, is presumably a result of this early instability. The aisle between Bays 1 and 2 was also deliberately blocked with masonry and midden material, perhaps as a preventative measure, although the walling did not form a solid block underneath the lintels, suggesting that it did not serve any great structural purpose. It is possible that the midden material packed under the lintels has simply reduced in volume as it decayed, and that originally the gap was completely blocked, albeit with material which would have done little to strengthen the superstructure of the pier.



ILLUSTRATION 2.21

Wheelhouse 1, Pier A, showing the pronounced slumping of this pier. Note also the rounded, flat-topped stone to the right at the rear of the entrance, which forms part of the primary entrance paving.

Bay 7 seems to have suffered even worse structural problems during Phase 2 although these are not so obviously presaged. Instead, the first sign of problems was the construction of a retaining wall (C178) to revet masonry and mixed sand which had seemingly collapsed into the bay, rendering it effectively uninhabitable (Ill 2.18). This rubble must presumably have derived from the corbelled roof or the back wall of the cell.

There is thus plentiful evidence, allowing for the relatively small number of bays excavated, of structural weakness leading up to the final catastrophic collapse, or deliberate dismantling, of the upper walls and cell roofs, which marks the end of Phase 2, and which is represented by a series of rubble and sand deposits in each of the excavated bays (eg C120, C145, C146). It may be surmised that Wheelhouse 1 during Phase 2, while still perhaps impressive as a structure, did not have quite the monumental interior of Phase 1.

#### *2.4.1.5 Spatial patterning within the wheelhouse*

Despite the inaccessibility of certain areas for excavation, there is a reasonable amount of evidence for differentiation of functions between distinct zones of the interior. There seems little question that throughout Phase 2 the wheelhouse was in use as a domestic building, and the cultural material from its floor deposits suggests that a wide range of domestic activities were carried out, including cooking and eating.

In the first period of Phase 2 the wheelhouse was dominated by a small, well-built central hearth, shielded from the entrance by an upright slab at its west end (Ill 2.13). A slab partition (C504) linked the north corner of the hearth to the inner end of Pier A. This is important as it meant that anyone entering the building was not presented with a choice of moving left or right around the hearth, but was compelled to pass to the right, anti-clockwise. It also had the effect of distorting the symmetry and circularity of the interior, although this need not have had great visual significance if the partition was relatively low. The remarkable similarity between this spatial arrangement and that in the earliest occupation of Structure 4, as well as the similarity in the size, shape and design of the hearths (see Section 2.4.3.2), suggest that these two episodes of occupation may have been contemporary.

No other primary Phase 2 structural features could be recognized in the interior, although at some point the post-setting (C273) was inserted; the first clear

sign of structural instability within the wheelhouse. Subsequently the hearth was replaced by a slightly larger version incorporating unusual pebble-kerbing, and Bay 1 was separated from the interior by a kerb.

The frequently noted bowl-like formation of deposits within the centre of the bays suggests that they were subject to some form of compression, perhaps through use for working or sleeping. In Phase 2a this applies to all three excavated bays, 1, 2 and 7. The much better preservation of the laid floor deposit (C274) in the central area as opposed to the bays, further suggests that the latter were subject to more compression and mixing.

The distribution of pottery within the wheelhouse in Phase 2a adds to the impression of spatial differentiation (Ill 2.22a). Broadly equivalent amounts of pottery were recovered from the central area (31 per cent of the total) and from Bay 2 (38 per cent). The smaller amount from Bay 7 (12 per cent) can be effectively doubled since only half of the bay was excavated, giving a density not dissimilar to Bay 2 and central area. A much smaller amount (10 per cent) was recovered from the entrance bay, as would be expected from the use of this area primarily as a thoroughfare which did not accumulate much depth of deposits.

What is more interesting is the extremely low amount of material in Bay 1 (9 per cent of the total), which does not relate to any lesser volume of deposits but seems rather to represent a genuine difference in deposition. Bay 1 was also the bay least accessible from the entrance (given the constraints on movement around the interior) and thus, on a purely functionalist level, perhaps the least likely bay to be cleared out regularly. Whatever the function of Bay 1 it appears that substantially less broken pottery found its way into the deposits here than elsewhere in the excavated parts of the interior.

Analysis of the size ranges of the pottery assemblages from the different parts of the interior provides further information on the different spatial zones. The percentage of large sherds from each zone is given on Ill 2.22b. Again there is little difference between the central area (14 per cent) and Bay 2 (17 per cent), both close to the average for the site as a whole (15 per cent). Perhaps surprisingly the entrance bay assemblage is similar (13 per cent), despite the presumed effects of trampling. It seems probable that the large sherds here survived by virtue of being deposited to the sides of the entrance bay and within the 'aisles'.

Again, however, Bay 1 has a notably high large sherd percentage of 23 per cent. This would appear



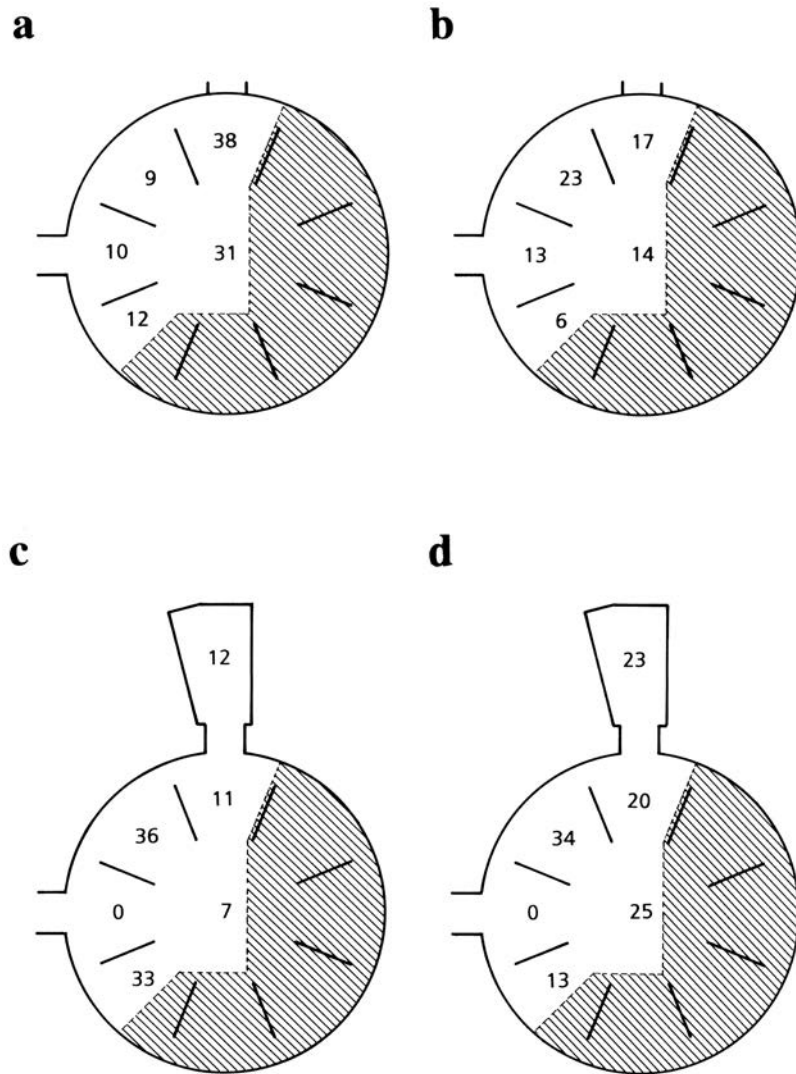


ILLUSTRATION 2.22

Wheelhouse 1 and Structure 3, distribution of pottery: (a) and (c) show the percentage of pottery in each zone during Phases 2a and 2b respectively; (b) and (d) indicate the percentage of large sherds in each zone during these two sub-phases.

to suggest that the pottery sherds which did reach Bay 1 were subject to less subsequent trampling and disturbance than in Bay 2 or the central area. Together with the low absolute level of pottery deposition here, it seems probable that this bay was used differently from the other areas discussed, and was perhaps not a focus for day-to-day activity. The most obvious function would seem to be storage, although there may of course be other possibilities.

The reverse would seem to apply to Bay 7 which has a large sherd percentage of only 6 per cent, suggesting even more trampling and disturbance

than in the central area. While this may relate to more intense activity in this bay it is worth bearing in mind that later collapse of masonry, which affected this bay more than any other, may conceivably have caused the compression and breakage of pottery in these lower deposits. The distribution of other finds is fairly even throughout the excavated area (Table 2.3).

The Phase 2b reorganization of the interior seems to have altered the division of space within the wheelhouse significantly (Ill 2.18). Most obviously the hearth was set back from the entrance. This shows a remarkable similarity with the secondary hearth in Structure 4 (see Section 2.4.3.2) which was of the same boulder construction and was again set back from the entrance. This might be taken to suggest that Wheelhouse 1 and Structure 4 were reorganized as part of a general re-design of the settlement during Phase 2b. A further, rather obvious, change was the opening up of the entrance which had formerly led to Wheelhouse 2 and which now gave access to the newly constructed Structure 3 (discussed in its own right below, see Section 2.4.2).

The forced anti-clockwise path around the interior seems to have been abandoned, and the paving in the entrance bay now terminated abruptly at a newly inserted inner threshold slab. Rough paving or cobbling seems to have circled the periphery of the central area around the hearth, leaving

a small central zone clear and apparently featureless. A small slab-capped pit was the only other recognizable internal feature. This may have acted as some form of sump to drain wastewater from the central area, or it may have had some more symbolic purpose, as appears to be the case at other wheelhouses in the Western Isles (Chapter 7).

The clean sand floor (C242) laid across Bay 2 during the primary period of Phase 2b seems to signal a change in use from bay to passage-way, presumably associated with the construction of Structure 3 (see Section 2.4.2). Structure 3 has been added to the

## Excavation results

TABLE 2.3  
The distribution of Phase 2 finds (excluding pottery) from areas within Wheelhouse 1.

Block	Bay 1	Bay 2	Bay 7	Central area
5a	Bone pin (SF207)	Spindle whorl (SF281)	Bone pin (SF251)	Polisher (SF124)
	Pick (SF299)	Bone comb (SF204)	Worked antler (SF292)	Worked antler (SF219)
	Peg/punch (SF302)	Worked antler (SF221)	?Moulds (SF272-SF277)	Gaming piece (SF145)
	Peg/point (SF303)	Whale bone vessel (SF218)		
5b	Spindle whorl (SF280)	Spindle whorl (SF98)	Antler tool (SF181)	Worked antler (SF286, SF132, SF202, SF289, SF114)
	Worked antler (SF143, SF111)	Whale bone (SF110)	Mould (SF271, SF272)	Whale bone (SF118, SF163, SF169, SF156, SF192, SF296)
	Whale bone (SF162)	Forked tool (SF100)	Whale bone (SF304)	Chopping board (SF170)
	Antler pick (SF101)	Bone pin (SF96)		Bone pin (SF115)
	Copper pin (SF193)	Mould (SF273)		Rotary quern (in pit) (SF171)
	Mould (SF270)	Worked antler (SF293)		

Entrance bay: hammerstone (SF188) and rotary quern fragment (SF189) in paving  
Structure 3: worked antler (SF138)

diagram showing the pottery densities within the structure (Ill 2.22c and d).

There are some significant broad-scale differences in the nature of the finds assemblages from this and the earlier period. Although the pottery assemblage sizes are remarkably similar (942 sherds for the later period as against 858), the later assemblage had a higher percentage of large sherds (23 per cent as against 15 per cent) suggesting that the deposits may have formed rather more quickly and been less exposed to trampling. Despite the broadly equivalent amounts of pottery in the two sub-phases, Phase 2b incorporated a very much larger assemblage of bone debris, eg 215 cattle bone fragments as against only 70 in Block 5a, and 128 red deer fragments as against 34 in Block 5a. This again might suggest that the deposits formed rather more quickly with less attention being paid to cleaning of the floor surfaces. It should be remembered, however, that, had the structure been occupied a little longer, these Phase 2b deposits might themselves have been thoroughly cleaned out, and the apparently greater deposition in this period may be illusory.

The greater percentage of large sherds in Phase 2b may in part account for the much higher percentages of decorated sherds (6 per cent compared to 3 per cent), rim sherds (10 per cent compared to 3 per cent), and bases (2 per cent compared to 1 per cent), since the larger the sherd the more likely it is to include parts

of the rim, base or decorated section of the vessel. In other respects the assemblages are extremely similar (see Section 3.2) and it appears that the statistical differences quoted are largely a factor of the relative size ranges.

More significant than these broad-scale differences is the entirely different spatial distribution of pottery within Phase 2b. Only 7 per cent of this pottery comes from the central area as opposed to 31 per cent in the earlier period, and the amount in Bay 2 dropped from 38 per cent to only 11 per cent. Structure 3, accumulated some 12 per cent of the pottery while the entrance bay was entirely free from sherds. There appears, therefore, to be a broadly even density of pottery from the central area, Bay 2 and Structure 3 (Ill 2.22c).

By contrast, Bay 1 contains 36 per cent as opposed to 9 per cent before, and the excavated half of Bay 7 contains 33 per cent, as opposed to 12 per cent before. The implication would appear to be that Bays 1 and 7 were now being used to dump debris, including pottery, perhaps cleared from the central area. This hypothesis is supported by the large sherd percentage of 34 per cent from Bay 1 (Ill 2.22d) which is significantly higher than for the central area, Bay 2 and Structure 3 (25 per cent, 20 per cent and 23 per cent) and more than twice that of the site assemblage overall (15 per cent). The implication would appear to be that the material dumped in Bay

1 was again subject to little trampling. Bay 1 would appear still, therefore, to be little used for human activity, although now it was apparently used as a repository for cleared debris, incorporating large amounts of pottery.

Bay 2 was apparently rather similar in this respect. Its low percentage of large sherds (13 per cent) may relate simply to the disturbance to the underlying deposits caused by falling masonry during this period of occupation.

In contrast to the pattern of pottery distribution, antler- and whale bone-working debris concentrated firmly in the central area (Table 2.3). This would appear to suggest that different patterns of deposition affected the movement of pottery sherds and other artefacts around the structure. It seems most likely that pot sherds were generally cleared and moved, perhaps with hearth debris, while the debris of bone- and antler-working may have become incorporated into floor deposits closer to the areas where these activities were carried out. Whatever the precise processes, there does seem to be some suggestion that antler-working and whale bone-working were practised in the central area of the wheelhouse, and minimal evidence that this activity extended into the bays.

There may be significance in the fact that all three spindle whorls from the wheelhouse were found in the bays (two in Bay 2 and one in Bay 1), with a complete absence in the central area (Table 2.3). This could conceivably indicate that spinning was primarily restricted to the bays, or simply that the distribution of these finds reflected the same depositional processes as that of the overall ceramic assemblage. In general, however, the non-ceramic artefacts are too few in number to present any more than hints of the likely significant patterning within the structure.

In conclusion, it appears from the nature of the deposits and from the pottery data, that during this second period of Phase 2 occupation, Bays 1 and 7 had become little used, structurally unstable, peripheral areas which were not subject to the same degree of cleaning and maintenance as the central area, Bay 2 and Structure 3. The more formal pattern of spatial differentiation seen in the earlier occupation, where the bays accumulated rather less pottery than the central area, thus seems to have broken down as the structure itself began to crumble. This picture of decline may also be reflected in the greatly increased incidence of bone debris which was left to become incorporated in the floor deposits (see Section 4.2).

### 2.4.2 STRUCTURE 3: BLOCKS 17 AND 19

Structure 3 was a small corbelled cell entered from Wheelhouse 1 (Ill 2.14). It was built within the abandoned and infilled Wheelhouse 2 and used the entrance which had formerly connected the two wheelhouses. When discovered, the structure was intact with its roof in place and a substantial void between its uppermost deposits and the underside of the roof. Its entrance had been sealed off by the accumulation of rubble in Bay 2, prior to the construction of Structure 8 in Phase 3. The structure was also sealed from above by the deposition of a layer of midden material (C012, Block 18, see Section 2.5.3).

The stratigraphic position of Structure 3 is thus unambiguous. It succeeded Wheelhouse 2 and thus clearly post-dated Phase 1. It was in turn sealed by Structure 8 and thus pre-dated Phase 3. As it was still accessible and open prior to the construction of Structure 8, it is clear that Structure 3 was accessible until the end of Phase 2.

#### 2.4.2.1 Construction: Block 17

The walls of Structure 3 were formed of vertical slabs revetted into the fill of Wheelhouse 2, supported in places by an informal foundation course of rougher boulders, and surmounted by coursing of small angular blocks (C162). The area enclosed was approximately 2.5m along its main axis, by 1.4m at its widest point, with a south-west facing entrance into Wheelhouse 1. The southern part of the cell was narrow and constricted, while the inner, northern end, opened out somewhat giving a pear-shaped plan overall. A threshold of three upright slabs (C221) was also emplaced at the inner end of the short entrance passage at this time, although only the westernmost of the three actually crossed the passage (the other two being incorporated within the wall fabric, Ill 2.23a). A further single slab formed a threshold at the outer (wheelhouse) end of the passage.

Between these two thresholds, within a layer of dark stained sand (C220) were buried the skulls of two sheep and the post-cranial remains of one adult sheep (see Section 4.2.3.2). Many of the long bones had been deliberately broken for the removal of marrow and one distal humerus displayed knife marks. None of the bones, however, had been gnawed, and all of the toe bones were missing. The unusual nature of this deposit relative to the remainder of the animal bone assemblage, together with its position within the entrance, suggests that it represented a ritual deposit associated with the

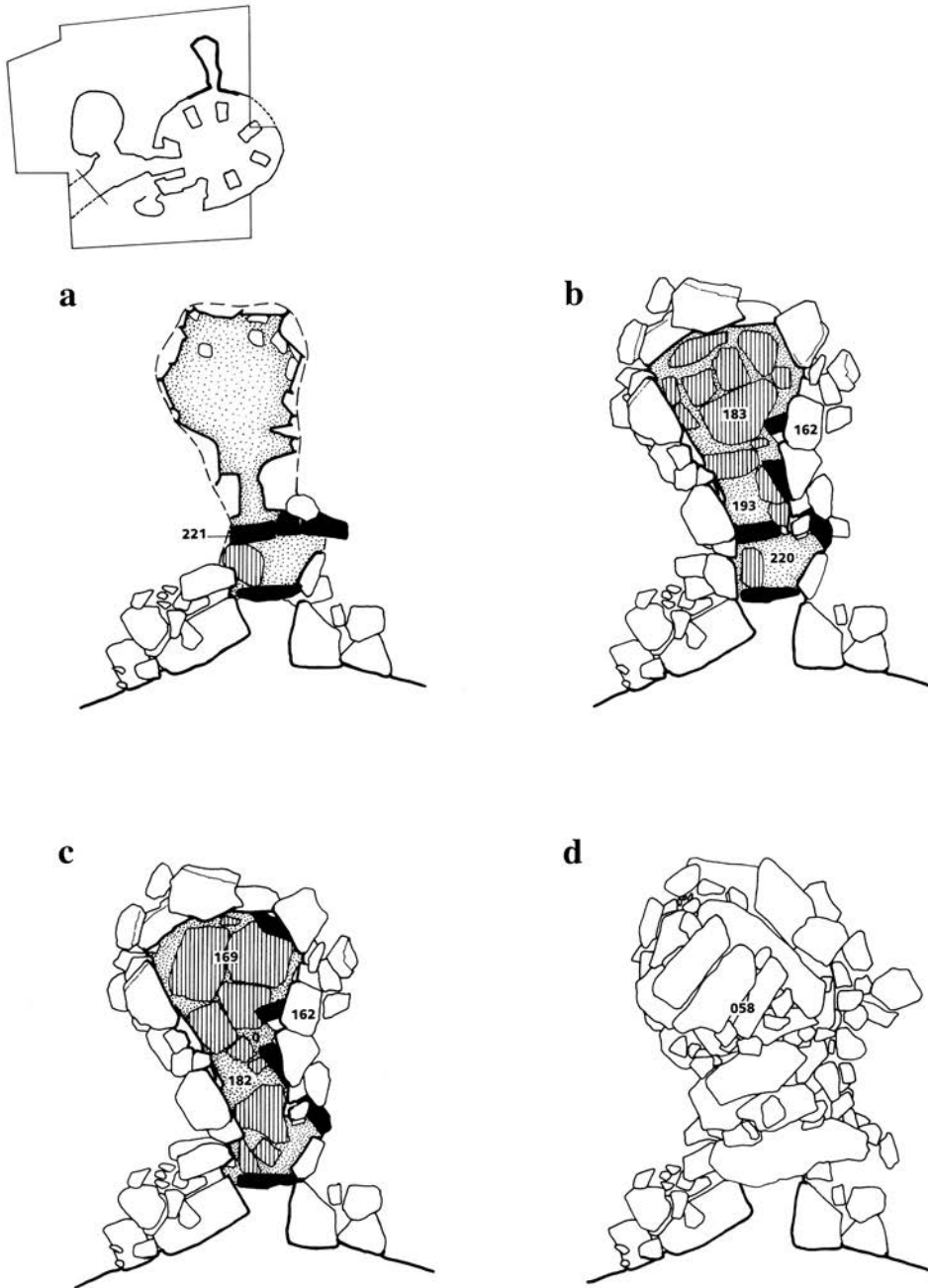


ILLUSTRATION 2.23  
Structure 3 plans.



ILLUSTRATION 2.24  
Structure 3 roof.

foundation of Structure 3. Also within this deposit was a beater tip (SF172) associated with weaving.

The low walls were corbelled over using a line of five long thin slabs (C058) to completely cover the interior (Ill 2.23d and 2.24). The large upper slabs rested on somewhat smaller angular slabs, and one extremely long slab, over the slab-revetted walling. Above the roof were traces of a dark peaty deposit (C047) which may represent the remain of a former turf or peat covering over the stone roof. Without such a covering the roof would not have shed water effectively. The roof would have been no more than 1m above the floor in the primary period of use and still less after re-paving (see Section 2.4.2.3).

A section was drawn running approximately south-east to north-west across the intact roof of Structure 3 (Ill 2.25). This shows the relationship between the walls and roof of Structure 3, the upper Phase 3

midden (C012, Block 18) and the infill of Structure 2 (C031, C049). The section suggests that the walls of Structure 3 were set into a pit dug within C031 and C049 (Block 15) which themselves overlie the primary deposits of Wheelhouse 2.

The same section shows the remains of the apparent capping of the cell (C047) which is preserved in this section only over the eastern part of the roof. This and other deposits are sealed by a stained sand deposit (C012) which is broadly contiguous with the other sandy midden deposits which formed during Phase 3 (see Section 2.5.3, Block 18). It would appear that the roof capping (C047), assuming that this interpretation is correct, was subject to substantial erosion or deliberate removal prior to the formation of the sandy deposit above (C012). As we will see below, in the discussion of the Phase 3 middens (see Section 2.5.3), this seems to correlate to other

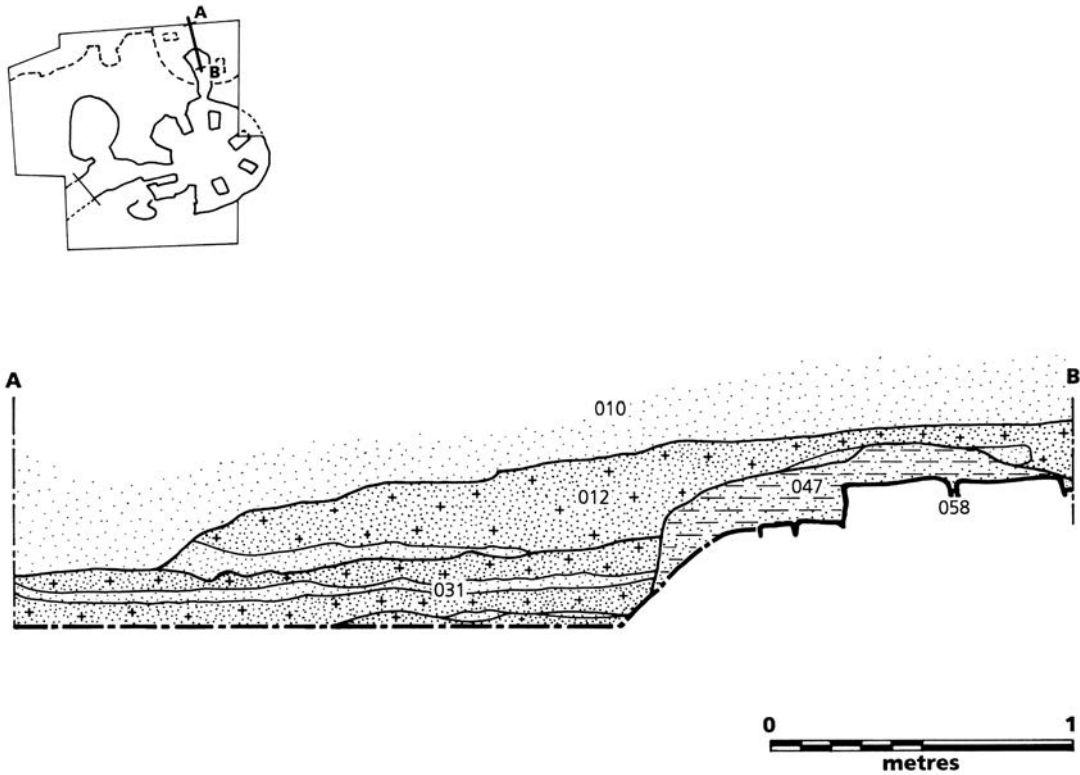


ILLUSTRATION 2.25

Section, showing relationship of Structure 3 roof and walls to deposits within Wheelhouse 2.

areas of apparent soil erosion which occurred during Phase 2.

The base of the pit constructed to receive the walls of Structure 3 was dug into the surface of the underlying rubble and sand destruction deposit of Wheelhouse 2 (130, 131, see Section 2.3.2.2). Within a hollow scooped into this material was laid a fragment of human skull (HB01, see Section 3.4 and Ill 2.26) and a sherd of cordoned pottery retrieved from the digging of the pit (another sherd was probably similarly retrieved (V2513 and V2454, Ill 3.3c and d, see Section 3.2.6)). As has been discussed above (this section), this presumably ritual deposit is best interpreted as associated with the construction of Structure 3.

#### 2.4.2.2 Internal deposits: Block 19

Once the walls of Structure 3 had been constructed, a mixed deposit of sand, ash and a distinct yellow-green boulder clay (C193) was deposited within the interior of the structure. This deposit appears to represent a deliberate setting mixture for a series of substantial slabs (C183) which formed the primary paving of the structure (Ill 2.23b and 2.27).

Above this primary paving was a relatively thin layer (*c* 0.15m maximum) of mixed sand, ash and organic refuse, again with some inclusions of boulder clay (C182). This may represent an in situ accumulation of material, or alternatively a deliberate bedding deposit for the secondary paving (C169). This latter paving was rather less well-constructed than before, comprising a series of level slabs within the centre of the main cell with somewhat blockier stones around the sides and in the passage (Ill 2.23c).

Finally a further mixed sandy deposit, containing some mixed midden material (C164), had formed over these secondary paving stones. The cell had by no means been allowed to fill up, however, before it was sealed off by the collapse of Bay 2. All of the internal deposits must have formed while Structure 3 was accessible from Wheelhouse 1, with the possible exception of some sand percolation through the roof post-abandonment (although such material seems to have formed only a superficial scatter on the surface of the final internal deposits) (C164). When abandoned, approximately 0.6m separated the surface of the floor



ILLUSTRATION 2.26  
Deposit of human skull and pottery below Structure 3.

deposits from the under-side of the slab roof in the centre of the cell.

### 2.4.2.3 Interpretation

The function of this building is far from clear. While it appears at first glance to be a subsidiary storage cell, there are several features which complicate its interpretation. Firstly, Structure 3 was the only part of the entire settlement, other than the entrance to Wheelhouse 1, to be deliberately paved. The purpose of the paving could have not been to avoid damage from the passage of feet, as Structure 3 at no time had sufficient height to allow an adult to stand or even crouch. Yet it is hard to imagine what form of storage would necessitate the emplacement of such massive paving stones.

The structure contained no sign of burning, whether in the form of sooting, damage to the friable gneiss wall and roof stones, or quantities of ash or other waste. An industrial or cooking function thus seems unlikely. Strangely, perhaps, both ‘setting’

deposits for the successive pavings of the cell (C093, C182) contained the only evidence for the burning of seaweed (in the form of burnt marine mollusc shells of species parasitic to seaweed) pre-dating Phase 3 (see Section 2.5.1.2). Either or both of these deposits may well have been brought into the cell for a specific purpose and it seems improbable that seaweed was burnt in situ.

Not only was Structure 3 paved, it was re-paved. If it is difficult to interpret the function of the primary paving it is even more difficult to explain the secondary version. The primary slabs were unbroken and apparently quite sound. They were certainly not inaccessible, being sealed under only a few centimetres of deposits (indeed, they may have been entirely visible, as the deposit which seals them seems quite likely to have been a deliberate setting for the secondary slabs). It is possible, however, that the re-paving could be related to the deposition of the sheep burial in the threshold area.

The re-paving further reduced the available headroom to a maximum of 0.8m. It would have been a considerable operation manoeuvring the paving slabs within this constricted space, but it would nonetheless have been possible if one person squeezed inside the cell while another passed in the slabs. The other possibility is that the re-paving involved breaking through the roof; a far more laborious operation.



ILLUSTRATION 2.27  
Structure 3 excavated.

The slabs used in both the walling and paving of Structure 3 represent some of the best-quality building stones on the site. It seems probable that most derived from the abandoned Wheelhouse 2, where they may have formed parts of piers and lintels. In this case the impressive masonry may relate less to the perceived importance of Structure 3, and more to the availability of good building stone. The rather lower quality of the secondary paving stones may simply relate to the lack of availability of similarly high-quality material at this later stage in the settlement's development.

The pottery assemblage from Structure 3 was generally undistinguished, although the density of sherds was reasonably high, at 133, given the restricted volume of sediment within the structure. The greatest concentration derived from C193 which is interpreted as representing a setting material for the primary paving, and thus strictly pre-dates the use of the structure. A further concentration occurred in the passage between Structure 3 and Wheelhouse 2, and this is where a high proportion of larger sherds were located. Their presence would seem to suggest that movement along

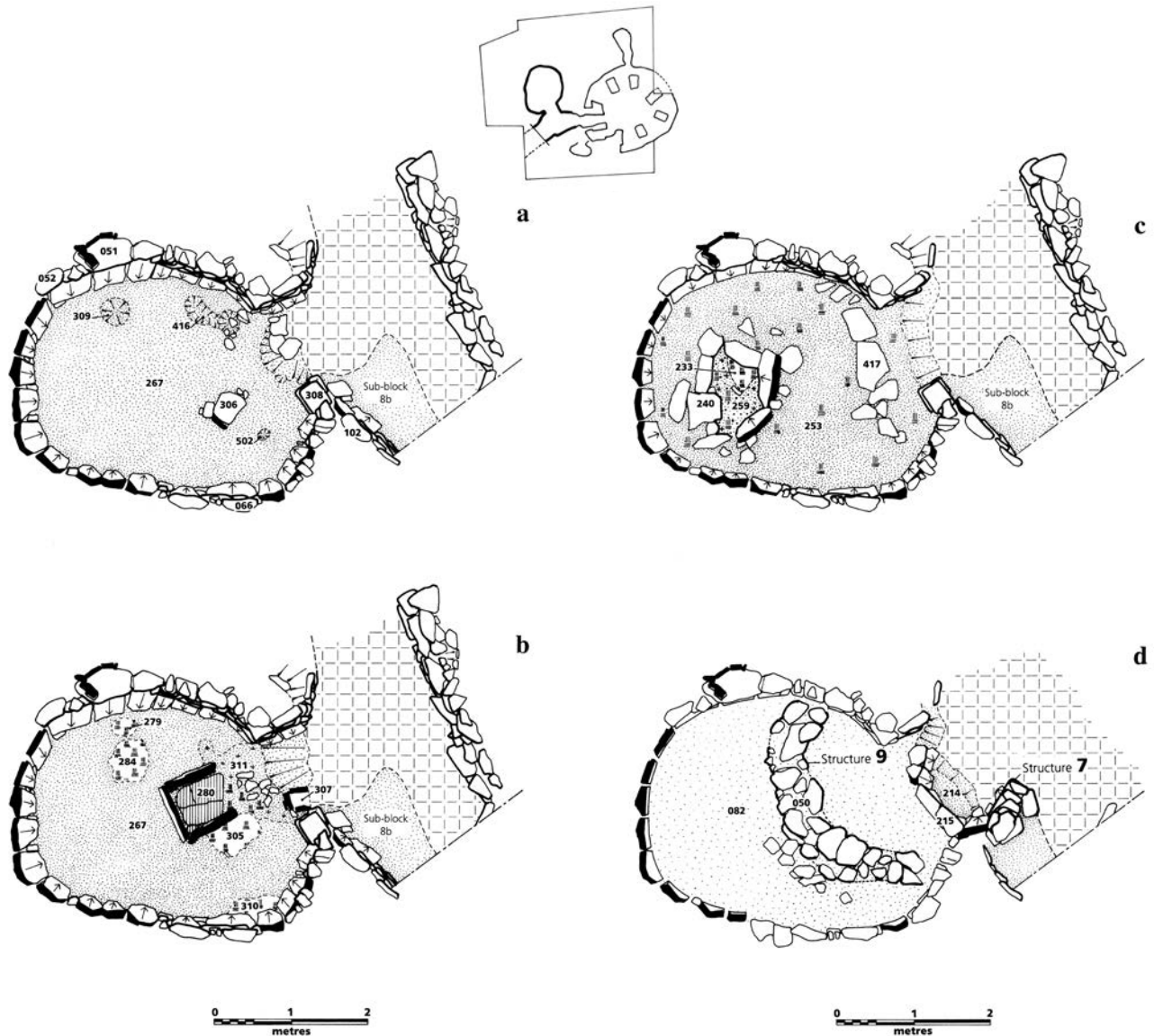


ILLUSTRATION 2.28

Structures 4, 7 and 9: (a) shows residual features below first coherent primary floor plan in Structure 4; (b) first coherent primary floor plan in Structure 4; (c) secondary reorganization in Structure 4; (d) Structures 7 and 9.



this passage was far from constant. The remainder of the pottery was found under and above the secondary paving. Relatively few large sherds were identified in these contexts and the evidence does not suggest that these necessarily represent storage vessels broken in situ. The ceramic evidence does not, therefore, greatly help in the attribution of function to this cell.

The largely negative evidence for the function of Structure 3 raises the inevitable spectre of primarily ritual or symbolic purpose. There were, however, no recognizably 'special' deposits within the cell suggestive of an overtly ritual function. Nonetheless, the foundation deposit of a human skull (see discussion under Wheelhouse 2, above, see Section 2.3.2.2) set below Structure 3, and the sheep burial within the entrance passage do suggest a special function for this cell, although such deposits are clearly not restricted

to buildings with a specifically ritual purpose in the Hebridean Iron Age.

Whatever its function, it would appear that Structure 3 was kept relatively free from the build-up of deposits, a process made easier by the presence of the paving. Storage seems the least problematic solution, although, as discussed, the evidence suggests that more care and effort was lavished on this structure than was probably necessary for a simple storage function.

### 2.4.3 STRUCTURE (4) BLOCKS 8 AND 9

Structure 4 was a small, slab-walled building leading off the entrance passage to Wheelhouse 1 (Ill 2.13). It had internal dimensions of approximately 3m north-south by 2.6m, and was an irregular oval in shape, being markedly flattened on plan on its north-west side. Structure 4 appears to have formed a second

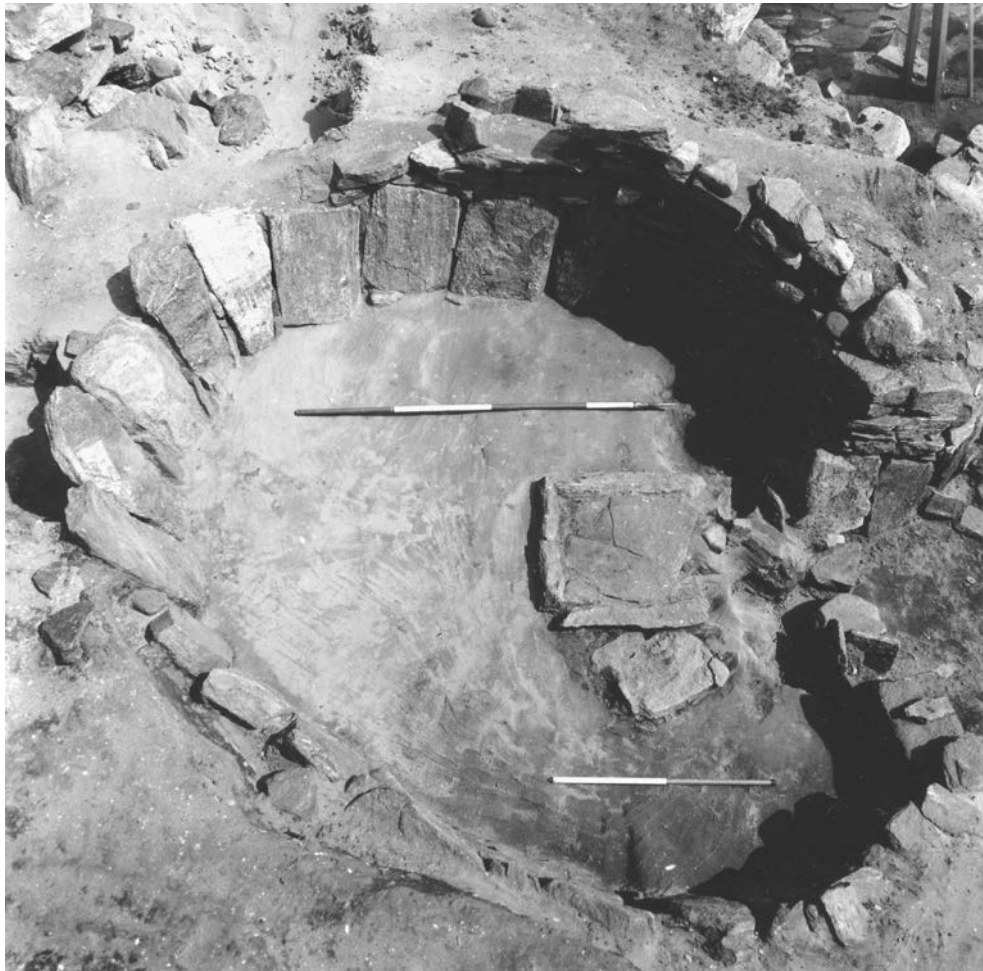


ILLUSTRATION 2.29  
Structure 4: first coherent floor.



ILLUSTRATION 2.30

Structure 4: north wall slabs seen from entrance.

domestic focus for the settlement. Like the subsidiary buildings of Phase 2, Structures 3 and 5, the walls of Structure 4 were formed of a foundation course of edge-set slabs, capped by coursing.

The walling of Structure 4 sealed the original entrance passage cell of Wheelhouse 1 and was clearly, therefore, not a primary feature of the settlement. Indeed, the entire north wall of the original wheelhouse entrance passage appears to have been dismantled and re-built to create a rather wider passage, which may in fact have been an area of occupation in its own right, rather than simply a thoroughfare. Structure 4 was later sealed by the construction of the much smaller Structure 7, still within Phase 2, and indeed had been out of use for some time prior to the construction of Structure 7.

#### 2.4.3.1 Construction: Block 9

The first stage in the construction of Structure 4 was the dismantling and widening of the north side of the original entrance passage to Wheelhouse 1, and the excavation of a large oval pit, at least 1.1m deep, into the natural sand accumulations to the north of the former passage. Before they had any opportunity to weather, the sides of this pit were lined with substantial flat slabs (C052, C066) set on end (Ill 2.28a). The largest slabs measured up to 1.1m in length.

The foundation course of edge-set slabs was capped with at least six courses of smaller, angular stones, packed behind with a reddish, ashy, midden-derived material (C071). There is no indication of what had happened to the large volume of sand which must have been removed to accommodate the structure, or of the deposits presumably cleared from the wheelhouse entrance passage. The latter may well have formed part of the wall-backing material (C071).

The north wall of the wheelhouse entrance passage was re-built in a similar style to the main cell of Structure 4, although the foundation slabs were rather less substantial (C102) and the walling survived to a maximum height of only 0.8m. The packing material (C101) used behind the new passage wall was similar to that used in the main cell.

The walls of the main cell of Structure 4 were continuous with those which opened out into the entrance passage. The gap in this walling at the entrance to Structure 4 measured 1.6m, but this was narrowed to 1.1m by the insertion of a non-revetted block of coursed masonry (C308) which adjoined the main revetted wall at the west side of the entrance. The door-way was further narrowed by the insertion of a post-setting (Block 8, see Section 2.4.3.2) which was probably intended to support a timber door. This implies a door-width of 0.6m.

One of the most curious structural features within Structure 4 was a ‘shelf’ (C051) set into the east wall, just above the slab foundation course (Ill 2.28a and 2.29). This was formed using a single flat slab (0.7m by 0.4m in size) lined on at least two sides by small kerb-stones (the south side of the kerb did not survive long enough to be recorded, having been disturbed by machining in this area). While the plan indicates that this would have been open to the west (ie facing inwards), a displaced stone recorded before the feature had been properly identified suggests that the kerb may have entirely surrounded the slab, creating a feature not dissimilar to a stone bowl set in the wall. This would have had internal dimensions of approximately 0.4m by 0.15m, by around 0.15m in depth.

It is possible that similar features may have been present elsewhere around the wall, but have simply not survived. Any such feature in the wall opposite, for example would have lain above the level to which the wall there was preserved.

A further striking architectural feature of Structure 4 was the careful arrangement of the foundation slabs. These were graded in height, with the largest being set directly opposite the entrance on the north of the wall circuit (Ill 2.30). This seems to have served to focus attention on this part of the wall. The gaps between the bases of the largest slabs were filled using elongated chocking stones set on end. The upper coursed walling had been used to level up this graded foundation course, although it is not clear how high it originally stood. The regularity of the wall-head on the best-preserved, south-east arc, suggests that it may never have been much higher than around 1.1m.

The pottery assemblage associated with these construction deposits was confined to the wall-packing material (C071, C101) and the disturbed sand surface behind the Structure 4 wall (C099). The 4 per cent component of large sherds supports the hypothesis that the material derives from discarded and disturbed domestic refuse, most probably from the wheelhouse entrance passage. Interestingly, this wall-packing material contained a much greater density of artefactual material than the occupation deposits and included metalworking debris (see Section 3.11) and an antler point (SF035, see Section 3.5). This reflects the pattern of artefact-rich wall-packing material seen in Wheelhouse 1 (above), even to the extent of incorporating otherwise rare evidence for metal-working.

### 2.4.3.2 Occupation deposits: Block 8

The deposits which formed within Structure 4 can be divided into three main groups: a primary occupation (itself showing signs of time-depth), a secondary re-modelling and later re-use. A fourth group of deposits (Block 8b) was separated from the main block by an area of disturbance caused by the later insertion of Structure 7 (see Section 2.4.4).

Ill 2.28 shows four successive plans of Structure 4. The first two plans (a and b) illustrate the primary occupation, which represents a palimpsest of features deriving from multiple episodes of occupation and clearance. The first plan illustrates a series of fragmentary features and deposits preserved beneath the lowest coherent floor plan. All had been horizontally truncated and survived only in dips and hollows in the natural sand floor. The main detectable features here comprised a primary hearth (C306) lying partially under its successor (C280, this section) and represented by two flat paving slabs and a displaced kerb stone on its north side. Two smaller stones represent displaced kerbing on the south side of the hearth. The hearth was set into the natural sand dune floor (C267) and contained residues of orange peat ash (C305) which extended under the paving of the adjacent, later hearth (C280).

Other features at the base of the primary occupation comprised a series of hollows (C309, C416) none more than a few centimetres deep. They may indicate the position of items of stone or timber furniture set around the periphery of the building.

Later, but still within the period of primary occupation, during which the floor was repeatedly scoured to re-expose clean sand, a second hearth (C280) was constructed (Ill 2.28b and 2.29). This was a carefully paved and kerbed, near-square structure, with an open end facing towards the entrance (the south-south-west). It was set close to the door-way, and indeed its position could be taken to imply that the door to Structure 4 opened outwards into the entrance passage rather than inwards (but see below, this section). Three flat slabs, set close together, formed the base of the hearth, while each side of the kerb was formed of a single long angular slab set on edge. The overall dimensions of the hearth were approximately 0.85m east to west by 0.85m. Where not overlying ash from the earlier hearth, this second hearth was set into natural dune sand (C267) demonstrating again how the floor had been scoured down to the clean sand base after a period of occupation.

A small amount of bright orange peat ash (C281) survived within the hearth, in the interstices of the stones, and several other patches from around the structure also seemed to survive from this period of primary occupation. These included ashy patches against the west wall (C310), the east wall (C279), and close to the north-west of the hearth (C284), and a more extensive area of ash deposits (C311) concentrated between the hearth (C280) and the entrance to Structure 4. In this latter area it appears that increased exposure to trampling has led to the compression of successive ash tips into the sand floor, and thus to their preferential survival. C311 extended to a depth of up to 0.05m, which was significantly deeper than any of these other primary deposits (it is distorted at its southernmost extent in the drawn section through having been cut through in the construction of Structure 7, resulting in a block of material being re-deposited in a vertical spread behind the later wall). Only two sherds of pottery were

recovered from the whole of this primary occupation, although it should be stressed that the overall volume of deposits recovered was extremely small.

The other important feature of this primary occupation was a small post-setting (C307) built against the west side of the entrance. This was formed of three small edge-set slabs (a fourth, nearest the entrance passage, has probably been removed during the construction of Structure 7) which defined a square area with inner dimensions of 0.2m. A series of smaller exterior packing stones held the slabs in position, but there were no internal packing stones. From its position it is presumed that this post-setting related to a timber door some 0.6m wide which gave access into Structure 4.

Any other door support structures which may originally have been present are unlikely to have survived the later construction of Structure 7. However, it seems improbable that a second post-setting of similar dimensions would have been

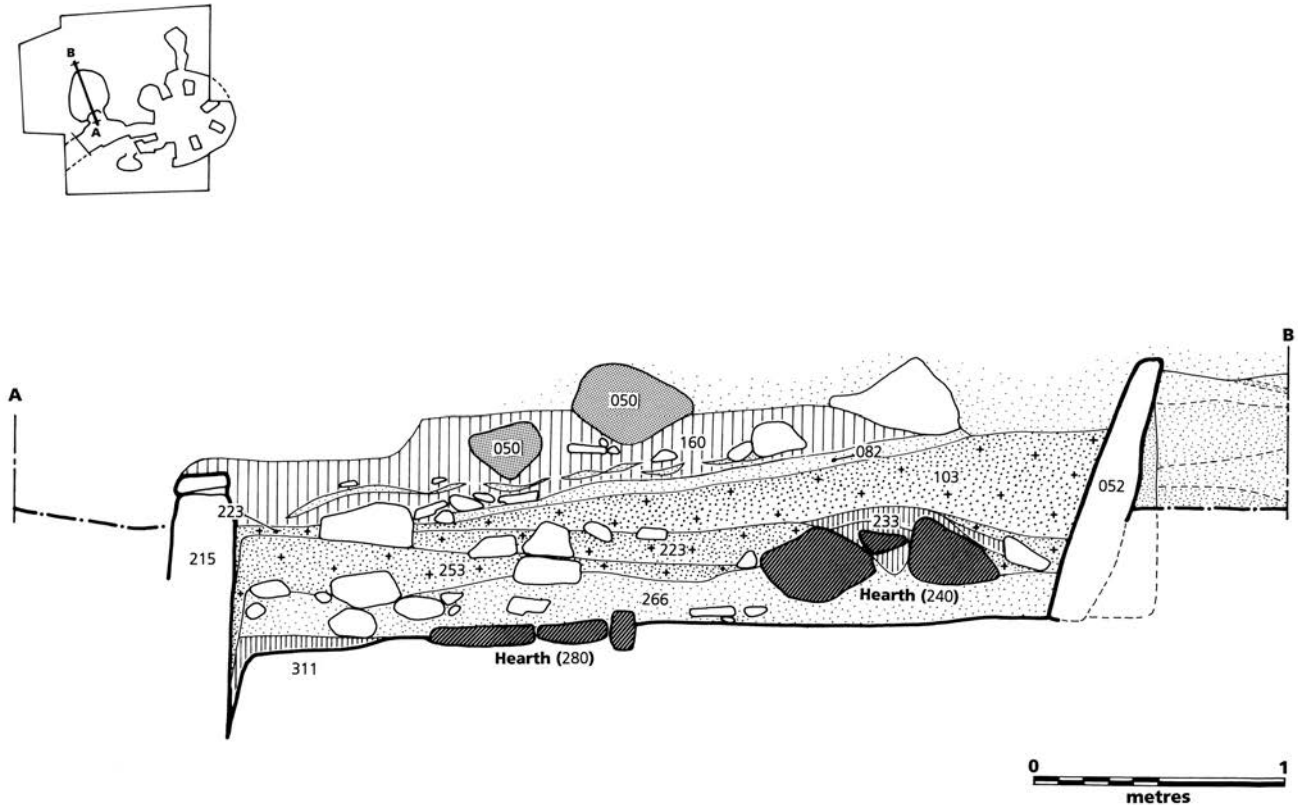


ILLUSTRATION 2.31

Section through Structure 4. The ash deposit (C311) which represents the primary occupation of Structure 4 appears to have been disturbed by the cut for Structure 7 (C215) resulting in a block of this material falling vertically into the cut for the later wall.

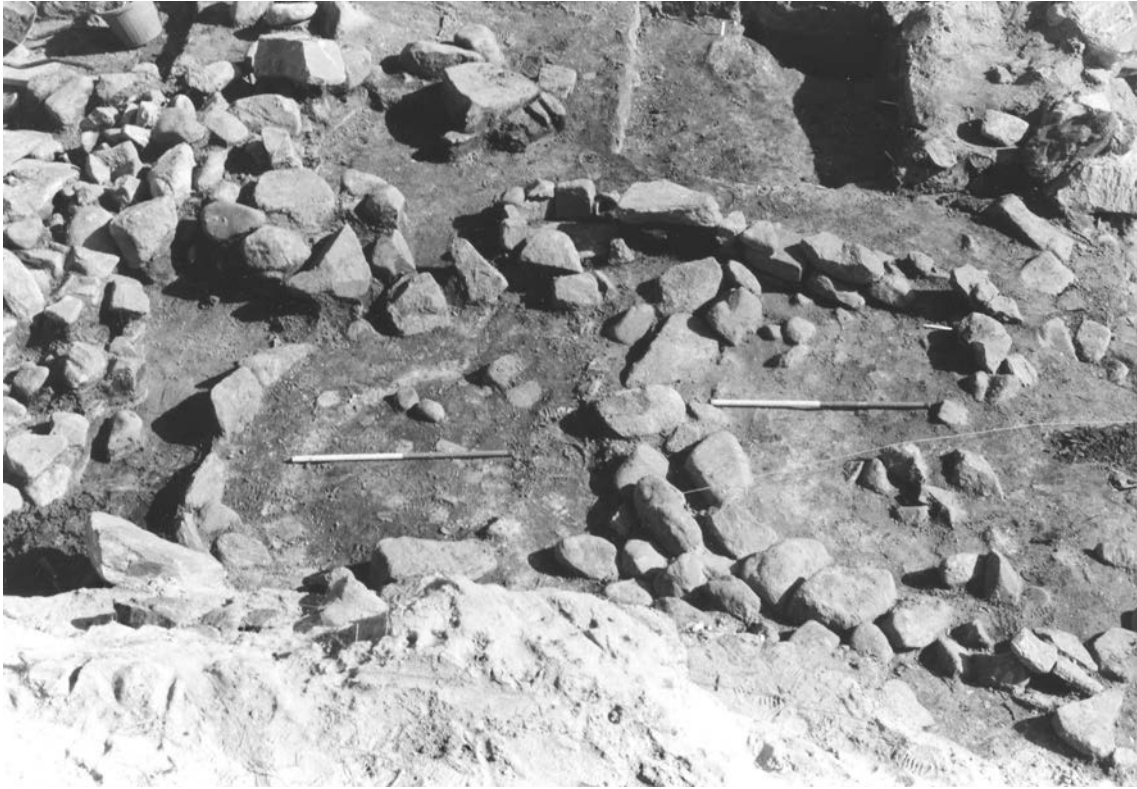


ILLUSTRATION 2.32  
Structure 9, from the north-west.

squeezed into the narrow gap available. The surviving setting most likely held a pivot-post. The floor plan in Ill 2.28b indicates the area of later truncation of the sand floor towards the entrance to Structure 4.

At the end of the period of primary occupation an extensive dump of stained sand material (C266, C253) seems to have been spread across the interior of Structure 4 to a combined depth of up to 0.4m. Analysis of samples from C266 appears to confirm the field interpretation that it derived from a deliberately deposited inorganic sand floor deposit, subsequently admixed with organic domestic debris, presumably from occupation on its surface. This material included seven of the 11 great auk bones recovered from the site. The upper portion of the deposit (C253) was markedly more organic in composition than the lower, suggesting greater exposure to mixing and disturbance. This upper portion (C253) was deeper in relation to the lower (C266) in the southern half of the building, suggesting, perhaps unsurprisingly, that the entrance area had been subject to more intense mixing and trampling. A substantial assemblage of pottery had been incorporated within these deposits, presumably by trampling.

Alternatively, it is possible that these secondary floor deposits may have built up gradually, with periodic sand deposits becoming incorporated into an accumulating deposit of domestic debris. In this case, the change from the primary to secondary occupation would be marked simply by the cessation of regular cleaning of the building, with clean sand simply being spread across the surface whenever required.

C266 yielded two radiocarbon dates with ranges of 85 BC-AD 50 and AD 15-100 respectively, at one sigma (adjusted) (GU-2746 and GU-2748).

This secondary occupation marks a significant break in the use of Structure 4, reflected in the reorganization of features within the interior (Ill 2.28c). Set into the top of the laid floor was a new hearth (C240). This was a far less well-built structure than the primary hearths, and had no trace of any formal paving. It comprised seven large, elongated slabs set in an approximately rectangular arrangement towards the rear (north) wall of Structure 4, and measuring approximately 1.2m north-west to south-east by 1.1m. Most of the hearth-stones were distinctly more rounded than those of the earlier hearths. The hearth-stones seem to have been

displaced slightly outwards, perhaps by the weight of deposits above.

This hearth retained in situ ash deposits, comprising a basal layer of grey-white compact ash (C259) and an upper deposit of bright red-orange peat ash (C233), the latter containing fragments of unburnt peat. Around and partially over it formed the final occupation surface within Structure 4 (C223); an ashy deposit rich in organic material up to 0.15m thick. This context yielded a radiocarbon date with a range of AD 75–125, at one sigma (adjusted) (GU-2747).

The entrance deposits at this secondary level had been even more disturbed by subsequent construction than those lower down, and it is impossible to tell whether the door-post setting remained in use, or whether some other entrance arrangement had been devised. Interestingly, the secondary hearth was set well back from the entrance, presumably indicating some re-ordering of space within the structure.

The only other recognizable feature in this secondary occupation was a rough alignment (C417) running across entrance to Structure 4, approximately east–west for a distance of around 2.4m. It consisted of flattish stone slabs, and stood to no more than a single course. Its function is entirely uncertain, but its form is reminiscent of the laid stone features in the Phase 2b floor of Wheelhouse 1 (Ill 2.18).

Following this secondary occupation the structure seems to have suffered some structural failure, with rubble, ash and midden debris (C103) being dumped or falling onto the floor deposits (C223), forming up to 0.45m thick against the north wall, though fading out to the southern part of the interior. This midden debris contained exceptionally high concentrations of fish remains (see Section 4.4). The subsequent accumulations of midden over the abandoned structure (C085, C067, C160) were interrupted by an apparent episode of windblown sand deposition (C082), up to 80mm thick, over which was constructed an irregular alignment of rounded boulders (C050, Structure 9) of uncertain function, c 3m long by 0.6m wide (Ill 2.28d and 2.32). It is possible that this apparently short-lived structure (sealed by midden deposits C067 and C160 which were themselves truncated by Structure 7) may have extended beyond the confines of Structure 4 but was preferentially preserved within the ruined building. It does at least serve to demonstrate that Structure 4 was largely infilled and certainly out of use as a domestic building before the construction of Structure 7.

#### 2.4.3.3 Entrance area deposits: Block 8b

The deposits which formed outside Structure 4, in its entrance area, have been grouped together as sub-block 8b (Ill 2.28a). The external stratigraphic relationships of this sub-block are the same as those of the rest of Block 8, but the precise linkages between contexts within 8 and 8b have been obscured by the later insertion of Structure 7 (see Section 2.4.4). It would appear that the lowest deposits in this sub-block (C283, C282) relate to the primary occupation, while the later deposits (C251, C250, C244, C171) must represent material accumulated during the later periods of occupation, as they combine to all but obscure the entrance passage walling. The deposits are predominantly stained and organic-rich sands, with lower concentrations of domestic debris than were visible in deposits inside Structure 4. A sample from C283 produced rachis internodes and possible straw plant macrofossils, suggestive of the burning of crop processing debris as fuel.

#### 2.4.3.4 Interpretation

Structure 4 seems to have been a domestic cell forming a second focus for occupation within the settlement during Phase 2. Despite the remarkable complexity and apparent time-depth present in the structure, its occupation seems to have been short-lived, for even by the end of Phase 2 it had been abandoned and infilled for long enough to be sealed by two successive structures (Structures 9 and 7). It may be best interpreted as fulfilling a need for additional domestic space during a relatively brief period within which the household had expanded beyond the capacity of the primary structure, Wheelhouse 1, whether this was defined on the basis of numbers or by the composition of the household.

The dismantling of earlier masonry within the Wheelhouse 1 entrance passage shows that the original entrance arrangements had been substantially modified. The re-modelled entrance was too wide to be roofed with slabs, and was presumably roofed in timber (Ill 2.13). Later disturbance prevents any detailed understanding of the nature of the use of this passage during Phase 2, although the deposits of Block 8b suggest that occupation was not as intense as within Structure 4 or Wheelhouse 1. The width of the re-modelled passage suggests that it may have had a more varied use, perhaps for storage or as an ante-room, than the original, narrow wheelhouse passage which seems to have represented a more formal and

## Anatomy of an Iron Age Roundhouse

TABLE 2.4  
Finds (excluding pottery) from Structure 4 (Block 8, Phase 2).

Floor deposit	Entrance area (Block B)	Dumped midden
Spindle whorl (SF283) Bone pin (SF187) Pumice	Human skull fragment (HB03)	Spindle whorl (SF278, SF285) Chopping board (SF149) Pumice Bone model sword (SF20) Bronze ring (SF142) Human tibia fragment (HB04) Antler roughout (SF294)

less flexible space. Within one of the upper fills of this entrance area (C171) was found a fragment of human skull (HB03) into which someone had attempted to drill a hole (see Section 3.4). It is not clear whether this was a deliberate or fortuitous deposit.

It is clear from the deposits which accumulated inside it that Structure 4 was a roofed building. Given the absence of internal roof supports, it is presumed that a conical timber-framed roof would have been used (although stone corbelling cannot be entirely ruled out), resting on rafters set into the tops of the walls (or perhaps set into a timber wall plate), at a



ILLUSTRATION 2.33  
Structure 7.

height of at least 1.1m above the primary floor. This would have given a height from the floor to the apex of the roof of at least 3m. The building was thus reasonably substantial, but far from monumental in scale, although the grading of the wall slabs, the slope of the floor and the construction of at least one wall shelf, hint at a formalized approach to design and construction.

The evidence for differential levels of trampling in specific parts of the building, represented by the survival of compressed ash layers and by disturbance in the underlying sand floor during the primary occupation, may reflect aspects of the way in which the interior space was used. The evidence for intensive trampling of deposits at the entrance is no great surprise, but there does seem to be a clear trend for this trampling to carry around the east side of the hearth (Ill 2.28a). This implies that people entering the building would have moved to their right around the hearth, following a anti-clockwise (the opposite of 'sun-wise') path. The off-centre position of the earliest hearth may even have been intended to facilitate movement around this side of the floor. This is remarkably similar to the pattern in Wheelhouse 1 in the early part of Phase 2, when the slab partition between the entrance piers and the hearth also forces anyone entering the building to move around the hearth in an anti-clockwise direction.

A notable area of compression also occurs directly below the wall-shelf in the east wall, suggesting some focus of activity there. It is unfortunate that the lack of artefactual material from these thin primary deposits does not allow us to build on these intriguing patterns.

The secondary occupation was marked by a reorganization of space within which no obvious patterns of spatial division can be observed, other than

an apparently greater intensity of trampling in the southern half of the building. The movement of the secondary hearth to the rear of the building implies some change in the mode of use. An almost identical movement of the secondary hearth, accompanied by a similar change from slab to boulder construction, is seen within Wheelhouse 1 in Phase 2b, and it is tempting to equate the two events. The relatively poor construction of the hearth, together with the failure to maintain the cleanliness of the floor, and thus the height of the walls, and the partial blocking of the tallest wall slabs by the re-positioning of the secondary hearth, all hint at a decreasing interest in the formal architectural aspects of the building during this secondary use. It should be borne in mind, however, that had the building been inhabited for a further few years, this whole mass of secondary deposits might have been removed once again down to clean sand, and previous cycles of occupation may have been equally productive of occupation debris which periodic cleaning has simply removed.

One potentially significant difference emerges from the comparison of finds from Structure 4 and the Phase 2 deposits in Wheelhouse 1. Although containing only around 25 per cent less pottery (1,448 sherds, as against 2,027 sherds) Structure 4 was almost entirely lacking in all other types of finds. There was a complete absence of worked antler and whale bone, and only one bone object (a pin tip, SF187). Aside from the pin, the sole objects represented within Structure 4 floor deposits were a spindle whorl (SF283, not illustrated, see Section 3.3) and a piece of pumice (see Section 3.8 and Table 2.4). This discrepancy might suggest that the range of activities carried out within Structure 4 was rather more restricted than within Wheelhouse 1.

Once abandoned, the structure seems quickly to have been allowed to infill with midden deposits and stained sands. This process had apparently begun before the first deposit of windblown sand formed within the shell of the building. It is tempting to suggest that these deposits represent abandonment and de-roofing during the spring or summer, with subsequent deposition of domestic waste, followed by sand deposition over the first winter when the structure lay open. Whatever the timescale, these deposits were soon sealed below a stone wall, Structure 9. This may originally have formed part of a more extensive structure, but it survives only within Structure 4, where compression of the underlying deposits seems to have reduced its absolute level, protecting the lower courses from later

stone-robbing. Its function is unclear, but, whatever its intended purpose, it was itself out of use and largely robbed before the end of Phase 2, as it came to be sealed by the construction of Structure 7, below.

#### 2.4.4 STRUCTURE 7: BLOCK 22

After Structure 4 had been abandoned and had largely infilled with debris, a new cell, Structure 7, was constructed on the north side of the Wheelhouse 1 entrance passage (Ill 2.28d and 2.33). A hollow was dug out from the infilled entrance area of Structure 4, and lined with vertical slabs with upper coursing to form a C-shaped cell (C215), the open side of which faced south. The walling contained the broken upper stone of a rotary quern. There was no obvious use of packing material behind the walls. It is possible that midden deposits (C160, C067, Block 8, see Section 2.3.1.1) which overlay the former wall, Structure 9, behind Structure 7, were thrown up as wall-packing for Structure 7, rather than formed in situ. However, these deposits seem too extensive to derive from this construction activity and seem more likely to have been simply cut through in the construction of Structure 7. Indeed, there are indications in section (Ill 2.31) of a cut through these deposits set slightly back from the Structure 7 wall-head which may have been part of the cut made to accommodate Structure 7.

The group of deposits which form this structure (Block 22) clearly sealed Block 8 and were themselves truncated by Block 20. They can be firmly assigned to the latter part of Phase 2.

The structure measured approximately 1m across its open side, by 0.8m deep, and had a maximum surviving height of 1.1m. It is not clear to what extent the surviving plan was representative of the original structure, as Structure 7 had itself subsequently been truncated in the construction of the sump along the Structure 8 entrance passage in Phase 3 (see Section 2.5.1.3).

The only detectable primary fill within Structure 7 was a deposit rich in peat ash (C214) and again truncated on its south side. This deposit contained a relatively high density of pottery sherds (C60) and included a high percentage (32 per cent) of large sherds, suggesting that the deposits may have formed in situ, with limited exposure to trampling.

Structure 7 occupied almost the same position as the much earlier wheelhouse entrance cell (C415, Ill 2.2) which had preceded Structure 4 in Phase 1. Its purpose is unknown and it is not clear if it was



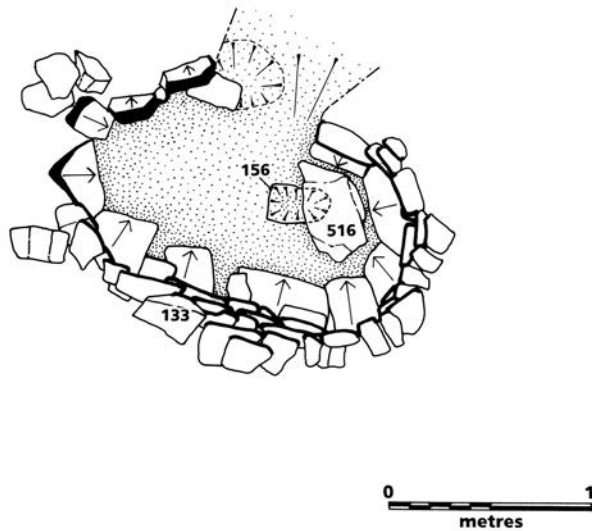
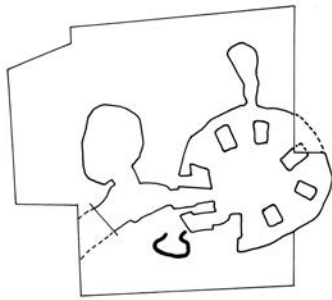


ILLUSTRATION 2.34  
Structure 5 plan.

a roofed structure. It may have been encompassed by the overall roof of the entrance passage. It was clearly not a domestic structure and thus did not presumably replace the function of Structure 4. It is perhaps significant that Structure 4 seems to have gone out of use some time before the construction of Structure 7, suggesting that the two may be unrelated in function.

#### 2.4.5 STRUCTURE 5: BLOCKS 13 AND 14

Structure 5 was a small stone-lined pit located close to the south of the Wheelhouse 1 entrance and adjacent to the Wheelhouse 1 wall (Ill 2.34). Indeed, the cut for the pit (C155) clipped the edge of the Structure 1 construction trench, demonstrating that Structure 5 was later in construction than Wheelhouse 1. This does not in itself mean that Structure 5 necessarily

belonged to Phase 2, as its construction could have followed shortly on that of Wheelhouse 1. It is believed to belong to Phase 2, rather than Phase 1, largely because of its constructional similarities with Structures 3 and 4, and because its position would seem incompatible with the roofing of Wheelhouse 1, as the lining of the pit virtually touches the wheelhouse wall and would thus presumably have interfered with any form of roofing over the wheelhouse bays.

##### 2.4.5.1 Construction features: Block 14

Structure 5 was dug into clean, natural sand, its sides being formed by a foundation course of vertically set slabs surmounted by two or three courses of small angular stones (C133). The wall was nowhere more than one stone thick. Some packing of stained, mixed sand seems to have found its way behind the wall (C159), but this does not appear to represent a formal constructional feature. Similarly the foundation stones were found to be set in pronounced depressions within

the natural sand, but these appear to result from the weight of the wall rather than representing a deliberate preparation for the wall construction.

The wall formed an apparently unbroken circuit with dimensions of approximately 1.6m by 1.8m. Although initially thought to be a small cell, when first exposed, Structure 5 seems to have had no entrance. Where undisturbed, the level and uniform nature of the upper course suggests that it represents the original unmodified top of the pit. This would give an original depth of around 0.7m.

##### 2.4.5.2 Deposition summary: Block 13

The earliest feature within Structure 5 was a shallow cut or depression some 0.2m by 0.3m by some 0.1m deep (C156). This was filled by a stained sand deposit (C157) and partially sealed by a flat slab (C516) similar to those used to form the foundation course

of the wall (Ill 2.35). This stone appears to derive from the adjacent north-eastern circuit of the wall, where a slab of similar dimensions was missing. This would seem to imply that the wall of the structure had collapsed or been partly dismantled prior to the accumulation of any substantial deposits on its floor. Indeed only a thin deposit of stained sand and ash (C153) seems to have been in place before this partial collapse occurred.

Analysis of this thin deposit suggests that it derived from a mix of sand, ashy hearth waste and other domestic refuse, of a type common throughout the site. There was nothing in the results of the analyses to suggest that the material derived from any special function particular to Structure 5. Analysis of the fill of the primary depression (C157) suggested a much less organic composition, seemingly indicating a different source for this material. This would appear to support the suggestion that this depression was filled quickly, and perhaps deliberately, before any debris had time to accumulate.

The fallen part of the Structure 5 wall lies immediately adjacent to the wall of Structure 8 which was constructed in Phase 3 (see Section 2.5.1.1). It seems highly likely that it was during the disturbance associated with the construction of Structure 8 that this damage was caused, and thus that the Structure 5 was still largely empty at the end of its life, at the end of Phase 2.

Above the primary deposit, the upper fills of Structure 5 were formed of a series of mixed and stained sands which rose to the level of the wall-head. These deposits, and the wall-head itself were then sealed by the cobbled path associated with Structure 8 (see Section 2.5.1.3). Within this sandy infill, and confined to the western part of the floor, resting against the wall, was a deposit of stones comprising, small angular slabs (C152) supporting a small 'bank' of cobbles (C149) and small flat stones (C143) of a type commonly used as 'wedges' in the various dry-stone walls on the site.

The pit contained a fairly large assemblage of pottery totalling around 197 sherds. While this might



ILLUSTRATION 2.35  
Structure 5 from south (fully excavated).

seem surprisingly high for such a restricted volume of deposits it is not in fact any greater in terms of concentration than other Phase 2 deposits, notably Block 8. The very small percentage of large sherds (4 per cent) reflects the likely derivation of this material from re-deposited domestic debris.

#### 2.4.5.3 Interpretation

There is little evidence as to the primary function of Structure 5. Storage of some form is most likely, although there is nothing in the sediments retrieved that hints at what the stored products might have been. The only primary deposits (C153), other than the fill of the primary depression, appear to be trampled admixtures of the general sandy, ashy domestic debris which formed much of the site stratigraphy. The primary depression (C156) with its distinct, though inorganic and unspectacular fill (C157) may hint at some form of special deposit, emplaced prior to or during the use of the structure, but the evidence is equivocal.

The structure was presumably roofed, since no windblown sand or other such material seems to have

accumulated. A slab roof is possible, as was the case for Structure 3, but since the roof formed the only access, we might perhaps envisage a more easily removable timber-built covering.

The majority of the internal deposits seem to relate to a short-lived phase of activity which followed directly on the abandonment of Structure 5. The wall on the north-east side seems to have been pushed inwards and the largely empty interior filled with a heterogeneous dump of domestic debris and loose stained sand derived from Phase 2 deposits in the vicinity. The discrete stone dump, deposited against

the west wall, after the partial collapse of the pit appears to represent a small stack of either construction material which was never required, or waste material from the construction of Structure 8. The orderly deposition of these stones suggests a single event, with the rapid accumulation of the stained sandy deposits above.

Rather bizarrely, the finds from Structure 5 contained two of only three pieces of bone-working debris (other than whale bone) present on the entire site. The two pieces (SF83 and SF84, see Section 3.5) derive from dumped fills (C134, C140) and may

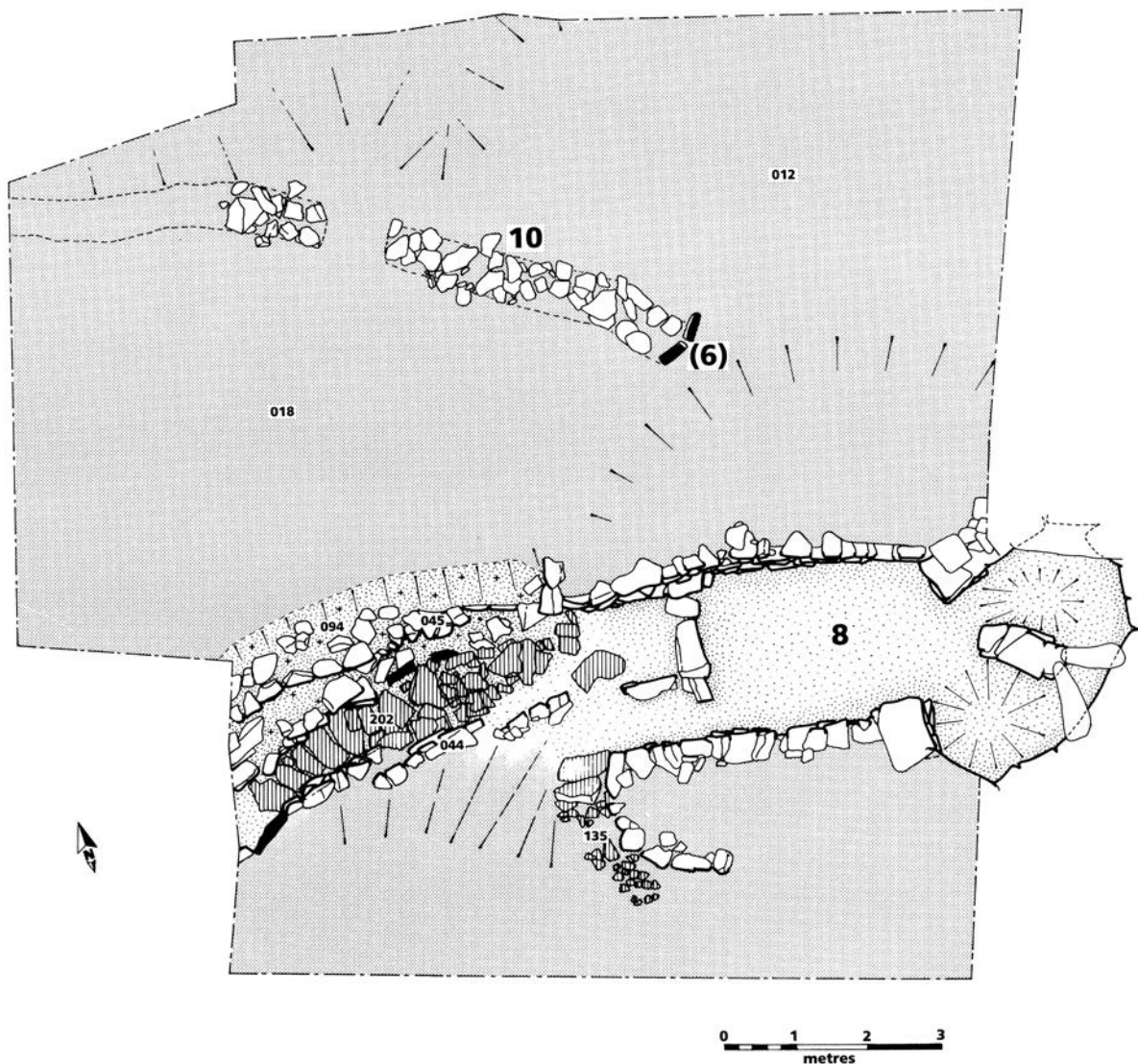


ILLUSTRATION 2.36  
Phase 3 summary plan.

suggest that part at least of the fill does not derive from the other excavated structures. If this material did derive from, say, Wheelhouse 1, it seems odd that virtually no bone-working debris was identified in that structure. Even more surprisingly, this material contained no mammal bone refuse other than the worked fragments. This would appear to confirm that the dumped material did not derive from the excavated buildings, which were generally relatively rich in bone debris.

#### 2.4.6 STRUCTURE 6: BLOCK 21

Structure 6 is interpreted as representing the remains of a stone-lined pit similar to Structure 5. Its sole surviving components were two orthostats, dug into the natural dune sand (Ill 2.14) which, if the interpretation is correct, would have formed the southern arc of the original pit. No coursing was present and no other slabs were identified. The only detectable fill was a slightly stained sand deposit containing some peat ash flecks (C186). No finds were associated with this structure.

Whatever the precise form of the original feature, it was apparently dismantled prior to the construction of a wall (Structure 10) during Phase 3. The remains of Structure 6 formed the south-east terminal of this later wall (Ill 2.36).

The apparent disappearance of much of this structure suggests that some alteration of ground levels must have occurred between the construction of Structure 6 (which was sand-revetted) and the construction of Structure 10 (which was free-standing). The ground appears to have sloped downwards gently to the north away from the surviving elements of Structure 6. It is possible, therefore, either that the missing elements of the structure may have been free-standing, or that some degree of soil loss, presumably through deflation of the surrounding sands by wind, may have caused the structure to lose its sand support.

#### 2.4.7 PHASE 2 SOIL EROSION

At various points in this discussion the issue of soil erosion has arisen and it is perhaps worth drawing some of these threads together. The erosion of the surrounding sand into which the structure was revetted has been cited as a likely reason for the poor condition of Structure 6. Similarly, the section in Ill 2.25 shows that the roof capping of Structure

3 had apparently been substantially lost prior to the formation of the Phase 3 midden (C012) above it. The underlying deposits in the fill of Wheelhouse 2 (C031, C049) also appear to have been truncated horizontally in the same section.

Indeed, there are no surface deposits anywhere on the site which can be dated earlier than Phase 3, and earlier midden material can be identified only in sediment traps formed by abandoned buildings, eg Structure 4.

It would appear, therefore, that there may have been a significant loss of soil from around the various structures during Phase 2, and perhaps earlier, prior to the deposition of substantial midden material during Phase 3, often onto re-exposed natural sand (see Section 2.5.3). Excluding deliberate human action, which seems unlikely, the only reasonable explanation for this soil loss is wind erosion, such as can be observed widely in the modern machair environment. This in turn implies the presence of broken ground around the buildings, perhaps caused by the processes of construction and building maintenance, or by the over-grazing of animals (perhaps especially pigs) around the wall-heads and roofs of the settlement.

#### 2.4.8 UNASSOCIATED DEPOSITS OF PHASES 1 OR 2

Two small features could be shown to pre-date Phase 3 (as they underlie the midden deposits of Block 18), but cannot be definitively related to deposits of either Phase 1 or 2. They may belong to either of these phases or, conceivably, to even earlier activity (not on plan).

##### 2.4.8.1 *Negative features: Block 10*

A small, charcoal-rich pit (C200), some 0.1m deep by 0.25m diameter, was identified between the entrance to Wheelhouse 2 and the north wall of Structure 4. It was cut into natural sand. It appears to represent the base of a stake or post-hole. A similar pit (C300), 0.15m deep by 0.15m diameter, with a V-shaped base, was identified close behind the west wall of Wheelhouse 2.

##### 2.4.8.2 *Interpretation*

It seems most likely that these features relate to ephemeral structures emplaced during Phases 1 or 2. Seven sherds of pottery were recovered from the fill of feature C300 but the assemblage is uninformative, except insofar as it supports the association between the feature and the main period of settlement on the site.



ILLUSTRATION 2.37  
Structure 8, from north-west, showing primary floors and re-use of corbelled cells.

### 2.5 PHASE 3: THE RECTILINEAR STRUCTURE

During Phase 3 the cellular layout of Phase 2 was replaced by a single, rectilinear domestic building, Structure 8 (Ill 2.36). A wall, Structure 10, was also constructed, possibly as part of an enclosure around the settlement.

The main changes can be summarized as follows:

1. The network of small cells was replaced by a single dominant structure.
2. The building form changed from circular to rectilinear, with concomitant implications for roofing.
3. The slab-revetting building technique was abandoned.
4. The settlement was apparently at least partially enclosed.

Deposits belonging to this phase comprise Blocks 1–4, 18 and 20. The Site Matrix (Ill 2.1) shows clearly the stratigraphic ‘bottleneck’ which separates these blocks from all earlier deposits on the site.

Blocks 2 and 4 represent the construction of, respectively, the main walls and entrance passage of Structure 8. They are in turn sealed by Blocks 1 and 3, the fills of Structure 8 and its entrance passage. Block 20 comprises the structure and fill of a drain or sump which lay below entrance passage of the building.

Block 18 comprises the only group of Phase 3 deposits not directly related to Structure 8. It contains a series of midden deposits and the wall, Structure 10, which sealed all structures and deposits of Phases 1 and 2. It appears to have formed in parallel with the occupation of Structure 8 (the midden deposits did not extend into or over Structure 8, suggesting that they formed while it was still roofed and in use). The nature and condition of the artefactual material supports the hypothesis that this block formed during the main occupation of the settlement and did not incorporate significantly later material.

#### 2.5.1 STRUCTURE 8: BLOCKS 1–4 AND 20

Phase 3 saw a major reorientation of the settlement with the dismantling or final collapse of much of the unstable Wheelhouse 1, and the construction in its place of Structure 8 (Ill 2.36, 2.37, 2.38). The new building was the first and only rectilinear building on the site, and its form is presently unique in the Iron Age of the Western Isles. It was partially revetted into earlier deposits and wheelhouse masonry, re-using the line of the original wheelhouse entrance passage. Throughout the occupation of Structure 8 the two corbelled south-eastern cells of the wheelhouse remained in use, substantially unmodified.

Structure 8 was built wholly within the interior of the former Wheelhouse 1 and its construction therefore necessitated the partial demolition of the latter. Alternatively, it may have been the accidental collapse of much of Wheelhouse 1, pre-figured by the signs of structural weakness apparent during Phase 2, which led to the re-configuration of the settlement in Phase 3.

There is no indication that any significant period of abandonment separated the occupation of the two structures. For example, there is no evidence for the accumulation of wind-blown sand within the abandoned wheelhouse, and indeed, as we shall see below (Section 2.5.1.1), there is some positive

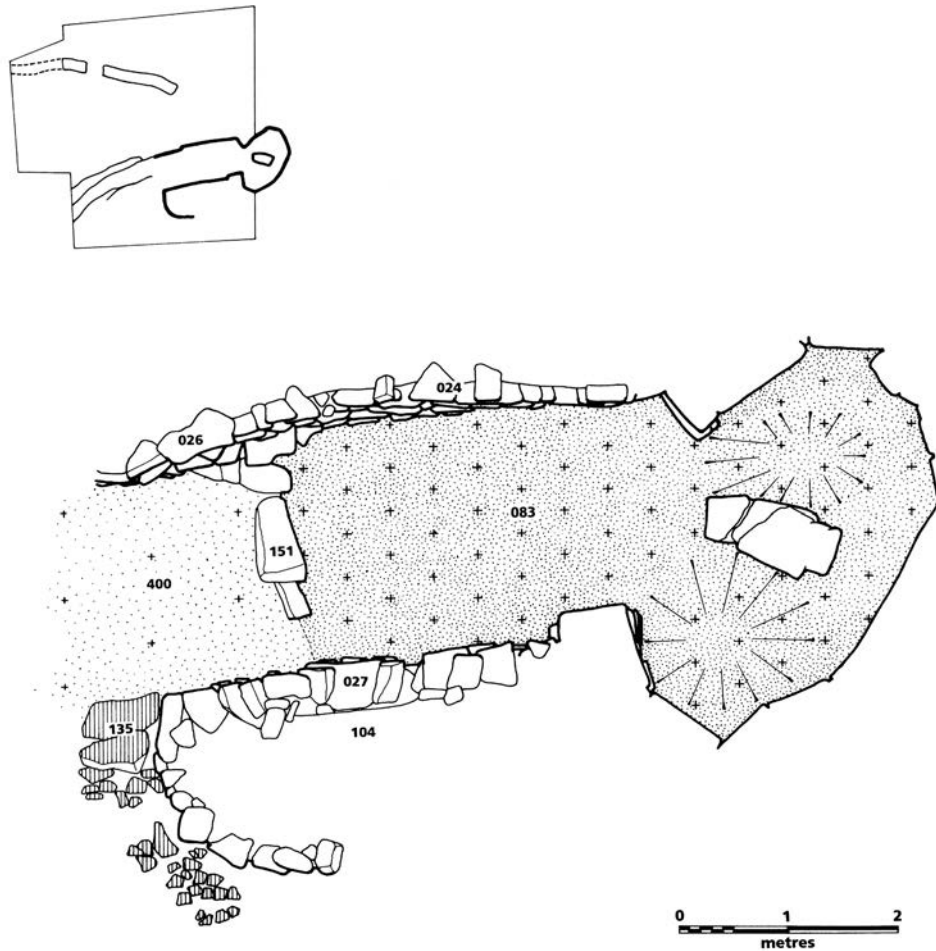


ILLUSTRATION 2.38

Structure 8, plan of primary floor. Note that the sub-division (C151) would, in reality, have been covered over by C132 by the time C400 and C083 formed.

evidence that the deep hole formed by the derelict wheelhouse had not filled with any appreciable quantities of material prior to the construction of Structure 8.

Regardless of whether the reorganization of the settlement resulted from choice or necessity, Structure 8 was clearly a radical break from the circular and curvilinear structures which had gone before. The structure was rectilinear on plan, aligned north-west to south-east, with a north-west entrance. It measured some 7.5m in length and had a maximum width of 2.2m, with its south-east end formed by the two surviving corbelled cells of Wheelhouse 1. The walls survived to a height of 1.5m along most of the north side, with a level wall-head which appears to have been substantially intact.

#### 2.5.1.1 Construction: Block 2

The condition of Wheelhouse 1, immediately prior to the construction of Structure 8, can be reconstructed to some extent. The walls around the circuit seem to have been reduced to around head height everywhere except for the two surviving corbelled cells on the south-east. The other bays were clogged with unconsolidated sand, rubble and midden (the latter presumably fallen roof packing or sealing material). The interior, however, does not seem to have been deeply buried, and we must assume that the central timber roof had been removed. The floor of Structure 8 was dug into the uppermost occupation deposits of Wheelhouse 1, over which only a thin coating of sand and rubble had accumulated (no more than around 0.4m at the centre, Ill 2.39).

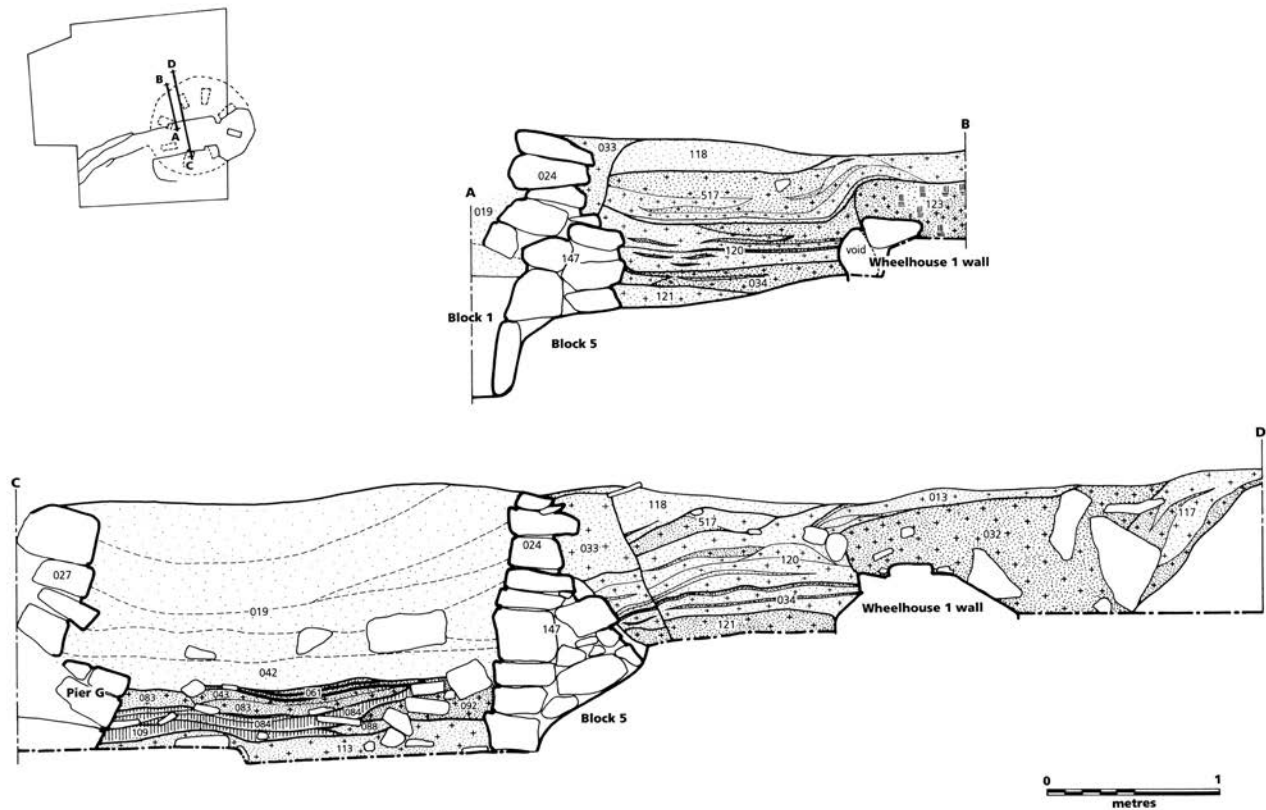


ILLUSTRATION 2.39  
Structure 8, sections through the interior, north wall and upper fill of Wheelhouse 1.

The north wall of Structure 8 (C024, C147) was the better-preserved of the two long walls, and had clearly been constructed in two phases. It incorporated numerous substantial flat slabs of reasonable quality, presumably removed from Wheelhouse 1. Although the pier immediately adjacent to the north side of the Wheelhouse 1 entrance, and its buttress, survived to form part of the backing for the Structure 8 wall, the remainder of the north wall stood well forward of the remaining wheelhouse piers.

The primary part of the north wall (C147) had a foundation course formed by slabs and boulders revetted directly against earlier deposits within the interior of Wheelhouse 1. It included the upper stone of a small rotary quern (SF086, see Section 3.6.2). A maximum of around 0.3m of Wheelhouse 1 occupation deposits appears to have been removed, although in places it was probably considerably less. Above this basal course the north wall of Structure 8 had a distinct outer as well as inner face and appeared in section as a free-standing structure (Ills 2.39–2.40).

In the space between the outer face and the wall of the ruined wheelhouse, a number of deposits subsequently formed. These were an extremely complicated series of striated sandy layers and tips with varying admixtures of ash and midden material. These deposits were simplified for recording purposes into four main groups (from the top downwards: C118, C074, C517, C120, C034, C121) but this should not be allowed to mask the complexity of the formation. One of these deposits (C034) contained lenses of uniform yellow/white sand, although the presence of pottery showed that it was not a simple windblown accumulation.

A fragment of worked human skull (HB02, see Section 3.4) was found within one of these wall-backing deposits (C074). It is unclear whether this was deliberately or fortuitously deposited.

The formation of these deposits raises significant questions. During excavation it was assumed that the primary north wall of Structure 8 had been free-standing and that these deposits had formed some



ILLUSTRATION 2.40

Photograph showing the section through the wall of Structure 8 and the upper fills of Wheelhouse 1. The upper part of Pier B can be seen in the foreground. The emergence of this pier made it impossible to maintain this section line at a lower level.

time after its construction. However, it is debatable whether a free-standing dry-stone wall only some 0.6m wide would have been able to support the thrust of the timber roof which presumably spanned Structure 8. It is perhaps more likely that the deposits behind the wall were deliberately emplaced after the wall had been constructed to provide the additional support required for the roof. It is probable, therefore, that the double-faced construction of the north wall was simply a device to ensure that the wall would stand until supporting material could be dumped behind it. The thin dry-stone wall was thus perhaps only intended to be self-supporting for a matter of hours or days, and was never intended to support the weight of a roof.

The deposits themselves give some support to this hypothesis. Several lapped up against the primary wall of Structure 8, showing that the wall was in place before they formed (Ill 2.39, especially A). The same deposits also lapped over the earlier deposits within the ruined Wheelhouse 1, and in one case at least (C120) rose at such a sharp angle that it seems improbable that they represent a natural formation (Ill 2.39, A). Indeed, in part B of the section, the underlying Wheelhouse 1 deposits (C032) also maintain an unnatural, near-vertical profile against which these later deposits had formed.

It would appear, therefore, that these deposits must have formed rapidly, and were indeed most probably deliberately deposited over an extremely short time-period, before the cut through the Wheelhouse 1 deposits had had time to weather and reach a more natural angle of rest (if indeed the near-vertical angle of rest does represent a cut; if the wheelhouse had been demolished immediately before work began on Structure 8, it is possible that this simply reflects the accumulation of material deliberately toppled into the wheelhouse which was not given time to weather into a more 'natural' formation. The presence of numerous voids in the deposits around the Wheelhouse 1 wall (Ill 2.39) lends weight to this interpretation).

At some later stage, the upper part of these deposits was cut through and a new, single-faced wall (C024) was inserted, with a packing of mixed ashy, sandy material (C033, C076) filling the spaces behind it. A maximum of five courses of this new single-faced revetted wall seem to have been built. The later walling was constructed of angular blocks of various sizes and was generally of less accomplished construction than the earlier elements. Towards the west of the structure, close to the entrance, an area of stone patching (C026) hints at a further episode of minor structural repair.



The construction of the new upper walling seems to have had a peculiar effect on the deposits behind the primary wall. The main section through this material (Ill 2.39, B and especially 2.40) shows a sharp disjunction in the otherwise coherent layers behind the primary wall. This disjunction seems to extend downwards from the point at which the upper part of this material was cut through. It would appear, therefore, that a substantial part of this block of material slipped by a few centimetres during this construction work, but not sufficiently to bring down the lower part of the Structure 8 wall, or indeed to show in the adjacent section (Ill 2.39, A). It may be surmised that this manifest instability may have been responsible for the initial collapse which had necessitated the re-building of this wall in the first place.

The re-building of the north wall cannot be accurately equated with the sequence of internal deposits within Structure 8. This somewhat complicates the stratigraphic relationship of Blocks 1 and 2, since not all deposits of Block 2 need be earlier than all deposits of Block 1. Although this does not affect the attribution of these blocks in their entirety to Phase 3, it should be borne in mind as a potential constraint on any more detailed stratigraphic analysis.

The southern wall (C027) was generally less well-preserved than the northern, in part perhaps because of the slope in the pre-excavation ground levels, which had brought the top of this wall close to the modern surface, and partly because of its more extensive re-use of unstable wheelhouse masonry. This wall ran north-west to south-east, parallel to the north wall, and was formed of medium to large angular stones forming rough and often dangerously unstable dry-stone walling.

The south wall incorporated in its construction the upper remnants of two of the southern piers of Wheelhouse 1 (Piers F and G), with new walling inserted even under the collapsing corbelling between these piers in an effort to provide some stability, and above it, to increase the wall height (the distortions in this sector of walling are visible in Ill 2.37). This seems an extraordinary way to have gone about the process of construction, as it would presumably have been much easier and safer to dismantle this corbelling and build the wall from scratch.

Mixed sandy and rubble-clogged deposits behind the south wall (C027, C104) could not be safely excavated. They appear to represent either deliberate packing, or debris from the dismantling or collapse of the upper Wheelhouse 1 superstructure. There was no indication

of multi-phase construction on this side of Structure 8, although its periodic collapse and instability made investigation extremely hazardous. The published section does not, therefore, extend through this wall (Ill 2.39). Nonetheless, the impression of ad hoc re-use of the collapsed or dismantled wheelhouse superstructure is clear enough.

At its west (entrance) end, the south wall curved outwards to the south, where the exterior ground level rose sharply. The wall, therefore, quickly reduced to a single course although it maintained the same absolute height as the internal wall-head. This short outward extension fringed a rough cobbled path (C135) which gave access to Structure 8 from the south (see Section 2.5.1.3). Its position suggests that it may have been intended to protect the butt-ends of the Structure 8 roofing timbers from damage by movement along the cobbled path. No such extension (or path) is present on the northern wall.

At the time of the initial construction of Structure 8, two internal features appear to have been built. These comprise an internal stone alignment (C151) which created a division between the inner and outer 'zones' of the interior, and a projecting stone 'bench' one stone wide, which adjoined the north wall in the outer zone. The former was formed of three long angular slabs laid across the interior from the north wall to just short of the south wall. This maintained the underlying spatial division at the end of the Wheelhouse 1 entrance bay. It would have been rendered invisible by the accumulation of sediments early in the occupation of the building (see Section 2.5.1.2), although some separation of the deposits to either side seems to have continued, suggesting that it may have supported a timber partition.

TABLE 2.5  
Finds (excluding pottery) from Structure 8 (Phase 3).

Floor deposits	Walls and wall-packing
Worked antler (SF66, SF69a-d, SF69f, SF52, SF291)	Bone needle (SF42) Bone pin (SF92)
Whale bone plaque (SF41)	Rotary quern (SF086)
Stone disc (pot lid?) (SF087)	Spindle whorl (SF279)
Flint flake	Human skull fragment (HB02)
Roughout (SF27)	
Chopping board fragment (SF300)	
Flensing knife (SF297)	

The limited pottery assemblage associated with the construction episodes reinforces the field interpretation of these deposits as re-deposited domestic midden and, in a few cases, substantially unmodified but re-deposited natural sand.

#### 2.5.1.2 *Internal deposits: Block 1*

The principal deposits within Structure 8 appear to represent a sequence of laid floor deposits interleaved with deposits of ash and other domestic debris (Ill 2.39). The sequence of deposits is slightly different in the eastern and western parts of the structure, separated by the internal stone partition (C151).

The earliest recognizable deposit in the eastern part of the structure is a layer of stained sand (C113) which forms a level surface extending into the corbelled cells. Despite its thickness (up to 0.2m) and extent, this deposit contained no pottery and little other domestic debris and is interpreted as a deliberately laid deposit of (initially) clean sand, which has become discoloured through exposure to heat and minor contamination with ash and organic material. It did, however, contain a cache of antler-working debris (SF52, SF66, SF69a–d, SF69f) and a stone disc (SF087) which, given the absence of other material, may have been deliberately deposited (indeed these objects make up a large proportion of the non-ceramic small finds from Structure 3, Table 2.5). The level surface of the deposit supports the hypothesis that it represents a laid floor rather than a deposit of windblown sand, which would have presumably lapped up against the walls. This deposit gave a radiocarbon date of AD 115–190, at one sigma (adjusted) (GU-2742).

A series of ashy, organic-rich deposits (C109, C112) formed immediately above this floor layer. These have a discontinuous distribution and appear to correlate with similar deposits (C091, C093) in the western part of the interior. These deposits do contain pottery and appear to derive from general domestic activity. C109 gave a radiocarbon date of AD 165–210, at one sigma (adjusted) (GU-2743).

This initial group of deposits was subsequently sealed by a second laid floor (C087, C088) similar in composition to the first, though less well-preserved and shallower. Over this second surface, a further series of ashy deposits formed. Analysis of the most extensive of these (C084) supported the field interpretation that it derived from a mixture of domestic sources, incorporating hearth waste and a high organic content. A high frequency of seaweed parasites suggests that this may have been a major

source of fuel in this period. This single context also produced 90 sherds of pottery of which 35 per cent were large sherds. This, together with the sharp division between it and the laid floor surface, suggests that this material was deposited relatively quickly. A small, discrete deposit of small to medium stones laid against the middle of the north wall of Structure 8 was also deposited at around this time (C092). The deposit appeared structureless, but may nonetheless relate to some form of internal furniture subsequently levelled as occupation continued.

Above these deposits was laid a third floor level (C083) represented this time by a darker, more stained sand, possibly containing a more substantial midden component, or possibly simply more mixed by trampling. Analysis of a sample of this material revealed plant macrofossils of a number of wild species indicative of heathland and bog, presumably derived from the burning of peat or turves from upland areas. Seaweed parasites were also present in some numbers. This deposit covered the entire eastern area of Structure 8, and the two corbelled cells (where it acquired a bowl-like profile), lying up to 0.2m deep in places. This floor contained notable concentrations of limpet shells apparently trodden into its surface. A much less mixed, white sand deposit in the western entrance area (C400) may represent part of the same deposit which had undergone a different post-depositional history. A further intermediate deposit (C132), over the area of the stone partition, may represent a further manifestation of the same original floor level.

C083 provided two radiocarbon dates with ranges of AD 200–330 and AD 170–245, at one sigma (adjusted) ((GU-2744 and GU-2745 respectively). It also contained the only sherds from flaring rim vessels on the site (V991 and V993, see Section 3.2).

Two further deposits covering much of the eastern interior (C043, C061) represent the final coherent deposits across the structure. Analysis of samples suggest that C043 at least derives from a fourth laid floor level, again with hearth waste incorporated into an essentially inorganic sand body. A localized area of ash (C060) against the north wall represents the final layer that can unambiguously be linked with the occupation of Structure 8. The total depth of deposits from the base of the first laid floor (C013) did not exceed 0.45m.

Above these occupation deposits lay a further deposit of clean white sand (C042). This is probably best interpreted as naturally deposited, as it does not appear to have been used as a living area, but its relatively level

surface, and inclusion of a small bone assemblage, seems unusual for a windblown deposit. It is perhaps best seen as a naturally accumulated sand layer formed when the building was de-roofed, but subsequently modified for small-scale, perhaps casual re-use. A radiocarbon date from this context suggested formation between AD 230 and 490, at one sigma (adjusted) (GU-2741). This may be taken as a terminus ante quem for the de-roofing of Structure 8.

Three localized patches of ash (C020, C046, C041) were the final anthropogenic deposits to be formed, and they were restricted to the southern of the two corbelled cells. They do not seem to be part of any wider use of the structure and may best be explained as single-episode dumps. Analysis of C020 supports the field interpretation that this was a single ash dump. The extremely high concentration of seaweed parasite marine molluscs (frequency of 73, by far the greatest concentration found in any sample on the site, see Section 4.5.1), strongly suggests that this ash derived from the burning of seaweed. The other two contexts

seem to represent the incorporation of ash within generally inorganic sand, although C046 had the second highest frequency of seaweed parasites from any sample on the site, and probably also derived from the burning of seaweed.

The final deposit within Structure 8 was a deep (c 1m) deposit of clean windblown sand (C019) which filled the structure to its wall-head (Ill 2.39). Numerous striations within the sand seem to show the pattern of deposition, with sand having formed against both walls leaving a linear hollow along the centre of the building. On the basis of observation of sand movement in the modern machair it seems likely that this structure could have infilled entirely within a short time after its final de-roofing; perhaps within a single winter.

*2.5.1.3 Entrance passage construction: Blocks 3, 4 and 20*  
The north-west facing entrance of Structure 8 was approached by a stone-lined path along the course of the former Wheelhouse 1 entrance passage. This

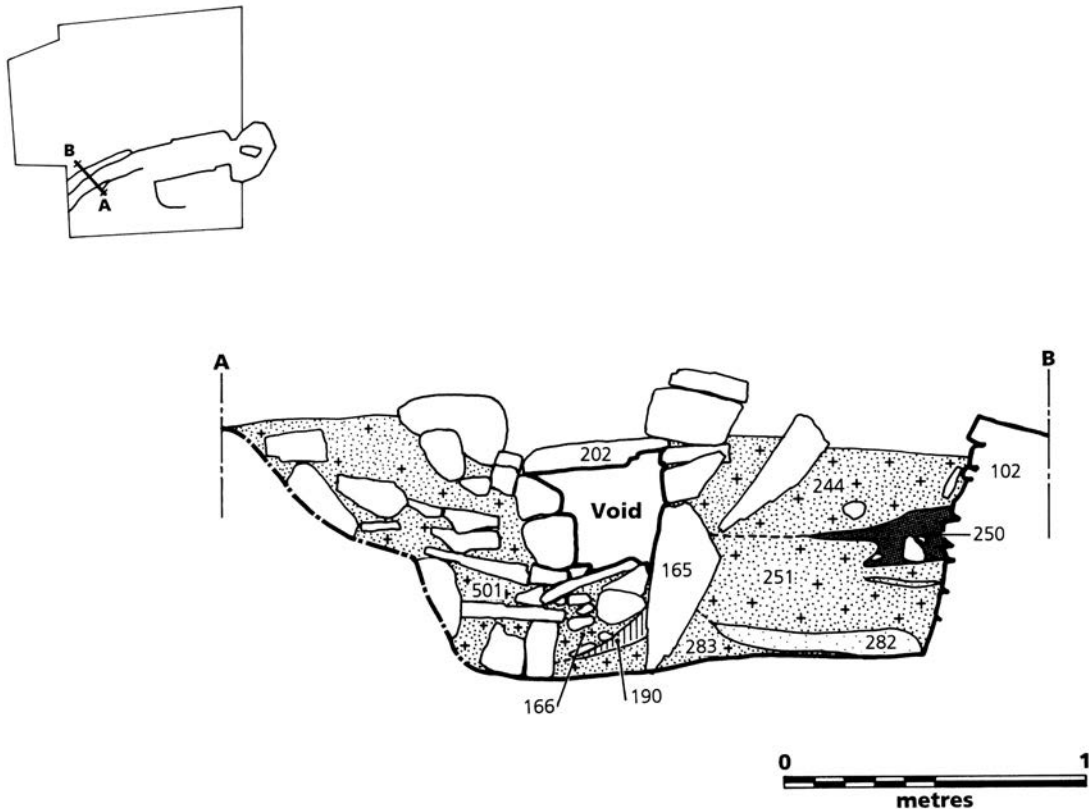


ILLUSTRATION 2.41  
Section across sump in the entrance to Structure 8.

path directed movement towards the northern half of the entrance while a rough cobbled path (C135, this section) from the south led into the southern half of the entrance (Ill 2.36).

The major feature of this entrance area was a linear drain or sump (Block 20), which ran along the centre of the passage, stopping just over 1m from the entrance to Structure 8. It appears to have terminated close to the west section, although this area was not fully excavated and the observation is based on the plan view only. This presumed end point would give an overall length of approximately 5.5m.

This structure must presumably be envisaged as a sump rather than a drain since it ran downhill towards the Structure 8 entrance, which would have made it a peculiarly ineffective means of re-distributing unwanted water. Presumably the intention was simply to create a channel through which surface water could escape quickly through to the underlying natural sand. The material through which it was cut itself comprised mainly stained sands, but even the limited midden content of these deposits may have been sufficient to cause drainage problems in the constricted entrance passage. Conceivably, surface water may otherwise have found its way into Structure 8.

The section (Ill 2.41) gives a fairly clear picture of how this structure was built. Firstly it appears that material which had accumulated during Phase 2 outside the entrance to Structure 4 (C244, C251) was dug out from the south side, leaving a near-vertical face. This face was then revetted with large slabs and upper coursing (C165). The south side of the sump was then built up from smaller slabs and coursing, with disturbed material (C501) being replaced behind it as packing. The cut for the sump reached clean sand at least in places along its course, and elsewhere reached and used the primary wheelhouse paving (C302). No new basal paving appears to have been created.

Once the channel had been thus created, a row of capstones (C202) was placed over it, and this was apparently weighted with smaller stones, creating what appeared from the surface as a strangely narrow paved walk-way along the centre of the entrance passage. The space between these two rows of weighting stones was little more than 0.5m. The narrow voids between the capstones would have been sufficient to allow surface water to escape into the sump.

When first built, the sump was around 0.7m deep below the level of the capstones and between 0.25 and 0.35m wide. It appears to have filled almost half full before deposition ceased. The fills were unexceptional

sandy deposits. Analysis of one of these (C166) suggested derivation from the usual domestic midden sources which pervade the site, mixed with inorganic sand. No mammal bone was present, although some fish bone was recovered.

The sump and its paving occupied the central portion of the passage which formed the most obvious route towards the entrance of Structure 8. Two further stone constructions lined the same path (Block 4), revetting the earlier deposits to the north and south, and creating a passage rather wider than that defined by the narrow band of paving above the sump (Ill 2.36).

Along the north side, the passage was lined by an irregular low revetment wall of water-worn boulders (C045) quite distinct in character from the usual angular blocks and slabs used elsewhere on the site. This alignment abutted the main wall of Structure 8 at its east end. Behind the stones was a deposit of sand and rubble (C094) which served to seal off the late Phase 2 entrance passage cell, Structure 7 (see Section 2.4.4).

On the south side, the path was defined by little more than a single course of irregular water-worn boulders (C044). While the north alignment disappeared into the main west section of the excavation trench, giving a minimum length of around 5m, this southern alignment could not be traced with any certainty for more than around 3.5m from the Structure 8 entrance. Both may have incorporated secondary additions and re-builds as the quality of construction was such that these could have been inserted without leaving any obvious trace. There is no positive evidence, however, that these revetments were other than primary to the construction of Structure 8 and thus at least broadly contemporary with the construction of the sump.

While the re-used wheelhouse entrance passage was the most carefully constructed route into Structure 8, a second option for access appeared for this first time in Phase 3. A rather less formal path, formed of rough cobbling (C135), was built up across the short slope to the south of the Structure 8 entrance, hugging the outward return of the structure's south wall. The path could be traced for no more than around 3m: any continuation would probably have been too close to the modern ground surface at this part of the site to have survived.

The material deposited within the entrance passage (Block 3) comprised mainly stained sand with inclusions of ashy material (C056, C057, C063). A small area of collapsed rubble (C062) towards the entrance

probably represents collapse or slumping from the north entrance revetment (C045). Towards the west section was a restricted deposit of more organic-rich midden material (C059, C105) which also contained a correspondingly greater concentration of pottery (25 of the 41 sherds from Block 3). Nowhere were the deposits of Block 3 greater than  $\approx$  0.3m deep.

The small ceramic assemblage from this block contained 0 per cent large sherds, indicating the degree to which these deposits had been disturbed.

### 2.5.1.4 Interpretation

There seems little doubt that Structure 8 was a domestic building built to replace Wheelhouse 1 which had become dangerously unstable by the end of Phase 2. No break in occupation is detectable between the two structures and the most likely explanation is that either Wheelhouse 1 suffered a catastrophic collapse which necessitated the immediate construction of a new domestic building, or else it was deliberately dismantled to make way for, and provide stone and structural support for, the new structure.

While aspects of the construction of Structure 8 appear opportunistic, such as the use of the remaining wheelhouse masonry to support its south wall, and the incorporation of the surviving wheelhouse cells, other features suggest that it marked a deliberate break with tradition. The new building was a semi-subterranean, passage-like structure, somewhat reminiscent of souterrains elsewhere in the Scottish Iron Age, but apparently a domestic structure in its own right. Its rectilinear form set it apart from all earlier structures on the site, and marks it out as an exceptional structure in the Iron Age of the Western Isles as a whole. Furthermore, the walls of Structure 8, although revetted at the base, did not use the technique of slab-revetting below a coursed upper wall, which had characterized the Phase 2 buildings. Possible parallels, such as they are, for this unusual structure, will be discussed in later sections of this report.

The move to rectangularity must indicate a radical shift in approach on the part of the inhabitants, in terms of the roofing mechanism as well as the more obvious changes in the use and division of space within the house. The roofing of Structure 8 was most probably achieved using a timber framework, as there is no sign of corbelling and the structure was too wide to have supported a slab roof. Presumably, therefore, the basis of the roof was a ridge pole running the length of the structure, terminating at the still-corbelled end cells left over from Wheelhouse 1.

The virtual absence of rubble in the infill of the building, together with the uniformity of the surviving wall-head, suggests that the excavated super-structure was more or less intact. This suggests an original wall height of around 1.5m, from which the timber roof would have risen a further 1m or more above the central spine of the building. The rafters would presumably have rested on the packing material behind the walls (presumably necessitating a timber wall-plate), or directly on the wall-head.

The arrangement of the roof at the north-west (entrance) end of the building is unclear. The structure seems to have been effectively open at that end, although perhaps it is likely that the door would have been set in some form of timber-built wall panel. Even if the latter was the case such a slight construction (too ephemeral to leave any archaeological trace) seems unlikely to have functioned effectively as a roof support. The implication, therefore, is that the building had, effectively, a non-weight-bearing gable end of timber, within which the door was set. This seemingly inescapable conclusion, however, simply reinforces the present uniqueness of this building in a Hebridean context. The ridge-pole would presumably have sloped down to the rear (east) of the building and resting on the pier between the two surviving corbelled cells, and supported by rafters to either side along its length, giving a distinctly sloping aspect to the finished roof.

From the rear and sides, the structure would, like its predecessors, have appeared as little more than a roof projecting above the machair surface, albeit a rectangular one. Approaching from the north-west, down the open entrance passage, however, one would presumably have encountered a timber gable set with a door. Even from the outside, therefore, this would have been a structure of markedly different character from those which it replaced.

The interior of the building seems to have been divided into three zones, each with some evidence of depositional variation. On entering, the first area encountered was some 1.7m long by 2.2m wide, defined at its east side by a stone alignment which probably supported a timber partition. This area has little overall depth of deposits and much less evidence of occupation debris than other parts of the building. It contained a projecting shelf or bench set along part of its north wall, less than 0.5m above the primary surface. It may be best interpreted as some form of ante-room, where little primary deposition of domestic debris occurred.

Passing through the presumed timber partition, one entered the next zone to the east. This was the largest sub-division with the building, measuring around 3.5m long by 2.2m wide. This area had a far greater concentration of domestic debris yet lacked any indication of a formal hearth or other built features. There was considerable evidence for the horizontal truncation of deposits (especially C042, C061, C083), suggesting periodic clearance of floor deposits, and it is possible that in situ hearth material was simply never allowed to accumulate for any length of time. This zone appears, on the basis of the depth and nature of the deposits, and the quantity and character of the finds, to have been the main domestic focus of the building.

Deposits from the central zone continued unbroken into the final zone, which comprised the two interconnected corbelled cells at the south-east end of the building. It is not clear whether the re-use of the corbelled cells reflected sheer opportunism on the part of the builders, or some deliberate wish to retain the cells as part of the design of the new building. There appears to have been no formal partition between the cells and central zone of the building. Although there was a tendency for successive floor deposits to form slight hollows within each of the cells. This might suggest that they were used for specific purposes, such as sleeping or working, or perhaps that different floor coverings were in place.

In the later part of the occupation of Structure 8, headroom in the two cells would have been highly restricted. Nonetheless, the south cell is the part of the building which appears to have remained in use longest, having some evidence for activity when the structure as a whole had apparently been abandoned.

Radiocarbon dates suggest that Structure 8 was most probably occupied for around 150 years (see Section 6.3.1), during which time at least four laid floors were inserted, used and abandoned. Given that the floors were periodically cleared out, this must represent an absolute minimum indication of the likely re-flooring episodes. There is no indication for any changes of use between any of these events. The evidence for the major re-building of the north wall, and for minor patching elsewhere, has been discussed above and provides further indications of time-depth.

The small amount of material which accumulated within the entrance passage, despite the relatively long life of the building, suggests that this area too was kept clean. The deposits which do survive, including signs

of collapse of the north entrance revetment, can be expected to relate predominantly to the later stages of Phase 3.

Eventually the structure was abandoned and left to fill with wind-blown sand. There is nothing in the post-abandonment layers which hints at the decay of a roof, and it must be assumed that the roofing structure was removed, possibly for re-use. The walls were left intact suggesting that there was no pressing need for building stone in the vicinity, or that social sanctions prevented the removal of the walling.

#### 2.5.2 STRUCTURE 10: BLOCK 18

Structure 10 has already been mentioned briefly in the description of the earlier (Phase 2) Structure 6. It comprised a fragment of a probable enclosure wall dating to Phase 3 and was located to the north of Structure 8 (Ill 2.36).

##### 2.5.2.1 Description

Structure 10 comprised the robbed foundations of dry-stone wall, formed of irregular water-worn stones (similar to those which lined the entrance passage to Structure 8), and running approximately north-west to south-east along the slight break of slope above the largely infilled Wheelhouse 2 and its entrance passage (Ill 2.36). Its total surviving length was around 8m although it may have continued to the north-west outside the excavated area, judging from the presence of rubble concentrations along its projected route. It was at most 1m wide and incorporated a break suggestive of an original entrance. An old ground surface (C068) was preserved under parts of the wall, suggesting that it had been built on a thin sandy soil of a type characteristic of modern machair soils in the vicinity.

The south-eastern terminal of Structure 10 butted against the surviving sand-revetted slabs of Structure 6. This left a gap between the wall terminal and the north wall of Structure 8 of around 3m (although it would have been less when Structure 8 was roofed; possibly little more than 1m).

##### 2.5.2.2 Interpretation

Given the poor state of survival of this feature and the confines of the excavated area, it is impossible to be certain as to its function. It appears securely linked to Phase 3, as the midden deposits of this block seem to have formed around it, and it clearly could not have co-existed with Structure 6. The use of water-worn

boulders provides a further, circumstantial link with Structure 8.

For the first time in the excavated area, therefore, we have an indication that the settlement was least partially enclosed, albeit by a wall of relatively slight construction. This enclosed area, as we shall see, seems to have served to define the area of disposal of midden material.

### 2.5.3 PHASE 3 MIDDEN DEPOSITS: BLOCK 18

Following the abandonment of Structures 3 and 4, at the end of Phase 2, a series of deposits formed within and around them, covering the majority of the excavated area, with the exception of Structure 8. Different context numbers were given to this series of deposits, divided principally on the basis of which earlier structures they covered, but in essence this series of deposits represents a broadly contemporary build-up of domestic refuse and sand.

#### 2.5.3.1 *Characterizing the midden deposits*

The most extensive of these deposits (C018) formed over the remains of Structure 4 and lapped up against the north side of the entrance passage of Structure 8. Analysis of this deposit confirmed the field interpretation that it formed from a mixed series of sands and domestic debris with a significant ash content. Visual inspection in the field indicated that this context had a higher organic content than similar and contiguous deposits over the remainder of the excavated area. A sub-sample taken in the field proved to comprise a discrete deposit of boulder clay, perhaps intended for pottery manufacture or use in building.

#### 2.5.3.2 *Midden formation*

C018 also contained the greatest density and quantity of pottery from this group of deposits (over 500 sherds) perhaps reflecting its convenience as an area for dumping domestic refuse, just outside the entrance to Structure 8. It also contained one of the few fragments of human bone from the site; a fragmentary tibia (HB04, see Section 3.4). A far lower density of pottery was recovered from the apparently contiguous deposits which formed within the hollow over the disused Structures 2 and 3 (the latter context, 012, is referred to in the description of Structure 3, above, and illustrated in Ill 2.25). These deposits formed further from the entrance to Structure 8, and were separated from it by the wall, Structure 10. A similar dearth of pottery was found in the material which formed

just north of Structure 10, over the former entrance passage of Structure 2.

Perhaps surprisingly these midden deposits produced a rather small bone assemblage; only 173 bone fragments compared to 193 in Structure 8 (Block 1), although the midden deposits contained twice as much pottery. It seems most likely that this difference relates to the greater exposure of these midden deposits as they formed on the ground surface, compared to the more sheltered conditions prevalent within the buildings. The documented presence of pigs on the settlement (see Section 4.2) may be a further factor in the paucity of bone debris in surface deposits. Interestingly, one fragment of bone turned out to be a probable miniature sword (SF20, Ill 3.24d, see Section 3.5.7).

It appears therefore that much of this midden material derives from hearth waste and floor sweepings from Structure 8, with material being dumped preferentially close to the entrance, within the area defined by Structure 10. Possibly this area, the original extent of which is now unknown, was a zone where midden was deliberately accumulated for onward transmission to the fields. It is perhaps also possible that the enclosure and zoning of midden deposition in the immediate vicinity of the main domestic building, was part of a deliberate strategy to prevent the kind of soil erosion witnessed during Phase 2, which might otherwise have threatened to undermine the domestic building.

The derivation of the Block 18 midden from Structure 8 is reflected in the pottery data. The percentage of large sherds in Structure 8 is 30 per cent, presumably indicating the primary nature of the deposition within the building. By contrast, only 13 per cent large sherds were recovered from the midden deposits of Block 18, suggesting a rather different depositional history for this material.

The lack of any midden formation over the abandoned Structure 8 also appears to confirm that it was the principal source of the Phase 3 midden deposits. The implication is that midden deposition ceased with the abandonment of Structure 8, presumably also indicating that there was no off-site source for midden deposition within the immediate vicinity of the site. This would appear to support the hypothesis that the excavated structures comprised a complete settlement unit in themselves and not part of a more extensive complex.

## 2.6 LATER ACTIVITY

Post-abandonment activity on the site was extremely restricted in extent and the relevant contexts have been gathered together in a single block, Block 7. The predominant processes at work were those of natural machair formation and erosion.

### 2.6.1 WINDBLOWN SAND ACCUMULATION: BLOCK 7

After the abandonment of Structure 8 and the deposition of the surrounding midden material, the site was entirely covered by a thick deposit of windblown, largely sterile shell sand (C010). This ranged in depth from around 3m in the north-western part of the site, to less than 1m over the corbelled cells of Wheelhouse 1 and less than 0.5m over the extreme south-western part of the excavated area. Very occasional ashy lenses were the only indication of pre-modern human activity in the deposit.

The surface contours of this sand surface bore no relation to the topography of the underlying archaeological features (Ill 2.20 is slightly misleading in being the only part of the site where there was some correlation, as the modern ground surface rose slightly over the intact wheelhouse bay roofs). It is likely that the area had been exposed to multiple episodes of accretion and deflation, some of which may even have led to the re-exposure of the uppermost Phase 3 deposits. The Phase 3 midden deposit, C012, had clearly been horizontally truncated (Ill 2.25). At some stage, two shallow pits or scoops (C014, C015) had been cut into the upper surface of the Block 18 midden deposits. Their fill was indistinguishable from the windblown sand overburden.

A small quantity of pottery was recovered from the sand overburden but this represents an entirely opportunistic sample, recovered when cleaning areas left by the machine, or during the 1987 trial excavation. It is unlikely to be representative.

### 2.6.2 RECENT DISTURBANCE: BLOCK 7

A series of apparently recent, and certainly post-abandonment, features had been dug into the overlying sands. Most obvious was a water-pipe

trench dug during the 1970s (C011), which cut across the southern part of the site, clipping the corbelled cells of Wheelhouse 1 (Ill 1.5). Other recent sheep burial pits etc were removed during the initial machine clearance of the site and were not recorded in any detail.

The removal of overburden by machine caused a degree of damage to the upper surface of the underlying midden material (Block 18) in the western part of the site. The resulting, disturbed material was recorded as C209, which yielded a small assemblage of pottery presumably derived from Phase 3 deposits.

Aside from these features, the surface of the Phase 3 deposits was undisturbed by later human activity.

### 2.6.3 INTERPRETATION

It would appear that human activity directly related to the settlement ceased after Phase 3. The site seems quickly to have been draped in a blanket of sterile, windblown sand. Over the succeeding centuries, the sand dune surface seems to have been reworked by wind action, creating a local topography entirely unrelated to that of the upper archaeological layers. Thus no trace of the settlement was visible from the surface above, and the site was hidden until exposed by tidal action as the coast advanced inland.

It is possible that the incursion of sand was part of the reason for the abandonment of the settlement at the end of Phase 3. However, it is equally possible that the sand cover might have built up more gradually over a period of several decades following abandonment. Structure 8, unsurprisingly, filled up with sand soon after abandonment, and the stones of the wall were apparently masked from later stone-robbers. The residual condition of the nearby wall (Structure 10), however, implies that it remained visible as a convenient stone source for some time after the disappearance of Structure 8. This suggests that problems with sand movement were not directly responsible for the abandonment of the site, and that the sand cover accumulated over a number of years, decades, or even centuries, after the last occupants had left Structure 8.