

# INTERIM REPORT ON THE EXCAVATION OF A MIDDLE BRONZE AGE SETTLEMENT AT REDWICK 2000-1

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*Excavation of three rectangular buildings of middle Bronze Age date at Redwick is outlined. Each of the buildings had been subject to significant erosion, especially Building 1, floor levels did not survive but the plans of Buildings 2 and 4 were better preserved. The buildings are on slightly raised areas of peat and are partly encircled by slight depressions in which occupation levels were preserved. The floors of the depressions are covered with many bovid and some ovi-caprid footprint-tracks. Human footprint-tracks also occur. The distribution of artifacts and that of footprint-tracks contributes to an understanding of the layout (eg entrance positions) and possible function of the buildings, some parts of which are thought to have housed animals. Building 2, perhaps Building 4, but not Building 1 produced evidence of human domestic activity but of very small-scale and probably short duration.*

## INTRODUCTION

This interim report is concerned with the excavations of Redwick Building 4 in 2000 and that of Buildings 1 and 2 in 2001. This work completes the excavation of the middle Bronze Age settlement at Redwick. For a plan of the setting of the settlement see Bell *et al* this vol Fig 11. The Redwick site had first been investigated during the intertidal peat survey funded by the Board of Celtic Studies of the University of Wales with additional funding from Cadw. Initial survey and cleaning of the Redwick buildings was undertaken in March 1996. The results of this initial work have been published (Neumann and Bell 1996; Bell *et al* 2000). In 1999 a three year programme of recording and excavation of the four Redwick buildings was initiated. Excavation

is supplemented by EDM survey of the area in order to put the site in the context of surrounding features and to establish the rate at which the peat shelves are eroding in this area. Peat shelf erosion is being monitored over a period by the project and the results will be published in the final report. In 1999 Building 5 and a substantial surrounding area were cleaned, recorded and archaeological features excavated. The building was found to be poorly preserved, but there was a well-preserved activity area (Area 5), including the site of a hearth, nearby. An interim report on that season of work has been published (Bell and Neumann 1999).

In addition to this research there has been an investigation of the sedimentary sequence underlying the buildings by Allen and Haslett (2002). Evidence of activity in the Romano-British period and an early Medieval woven structure, probably a fish trap, has been recorded in a palaeochannel to the west of the Bronze Age site; these finds are published in a paper which also gives an outline of the sedimentary and stratigraphic context of the Bronze Age site (Allen and Bell 1999). Aspects of the earlier stratigraphy at Redwick are now being investigated as part of a NERC funded research programme on Mesolithic to Neolithic coastal environmental change (Bell *et al* this volume).

## EXCAVATION OF BUILDING 1

A preliminary survey of this building was made over one day on 25.3.96, a day of torrential rain which made cleaning and planning very difficult. The team left the field that day with a drawing board covered in mud uncertain whether the pencil had left any trace of the individual 5 cm square

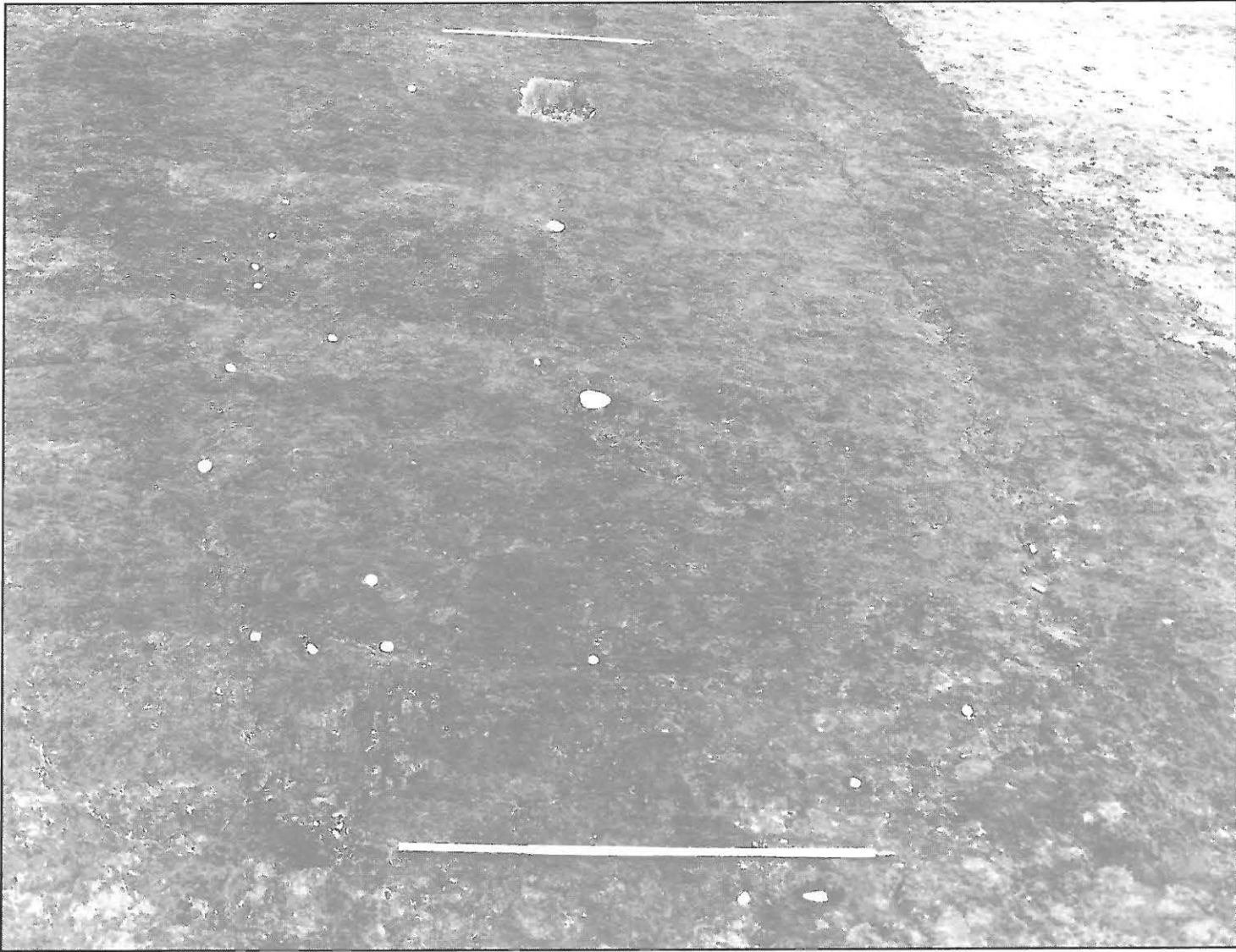
units planned (each 1 m at 1:20). Thankfully sponging later revealed a basic plan of the building (Bell *et al* 2000, fig. 16.9). In 2001 the building and a larger surrounding area 17 m by 8 m was cleaned, photographed and planned (Figures 1 and 2). This exercise demonstrated that the preliminary survey had identified the main elements with resurvey providing additional information. The building was 11.5 m by 4.5 m. The long axis of the building was represented by three large roundwood posts which are presumed to have supported the ridge piece of a roof. One of these (post 25) was lifted in 1996 and on this a radiocarbon date for the building of 3060  $\pm$ 70 BP (SWAN-227; 1500-1110 Cal BC) has been obtained. This, and the other radiocarbon dates in this paper, are 2 sigma calibrations based on the curve of Stuiver *et al* (1998) calibrated using Oxcal v3.5 (Ramsey 1995).

The main feature of the building is a shallow, almost continuous, linear channel 10-20 cm wide marking the wall line. The channel carried water draining from the peat surface and it was the most obvious feature of the Redwick settlement (Neumann and Bell 1996, fig. 8). In places the channel was a distinct clay-filled crack. Nineteen posts along the line of this crack were all that remained of the wall. The wall posts and the associated crack between them indicate that the building had a slightly bow-sided form. Six roundwood verticals were found in the interior. A single isolated roundwood post (diameter 60 mm) pointed by a single axe blow was located on the peat surface 9 m south of the building. The total number of wood pieces identified as part of this building is 28; of these 4 (14%) had been lost by erosion in the period 1996-2001 and 3 posts not found in 1996 were located in the more detailed survey in 2001.

Cleaning of the area just outside the building on its north side led to the identification of an arc of 10 circular hollows. These were of diameter 4-6 cm but one was 16 cm in diameter. This arc forms about 90 degrees of a circle of diameter 5.75 m. Careful cleaning revealed no evidence that the circle was originally complete. It is just possible that the arc of voids may represent places where posts have decayed. In size this is close to the 6 m diameter of the well preserved double-ring roundhouse at Collister Pill

(Bell *et al* 2000, fig 16.14). Voids have been encountered along the lines of the walls of some of the Redwick buildings and are thought to represent the positions of decayed posts. What makes this possibility deserving of particular consideration is that when Derek Upton (pers. comm.) originally discovered the Redwick site about 20 years previously, he described the presence of one or more stake built roundhouses, including one which seemed to intersect a rectangular building. He described the building posts at that time as much better preserved than at the time of our excavation and projecting significantly above the peat surface. He described round structures of double stake construction. Three of the voids are paired hinting at the possibility of double stake construction in this case. The present discovery is the closest structural form to that originally described by Derek Upton. This strengthens our impression that what the excavation has recorded, particularly in the case of Building 1, is a structure in a greatly denuded form as a result of physical erosion and oxidation of the peat surface. The crack forming the wall line of Building 1 is interpreted as a line of weakness in the peat created by wall posts many of which had now decayed, this impression is reinforced by the 'beaded'-nature of the gully on the north side.

Around three quarters of Building 1 there was no trace of an associated occupation surface. The exception was a shallow linear depression which led west of the building and joined the depression which ran on the east side of Building 2. This depression, the floor of which was covered in animal footprint-tracks, ran up to the southern part of the west wall of Building 1 (Figure 2). A range of evidence will be presented below for an entrance in this position in Building 2 and it is tentatively suggested that the linear hollow marked a route leading into the entrance of Building 1. An area 10 m by 4 m of this linear depression was cleaned, planned and partially excavated. The depression fill was a mottled peaty clay surface created by animal footprint-tracks made in peat and filled with clay. For reasons of time excavation in this area did not continue down to the undisturbed peat. This area produced the only finds associated with Building 1, and even here they were very few as shown by the symbols on Figure 2: 1 stone; 7 hazelnuts; 8



*Figure 1: Redwick - Building 1 as excavated with the positions of posts indicated by white markers of equivalent size and shape to the posts. (Photo. Edward Sacre).*

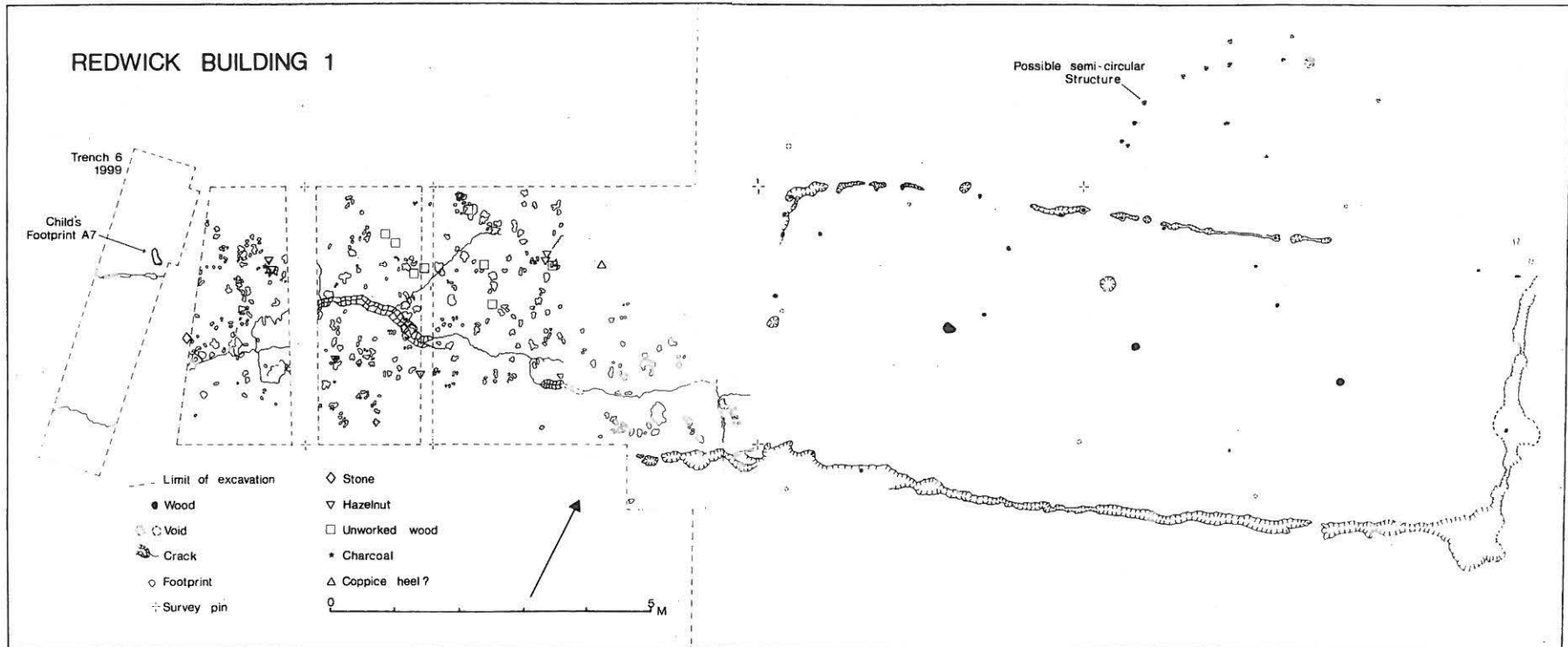
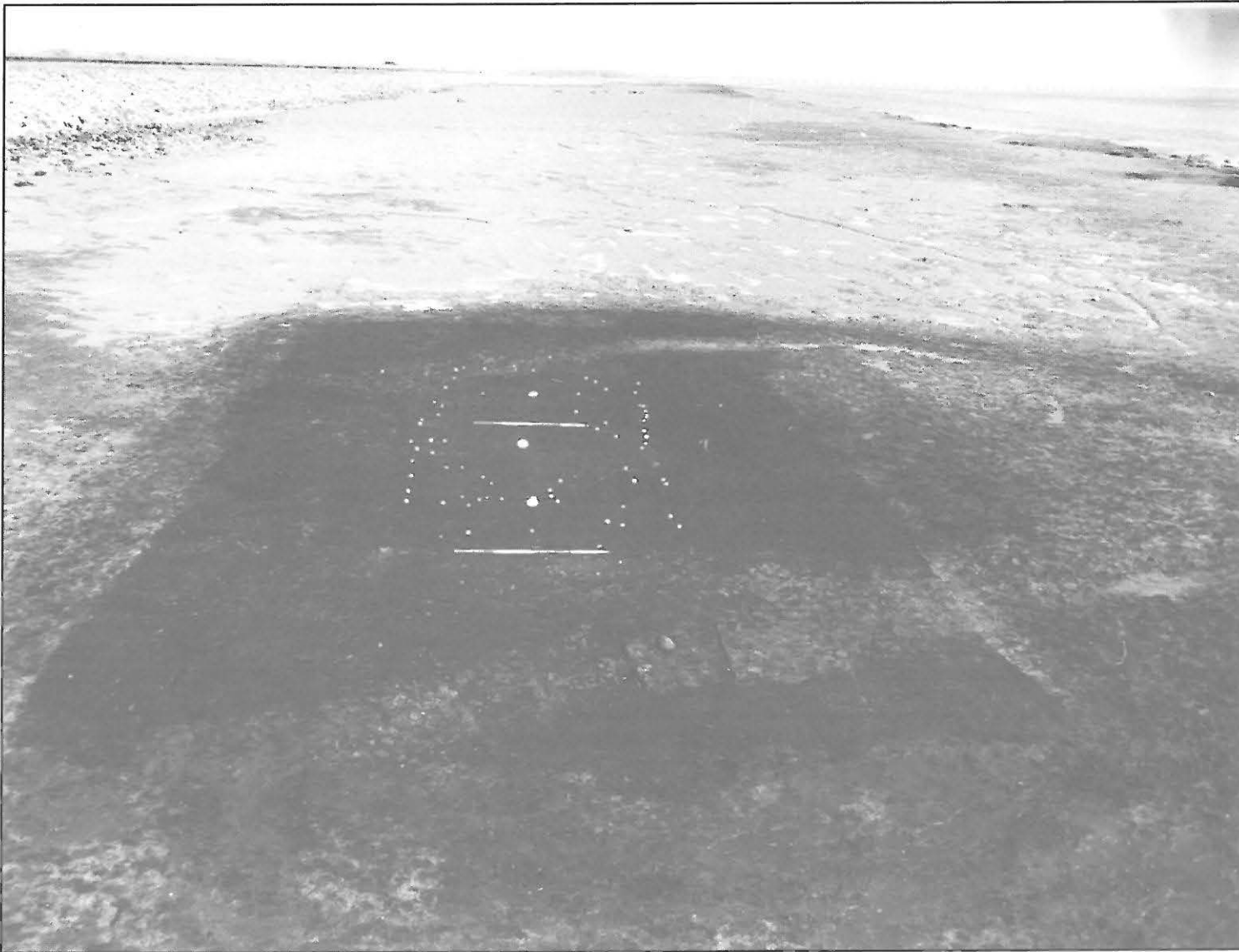


Figure 2: Redwick - Building 1, plan showing, to the north, a possible semi-circular structure marked by voids and, to the west, a linear depression with footprint-tracks and a small number of artifacts.



*Figure 3: Redwick - Photograph of Building 2 as excavated with the positions of posts indicated by white markers of equivalent size and shape to the posts. (Photo. Edward Sacre).*

Redwick building 2

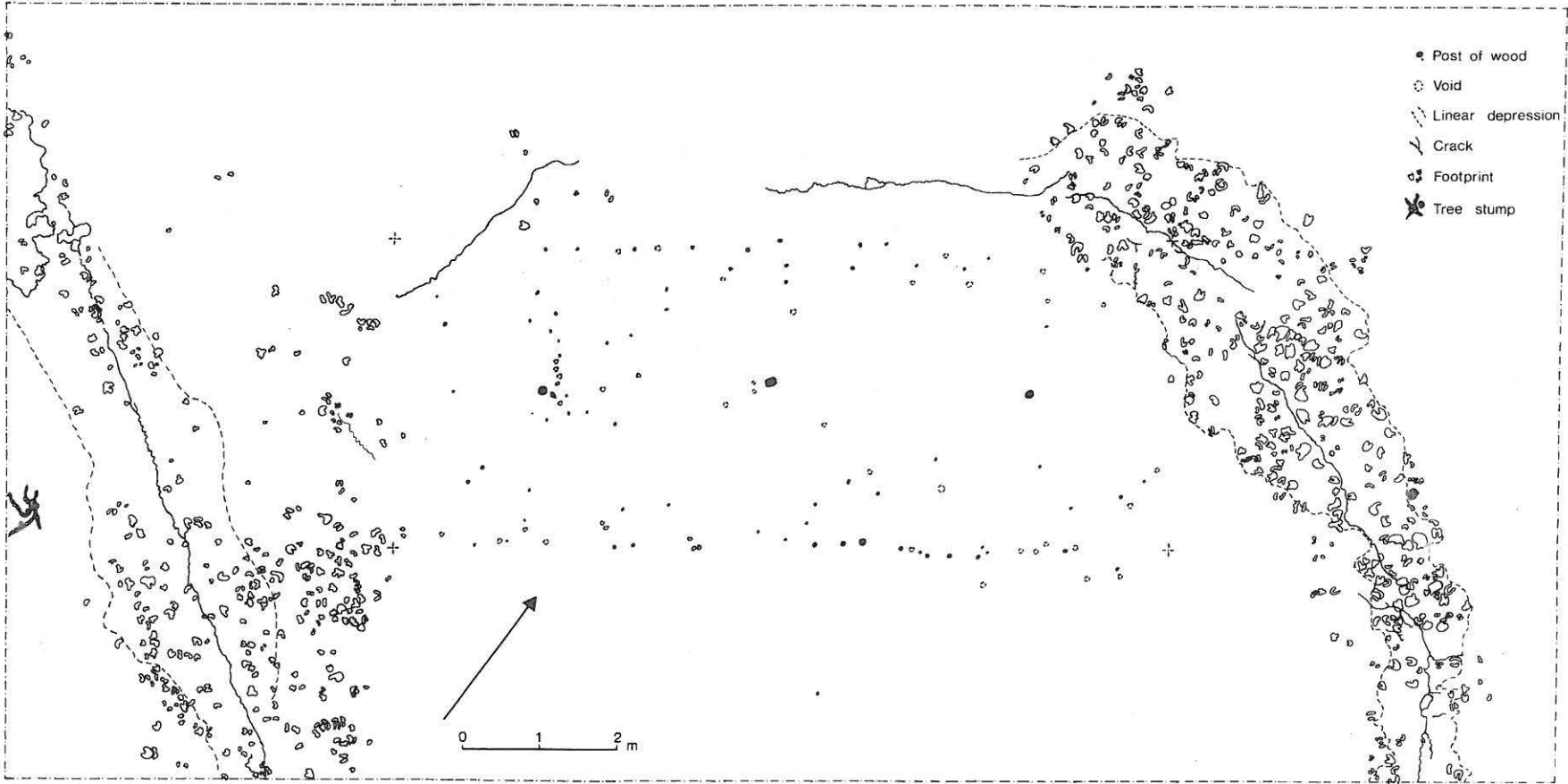


Figure 4: Redwick - Building 2 and the linear depressions to east and west, the floor of which are covered in animal footprint-tracks.

	West			East			Average
	1	2	3	4	5	6	
North -South	1.8	1.8	1.8	?	?	1.8	1.8
East - West	1.35	1.4	1.5	?	?1	1.4	1.4

Table 1. Redwick Building 2: dimensions of possible internal sub-divisions (m).

pieces of unworked wood; a possible coppice heel and one piece of charcoal. A trench cut across this linear depression in 1999 had revealed a well-preserved child's footprint (Bell and Neumann 1999, fig 9). Applying the calculations and sources on the relationship between footprint size and age (Bell *et al* this vol) the footprint length of 170 mm gives a height of 1.09 m and in modern populations this is likely to have been a child aged 5-6 years.

## EXCAVATION OF BUILDING 2

This building was originally cleaned and planned over two days on 26-27th March 1996 (Bell *et al* 2000, fig 16.10). In August 2001 excavation took place over 22 days with an average team of about 12. A 20 by 10 m area surrounding the building was excavated (Figures 3-4). The area of the building is slightly raised and has generally been mud free. In the rest of the excavated area 1-10 cm of mud was removed using slurry scrapers and the peat and peaty clay surface was cleaned. The building itself is 8.9 by 3.8 m with three large roundwood posts marking the axial line. Parallel with this are two side walls which in places consist of regularly spaced roundwood posts. The building appears to have a slightly bow-sided form. The two shorter end walls are poorly represented: 5 posts in the case of the west wall and just two posts in the case of the east wall; perhaps the end walls were lightly constructed, or partly open. Post 73 from the south wall has been radiocarbon dated 2940  $\pm$ 70BP (SWAN-226; 1380-930 Cal BC).

Within the building there is evidence of possible sub-divisions. Six small roundwood posts form a clear line north of the western axial post. Two roundwood posts could suggest the position of another subdivision north of the central axial post and between these two putative lines two other roundwood posts forming a line parallel

with the others could form part of another sub-division. A void and roundwood post north of the east axial post may suggest a similar line. These hypothetical divisions indicate that the north half of the building may have been subdivided into a series of stalls of the dimensions outlined in Table 1. This suggests an arrangement comparable to that found in the north-west corner of Goldcliff Building 1 where, however, the subdivisions were of smaller dimensions (average 0.75 m by 2 m; Bell *et al* 2000, 90). Although some internal posts are present in the southern half of the building, and the eastern part of the south wall is the most well-preserved part, there are no distinct linear subdivisions in that half. There was only one piece of worked wood (2250) which was away from the structure and clearly in its original position. This was a thin (2cm) but long (0.6m), vertical roundwood stake 1.9 m from the south wall.

The structure comprised 87 posts. Of those identified in the preliminary survey in 1996 12 (14%) had been lost to erosion by 2001 but the more thorough investigation in that year located 10 posts not found in 1996. A number of circular voids along the lines of the walls and within the building are likely to mark the positions of rotted posts.

The building was on raised bog peat in which heather and cotton grass were frequently present. Three small alder stumps were encountered near the limits of excavation, one to the west, two to the east. An alder wood layer is present about 18 cm below the peat surface and the stumps found on the peat surface may represent places where the peat had been eroded to a slightly lower level. In excavating the wood posts of this building, occasional finds of charcoal were made in the underlying peat in layers well below the horizons associated with building use, up to 42 cm into the peat. A large piece of charred

wood was also found when taking beetle samples for work by Emma Paddock (2000) from the peat face south of Building 1. It seems there may have been periodic burning of the fen wood communities centuries, or even longer, prior to construction of the buildings.

Building 2 lay on a slightly raised area which was delimited by slight linear depressions to west and east, these joined south of the building forming a linear depression running west of Building 1 which ran into a prominent clay-filled palaeochannel which runs from north to south west of Building 2 (Bell *et al* this volume Figure 11). The linear depressions have a fill of mottled clay and peat, generally 6-8 cm deep. In the centre of the depression was a crack 10 mm wide with a fill of grey clay. In general the fill of the cracks postdated the mottled fill of the channel. A crack ran discontinuously *c.* 0.7 m outside the north wall of the building, but the shallow depression with a mottled fill only extended *c.* 1.7 m west of the north-east corner of the building.

#### *Footprint-tracks*

The mottled fills of the linear depressions to east and west of Building 2 were clearly the result of mixing at the interface between these two sediment types caused by animal footprint-tracks. Those of cattle and ovicaprids were very abundant in the depression fills. These were planned at a scale of 1:20 to create the overall picture seen in Figure 4. Many of the mottles comprised a complex palimpsest of intersecting shapes. Where examples retained a sufficiently distinctive form for identification and measurement, actual size tracings were made of the footprint-tracks on polythene film. In some cases it was possible to trace a particular print at a number of levels of excavation. The clay fill of some examples was excavated and the result was cast in Plaster of Paris to obtain a cast of the animal's foot. Only one of these footprint-tracks (194) was a rather poorly preserved probable human print. In addition to the many footprint-tracks in the linear depressions 6 examples were found north of the building. Three examples were identified along the south wall line at a point where there was a 1.7 m gap in the wall. These could point to the position of an entrance.

Some of the footprints, including the three on the south wall exhibited a distinct microstratigraphy. The impression had been made in raised bog peat, it was partially lined at base and sides with a thin layer of lighter coloured plant material which it is thought may represent animal dung onto which the foot had been impressed, the shaft is then filled with grey clay, or clay with peat. In the linear depressions areas of lighter plant material of distinctively oval form were found in the peat surface, or at the base of footprints. These were of size *c.* 40 by 20 mm and are interpreted as ovicaprid dung. The possible dung material is being further investigated by Astrid Caseldine in terms of its plant macrofossil and pollen content in order to identify on what vegetation communities the animals had grazed.

#### *Artifact distributions*

All artifacts in the 20 by 10 m area excavated around the building were three-dimensionally recorded and their distribution is shown in Figure 5. The artifacts were concentrated in two areas to east and west of the building. A particular concentration *c.* 2 m by 1.5 m occurred to the west about 1 m from the wall of the building. This material was within the surface of the peat and the peaty clay which had been trodden into the peat by animals. The main concentration was not within the linear depression to the west of the building but in the peat area between the depression and the building. It seems probable that this concentration points to the position of an entrance in the southern half of the west wall. This seems very plausible given evidence presented above that the northern half of the building was divided into animal stalls. The artifact scatter ends on a marked line parallel with the wall. The line is so sharp as to call into question the proposed line of the west wall and suggest that it may have been 1 m further west. However, there were no posts along that line. Another possibility is that the eaves projected 1 m beyond the wall and the artifacts were thrown down to consolidate a muddy area outside the entrance. However, the edge of the artifact spread seems rather sharply defined for this explanation. There is a steady fall off in the density of artifacts to west, north and south of the main concentration, with the footprint area in the linear depression having rather more artifacts than the vestigial linear depression to the



Redwick building 2 : artifact distributions

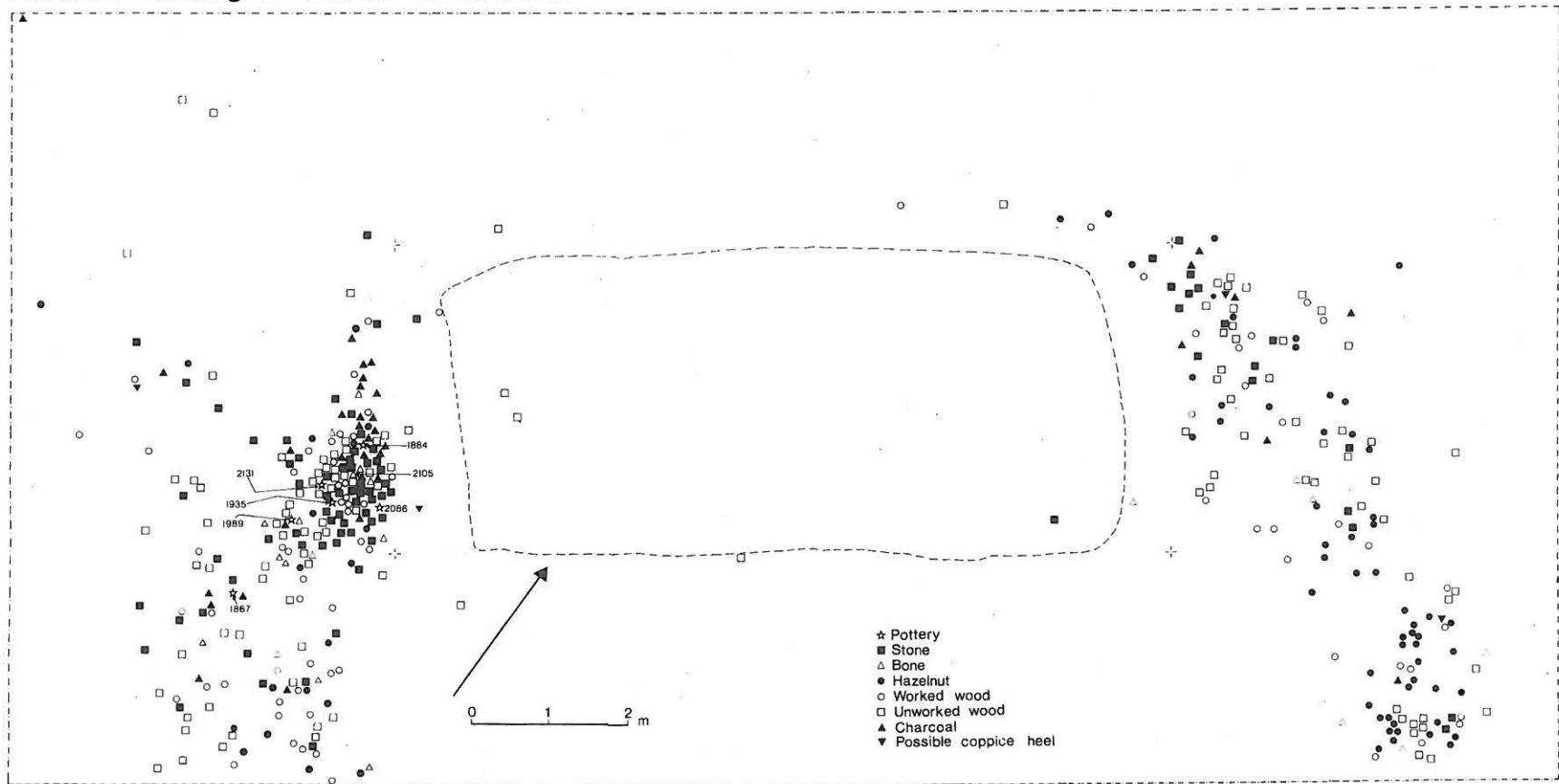


Figure 5: Redwick - Building 2 showing the distribution of artifacts around the building.

Artifact type	West	East	North	South	Inside	Total
Stone	65	7			1	73
Bone	15	5				20
Hazelnut	16	54	1			71
Worked wood	14	25	2		1	42
Unworked wood	66	46	2	2	3	119
Charcoal	28	4				32
Possible coppice heel	1	2				3
<b>Total</b>	<b>205</b>	<b>143</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>360</b>

Table 2. Redwick, Building 2: summary of the artifact types to west, east, north, south and inside of the building.

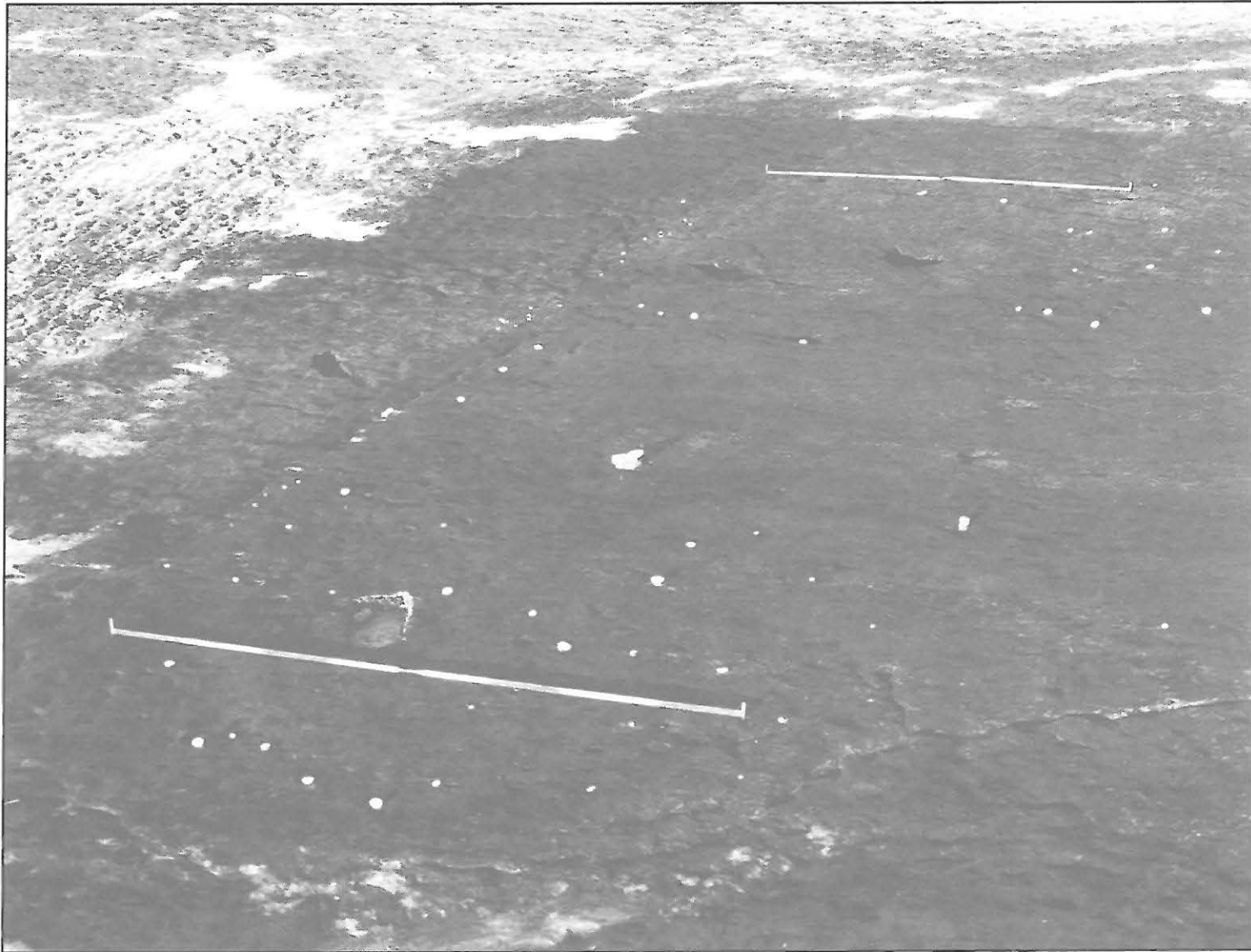
north. This fall off pattern of artifacts might possibly be explained by material being carried away from the building on feet. If that were so, then the main axis of communication may have been down the linear depression to the south, which is as the concentration of footprints suggests (Figure 4).

The artifact concentration to the east is less dense and does not show a pronounced nucleation close to the building. There is nothing here that strongly suggests the position of an entrance at the east end. Artifacts are distributed along the linear depression east of the building in the main area of footprint-tracks. The main concentrations of artifacts differ in their composition (Table 2). All six sherds of pottery found come from the west area and the position of each sherd is marked by its number (1884; 2131; 1935; 1989; 2086; 1867). This area also produced most of the bone, including a bovid skull with cut marks at the horn base (2105) and most of the stone and charcoal. There are many more hazelnut fragments and a little more worked wood in the concentration to the east. The very clear implication of this seems to be that an entrance to the west of the building was associated with domestic activities, particularly food preparation. If that is accepted then it seems probable that the southern half of the building was associated with short-term human domestic activity and the detritus from that activity was ejected from the hypothesized

entrance at the southern half of the west wall. There is no clear indication of an entrance at the east end although the shelling of hazelnuts, the working, or discard, of wood took place outside the east end of the building but without any marked focus. The few fragments of wood from inside the building, and to its north and south, are likely to derive from the building's decay. The only other artifact within the building is a stone probably trodden into the peat. As seen in other of the Severn Estuary buildings it seems probable that the floor area of the building and probably some of the wood from the walls has been eroded with the highest area of the peat hummock (Bell *et al* 2000).

#### EXCAVATION OF BUILDING 4

Building 4 was originally cleaned and planned over a two day period 28-29<sup>th</sup> March 1996 (Bell *et al* 2000). On that occasion 38 pieces of wood were located. Cleaning did not extend more than 1 m beyond the building but evidence was found for the presence of a small number of pieces of wood, stone and charcoal in its surroundings. Three features were located within the building. In August 2000 complete excavation of the building and its surroundings took place. An area of the peat surface 20 m by 10 m was cleaned of mud and planned (Figures 6-7). Once the entire area had been cleaned the position of each piece of wood was marked by a plastic outline cut to the



*Figure 6: Redwick - Photograph of Building 4 as excavated with the positions of posts indicated by white markers of equivalent size and shape to the posts. (Photo. Edward Sacre).*



Figure 7: Redwick - Plan of Building 4. (Drawing S.J. Allen).

shape of the wood to produce the photograph of the building.

The building comprises a total of 59 pieces of wood (1996 plus 2000 totals), mostly roundwood verticals, which delimit a rectangular area 13.8 by 4.7 m. It occupies a low rectangular hummock on the peat surface. There are four more substantial posts, or post settings, down the axis of the structure which are likely to have supported the roof ridge. Of these, post 205 was lifted in 1996, 209 and 210 are possible packing planks for a removed axial post excavated in 1996, two other possible axials (one of which comprised two adjacent posts) were lifted in 2000. Post 205 from Building 4 is radiocarbon dated  $2930 \pm 70$ BP (SWAN-225; 1380-920 Cal BC). Of the 59 pieces of wood known from this building, 10 of those present in 1996 no longer survived by 2000, a 14.5% loss over 4.6 years. Of the 59 pieces of wood 18 (30%) had not been recorded in the more superficial planning exercise of 1996.

Of the 59 pieces of wood from Building 4, 42 have so far been identified: of these 34 (81%) are *Corylus* (hazel) roundwood and 8 (19%) are *Quercus* (oak). Tree rings from the *Quercus* samples have been measured by Nigel Nayling (pers comm. 11.2001). The axial posts, although large, were fast grown with ages of 21 and 23 years respectively. For the split wood ring counts up to 57 and 95 rings suggest the trees used were mature. Two of the timbers cross matched to produce a 68 year sequence but it has not been possible to cross match the short oak sequences at Redwick with chronologies dated, or undated, elsewhere.

The *Corylus* (hazel) roundwood posts which mostly formed the walls had been pointed by a single diagonal blow. The main axial posts were of *Quercus* roundwood which had been cut with many axe blows to produce a flat to rounded, rather than pointed, end. This was presumably to prevent the post sinking further into the peat. The axial post, excavated in 2000 had been driven 0.65 m down to wood peat which would have provided a firm foundation. One of the axial posts excavated in 1996 was next to a large stone which may originally have been a pad stone, or packing stone. The position of another axial post was

marked by a 30 cm deep feature filled with peaty clay. Within this fill was an angular piece of limestone and pieces of possible animal dung. On the edge of the feature was a small roundwood vertical. The vertical and the stone are interpreted as packing for an axial post which had been withdrawn in prehistory. The position of the western axial post excavated in 1996 was marked by a similar peaty clay filled feature flanked by two planks which had been driven down into the peat, again as probable packing for a removed post. Thus it appears that two of the four axial posts on this building and some of the wall posts were removed in prehistory for reuse.

Where survival of the building was at its best, at the west end, the walls consisted of roundwood verticals of diameter *c.* 4.5 cm evenly spaced at intervals of *c.* 0.4-0.5 m. At the east end of the north wall, outside the line of posts, were short lengths (10-20 cm) of roundwood (*c.* 1.5 cm diameter) lying horizontal, or at an angle within the peat. These are likely to represent either wattles from a collapsed wall, or trimmings from the making of a wall.

In addition to the surviving posts, large numbers of circular holes were identified in the peat surface. Most were of similar diameter and depth to the posts and many were along the wall lines formed by surviving posts. Some of these voids, when excavated, reflected the shape of surviving posts and some contained wood fragments in their fills and are clearly the remains of posts which have decayed. In a few cases there were holes which contained traces of grey clay fill. These seem likely to represent the traces of posts which had been withdrawn before deposition of the upper Wentlooge clay. Most timbers appear to have been left to collapse and rot *in situ*.

A marked crack in the peat could be identified along the line of part of the north wall. Similar cracks along wall lines have been found at Goldcliff, Building 6 and 8 (Bell *et al* 2000, figs 8.5 and 8.18) and Redwick Building 1 (Figure 2). At the east and west ends the crack lay *c.* 0.8 m beyond the outer posts, the crack accentuates the apparently curved ends of the building at the west and it may be that this represents the line of the building's eaves.

The west end and the western two thirds of the north wall of this building were well preserved. Two thirds of the south wall and the east wall were poorly preserved, being represented by small numbers of pieces of wood and in some cases, particularly at the east end, only part of the points of some vertical stakes remained. The implication of this is that erosion has had the effect of planing off the south east half of the building. Similarly contrasting preservations of parts of buildings to seaward was noted with many of the Goldcliff structures (Bell *et al* 2000). This seems likely to relate to the process of exhumation of the buildings from beneath the overlying clay. If so, we may hypothesise that the south east corner of this building was exposed to erosion a significant time (probably at least a decade or two) before the north west corner. This hypothesis is consistent with the survival just outside the north west corner of the building of stratigraphy associated with occupation of the building and also the overlying upper Wentlooge clay. In 1996 a thin layer of clay had remained just outside the building at the east end but this had been eroded and the extent of clay to the north significantly diminished by the time of excavation in 2000.

In 1996 three areas within the building produced evidence of features as follows:-

Feature 1: cut feature containing peaty clay and two planks. These were thought to be packing for a removed axial.

Feature 2: a cut feature roughly rectangular 50 by 60 cm with a fill of clay. Bovid footprint-tracks were found in the fill.

Stone: buried in the peat beside axial post 205.

In the light of these previous finds it was hoped that some surviving stratigraphy associated with the building would survive in its interior. In the event, work in 2000 produced no other features, or surviving stratigraphy, within the building. Occupation surfaces were confined to the slightly lower areas just outside the building to north and west. Here the stratigraphy associated with the building was most well preserved and produced the following sequence from top to bottom:-

Context 151: silty-clay upper Wentlooge bluish grey (Munsell, 6/1/5B) contains some reed fragments.

Context 152: peaty clay, the result of animal trample.

Context 153: dark yellowish brown (10YR4/4) peat (apparently sedge and reeds) with some flecks of clay/sedge peat with some clay, many animal footprints, areas of probable animal dung, woodchips, roundwood fragments and a small number of pieces of animal bone. The occupation surface associated with the building.

Context 154: a thin layer of charred heather (7.5YR3/1, very dark grey) on the surface of the raised bog.

Context 150: Raised Bog peat contains heather and cotton grass, contains no wood except for that driven into the peat relating to the building.

#### *Artifact distributions*

The positions of all artifacts (Table 3) were recorded three dimensionally and a plan of these is shown in Figure 8. A small number of finds were found in features within the building but most finds occurred outside the building in the slight depression to its north and west. There was a marked concentration of worked and unworked

Artifact type	Number	%
Unworked wood	92	40
Worked wood	76	33
Pottery	1	0.4
Withy tie	1	0.4
Stone	13	5.6
Bone	13	5.6
Hazelnut	12	5.2
Charcoal	22	10
<b>TOTAL</b>	230	100

Table 3: Redwick Building 4 artifacts

Redwick building 4 : artifact distributions

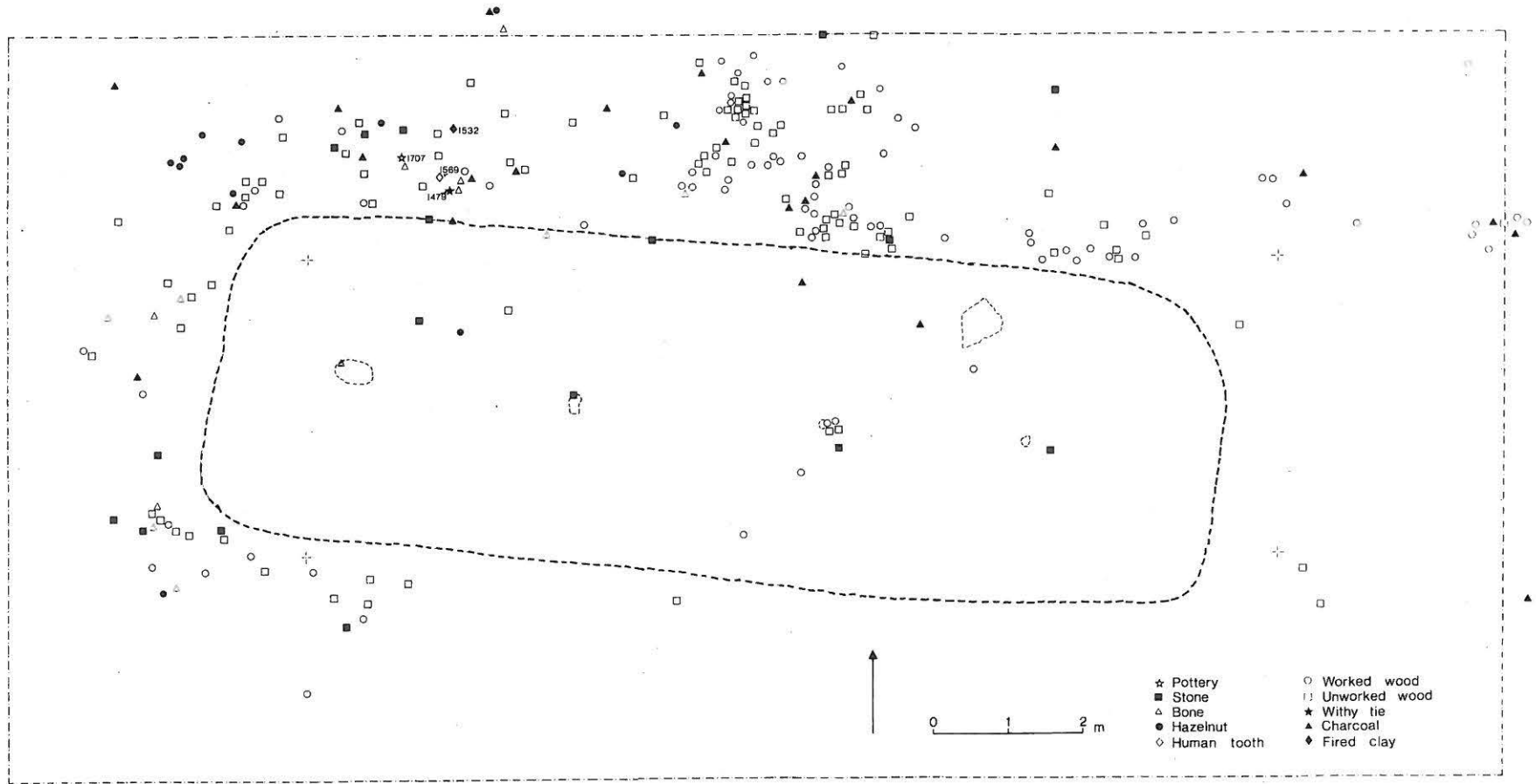


Figure 8: Redwick - Building 4 showing the distribution of artifacts around the building.

wood fragments just outside the middle of the north wall which suggests the possibility of an entrance in that area. Particularly at the west end there are hints that the artifact concentration starts about 40-60 cm beyond the wall line, this might point to the position of eaves. There is no very clear pattern in the distribution of different types of artifact (see above for contrast with Building 2). Worked (woodchips and cut ends) and unworked wood overwhelmingly predominate among the finds and it is reasonable to assume that much of this material derives from the making, collapse and decay of the building. Artifacts which may be connected with food preparation and domestic activities are present, but in very small numbers: just one sherd of pottery (1707), a scatter of charcoal fragments and a small number of stones which had been affected by heat. Finds of particular note included a fragmentary withy tie (1479) and a human deciduous tooth (1569) of a child aged 9 years  $\pm$ 24 months (Brian Connell, Museum of London Archaeological Services pers. comm 2.7.01) and a piece of fired clay (1532). This further complements the footprint-track evidence for the presence of juveniles on this site.

#### *Footprint-tracks*

To the north west of the building a thin layer of clay overlay the peat. In this area a total of 54 animal footprint-tracks were recorded. Of the recorded examples 45 have so far been provisionally identified: 26 were bovid size (57%) and 19 ovicaprid size (42%). It is notable that some of the footprints of both *Bos* and ovicaprids were of small juvenile size as was previously noted in Redwick Area 5 (Bell and Neumann 1999, fig. 10). This is of particular interest because it may suggest activity during spring and summer when young animals would have been around. *Bos* and ovicaprids are also represented among the small bone assemblage from Building 4. No examples of human footprints were found in this area.

### **SURVEY ASPECTS**

EDM survey of the surroundings of the Redwick site began in 1999 and was continued in 2000, some additional survey being carried out in 2001. In 2000, 4000 survey points were recorded with horizontal location and OD height. The combined

survey of 1999 and 2000 represents the most detailed survey of part of the intertidal zone. The objectives of this survey are to monitor erosion of the peat edges and to put the excavated site in the wider context of its associated stratigraphy, palaeochannel features and archaeological finds. To these ends the main peat edge was replanned in 2000 at *c.* 1 m intervals for comparison with the survey prepared in 1999. This should enable erosion rates over the one year period to be compared once the 1999 and 2000 surveys are in a GIS framework.

The survey now extends along the foreshore 600 m west of Building 4 and 1 km east of Building 4 as far as the outlet of Cold Harbour Pill. Between the Redwick site and Cold Harbour Pill 8 other archaeological sites were located on the survey. There is evidence of an occupation site (Redwick 2) 230 m east of Building 1. There appears to be another site *c.* 500-750 m east of Redwick. This includes trackways and occupation scatters of charcoal, bone, worked wood and some pottery sherds. It is probably another settlement site for which no buildings are at this stage exposed. A nearby wood structure in a palaeochannel (Cold Harbour 2; Bell *et al* 2000, figure 16.19) appears to be rather later than the possible settlement evidence although the Cold Harbour sites do appear to show evidence of continued activity from the peat horizon into the saltmarsh phase.

Individual sites picked up on the survey between Redwick and Cold Harbour Pill are as follows:-

- (i) Redwick 2 - occupation scatter, charcoal, burnt stone and woodchips. A find made in 1996, located in the 1999 and 2000 surveys.
- (ii) Redwick 2 trackway - a short length of track crossing a small palaeochannel comprising roundwood verticals and a few pieces of the brushwood trackway surface, probably mostly eroded. A find made in August 1999.
- (iii) A circular pit diameter *c.* 0.9 m, depth 16 cm cut in the raised bog peat. A new find in September 2000 excavated in September 2001. Two roundwood stakes (dia 3-4 cm) had been lain diagonally across the pit to form quarters. The fill



contained a heat fractured stone. There were thin lenses of clay lining the base and a fill of peaty clay. Bovid footprints were identified in the basal fill.

(iv) Cold Harbour 1b. Relocation in February 2000 of the site of an earlier excavation. Occupation scatter with charcoal and traces of what appear to be small rectangular excavations (Whittle 1989).

(v) An area of worked wood (CH Context 11). This was a new find in February 2000 in a palaeochannel. It was planned and subject to limited investigation as part of the British Academy project. It was originally thought to be a possible fish trap but is more complex than surface appearances suggested and may be a trackway.

(vii) A trackway (CH Context 9) 30 m west of Cold Harbour 2. A new find in February 2000. It comprises roundwood laterals held in place by roundwood verticals and a brushwood surface. A plan of this structure was made as part of the British Academy funded project.

(viii) Coldharbour 2, a palaeochannel with post settings, this had been planned in October 1996 (Bell *et al* 2000, fig 16.19). By 2000 this had undergone significant further erosion and additional evidence was exposed, a new plan was made and strategic excavation carried out as part of the British Academy funded project. This demonstrated that the structure consisted of a wooden fence beside which was a woven basket 1 m in diameter. The structure is dated 2520 ±60BP (SWAN-241; 800-410 Cal BC). A potsherd, several bones and other artifactual material in the channel may indicate temporary settlement activity nearby.

## CONCLUSIONS

In this project the opportunity was taken to investigate aspects of prehistoric intertidal archaeology which it was felt had not received the attention they deserved in the earlier project focused on Goldcliff, for reasons of time and resource. In particular we have been able to investigate a wider area around buildings and obtain artifact distributions which enhance

understanding of the buildings themselves and the social use of space in and around them. Artifact distributions point to the possible positions of entrances, and in the case of Building 2 could suggest a wall in a position unmarked by surviving wood posts. The low numbers of artifacts suggest small-scale and short-term domestic activity in association with Building 2, possibly, but less clearly so, in the case of Building 4. There was no evidence of such activity in relation to Buildings 1 and 5. We also know that some domestic activity took place away from buildings, there is evidence of the hearth and associated cooking activities revealed by the 1999 excavation of Area 5.

This project has also gone beyond our earlier work at Goldcliff in examination and recording of the footprint-tracks around the buildings which strengthen our view that these structures are associated with animal husbandry in coastal wetland. This hypothesis is being further tested by the palaeoenvironmental analysis programme which is now well advanced. At Goldcliff the identifiable prints were all of *Bos*, at Redwick husbandry seems to have involved predominantly *Bos* but with ovicaprids. Human footprints were well represented in Area 5, with one excellent example on the linear depression between Buildings 1 and 2 and two other poorly preserved examples in the Building 1 and 2 areas. The footprint evidence is most valuable in demonstrating the presence of children in what is interpreted as a seasonal settlement.

Of the Redwick settlement Buildings 1 and 5 were the nearest to the peat shelf edge and were poorly preserved by comparison with Buildings 2 and 4. There is evidence that the positions of some posts are now only marked by voids. The possibility has been identified that Building 1 was preceded by a circular hut of which only voids from ¼ of the circumference survived. Around 14% of the posts have been lost between 1996 and detailed excavation in 1999-2001. The site was originally identified about 1980 by Derek Upton, and he observes that the buildings were much better preserved then. The site as recorded seems therefore to be in the later stages of destruction by erosion. Of the three buildings reported in interim form here (1, 2 and 4), each had undergone 14% loss of posts in the period between original survey

in 1996 and excavation in 2000 or 2001. The corresponding figure for loss in Building 5 was 20%. Clearly little would have remained of these buildings in a decade or two if excavation had not taken place.

The survey shows that the Redwick site is part of a complex of archaeological sites which stretches west to Cold Harbour Pill. Other sites in that area occur both on the surface of the main peat and in the early stages of the upper Wentlooge saltmarsh succession which followed.

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