# TRE'R CEIRI IRON AGE HILLFORT MANAGEMENT PLAN

prepared by

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# TRE'R CEIRI IRON AGE HILLFORT MANAGEMENT PLAN

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Fig. 1 The Ramparts: points of collapse (after Dallimore 1978).

# TRE'R CEIRI MANAGEMENT PLAN

# INTRODUCTION

Tre'r Ceiri (SH373446) is an exceptionally well preserved Iron Age hillfort crowning the 485m (1600ft) high, easternmost peak of Yr Eifl on the Llŷn Peninsula. The two-hectare (five-acre) fort is bounded by a large dry-stone wall, 2.3 to 3.0m thick, in some places standing close to its original height of 3.5m, with a surviving parapet. An outer defensive wall stands to the north-west, the most accessible side of the fort. Inside the main rampart are in the region of 150 huts. These exhibit a great variation in size and shape, ranging from simple round huts to irregular and rectangular structures. There are two main entrances through the inner rampart, at the south-west and the north-west, both with associated outer defences. In addition there are three simple gaps in the ramparts forming the north, west and south posterns. The north postern is unusual in that the wall is carried over the entrance passage by several massive stone lintels. The highest point of the fort is marked by a Bronze Age cairn.

#### Land Ownership

The land on which the fort is situated is in the ownership of Mrs M. Owen, Brynhyfryd, Penylan Avenue, Porthcawl, Morgannwg Ganol. She has given Cyngor Dosbarth Dwyfor permission to undertake work on the monument on the understanding that she is kept informed of the project's progress.

The site forms part of the land parcel rented by Mrs Owen to Mr Hughes, Gellia Farm, Llanaelhaearn.

The ancient monument lies within the Llŷn Area of Outstanding Natural Beauty, the Llŷn Heritage Coast and the Llŷn Peninsula Environmentally Sensitive Area. The site is also within the boundaries of Yr Eifl Site of Special Scientific Interest. This does put some restrictions on certain activities but the Countryside Council for Wales has been very co-operative with all work proposed and undertaken so far. However, all archaeological and conservation activities on site, and all promotion and use levels for the site, take into consideration the importance of protecting this important landscape and ecologically rich area.

#### Previous Work on Tre'r Ceiri

The fort has elicited great interest over the years. Pennant described the site in his 'Tours of Wales, II' in 1783, as the 'most perfect and magnificent as well as the most artful of any British fort I ever beheld.' By 1894, however, the Cambrian Archaeological Association were lamenting that 'such a splendid specimen of a prehistoric city would be allowed to perish miserably partly by neglect and partly by wanton injury....' They tried but failed to get the site scheduled and noted 'that tourists and others now amuse themselves by tearing down portions of the ramparts in order to erect small cairns....if the monument were scheduled it would be possible to reward these Goths and Vandals suitably with the two months' hard labour they most richly deserve.'

This prompted a number of excavations; in 1903 S. Baring-Gould and R. Burnard examined 32 huts, and in 1906 H. Hughes produced the first accurate plan of the site, excavated 32 huts and examined the south-west entrance. Further excavations were carried out in 1939 by W. J. Hemp, G. Bersu and C. A. Gresham, who examined five huts and part of the inner face of the rampart on its north-west side. An additional ten huts were excavated in 1956 by A. H. A. Hogg. The excavations produced finds from later in the fort's history, showing the huts were used up to the 4th century AD.

The site was scheduled in 1923.

# Threats to the Monument

A survey carried out in 1989-90 by S.D. Boyle suggests that in excess of 6000 people visit Tre'r Ceiri every year, causing severe erosion to the monument. In 1978 K. Dallimore produced a survey for the Welsh Office, identifying areas of damage in the ramparts and huts (fig. 1). He identified 42 areas of collapse in the outer face of the rampart, about 20% of its total length. Several of these breaches were being used as access points to the fort and were thus being further eroded. Dry-stone walls are particularly vulnerable to this kind of damage as collapsed facing can no longer support the wall to either side, thus leading to a gradual deterioration of the wall at these points. More intentional damage was being caused by visitors dismantling masonry in order to build cairns and shelters within the fort or simply as a source of stones to throw from the ramparts down onto the steep scree slopes below. An additional problem that has been plaguing the site for many years is the activities of treasure hunters. In 1904, Rev. Baring-Gould and Robert Burnard stated that much of the damage to the huts was due to excavations made some fifty years before by local people after an old woman of Llithfaen dreamt that a copper cauldron full of gold was buried in Tre'r Ceiri. More recently treasure hunters equipped with metal detectors have been visiting the site and further weakening the walls by digging holes in the floors of the huts.

# THE CURRENT PROJECT

In 1989, in response to the above problems, the Tre'r Ceiri conservation project was set up by Cyngor Dosbarth Dwyfor with financial support from Cadw: Welsh Historic Monuments and Gwynedd County Council. Cyngor Dosbarth Dwyfor provided management and administrative services for the project. Three masons from a local firm were contracted to do the stone work, with archaeological supervision by Gwynedd Archaeological Trust. The aims of the project, over an initial five-year period, were threefold:

- i. Education of visitors to the site.
- ii. Stabilisation of unstable masonry.
  - iii. The development of appropriate conservation techniques.

# Archaeological and Conservation Techniques

14.1

Tre'r Ceiri is an area of considerable archaeological importance and is a Scheduled Ancient Monument. Recording and conservation works are therefore carried out to the highest standards.

The first stage of a seasons work is the site meeting, where the work programme is decided upon. These meetings are attended by the masons and representatives from Cyngor Dosbarth Dwyfor, Gwynedd County Council, Cadw and Gwynedd Archaeological Trust. Meetings are then held every month, thus allowing regular monitoring of the works.

The areas designated for conservation are first photographed in colour and monochrome from a standard distance of 4m, using a shift lens to correct the verticals. This method creates a sequence of overlapping pre-conservation photographs of the ramparts using the most accurate central 40% of the negative. At this point any particularly sensitive areas are planned using a total station, and written descriptions are made of all collapses. Each collapse is allocated a code based on Dallimore's 1978 plan (fig. 1) thus completing the pre-conservation recording.

After consultation between the archaeological supervisor and the masons to decide on the best strategy to rebuild a given collapse, any loose or threatened *in situ* stones are numbered on the pre-conservation photographs. The numbers are then written on the stones with an oil-based crayon. This procedure ensures that any weak masonry that may have to be dismantled or may collapse accidentally can be accurately replaced. At this point any fallen stone is cleared from the vicinity of the collapse, which is photographed again and in some cases drawn. The



Fig. 2 Areas conserved, 1989 to 1993.

collapse can now be rebuilt to the required height and any numbered stones replaced in their original positions.

Small unobtrusive holes are drilled around the edge of the new masonry, and plastic tape or polypropylene cord is placed within the wall at the level of the disturbed core, to allow differentiation between original and conserved masonry after the stone has weathered. At the end of the season the conserved areas are photographed and a detailed report prepared, describing all works carried out.

#### Progress in the First Five Seasons

The 1993 season marked the end of the initial five-year project. Works have mainly been concentrated on the inner rampart and the huts abutting it (fig. 2). In addition to this, 11 huts in the interior of the fort have been conserved and the entrance through the outer rampart has been stabilised (fig. 2).

#### Conservation of the ramparts

330m of the 660m of inner rampart have been conserved on the north-west side of the fort, encompassing the south-west, west, north-west, and north entrances. In all, 145 collapses have been identified and stabilised, representing close to 50% of the conserved wall length.

The 145 collapses ranged in seriousness from large failures in the rampart, necessitating rebuilding from ground level, to minor dips and instabilities in the facing, requiring nothing more than the addition of a few stones to the wall.



Fig. 3 Sketch section through the ramparts at the north of Tre'r Ceiri

The ramparts are faced with long stones running into the wall, known as headers, and filled with a core of loose stones (see fig. 3). The masonry is not coursed and forms a very uneven face. This is in contrast with modern dry-stone walls, which use a combination of headers and stretchers (stones placed with their length in the direction of the wall), coursed to form a flat face. The masons have therefore had to modify and refine their techniques over the five years of the project, initially taking great care over the selection and placement of stones in an attempt to mimic the original style. This sometimes resulted in a face that was a little too even, although excellent results were often produced - collapse K, for example. The style of the Iron Age builders seems to have relied less on careful stone selection (the stones do not fit together in a regular fashion as in modern masonry), resulting in a very uneven face containing many small voids. The masons have now modified their technique, selecting stones less carefully, while still making sure that the headers lock together, the weight of the stone providing much of the stability of the face. The placement of the core is very important: facing within the core at the south-west entrance bastion suggests that the stone was not just thrown in but carefully placed. The masons have now developed a technique of packing the core very carefully behind the headers, providing greater stability to the rather uneven facing.

It has been observed that many visitors to the fort walk on top of the ramparts, thus contributing to their erosion. It is not possible to halt this activity as access can be gained easily at many points on the fort. It was felt that an effective method for securing the wall top was needed. Several options were discussed and tried. It was decided that the edges of the wall were the most fragile and could be best secured by the placement of large interlocking slabs along the edge. This performs two functions, in stabilising the top of the facing and in helping to retain the core. In addition the core is carefully set with occasional long pinning stones pushed down into the body of the wall in order to prevent any large-scale lateral This produces a rough but slightly loose central wall top. It is interesting to movement. compare the structure of the new masonry with that of the original. A particularly well-preserved stretch of wall 30m west of the north postern shows the wall close to its original form, with a well-preserved parapet and walkway along the inside of the wall. This walkway is stabilised by huge slabs laid along the inner edge of the wall. Most of the collapses in this area have been caused by the loss of one or more of these slabs, causing the core to spill forwards, thus undermining the parapet and the surrounding masonry.

Several lengths of parapet have survived, usually where the wall is at its highest, and these have been stabilised with the minimum disturbance possible in order to preserve the maximum amount of original masonry.

#### Conservation of the huts

Conservation work was carried out on 11 of the 17 huts in the group around subdivided roundhouse 53/89/90 in the first season and on ten huts abutting the ramparts in the second and third seasons. The hut walls are constructed in a similar fashion to the ramparts but on a much smaller scale. The lack of very large slabs means that the wall tops were harder to secure, and no ideal solutions were found. Additional problems were encountered when attempting to rebuild badly ruined stretches of facing, as many of the huts exhibited signs of multi-phase building, the last phase often being associated with the excavation at the turn of the century, resulting in severe difficulties in interpreting the wall lines.

#### Conservation of the entrances

Much valuable new information about Tre'r Ceiri has emerged during the conservation process, adding to our understanding of both the construction and the occupation of the site, particularly around the entrances. Both the south-west and north-west entrances have been shown to be multi-phase constructions.



Fig. 4 The south-west entrance after conservation.

# 1. The south-west entrance (fig. 4)

At the beginning of the project the south-west entrance was very dilapidated. The line of the inner south-eastern side had been lost and the large bastions to either side of the entrance had been reduced to fast-eroding rubble slopes. After clearance of the fallen stone in the entrance passage, several large stones were discovered beneath the rubble in the passage, indicating the line of its south-east side. These had been tentatively identified by Harold Hughes in 1906, but lost ever since. The side of the passage was rebuilt along this line, thus stabilising the bastion behind it. The bastion on the north-east side of the entrance was in a very dilapidated condition but enough facing had survived to indicate the line of the original masonry. This enabled the masons to build the facing to a sufficient height to secure the wall behind it. During clearance for this work it emerged that the bastion had been built in front of the original wall face, which could still be seen standing deep within the present masonry.

#### 2. The west postern

A small amount of rubble was cleared from the vicinity of the west postern. Several huge rectangular blocks of stone were lying across the inner end of the entrance, indicating that it had been blocked in antiquity.



Fig. 5 The north-west entrance after conservation.

# 3. The north-west entrance (fig. 5)

The north-west entrance was described by Pennant in 1781 as 'the Grand Entrance.' By 1993 the passage was choked with tumbled stone, with severe collapses at the outer and inner ends of the passage. A large amount of rubble was cleared from the passage floor by Gwynedd Archaeological Trust staff, revealing the extent of the entrance. Three major collapses were cleared, F, F10 and F11 (see fig. 5), and rebuilt. The collapses at F10 and F11 seemed to have occurred at the abutments between different phases of walling in the entrance; the facing at F10 appeared to be continuous with the outer face of the rampart, the wall running towards F11 being added afterwards.

A hidden wall face was discovered behind the collapsed facing at F11. Several large sherds of a Romano/British pottery jar dating from the late 2nd to mid 3rd century AD were discovered in the wall core between the hidden face and the line of the facing at F11, suggesting that the final phase of building was completed after the late 2nd century. This is one of the few pieces of evidence we have for the construction of hillfort ramparts during the Roman occupation.

There was enough surviving facing at the inner end of the passage to allow the passage wall to be redefined (collapse G1), giving the passage an 'hourglass' shape in plan.

#### 4. The north postern

The north postern was cleared and consolidated. The wall was carried over the entrance by two original and three replacement stone lintels.

#### Visitor Management

An information board was erected on the south-west approach to Tre'r Ceiri just before the August Bank Holiday 1990. This was vandalised within a week; the wooden frame was smashed open and the display board stolen. A sturdier board was erected in late 1992.

Way markers were erected on the footpaths approaching the fort from the south in an effort to minimise erosion on these approaches.

#### Working conditions

The first season's works were conducted between December 1989 and March 1990. Weather conditions were particularly severe, resulting in the destruction of the mobile caravan which served as the site hut. Works were carried out during late spring, summer and early autumn in the remaining seasons. Conditions, however, can still be severe even in the summer. The site is very exposed, often resulting in high winds and driving rain. The cloudbase is often below 485m, reducing visibility to a few metres, making surveying impossible and photography difficult. When the lichen-covered stones on the scree are wet they become extremely slippery, making work in some areas of the fort very hazardous. A number of days' work are usually lost each season as a result of heavy rain and high winds, but working methods can often be adapted to weather conditions.

# Publicity

The site has not been actively publicised but several presentations have been made to the public. Two short television features were shown in 1989 an 1993, concentrating on the work of the masons. Illustrated lectures have been given by S. D. Boyle and D. Hopewell to a diverse range of interested bodies including Ysgol Tudweiliog, Stoke-On-Trent Museum Archaeological Society and The North Wales Dry-stone Walling Association. In addition to this, annual lectures on the project have been given to the Hillfort Study Group at the Institute of Archaeology in Oxford.

# The Archive

The above works have all been recorded in detail and have thus created a large archive. Over 7000 photographs have been taken so far. The on-site photographic record sheets are being copied onto a database in Gwynedd Archaeological Trust to allow easy retrieval of information. All negatives, slides and prints are stored in standard archive quality conditions.

All primary records are archived and indexed and a detailed report on all works is produced at the end of each season.

# Conclusions

The conserved rampart seems to be surviving well, erosion in these areas has been reduced from the widespread loss of lengths of Iron Age masonry to the loss of an occasional stone from the wall tops. The huts are, as expected, less stable; a few stones have been displaced from the walls of the huts conserved in the first season. This is in marked contrast to the very noticeable damage to a number of huts over the last few years.

The consolidated entrances and long stretches of imposing ramparts discourage visitors from climbing over the walls and must also instil a greater sense of respect for the monument as a whole. The view from the north-west now gives an impression of Tre'r Ceiri as a unique and coherent monument, as opposed to a series of disconnected and fast-eroding lengths of wall.

#### PROPOSAL FOR THE NEXT FIVE YEARS

It is anticipated that the Tre'r Ceiri Conservation Project will be completed within the next five years, leaving the monument in a stable condition suitable for long-term, low-level management. A survey of the unconserved areas of Tre'r Ceiri was carried out at the end of the 1993 season. All footpaths and areas of collapse were marked onto the Plowman Craven survey (fig. 7) and written descriptions made. This provided an overview of the erosion to the huts and ramparts, allowing conservation strategies to be formulated.

#### Visitor Management

Very little of the damage to Tre'r Ceiri has been caused intentionally. The majority of recent erosion has been caused by visitors walking on wall tops and by the proliferation and widening of the footpaths.

A programme of visitor management should lessen many of these pressures. Several factors can be considered:

i) The public profile of Tre'r Ceiri.

This is the most fundamental aspect that must be considered. At present Tre'r Ceiri is not highly publicised, perhaps limiting the increase in visitor pressure. If this strategy were to change either now or in the future a more radical management strategy would be required. It is recommended that the public profile of Tre'r Ceiri is kept as low as possible.

# ii) Footpath Management

Most visitors enter the fort from the south-west and follow the major footpath running to the cairn. The path follows the inside of the rampart to the north-west entrance and then runs back to the south-west entrance. This route passes close to a number of the groups of huts within the fort and runs through several huts at the north-east, which are now reduced to rubble. Visitors commonly leave the main path to explore the huts or to stand on the rampart to admire the view. Unfortunately this has led to the formation of a network of paths over the walls of many huts, causing severe erosion to some areas of fragile masonry. It is important that this trend is stopped, or else any consolidation work will be quickly negated. The main footpath can provide an interesting circuit of Tre'r Ceiri while causing the minimum amount of erosion, if the areas of widening and branching can be limited. Additional way-marked paths to some of the better preserved and stable huts, with appropriate deterrents from clambering over the walls, would provide additional areas of interest while encouraging the public to keep away from more delicate areas. It is therefore necessary to make the main footpaths more obvious by the use of way markers and to discourage access to the wall tops by the rebuilding of collapses where possible and by the erection of unobtrusive barriers and information boards. The erection of wooden way markers and the associated ground disturbance within archaeologically sensitive areas is not desirable. An alternative method of producing simple way markers etc. would be to paint arrows on large natural stones, taken from the scree where necessary.

The north-west entrance can now be considered as an alternative and perhaps preferable way into the fort. It is much more accessible than the south-west approach, being less steep, and since conservation, less choked with stone. Further way markers and an information board would have to be erected to channel visitors in this direction.

#### (iii) Visitor Education

The current information board is read by a high percentage of the visitors to the fort. It would be desirable to further stress the fragility of the monument and damage that can be done by walking on the walls. Changes to the text on these points would increase awareness of these problems. In addition to this, an information board should be erected at the north-west entrance, along with smaller warning notices on the approaches to the main hut groups, stressing their fragility, and again utilising stones instead of wood where possible.

#### Monument Management

The areas conserved in the first five years demonstrate the value and efficacy of the project. There has been practically no erosion to the conserved areas of the ramparts, and erosion in the huts has been limited to areas where access to the wall tops has continued. This can hopefully be further minimised by adopting the visitor management strategies outlined above.

#### i) The Rampart

Forty-two collapses were identified in the unconserved rampart, comprising 86% of the length of the wall. This alarming figure is mainly comprised of small dips in the upper half of the wall. If the area around the cairn (collapses P, Q & R) is discounted, only 4.3% of the facing has collapsed down to ground level. These collapses present few barriers to consolidation and can be conserved using the established methods. The rampart around the cairn between collapse 01 and the outcrop S is the most damaged length of rampart on Tre'r Ceiri. Large numbers of visitors are documented as having damaged this area over the last 100 years, and now this length of rampart is characterised by short lengths of facing, often protected by large stones on the wall top, interspersed with slowly eroding collapses. The problems are further compounded by several old collapses, apparently caused by scree movement, where the facing appears to have slipped down the slope and is now offline, making consolidation difficult. An alternative hypothesis is that these offline lengths of facing were attempts to buttress and stabilise the scree in antiquity. It is expected that many of the collapsed lengths of wall can be rebuilt to stabilise the surrounding masonry, but some areas may have to be abandoned. It is recommended that whole area be surveyed in detail and a close appraisal be made of the remaining wall by the stonemasons.

# ii) The Huts

The survey identified 205 collapses in the huts. These have been roughly classified into five categories.

# Category 1

32 collapses have arrived at a point of stability and hence constitute no threat to the monument. It is anticipated that no further action will be taken here.

# Category 2

33 collapses are minor areas of erosion posing little threat or needing only minor consolidation.

#### Category 3

67 collapses were identified as still undergoing erosion and being easy to conserve, such as obvious collapses in upper wall faces.

#### Category 4

27 collapses are areas of severe and continuing erosion, threatening archaeological information or large areas of original masonry. The consolidation of these collapses must be seen as a priority.

## Category 5

46 complex or very extensive collapses were identified. Further assessment is needed in these cases, as often the line of the hut wall is no longer visible or is complicated by multi-phase construction.

The conservation of the huts is less straightforward than the ramparts. The principle that a wall, once breached, will be weak and unstable, leaving it open to erosion, still applies here. The aim of the conservation project is to preserve the surviving monument and any archaeological information contained within it. Some huts have not been excavated and thus contain an important archaeological resource. Of the 66 excavated huts, seven contained category 5 collapses and six contained category 4 collapses. These were all associated with the main footpath around the fort. In particular huts 100, 104, 105, and 110 have footpaths running directly through them, causing ground disturbance. The walls of these huts are very low and it will be difficult to keep the public away from these areas, so it may be necessary to consider a programme of rescue excavation to recover any archaeological information before it is lost. Such a programme would be separate from the conservation project and an application could be made to Cadw for funding from their rescue archaeology budget, by Gwynedd Archaeological Trust. Many of the unexcavated huts are in rarely visited areas of the fort and it is recommended that only minimal conservation works be carried out here, such as replacement of recently fallen stones and infilling of treasure-hunter holes. Disturbance of old collapses should be avoided.

Conservation of the excavated huts is less problematic. Category 2, 3 & 4 collapses will be conserved by rebuilding fallen facing, etc. This will add considerably to the stability of the huts and preserve archaeological information such as the line of presently collapsing entrances. Collapses that have fallen to a state of stability will not be disturbed as this is beyond the brief of the conservation project. Category 5 collapses will be examined in detail before a decision on how to proceed with conservation works is taken. It is anticipated that a number of the more serious and complex collapses will have to be abandoned, as attempts at conservation would endanger the archaeological record. In these cases the area will be surveyed in detail and loose masonry stabilised by pinning.

Experience on this and other sites has shown that a well-defined hut is more likely to be respected as an interesting historical monument and less likely to be perceived as a meaningless heap of rocks to be climbed over and destroyed at will.

#### iii) The Outer Ramparts and Extra-Mural Enclosures

These areas were not surveyed in detail at the end of the 1993 season, due to limited resources, but a brief assessment revealed that the area around the path to the south-west entrance was suffering from some erosion. No other recent damage was recorded. Dallimore recorded 11 collapses in the outer ramparts, but none of these are suffering from recent erosion. A more detailed survey of the outer ramparts and extra-mural enclosures will be carried out in the 1994 season.

# iv) The cairn

In 1993, Gwynedd Archaeological Trust conducted a limited excavation on the ruined cairn. It is proposed that the reinstatement of this feature should be included in the 1994 conservation programme. A detailed proposal is provided in appendix 1.

#### Long-term Management

The above measures will substantially increase the stability of the site. It is inevitable, however, that some further damage will occur. The site will never be immune to intentional damage and the huts in particular will need to be monitored for further erosion. The areas conserved in the first five years have suffered very little erosion, but the long-term stability of the huts has been called into question. No really effective method of stabilising the wall top has been achieved, leaving the huts open to erosion. The visitor management strategies proposed above should help to limit the damage.

The current level of erosion to the conserved areas is easily manageable. It is considered that one or two days per year spent on site replacing stones and repairing minor instabilities would be sufficient to maintain the stability of the monument. If visitor numbers were to increase dramatically, this estimate would have to be revised. It is recommended that consideration be given to grant-aided long-term management under section 24 of the Ancient Monuments and Archaeological Areas Act (1979).

The alternative to the conservation measures outlined above would be to leave the huts to decay until they reached a stable state. This would entail the loss of some archaeological information and the destruction of part of a unique and spectacular ancient monument.

# Funding

In order to continue with the hillfort consolidation programme at the current level, all the funding partners must assess carefully the proposals contained within this plan and the costs implications.

Based on January 1994 figures, the cost of continuing with the work at the same level as in the first five years would be in the region of £32,000 per year.

Ideally the project partners could continue to fund the work at their current levels:-

CADW	80%
CDD	10%
GCC	10%,

with Cyngor Dosbarth Dwyfor providing the full range of administrative and other services for the project at their own expense. Estimated costs of this element of the project is in the region of £4,000/£5,000 a year.

After consulting with Gwynedd County Council and the Treasurer of Cyngor Dosbarth Dwyfor, a contribution of £3,500 per year towards the on-site work for a further period of two years can almost be guaranteed. Finance for the following period of three years would obviously be a matter for the new local authority following Local Government reorganisation. However, if a five-year programme has been established by the current local authorities, the new local authority should see the remaining years of the project through to the conclusion of the programme.

#### Work Programme

The areas designated for conservation in years 6 to 10 are shown on fig. 6.

Year 6

i. Reinstatement of the material excavated from the cairn (see appendix 1).

ii. Survey and conservation of ramparts O1 to S (see page 11). The ramparts around the cairn will be surveyed using a total station, allowing an appropriate conservation strategy to be formulated. It is anticipated that many of the collapsed areas will be rebuilt in order to support the surviving masonry.

iii. Conservation of the huts below the cairn (137, 138, 139, 75, 144, 145, 146, 147, 148, 149, 150). Only hut 75 has been excavated; minimal stabilisation should be carried out on the unexcavated huts. Huts 137, 138 and 139 need careful assessment as much recent erosion has occurred here.

#### Year 7

i. Stabilisation of ramparts S to X3. There are 16 collapses in this length of rampart, all of which can be conserved using the established methods.

ii. Detailed assessment and conservation of the group of huts abutting rampart X3 to V, centred on hut 42. This is one of the most severely eroded areas of Tre'r Ceiri and requires extensive conservation. A careful assessment will be made of the damage to unexcavated huts 103, 104, 105 and 106 in order that the appropriate mitigatory strategy can be implemented.

#### Year 8

i. Conservation of the following huts: Central south-east group containing huts 5 to 14, and the north-west group containing huts 21 to 26 and hut 28. Both groups of huts have been damaged due to their proximity to the main footpaths through the fort. It is therefore important that appropriate way markers etc. are in place by this point in the conservation programme.

#### Year 9

i. Conservation of rampart Y1 to DD. This length of rampart contains 17 collapses, all of which can be conserved using the usual techniques.

ii. Conservation of the group of huts abutting rampart BB to BB4. Unexcavated hut 32 has suffered from serious recent erosion and requires careful examination before appropriate action is taken.

Year 10 - Conservation of the following huts:

i. The major northerly group containing huts 54 to 71. Much of this area is not suffering from heavy erosion and will therefore not require intensive consolidation. Huts 46 to 48A and 141 to 143A are very eroded and are now reasonably stable and therefore require little consolidation.

ii. Consolidation of the unconserved huts close to the north-western rampart. Hut 110 in particular is suffering severe erosion and, being unexcavated, needs careful evaluation.

# **COSTINGS AT JANUARY 1994 PRICES**

Costings for proposed work programme, per annum.

	- 2-1	
	Preparation and recording: 30 days on site at £126.20 per day;	£3,786
	Supervision and recording:	
	60 days on site at £126.20 per day;	£7,572
	Preparation of report and archive 40 days off site at £89.20 per day;	£3,568
	Assistant	
	30 days at £50.00 per day;	£1,500
	Masons	1 512 515
	3 masons for 60 8 hour days;	£15,360
Total	cost per annum at January 1994 prices	£31,786

Estimated cost of redesigning, typesetting and production of notice boards £1,100 Estimated cost of waymarkers £500



Fig. 6 Tre'r Ceiri, areas designated for conservation in years 6 to 10.

# APPENDIX 1 Tre'r Ceiri Cairn Consolidation - G. Smith

# **APPENDIX 2**

Text for fig. 6 (large scale plans) including catalogue of erosion to the huts and ramparts

# **APPENDIX 1.**

# Tre'r Ceiri Cairn Consolidation

# G. Smith

The excavation showed that the cairn originally consisted of a 'tiered' structure with an outer, lower revetment wall and an inner, upper wall. Most of the circumference of the outer wall survives to its original height and parts of it are exposed. Only part of the inner wall survives and exists around some three-quarters of the cairn's circumference, although it is not visible on the surface.

These walls have survived the intensive trampling of, and interference with, the monument only because of the protection of a cover of loose tumbled stones, as the mound has gradually achieved a natural 'angle of rest'. It would be possible to carry out further excavation over the whole mound to expose and record the entire remaining structure. This would then become a visible and understandable archaeological monument for However, the revetment walls are crudely built and unstable. visitors. The inner, upper wall is the more lightly built of the two and is also the more exposed. If the cairn was elsewhere than on a heavily-visited summit then it might survive exposure, as with those reconstructed at Brenig. However, in this situation only secure fencing could provide protection and this would be unacceptable as would consolidation with mortar. The best alternative here seems to be to reinstate the excavated material and all modern climbers' cairns to provide a protective 'shell' while interpretation would have to rely on displayed This may lessen interference with the monument but there appears no way information. that trampling can be avoided.

# APPENDIX 2. Text for fig. 6

## Introduction

The site was surveyed between June and October 1993. The plan is based on the survey carried out by Plowman Craven and Associates in 1980, with various additions showing the following:

i) Footpaths. All footpaths with a width of at least 0.2m were recorded.

ii) Areas of continuing erosion to the ramparts and hut walls. A rough estimate of the rate of erosion is indicated in the text. This is based on the degree of weathering and lichen growth on the stones. Recently disturbed stones are bright reddish orange, becoming duller with exposure to the elements, and finally turning light grey. Grey crustose lichens cover any undisturbed stones within 35 years.

iii) Areas of collapse that have reached a point of stability or are not threatening surrounding masonry.

iv) Treasure-hunter holes.

v) Inaccuracies and misinterpretations on the Plowman Craven survey.

Constraints of time precluded detailed descriptions and surveying. The text should be seen as a brief description of the erosion to the site and the plan as a measured sketch.

Catalogue of erosion to the huts and ramparts

Collapses in the huts

Hut 1 Walls mainly collapsed, little threat.

Hut 2 Hut conserved in 1990.

Hut 3 Very dilapidated.

3a) An area of severe and continuing erosion, no facing is visible and the stone and peat above the presumed line is eroding fast.

3b) A 3.5m long area of dilapidated facing. Maximum height 0.9m. No recent erosion but not stable.

Hut 4 This hut still has standing walls (inner) around most of its circumference but is very unstable. The south side, where the hut meets the rampart, is still standing to a height of 1.6m. The out-turn by the entrance on collapse 4a appears to abut the rampart. This hut is built from unusually small stones.

4a) Both sides of the entrance are beginning to collapse. The north-western side is particularly unstable, with danger of complete collapse. Much recent damage. Wall stands to 1.2m maximum.

4b) Small area of collapsed abutment.

4c) A lot of recent damage at this point. The upper 0.3m of facing has fallen. The facing however is visible beneath the tumble. The only doubtful area is where the rampart and hut may join. Much recent disturbance.

4d) The dividing wall between the two huts is very dilapidated. There is no facing visible in hut 4 but some 0.5m high (maximum) remains in hut 3.

Hut 5 A large, spectacular hut. Facing up to 1m high.

- 5a) Face reduced to ground level or close, recent damage, unstable.
- 5b) Recent collapse at entrance. Danger of line being lost.
- 5c) Wall top very poor with voids in wall face.

# Hut 6

(6a & 6b) Much recent disturbance to face. Walls at maximum 1.2m high, falling in places to ground level; wall top generally disturbed; floor very uneven, perhaps due to the collapses.

# Hut 7

7a) Minor recent disturbance to wall tops.

Hut 8 Well preserved.

- 8a) Recent collapse to ground level.
- 8b) Collapse in upper courses.

#### Hut 9

9a) Wall partially collapsed, very unstable, recent damage.

9b) Recent damage to entrance. Line of entrance may be lost.

9c) Face collapsed to ground level causing instability. Recent damage.

Hut 10 Well preserved, walls up to 1.75m.

10a) Wall collapsing at edge of entrance. Recent damage. Line of wall will be lost.

10b) Severe overhang, upper 0.5m of facing collapsed. Recent erosion.

10c) A stone has slipped out half way down the face, causing collapse. Recent.

Hut 11 Fairly well preserved, walls up to 1.5m.

(11a & 11b) Recent collapses to well-preserved wall faces, not stable, collapsed to ground level.

Hut 12 Fairly well preserved, walls up to 1.7m.

12a) Wall top partially collapsed and unstable. Some recent damage.

# Hut 13

13a) Large collapse in E. wall, falling from 1m to ground level. Collapse 1.6m wide, walls to either side unstable with much recent disturbance.

13b) 0.8m wide collapse down to ground level.

13c) Evidence of some recent repairs to top of wall.

13d) Wall top generally loose and unstable.

Hut 14 Wall tops generally poor and eroding, 0.8m high, facing loose and beginning to collapse.

14a) Recent damage.

14b) Very eroded, concentration of stone suggests a face, path crosses here.

14c) No facing and little stone here, wall does not curve round as on P/C. Path causing recent erosion.

## Hut 14A

505a) Recent damage, wall stands to 0.4m in places, wall tops loose and semi-collapsed.

# Hut 15

15a) Wall collapsed down to ground, threatening face to either side. A little recent disturbance.

Hut 16 Good hut, faces 1.2m high.

16a) Small collapse (recent) in wall top at entrance, marginally stable.

16b) Partition recently collapsed, unstable.

Hut 17 D-shaped hut, 17/18 perhaps originally 1 round hut later modified, walls up to 1.0m high.

17a) Very unstable masonry at built corner, some recent damage, then wall becomes overgrown, all continuous, not as P/C.

17b) S. outer wall at the entrance gradually falls to ground level, some erosion recently.

17c) Collapse to ground level revealing possible evidence of a two-phase build.

Hut 18 Walls low and partly collapsed, little damage, but some unstable areas.

Hut 19 Sub-oval, well-preserved hut. Two major collapses, walls up to 1.5m.

19a) S.W. end of hut reduced to ground level, masonry to either side threatened, well-eroded

- wall tops leading to collapse forming a path.
- 19b) Wall reduced to rubble slope, recent erosion.
- 19c) Small collapse in wall, recent. Somewhat unstable.
- 19d) Recent hearth in centre of hut ? 1990, not much damage.

19e) Somewhat unstable outer face.

Hut 19A Possible hut, low walls, no recent damage.

Hut 20 Walls low and tumbled, shape of hut still defined. No threat.

Hut 21 Small stretches of wall standing 1.2m high.

21a) S. wall of hut reduced to ground level and now delineated by a rough line of stones. Not under threat in centre but as wall rises at either side. Some recent erosion.

21b) 5m length of wall collapsed down to ground level. Now a rubble slope. Recent erosion.

21c) Small dip in in situ facing. Recent erosion.

Hut 22 Narrow rectangular hut, walls 1.0 to 1.5m high. N. end well preserved, entrance not as P/C.

22a) Facing surviving to 1m across half of the S. end, forming a narrow entrance. Semi-collapsed, no recent damage.

22b) S. wall collapsed to ground level at this point, much recent damage.

22c) Face semi-collapsed, edges of collapse unstable. A little recent damage.

22d) Sides of entrance passage collapsing; E. side, line of the facing almost lost, recent damage. W. side collapsing at outer end. Recent.

Hut 23 Large rectangular hut, W. wall up to 1.75m, the rest somewhat ruinous.

23a) Entrance blocked by rubble. N. side still visible up to 0.75m high,23b) Length of facing collapsed. Line of basal courses still visible. Minor recent damage.

23c) Length of facing collapsed. Line of basal courses still visible. Some recent damage.

23d) End of hut completely collapsed. Recent erosion.

Hut 24 Fairly well-preserved, D-shaped hut, walls generally 1.3m high.

24a) Collapse at outer end of well-defined entrance. Line being lost, recent damage.24b) N.E. end of hut very ruinous, not definitely as P/C. Several large stones have fallen from the wall. Some 0.25m high facing visible. Minor recent damage.24c) Old hole in floor has undermined hut wall, no collapse as yet but potential for serious damage.

Hut 25 D-shaped hut, walls 0.7m high, upper courses loose, interior overgrown

25a) Old collapse, basal courses probably intact. Some modern disturbance.25b) Narrow path crosses dip in overgrown wall. Possibly an overgrown entrance, no recent disturbance, although the path constitutes a threat.

Hut 26 Sub-oval hut, walls generally 1m high, well preserved, probable collapsed entrance at

26a) Some unstable masonry and minor recent damage.

26b) S. wall <u>severely</u> undermined and beginning to collapse due to old treasurehunter hole.

26c) Collapse to ground level, recent damage; apparently used to gain entrance to the hut.

26d) Unusual collapse, recent, possibly at junction between two phases of building. Short length of facing fallen, hut generally unstable.

Hut 27 Walls low and tumbled, no threat.

Hut 28 Low, max 0.5m high, walls well preserved and stable.

28a) Minor collapse, some recent erosion.

Hut 29 Facing only at abutment with hut 28, 0.6m high, reasonably stable. Little recent disturbance. Hut somewhat dubious.

Hut 30 Walls 0.4m high (one course of masonry) in places.

30a) Recent disturbance to a 2m long piece of low facing; the upper courses have been knocked off and there is a danger of losing the line of this facing.30b) Low level recent disturbance, not posing any threat at present.

Hut 31 Only S. end surviving.

31a) Face virtually at ground level, some minor disturbance, no threat. 31b) Face standing to a height of 1.0m, collapsed at E. Basal courses visible to reveal possible inner face of rampart standing 0.2m back. Hut very square-cornered. Two holes dug in hut floor.

31c) Low, 0.15m high, facing on E. side. Recent damage. Fragile. 31d) Recent hole dug to reveal 0.6m high corner to 31d. Reasonably stable. A footpath runs between 31c and 31d.

Hut 32 A large 8m wide hut built from small stones. Deteriorating fast. Blocked entrance on W.

32a) Face 1m high, reasonably stable. Wall top loose, some recent damage.32b) Face 1m high, semi-collapsed with big voids etc. Recent damage. N. end collapsed to ground level.

32c) Wall low and spread, no facing now visible, severe recent erosion in places. Another hole.

Hut 33 Probably not a hut as planned, overgrown bank/wall to N.W. more likely candidate. Some possible walling, reduced to ground level, visible.

33a) A concentration of stone on the pathway indicates likely wall. Erosion threat due to collapse of hut 32. A hole  $1 \times 1m \times 0.2m$  deep has been dug revealing a definite length of possibly curving facing concentric with hut 32. Recent damage here.

Hut 34 A possible rectangular hut, facing standing at N. corner up to 1m high.

34a) Very low facing, 0.3m high, recent damage. Stones dislodged from top, possible loss of information here.

Hut 35 Possible round-cornered, rectangular-shaped hut. Some 0.2m high facing visible on S.W. The rest is overgrown.

35a) Remains of facing reduced to ground level. Some erosion of small core. No real threat.

Hut 36 Continuation of 87. N.W. wall (36b) at ground level, some recent erosion, not much threat.

36a) Another access from hut to hut . Wall 1m high in places and very fragile.

Hut 37 Hut conserved 1991.

Hut 38 Hut conserved 1991.

Hut 39 Small structure, mainly collapsed, rough semi-collapsed facing visible on S. and some of E. side, Recent damage to 39a.

39a) Facing lost, recent erosion.

Hut 40 Facing up to 0.6m high at N.W. at 40a, facing to S. & W. stable.

40a) Facing unstable, many voids.

Hut 41 Ragged oval hut, walls up to 1.8m.

41a) Half of circumference partially collapsed and unstable. Recent damage. Rest of wall tops untidy, minor disturbance.

Hut 42 S. wall of hut stable, standing to 1.4m, but some disturbance at wall top.

42a & 42b) Small collapses in wall top, both still unstable.

Hut 43 Small length of facing in hollow. Facing semi-collapsed and reasonably stable.

Hut 44 Facing standing to 0.9m around much of hut. S. side very overgrown.

44a) Facing generally rather loose on upper courses. No recent erosion.

Hut 44A Distinct scatters of stone indicate possible rectangular hut, walls at ground level.

44Aa) Erosion occurring at footpath.

Hut 45 Walls low and unstable.

45a) Footpath crosses hut.

Hut 45A

45Aa) Face very low, maximum 0.6m high. Wall tops and upper courses recently eroded.45Ab & 45Ac) Footpath crosses walls, hence no facing remaining. Recent damage.

Hut 46 As walls low and unstable not much recent collapse, but some superficial disturbance. Under threat from footpath to W.

Hut 47 Facing standing for much of hut. Floor very uneven with holes etc. (not recent damage).

47a) Wall tops built from small stones, much disturbed recently.

#### Hut 48

48a) Facing standing for most of the circumference, generally loose with some recent disturbance.

Hut 48A Semicircular hut. S.E. wall still standing to a height of 0.75m in places the rest falls to ground level.

48Aa) Low walls, generally stable but some traces of unstable facing present, small amount of recent erosion.

48Ab) A massive stone 1.6m long has fallen from the wall in antiquity. The edges of the collapse are however now eroding quite fast. No recent damage. 48Ac) Outcrop not wall.

Hut 49 Well-preserved sub-ooidal hut in a fragile condition, maximum height 1.5m. Hut deteriorating fast.

49a) Recent collapse in face down to ground level, masonry unstable at S.W. edge of collapse, possibly threatening entrance. N.E. edge abuts 50.

49b) Old instability in wall, now being eroded on wall top, recent damage.

49c) Collapse directly behind facing of entrance, face collapsed from 1.1m to 0.3m, and stones recently put on wall tops, leaving no support behind passage facing. Much recent damage.

49d) Inner face partially collapsed in antiquity.

49e) Large area of outer facing fallen from 1m to ground level. Much recent damage.

49f) Recent digging/disturbance in entrance has undermined the facing on either side. E. side beginning to collapse and merge with 50b. Much recent damage.

Hut 49 Relationship etc. between hut 49 + 50 completely wrong on P/C.

Hut 50 N.W. wall well preserved, up to 1.2m high, entrance (50b) just visible.

50a) Walls collapsed almost to ground level, continuing erosion still visible at ends of collapse.

50b) Danger of losing entrance, recent erosion.

50c) Treasure-hunter hole.

50d) Small failure in wall base causing a collapse in upper wall, recent erosion compounding this.

Hut 51 Conserved hut (not drilled) with surviving facing for most of circumference. E. half filled with old collapse.

51a) Old collapse, some minor recent damage. Standing facing very fragile. 51b) Recent erosion to wall top. A path may be beginning to be established over the hut walls, causing damage to 86 & 53.

Hut 52 Irregular, overgrown hut, conserved but not drilled. No inner facing visible, no threat.

Hut 53 Conserved by S.D.B. except for Y-shaped partition.

53a) Further disturbance to partition, the line of one 'leg' will be lost unless some remedial action is taken.

53b) Minor recent damage to low facing. Every visitor today has walked over this wall.

Hut 54 Walls up to 1.0m.

54a) Wide collapse to ground level, threatening masonry to either side and entrance. 54b) Old, stable, collapse.

Hut 55 Walls standing up to 1.0m N.E. and ruined, but entrance still visible.

55a) Minor erosion

55b) Minor erosion

55c) Recently collapsed face, from 0.5m to ground level

Hut 56 Well-preserved round hut, walls up to 1.7m. Well-defined but semi-collapsed entrance.

56a) Dip in wall, some recent damage, stable. Treasure-hunter hole, also stable.

56b) Severe collapse to ground level from 1.7m, recent erosion, wall to either side threatened.

56c) Amateur repair with small stones, crude but effective, very recent. 56d) Large collapse used as entrance. Recent erosion and some instability to either side.

Hut 57 Reasonably well-preserved hut, walls 1.0m high, well-defined entrance.

57a) Recent damage to entrance, stones lost from W. side in particular, loss of definition possible.

57b) S.E. wall reduced to ground level, collapse widening, recent damage.

57c) Old treasure-hunter hole undermining wall, no recent damage.

Hut 58 Small overgrown (interior) hut, walls typically 0.6m, entrance probably facing hut 60, walls fallen to ground level around entrance and on N. side. Some unstable masonry surviving, some recent damage. Not easily rectified.

Hut 59 Large, subdivided, round hut with walls standing in places to an original (i.e. no rebuilding) 1.6m.

59a) Dividing wall falling from 1.5m to overgrown hump by centre of hut, some recent damage.

59b) Large serious collapse from 1.6 to 0.2m in facing, threat to surrounding masonry, some fairly recent damage.

59c) Slump in 1.5m high face, some recent damage, unstable.

59d) S.W. end of hut eroded to ground level, some recent erosion, some instability in surrounding masonry.

Hut 60 Small sub-oval hut, walls up to 0.7m high, minor erosion at low points in wall a&b, due to access to wall tops. Generally stable.

Hut 61 Large, moderately well-preserved, subdivided hut. Dividing wall well preserved. Walls up to 1.2m.

61a) N.W. side of hut reduced practically to ground level, only minor recent disturbance.

61b) End of dividing wall beginning to collapse, recent damage.

61c) Small collapse in face, not recent, reasonably stable.

61d) Small collapse to ground level, some recent damage.

61e) Wall from 61d to entrance semi-collapsed and unstable, no recent damage to inner face.

61f) Severe damage to outer face, visitors have constructed a small rectangular structure using stones from wall of hut, see S.D.B. 1990,

Hut 62 Well-preserved irregular hut.

62a) Large old treasure-hunter hole undermining the wall, still rather unstable.

62b) Low area in the wall with upper courses lost and recent damage.

62c) Overhang and general instability, wall falling to ground level.

62d) Outer face of hut damaged, upper courses falling, recent.

Note: Establishment of footpath through this group of huts is causing a severe threat.

Hut 62A Walls low and ruined, recent disturbance, very little facing visible.

62Aa) Old treasure-hunter hole.

Hut 63 Irregular hut, walls 0.8m high for much of their length but ruinous, apparently several phases but certainly not very clear. P/C inaccurate.

63a) Possible entrance, S. side survives. N. collapsed at b.

63b) Wall low and ruinous, unstable, not much recent damage.

63c) Now used as entrance, probably not original, wall reduced to ground level.

63d) Collapse to ground level at corner of hut used as access to wall tops, recent damage.

Hut 64 Fairly well-preserved round hut, walls up to 1.2m high.

64a) Major collapse in E. wall of hut, lower courses visible for most of the collapse beneath rubble, used as access to wall tops.

64b) Walls grade down to ground level, some recent disturbance.

64c) Possible E. side of the entrance, some recent disturbance.

Hut 65 Irregular hut, walls stand up to 1.2m. N. end well preserved.

65a) Old collapse to ground level, some recent damage.

65b Upper courses lost (not recent), facing not original, survives in 117 (see 117) above this level.

65c) Walls grade down to ground level, no recent damage.

65d) Possible semi-collapsed entrance and some recent erosion.

Hut 66 Well-preserved sub-rectangular hut, walls generally 1m high.

66a) Severe collapse in hut wall, much recent damage, used to gain entry to hut from footpath.

66b) Fairly recent collapse, some instability.

66c) Several collapses in relatively well-preserved entrance passage, some recent damage.

Hut 67 Exceptionally well-preserved round hut. Walls 1.6m high for complete circumference. Walls slightly undermined as hut excavated slightly below floor level.

Hut 68 Walls generally low (max height 0.8m) and tumbled.

68a) N.W. side eroding, causing lack of definition at the entrance.

68b) Wall unstable, minor recent erosion.

Hut 69 Well-preserved round hut, walls up to 1.5m. Two old treasure-hunter holes in floor; no threat as not below floor level. Upper walls ragged, with minor recent erosion.

69a) Wall collapsed to ground level with some instability to the N.E. Little damage.

Hut 70 Fair condition. Walls up to 1.45m, two old collapses, 70a and 70b, with some modern erosion, but reasonably stable.

Hut 71 Rubble-filled, partially overgrown hut, walls up to 1.2m.

71a) Old collapse to ground level, some minor recent erosion, masonry threatened to either side.

71b) Wall low and ruined. No threat.

Hut 72 Approximately rectangular hut, conserved but not drilled.

72a) Minor disturbance, some stones knocked off wall top.

Hut 73 Conserved, not drilled.

Hut 74 Irregular hut, facing standing to 0.8m. Some large voids and areas of instability. Hole in S.E. corner revealing 1.2m high facing. Facing visible on E. side of hut. Masonry generally loose, but little recent erosion.

Hut 74A Dubious hut with length of 0.3 high facing.

74Aa) Rather loose, little recent disturbance.

Hut 75 Well-preserved rectangular hut, well-defined entrance. Inner facing 1.2 to 1.4m high on all sides.

75a) Collapse in face down to ground level, some recent disturbance and instability on either side.

75b) Corner collapsed to ground level. Some recent disturbance and instability.

75c) Large treasure-hunter hole at base of wall.

75d) Recent collapse in outer face, unstable.

# Hut 76

76a) Hut practically destroyed; much loose, recent disturbance.

Hut 77 Conserved in 1991.

Hut 78 Conserved in 1990.

78a) Small oval hut, facing surviving up to 0.4m. Walls generally low. Possible threat due to footpath.

Hut 79 Large round hut.

79a) Recent erosion/collapse in wall face.

Hut 80 Conserved in 1991.

Hut 82 Tiny rectangular hut. Walls up to 1.2m. Face at N.W. end not visible. Whole hut choked with rubble.

82a) Face formed by upended slabs 1.25m long, now tipped forwards at about 30°. No recent damage.
82b) Face 0.7m high, upper courses recently lost but core standing to a height of 1.3m.

Hut 83 Not convincing as a hut - no threat.

Hut 84 Not located.

Hut 85 Practically no standing facing, no threat.

Hut 86 Conserved. Small hole dug in floor.

Hut 87 Subrectangular hut. Conserved but not drilled. 0.6m high walls.

87a) Another route through this group of huts. The wall is beginning to collapse at this point. Recent damage.

**Hut 88** 

88a) Very little facing visible, damage not recent, wall collapsed forwards and very tumbled.

Hut 89 Conserved in 1989 - 90.

Hut 90 Not located.

Hut 91 Irregular enclosure with low tumbled walls, some facing remains.

Hut 92 Conserved hut, not drilled.

92a) Continuing erosion at entrance. Hole and minor disturbance caused by burying disposable nappy.

92b) Another common point of access to wall top.

Hut 93 Maybe a separate structure from hut 91, 93 is marked by a circular hollow in the ground now overgrown.

- 93a) Some erosion due to proximity to the path, some recent.
- 93b) Minor recent erosion.

Hut 94 No visible facing, may not be a hut, just outer faces of 23 & 24 with additional wall at S.

94a) Minor recent erosion.

**Hut 95** Almost certainly a large round hut, S.E. side severely eroded. Facing up to 1.1m on N.W. side. Ground disturbance caused by footpath through centre of hut. Possible candidate for excavation.

Hut 96 Dubious hut, overgrown.

Hut 97 No facing visible, footpath causing erosion to N.W. end.

Hut 98 Debatable hut, scree slope, little definite facing. No threat.

Hut 99 Incorrectly numbered on P/C. Just about visible as dip in scree, no threat.

#### Hut 100

100a & 100b) Path passes through hut, some localised damage. Generally walls eroding but low.

# Hut 101

Hut 102 Mainly overgrown, some facing at N.

#### Hut 103

103a) Reduced to rubble, no facing visible, recent disturbance, all reduced to practically ground level.

Huts 104/105 Both huts reduced to ground level by two paths, some facing still visible, much recent disturbance, still eroding fast. Unstable. <u>Priority</u>. Danger of ground disturbance.

Hut 106 Circular hut, incorrectly planned, entrance facing S.

106a) All of the walls are much eroded and unstable, much recent damage, some detail still visible. <u>Priority.</u> Footpath damage.

#### Hut 107

107a) Small area of collapse. Recent erosion. 107b) Wall generally stable, recent erosion to wall top and voids in lower face.

# Hut 107A

107Aa) A collapse in approximately 1.0m high facing. Unstable, recent disturbance.

#### Hut 108

108a) Only small amount of facing visible. Wall line becomes indistinct where path crosses. Unstable masonry and recent damage.108b) Wall top unstable in places. A little recent erosion.

Hut 109 Not located.

Hut 110 Small round hut, walls up to 1.0m at S.E. P/C plan woefully inaccurate, needs to be re-planned. Footpath causing severe erosion to N. wall.

110a) Interesting probable two-phase entrance. Recent erosion is threat to information.110b) N.W. wall of hut reduced to ground level by footpath, recent damage, severe threat.

Hut 110A Slight possibility that this is a much ruined hut, if so footpath causing real problems. (See Hughes).

Hut 111 Conserved in 1991.

Hut 112 Generally tumbled and overgrown, face up to 0.7m high with some instability. See S.D.B. 1991.

Hut112A Some threatened masonry - surveyed and minor conservation works. See S.D.B. 1991.

Hut 113 P/C absolute rubbish. Possible round/sub-rounded hut, some definite facing visible. Footpath crosses centre of hut causing serious damage and ground disturbance. Needs re-planning. A number of walls etc. in this area are under threat. See S.D.B. 1991.

Hut 114 Conserved in 1991.

Hut 115 Conserved in 1991.

Hut 117 Small rectangular structure, facing survives for much of walls below tumble.

117a) Recent rebuild probably using original facing stones, upper walls rough with some recent damage, centre of hut filled with tumble perhaps protecting *in situ* stone.

Hut 118 Walls low, no facing and recent erosion.

Hut 119 Walls low and tumbled, no threat at present

Hut 120 Not located.

Hut 121 Large rubble-filled round hut, walls mostly low and collapsed. Maximum height 0.8m. All masonry unstable but no recent damage. Entrance visible but unstable, possibly running into hut 122 but now undermined.

Hut 122 Overgrown hut, walls low and tumbled, no recent erosion.

Hut 123 Low and overgrown, no threat.

Hut 124 Large enclosure, walls low and ruined, only minor erosion. No threat.

Hut 129 Small oval hut, facing on S.W.& N.E. standing up to 1m high. N.W. end low & overgrown, S.E. reduced to ground level.

129a) The facing on the S.W. is beginning to collapse and is rather unstable, recent damage.

129b) Minor damage at end of facing, slight instability.

Hut 130 Small sub-rounded hut, walls mainly reduced to ground level.

130a) Small length of facing, 0.4 high, surviving but very unstable.

Hut 131 Small sub-rounded hut, little surviving facing.

131a) Small hole dug in wall line.

Hut 132 Long irregular hut, possibly two huts with a division (marked 132a). Walls up to 0.5m high but generally tumbled. Possible remains of facing (132b) at S.E. end. Walls generally partially collapsed and unstable, little recent damage, however.

Hut 133 Well-preserved sub-rectangular hut, abutting 50. Walls standing up to 1.2m high.

133a) The N.E. wall has collapsed down to ground level. The masonry to either side is unstable, collapse fairly recent.

133b) Large hole in hut floor, now overgrown.

Hut 134 Short length of facing still standing at S., height 1.0m. Rest of hut overgrown and indistinct.

Hut 135 Walls generally low except where abutting 50, no major threat.

135a) Recent minor erosion to wall top, wall line unclear, running towards 49 & 50.

Hut 136 Not located.

Hut 137 Sub-rectangular hut, walls recently damaged but still up to 1.8m high.

137a) Serious, relatively recent collapse. N.W. corner has fallen into the hut, recent disturbance and masonry to N.E. in danger of falling.

137b) Collapse at entrance, unstable, no recent damage.

137c) Wall at S.E. corner partially collapsed and unstable, some recent damage.

Hut 138 Roughly rectangular hut deteriorating rapidly. N.E. corner still standing.

138a) Wall collapsed nearly to ground level. Recent erosion.

138b) Large hole dug in floor, undermining wall which is now falling into hole.

138c) Further erosion.

Hut 139 Large stone-filled enclosure with mainly tumbled walls. Small treasure-hunter hole in centre (not recent). Possible wall at N.W. joining 75 & 137.

139a) Minor recent erosion to unstable walls.

# Hut 141

141a) Wall close to ground level, some facing remains which is loose and recently disturbed.

141b) Eroded but stable.

# Hut 142

142a) Flattened to ground level with occasional bit of surviving basal course. Wall faces can just about be distinguished. Entrance as planned on P/C.

# Hut 143

143a) Loose rubble slope, much recent disturbance. 143b) Wall top loose, recent disturbance.

Hut 143A Marked on plan as an area of scree, possible circular hut (548). Recent disturbance.

Hut 144 Large rectangular hut. Floor uneven and choked with rubble. Walls standing up to 1.2m except for W., where wall line is only traceable for part of its length.

144a) Wall collapsed down to approx 0.3m, rest of wall unstable, no recent damage. 144b) Large voids at base of wall causing some instability.

144c) Possible length of facing and much overgrown tumble suggesting some structural remains.

144d) Hole dug (not recently) below level of wall.

Hut 145 Large sub-rectangular hut with facing 0.4 to 1.4m high, incorrectly planned by P/C. S. corner clearly visible. Entrance on W.

145a) N. wall abuts bedrock and is very tumbled. Line debatable, old collapse, generally stable, no recent erosion.145b) S. wall mostly collapsed to ground level, old collapses, little threat, no recent disturbance.145c) Wall collapsing outwards, now stable, minor disturbance.

Hut 146 Large irregular enclosure, walls low and tumbled.

146a) Recent minor collapse.

Hut 147 Small circular hut, heather-filled, walls low and tumbled.

147a) Minor recent erosion.

Hut 148 P/C plan largely incorrect. Royal Commission O.K., refer to this. Large revetment wall at N.W. intact and undisturbed (not really a hut).

Hut 149 Round heather-filled hut, P/C plan dubious. Rough facing up to 0.6m high. No recent damage.

**N.B.** 146, 147, 148, 150 more like enclosures on scree outside fort. The scree below the cairn shows signs of similar terracing.

Hut 150 Irregular enclosure, walls rough and/or semi-collapsed, 0.5m high.

150a) Three or four large slabs have fallen into the hut from above. Walls generally fragile, so threat not much increased.

#### Collapses in the ramparts

**Collapse AA.** Outer face standing 1.0m at west, falling to 0.2m at east. The face becomes more ragged running from W. to E. Final easternmost 2.5m is a recent collapse with some remaining basal  $(0.4m^2)$  courses. 1.0m height of facing lost, with core spilling forwards over it. 7m long.

**Collapse BB.** 19.5m long, wall top very disturbed with some recent erosion. This collapse is a number of minor collapses which have merged to form a long area of raggedness. Maximum depth of collapse 0.6m, generally 0.4m. (face standing 1.2 to 2.0m high).

**Collapse BB1.** 12m long, upper 0.4m of outer facing lost, some recently. Core standing above this but beginning to slip forwards, face standing 1.2 to 2.0m high. Wall top: general low-level disturbance from walkers etc.

Collapse BB2 An old collapse in inner face, now reasonably stable, no recent damage.

**Collapse BB3** Inner face visible in places, quite badly eroded but generally stable with little recent collapse.

Collapse BB4 Upper courses lost, wall tops ragged.

Collapse CC Recent collapse down to ground level.

Collapse DD Recent collapse to near ground level, basal courses still visible beneath the rubble.

**Collapse N21** Path cuts through low wall. Slow erosion, no threat to surrounding masonry.

**Collapse O1** A 7m length of deliberate damage to the outer face. Face now stands to a height of 1.2m but 0.5m of facing has apparently been deliberately pushed off, c.f. N19, causing erosion to the wall top and scattered remains of the inner face as well as the obvious damage.

Collapse 01 Inner face surviving up to 1.0m, upper courses loose.

Collapse 02 Outer face standing up to 1.3m, recent erosion, upper courses ragged.

**Collapses P Q & R** 69m of wall around the highest point of the fort are severely eroded. Some lengths of facing standing up to 1.6m high survive, but severe erosion due to many years of visitors building cairns, throwing rocks off the rampart etc. have taken their toll. This is compounded by a number of lengths of collapse caused by slippage of the steep scree slope at the outside of the fort. This area needs to be surveyed in detail using the total station, which is beyond the scope of this assessment.

**Collapse S1** As outer face leaves outcrop it has collapsed down to ground level and is still eroding. One basal course may still be intact. Recent damage. The wall then rises raggedly to a height of 2.9m. Recent erosion.

The inner face is unsupported due to the collapse in the outer face and is falling backwards, some stability is now achieved due to large facing; still under threat of being undermined.

After S1 the wall stands to a height of 2.3m.

Collapse S2 1m wide dip in wall - minor instability and recent damage.

**Collapse S3** The rest of the wall S-T is slowly eroding, stones being knocked off/thrown from the wall top and general recent disturbance.

**Collapse S4** 10m long collapse, outer face of wall falls from 2.2m high at the N.E. to ground level at S.W.

S4 Outer - Rising in the centre, 1.4m as it reaches the outcrop. S4 Inner - The inner face is lost for much of the length of the collapse.

Generally unstable and some recent erosion.

Collapse U Some recent disturbance. 2m wide, both faces lost. Path enters fort from S.

Collapse U1 1.5m wide, stable minor collapse in wall top.

Collapse V 4m wide, 1m or more deep on outer face. Some recent disturbance.

Collapse V1 2m wide, 0.5m deep, some recent disturbance.

Collapse V2 6m wide, 0.5m deep, some disturbance.

**Collapse** W 6m wide, 1.3m deep. Unstable, some recent disturbance, particularly to inner face.

Collapse W1 2m wide dip in outer face, now stable.

Collapse W2 1.2m wide dip in inner face, recent disturbance.

Collapse X 3m wide, 1m deep plus damage to wall top. All recently disturbed.

Collapse X1 4m wide, 0.6m deep, much recent disturbance.

Collapse X2 1.8m wide, stones recently lost from top of outer face.

Collapse X3 1.8m wide, 0.4m deep, some recent erosion.

Collapse Y1 32m wide, scree slope, outer face badly collapsed, much recent disturbance, some malicious damage.

**Collapse Y2** 18m wide, an area where several paths meet the rampart (2m + high). Much malicious damage and some erosion; large headers thrown from wall. One deep collapse at S. (Y2a), rest of wall reasonably stable, needs to be re-surveyed.

Collapse Y2a Severe recent collapse, 1m wide, 0.6m deep.

Collapse Y3 1.9m wide, 0.4m deep collapse in inner face. Some recent disturbance.

Collapse Y4 Bulge in outer face, now reasonably stable.

Collapse Y5 Bulge in outer face, 1.6m length of upper courses lost. Recent damage.

Collapse Y6 1.2m wide, 0.4m deep. Recent damage.

Collapse Y7 7m wide, as wall runs to outcrop, stones recently lost from outer face and wall top, malicious damage.

**Collapse Z.** Running N.E. from edge of Z1. The wall almost certainly continued across the outcrop but is now almost destroyed. The stones have obviously been thrown from the rampart as they are spread a long way down the scree.

**Collapse Z1.** A 1m long collapse in the outer face; a few stones have been lost from the top of the wall, causing a slight dip as the wall reaches the outcrop.

**Collapse Z2.** Running from the edge of 5, a 7m long area of damage. The wall stands to a height of 2.3m and is reasonably stable. The parapet is visible for the whole length of 6. The stones on the outer wall top have been, apparently deliberately, thrown from the wall (the outer facing stones are dipping back towards the inner face so the stones could not have fallen). <u>Recent damage</u>.

**Collapse Z3.** Wall stands 2.5m high at the E. of this collapse, which is a major failure in the outer face, the wall having collapsed from low down. The collapse is at present spreading E., where there is severe recent disturbance. [PRIORITY.] Length 4m.

**Collapse Z4.** Face falls from 1.75m at either end to ground level at one point, much recent disturbance. Lower courses may be intact but buried. Severe collapse. Length 6m.

[Note at this point (i.e. E. of Z3) we have the best evidence for a parapet on the S. of the fort with an inner and a parapet face clearly visible].

Collapse Z5. A possible 3m length of walling linking a rampart to outcrop, eroded by footpath.

A concentration of stone on the outer rampart behind collapses Z to BB3 suggest the presence of a parapet, facing is occasionally visible. The recording of this is more suited to an E.D.M. survey. If no remedial action is taken this information will be lost.

