Aber Castle Mound, Ty'n y Mwd:
Aber

Scoping Report

GAT Project No. 1814
Report No. 566
January, 2005

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust
Craig Beuno, Ffordd y Garth, Bangor, Gwynedd, LL57 2RT

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Prepared for CADW

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Aber Castle Mound. Ty'n y Mwd, Aber. (G1814)

Scoping Report.

1. Introduction.

Active erosion on the motte at Aber, caused largely by the presence of a large oak on the west side, and the site of a tree now removed on the east, is to be repaired by infilling the erosion scars and attempting to form a grass cover. As a first stage in this programme of works, Gwynedd Archaeological Trust were commissioned to undertake a topographic survey of the mound, which would identify each of the scars individually, and calculate the amount of fill required for repair. The motte is a scheduled ancient monument (Cadw reference Cn 7).

2. Methodology.

A survey by total station was undertaken on 15th, 16th and 21st December 2004, by Andrew Davidson, Tanya Berks and Clare Victoroff. A photographic survey was undertaken by Clare Victoroff using a digital camera.

The results were subsequently downloaded onto computer, and a combination of CAD and illustrative software used to process the results. Modelling software was used to produce both a contour survey, and a three-dimensional view (figure 3). Calculations were undertaken for each of the scars and the results of these are presented below.

3. Background history.

The date of the origin of the motte is not known with any certainty. It has often been assumed that it formed one of the mottes established by Hugh of Avranches during his campaigns of the late 11th century, however no documentary evidence has been found to support this. Aber became one of the favourite palaces of the princes of Wales in the 12th century. The wife of Llywelyn ap Iorwerth, Joan, died there in 1237, and Llywelyn's son Dafydd in 1246. References to repairs to court buildings occur in 1289 and 1303. The site is likely to have gone out of use during the later Middle Ages. Excavations in 1993 revealed the presence of a hall house south of the motte on the presumed site of the bailey (Johnstone 2000).

4. Description of motte.

The motte lies at about 30m OD on the west side of the Afon Aber, just over 1 Km from the coast, and on the landward edge of the coastal plateau, where the Aber valley starts to narrow. Good communication routes lay along the plateau, into the uplands of Snowdonia, and to the sea. Pen y Bryn, identified as the possible home farm of the court (see Johnstone 2000), lies across the river to the east, whilst the church of St Bodfan lies some 3,000 m to the west.

The motte is a roughly circular earthwork, 5.8m high, 35.5m diameter at the base and 14.5m diameter at the top. There are remains of a ditch on the south side. No bailey is visible, but the presence of the excavated hall house to the south suggests it may have lain in this direction. Remains of a slight path can be seen running up and round the mound on the east side.

5. Present condition

The scars occur in two specific locations, on the west side focussed around two oak trees (marked A and B on the plan), and on the south-east where a tree had formerly existed, but has been removed within recent years. Each of the scars is shown in figure 2, and dimensions given in the tables below. The area occupied by the trees has been calculated, so that should they need to be removed sufficient material can be brought in to compensate for the removal of the roots. A figure is calculated in table 3 for the amount of materials required.

Table 1: Erosion scars

Scar number	Maximum width	Maximum length	Maximum depth	Area	Approximate volume
1	8.22 m	7.99 m	0.17 m	43.78 m^2	4.96 m^3 (5.89 m^3 with 1a and 1b)
1a	3.38 m	2.34 m	0.13 m	8.04 m^2	0.69 m^3
1b	3.68 m	1.10 m	0.12 m	3.00 m^2	0.24 m^3
2	2.24 m	1.47 m	0.08 m	2.52 m^2	1.68 m^3
3	3.58 m	2.38 m	0.22 m	6.53 m^2	0.96 m^3
4	2.86 m	6.64 m	0.10 m	10.78 m^2	0.72 m^3
5	9.49 m	6.70 m	0.25 m	47.45 m^2	7.91 m^3
6	13.33 m	1.94 m	0.34 m	19.87 m^2	4.50 m^3
7	4.16 m	5.07 m	0.12 m	17.98 m^2	1.44 m^3
8	3.49 m	3.24 m	0.10 m	8.14 m^2	0.54 m^3

Table 2: Size of tree roots systems

Tree	Maximum width	Maximum length	Area
A	3.83 m	2.82 m	7.20 m^2
B	1.56 m	1.14 m	2.44 m^2

6. Estimates of type and quantity of all materials needed for repair work (based on measurements and profiles)

i. Imported soil of local provenance
ii. Treated oak boards 1800mm x 150mm x 25mm to support fill and prevent slumping
iii. Fixing pins (concrete reinforcing rods) to hold oak boards, spaced at 600mm apart
iv. Fencing staples 25mm galvanised to fix reinforcing rods to lower side of oak boards
v. Greenfix type 6 straw/ coirfibre matting to re-establish grass
vi. Wyretex Fabric Type 5 mesh to reinforce the grass in times of stress (extends above the repair by 2000mm and extends below the repair by 1000mm)
vii. Steel fixing pins 5mm x 200mm at a density of no more than 6 pins per square metre to secure both matting and mesh
(Andre Berry, 2000, AQB Historic Landscapes, pp 26-7.)

Table 3: Calculation of quantities of materials needed

Scar number	Soil volume	Oak boards length	Reinforcing rods quantity	Greenfix matting area	Wyretex mesh width x length	Fixing pins quantity
1	5.89m^3	15m	25	44m^2	scars 1& 2: 9m x 11m	600
2	1.68m^3	-	-	3m^2		
3	0.96m^3	3m	5	7m^2	4m x 5.5m	132
4	0.72m^3	-	-	11m^2	3m x 10m	180
5	7.91m^3	-	-	48m^2	scars 5,6,7& 8: 17.5m x 12m	1260
6	4.50m^3	-	-	20m^2		
7	1.44m^3	11m	19	18m^2		
8	0.54m^3	-	-	8.5m^2		
Total	23.64m^3	29m	49	159.5m^2	33.5m x 38.5m	2000

7. Breakdown of appropriate remedial works for individual scars

Scar 1. has two further areas of erosion within the scar (**1a and 1b**). The scar is quite wide and deep and will require three lengths of oak boards to support the fill. Greenfix matting and Wreytex mesh should cover the filled scar. One piece of Wreytex mesh should cover scars **1** and **2**, although scar **2**, which is too shallow for oak boards, should have a separate piece of Greenfix matting.
Scar 3 is quite deep and therefore will require one length of oak board to support the fill.
Scar 4 is too shallow for oak boards but as it is on a steep slope the Greenfix matting will have to hold it in place.
Scar 5 is caused by the roots of tree A which will have to be covered up to some extent, but the roots will take the place of oak boards in supporting the fill.
Scar 6 is so steep that would not be practical.
Scar 7 will require three lengths of oak board to support the fill as it is both deep and wide.
Scar 8 will not require boards as it is very shallow and will contain the stump of tree B.
Scars 5, 6, 7 and **8** should all have individual pieces of Greenfix matting but they could all be covered in a continuos area of Wreytex mesh.

8. Notes on repair

The scars on the south of the motte are in a visibly better state now than in August 2003 when the site was photographed by John Roberts (GAT) and William Bown (CCW). The better grass cover now present is almost certainly due to the Autumn rainfall, and the problem is likely to worsen again during next Summer. The scars on the north of the motte have changed little except that there is more grass covering.

It is apparent that to successfully repair the erosion scars would require elimination of the causes.

Erosion scar 1 on the southeast side of the motte is most likely to have been caused by a **thorn tree** which was cut down at the roots some years ago. The roots which were left in situ have now rotted away. The scar left behind can now be repaired by infilling and reseeding.

The focus of the erosion on the northwest side of the motte is the large **oak tree** (A). Several factors are responsible for the erosion, namely:

- It provides shelter for animals.
- The village children use it as a play area.
- The large canopy prevents grass regeneration around the tree, if turf is laid it would probably die
- Small animals live in the roots of the tree
- Run-off from the tree washes the soil away
- The tree is growing

The tree is approximately 200 years old, and much of its roots are exposed. It is on a steep west-facing slope. There are two houses at the bottom of the slope. The houses would be in range of the falling tree and the occupants are worried that their houses might be destroyed should the tree fall. This would also cause severe damage to the motte should the root systems lift. When the tree is in leaf the branches which look unwell should be taken out to the trunk and the cut treated with a chemical such as Arbrex. This will reduce the wind resistance and the weight of the crown decreasing the threat of wind blow. It will also reduce the amount of shade beneath the tree, giving the grass more chance of regeneration. The tree is thought to be of sufficient age that pruning will not stimulate growth. If the tree were cut down the cavity formed by the rotting root would be worse than the erosion scar on the southeast side of the motte caused by the thorn tree.

There is a second **oak tree** (B) nearby which is smaller and nearly dead but possesses all of the above problems to a lesser extent.

The erosion caused by the trees would be best eliminated by cutting them down close to ground level, and repairing the ground around. It would then be necessary to monitor any re-growth of the tree stumps.

On the south side of the motte there is slight evidence for **badger activity** in one of the erosion scars. This is a single small hole, of the appropriate size for a badger sett. The visit on 21 December failed to discern any recent activity, and it is thought that the hole is not in use. However, should it become occupied, it would be necessary for CCW to obtain a licence from the Assembly to manage the problem. This is allowed for scheduled ancient monuments.

Protection of Badgers Act 1992 (c. 51)
10.—(1) A licence may be granted to any person by the appropriate Conservancy Council authorising him, notwithstanding anything in the foregoing provisions of this Act, but subject to compliance with any conditions specified in the licence—
(e) for the purpose of the preservation, or archaeological investigation, of a monument scheduled under section 1 of the [1979 c. 46.] Ancient Monuments and Archaeological Areas Act 1979, to interfere with a badger sett within an area specified in the licence by any means so specified;
(3) A licence may be granted to any person either by the appropriate Conservancy Council or the appropriate Minister authorising that person, notwithstanding anything in the foregoing provisions of this Act, but subject to compliance with any conditions specified in the licence, to interfere with a badger sett within an area specified in the licence by any means so specified for the purpose of controlling foxes in order to protect livestock, game or wild life.
(4) In this section "the appropriate Conservancy Council" means, in relation to a licence for an area—
b) in Wales, the Welsh Assembly Government.

9. Sources

Published sources

Clwyd County Council, 1994, *Erosion on Archaeological Earthworks*, Mold, pp 11.
Johnstone, N, 2000, *Llys and Maedref: The Royal Courts of the Princes of Gwynedd*, Studia Celtica, XXXIV

Unpublished sources

Andre Berry, 2000, AQB Historic Landscapes, pp 26-7.
Johnstone, N, 1994, *Ty'n y Mwd, Aber: Archaeological Excavation*, GAT, Report No. 86.

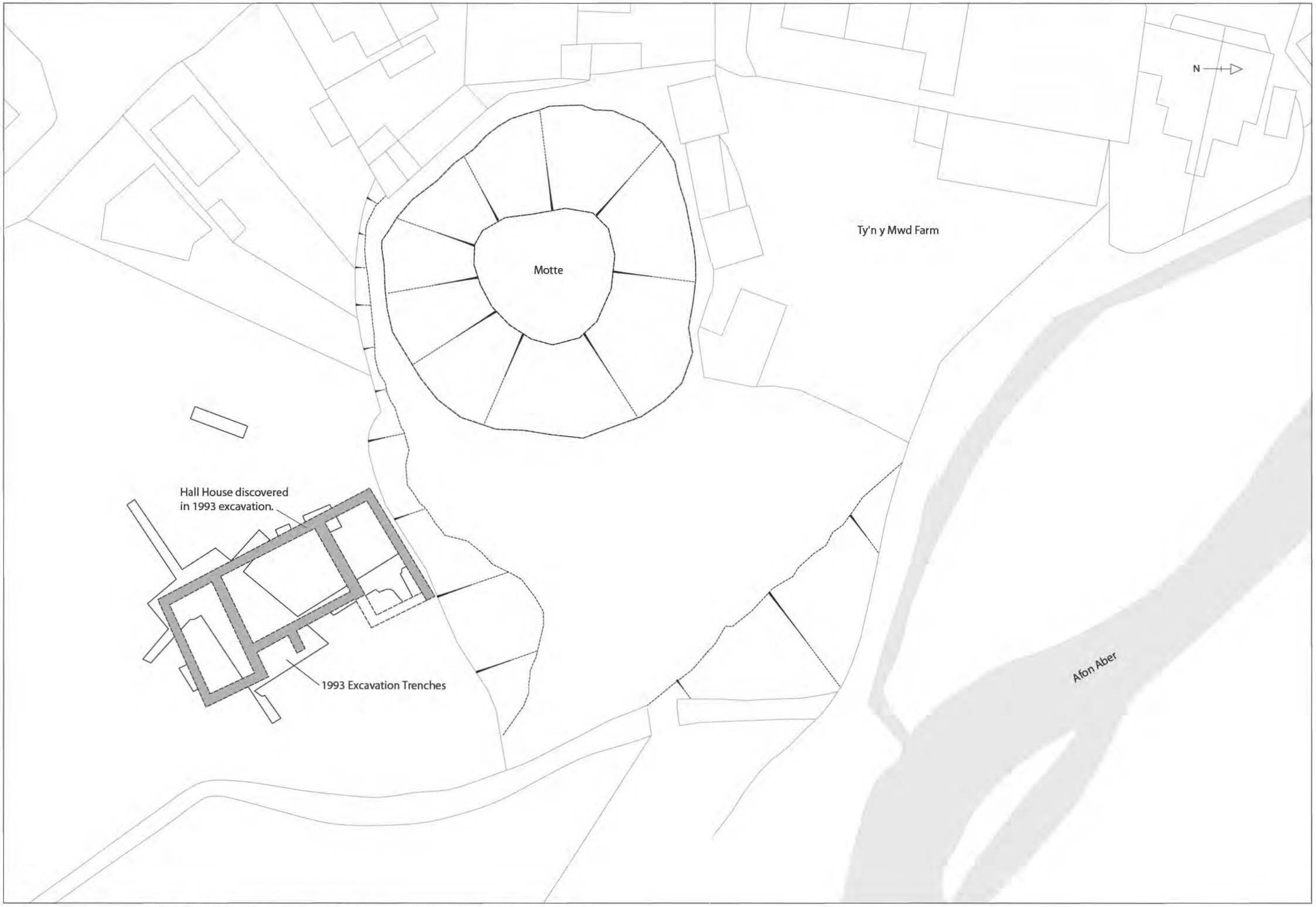

Figure 1. Location of the motte at Ty'n y Mwd, Aber and the location of the hall house discovered in excavations in 1993. (Scale 1, 400)

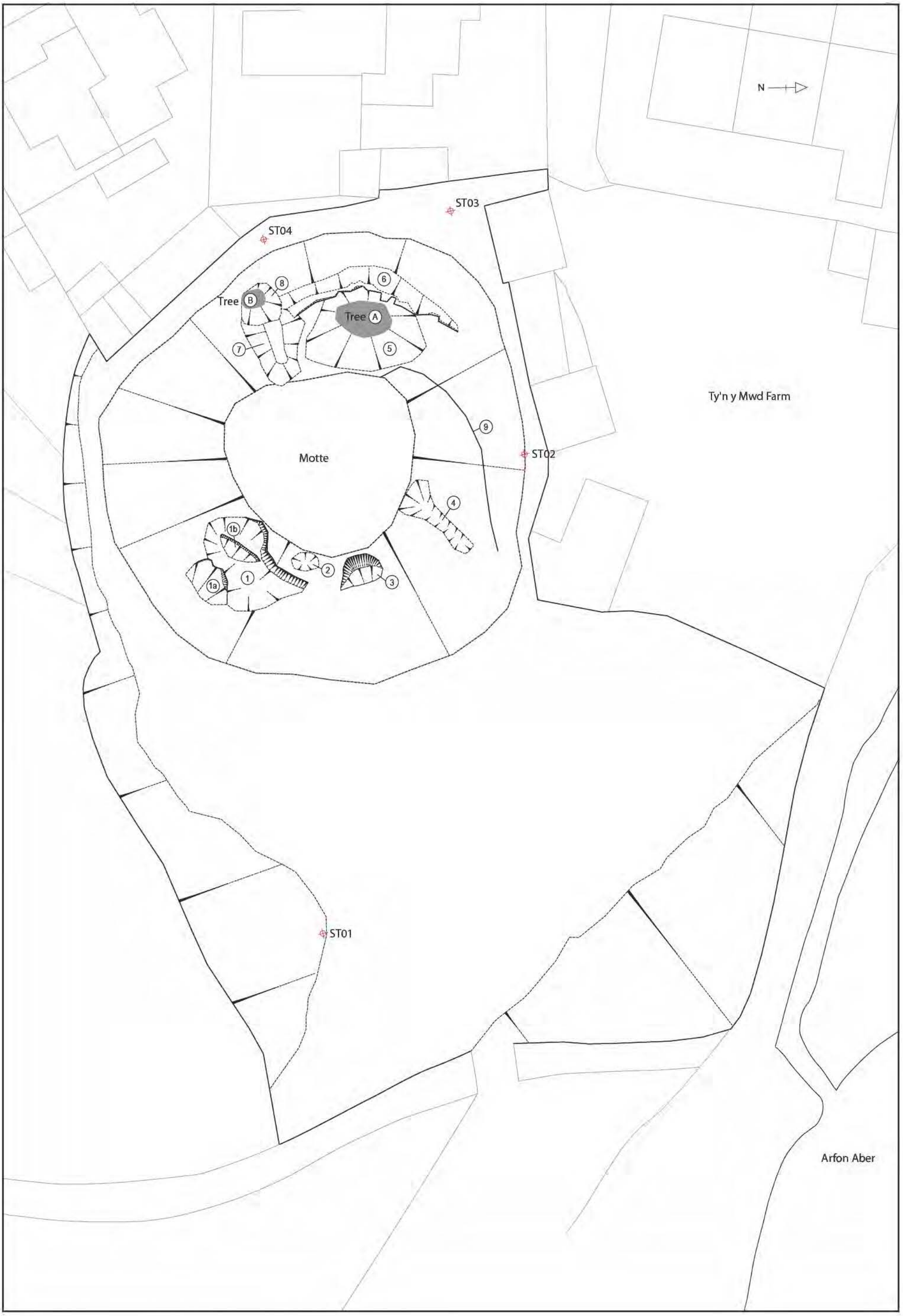

Figure 2. Survey of the motte at Ty'n y Mwd, Aber, including erosion scars. (Scale 1,300)

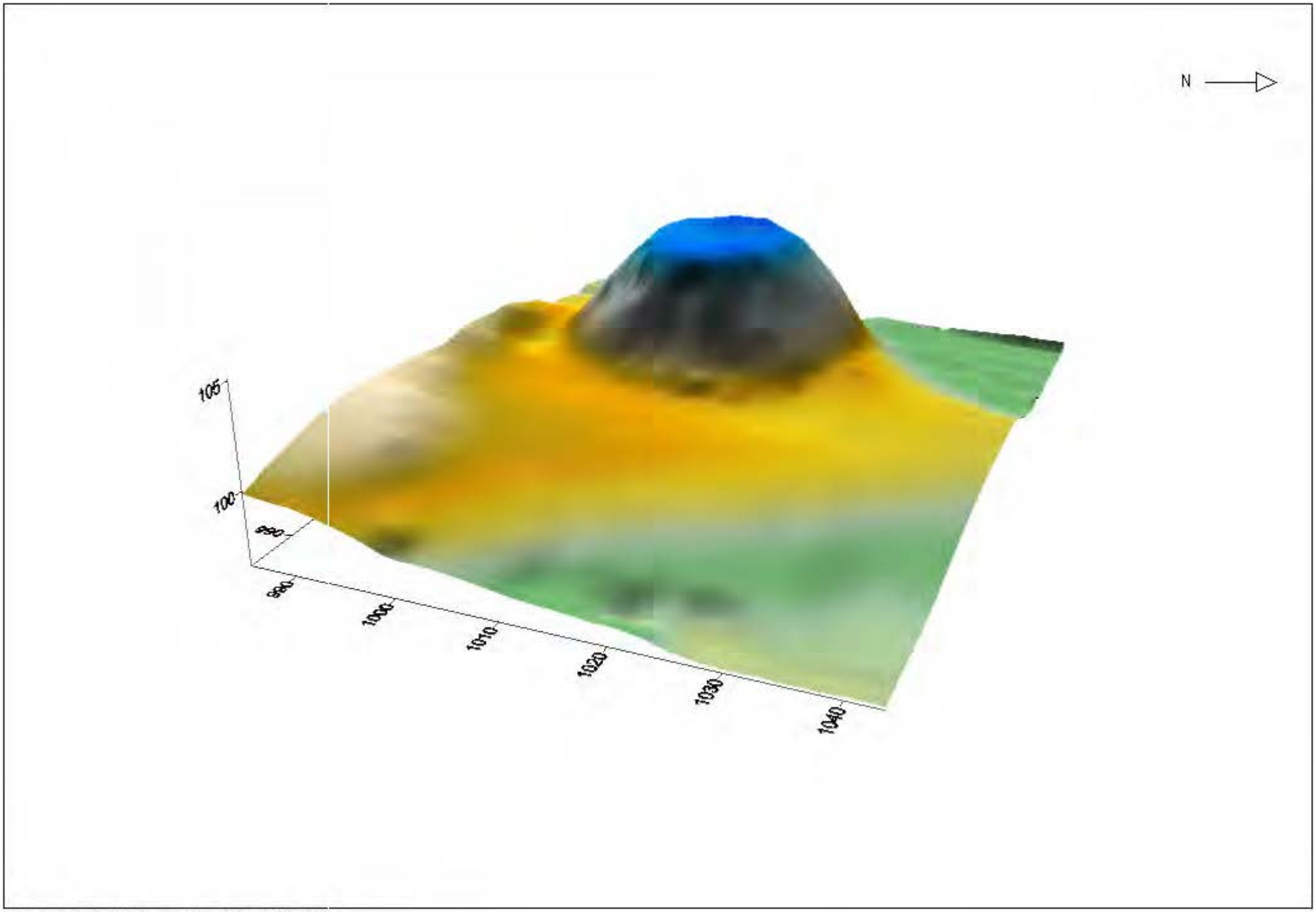

Figure 3. Model of the motte at Ty'n y Mwd, Aber.

Plate 1. View of the motte at Ty'n y Mwd facing southeast.

Plate 2. View of the motte at Ty'n y Mwd facing south.

Plate 3. View of the motte at Ty'n y Mwd facing west.

Plate 4. View of the motte at Ty'n y Mwd facing north east.

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