

# HERITAGE IMPACT ASSESSMENT

*Land adjacent to Cae Gors, Tregarth, Llandygaï, Gwynedd.*

ARS Report N°: 2021/150

GAT Event PRN: 46441



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# LAND ADJACENT TO CAE GORS, TREGARTH, LLANDYGAI, GWYNEDD:

## HERITAGE IMPACT ASSESSMENT

ARS LTD REPORT 2021/150



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**Planning Reference:** C21/0617/16/LL  
**GAT Event PRN:** 46141  
**Local Authority:** Gwynedd Council  
**Site central NGR:** SH 60685 68297

## EXECUTIVE SUMMARY

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Project Name: Land adjacent to Cae Gors, Tregarth, Llandygai, Gwynedd  
Planning Authority: Gwynedd Council  
Planning Reference: C21/0617/16/LL  
Location: Tregarth  
Parish: Llandygai  
Site central NGR: SH 60685 68297  
Date of Report: September 2021

MacLennan Construction Ltd commissioned Archaeological Research Services Ltd to produce a Heritage Impact Assessment (HIA) of a proposed development at land adjacent to Cae Gors, Tregarth, Gwynedd, with regard to how this might affect the setting of designated heritage assets within a 2km radius of the proposed development area, in accordance with pre-application advice provided by Cadw. This is following the submission of a planning application for a housing development: *'Full planning application for the erection of 12 no. affordable dwellings with associated access, parking and infrastructure on land adjacent to Cae Gors, Tregarth, Bangor'*.

Thirteen Scheduled Monuments and the recently inscribed World Heritage Site *The Slate Landscapes of North-west Wales* were assessed in accordance with the methodology detailed in *Settings of Heritage Assets in Wales* (Cadw 2017). The assessment has identified that there would be no impact upon the majority of these assets assessed due to the lack of intervisibility between them and the proposed development. There could be occasional, glimpsed views of the proposed development from a short length of the *Penrhyn Quarry Railway* Scheduled Monument, which forms part of the wider newly inscribed World Heritage Site. However, this part of the heritage asset is densely vegetated and therefore the impact of these glimpsed views upon the ability to would be of a negligible magnitude.

It is concluded that the proposed development would have a negligible impact upon the significance of the Scheduled Monument and wider World Heritage Site, or the ability to understand, appreciate or experience them.



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## CRYNODEB ANNHECHNEGOL

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Comisiynwyd Archaeological Research Services Cyf. gan MacLennan Construction Cyf. i baratoi Asesiad Effaith Treftadaeth o ddatblygiad arfaethedig ar dir ger Cae Gors, Tre-garth, Gwynedd, ynglŷn â sut y gallai hyn effeithio ar leoliad asedau treftadaeth dynodedig o fewn radiws 2km i'r ardal ddatblygu arfaethedig, yn unol â chynghor cyn y cais a ddarparwyd gan Cadw. Mae hyn yn dilyn cyflwyno cais cynllunio am gynllun datblygu tai: *'Cais cynllunio llawn i godi 12 o anheddau fforddiadwy gyda mynediad, parcio a seilwaith cysylltiedig ar dir ger Cae Gors, Tre-garth, Bangor'*.

Aseswyd tair ar ddeg o Henebion Cofrestredig a'r Safle Treftadaeth y Byd a ddynodwyd yn ddiweddar, Tirweddau Llechi Gogledd-orllewin Cymru, yn unol â'r fethodoleg y manylir arno yn Lleoliad Asedau Hanesyddol yng Nghymru (Cadw 2017). Mae'r asesiad wedi adnabod na fyddai unrhyw effaith ar y rhan fwyaf o'r asedau hyn oherwydd diffyg gwelededd rhyngddynt a'r datblygiad arfaethedig. Mae'n bosibl y gallai fod ambell gipolwg o'r datblygiad arfaethedig oddi ar ddarn byr o'r Heneb Gofrestredig Rheilffordd Chwarel y Penrhyn sy'n ffurfio rhan o'r Safle Treftadaeth y Byd ehangach sydd newydd ei ddynodi. Fodd bynnag, ceir llystyfiant trwchus yn y rhan hon o'r ased treftadaeth ac felly ni fyddai effaith y cipolygon hyn ar y gallu i werthfawrogi'r lleoliad ehangach o unrhyw bwys.

Cesglir na fyddai'r datblygiad arfaethedig yn cael fawr o effaith ar arwyddocâd yr Heneb Gofrestredig a'r Safle Treftadaeth y Byd ehangach na'r gallu i'w deall, eu gwerthfawrogi neu eu profi.

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# I INTRODUCTION

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## 1.1 Project and Planning Background

MacLennan Construction Ltd commissioned Archaeological Research Services Ltd to produce a Heritage Impact Assessment (HIA) of a proposed development at land adjacent to Cae Gors, Tregarth, Gwynedd, with regard to how this might affect the setting of designated heritage assets within a 2km radius of the proposed development area (hereafter 'PDA'). This is following the submission of a planning application for a housing development: '*Full planning application for the erection of 12 no. affordable dwellings with associated access, parking and infrastructure on land adjacent to Cae Gors, Tregarth, Bangor*'.

In its pre-application consultation response, Cadw provided a list of designated heritage assets that it considered could be affected by the proposed development:

◆ Scheduled Monuments:

CN056 Rhiw Coch Camp  
CN119 Sling Burial Chamber  
CN120 Pen Dinas Camp  
CN176 Coed Uchaf Hut Group  
CN195 Caer Pencraig Fort  
CN202 Parc Gelli Hut Group and Ancient Fields  
CN252 Hut Circle Settlement NW of Tan-y-Marian  
CN268 Enclosed Hut Circle Settlement at Cororion Rough  
CN287 Hut Circles West of Corbri  
CN297 Slate Gwaliau at Felin Fawr, Penrhyn  
CN393 Carnedd Howel Round Cairn

◆ World Heritage Site

Slate Industry of North Wales (candidate site) - Penrhyn Quarry and Bethesda, and the Ogwen Valley to Port Penryhn

Cadw went on to state:

*'The above designated historic assets are located inside 2km of the proposed development which is inside 250m of the boundaries of scheduled monument CN120 Pen Dinas Camp and the candidate World Heritage Site. The proposed development is likely to have an adverse impact on the settings of the designated historic assets which will be a material consideration in the determination of any planning application (see section 6.1.23 of Planning Policy Wales) but this issue has not been addressed in the documents that have been included in this consultation.*

*It is therefore strongly recommend that prior to the submission of any planning application for this development an assessment of the impact of the proposed development on the setting of the designated historic assets should be prepared by a competent and qualified historic environment expert in accordance with the methodology outlined in the Welsh Government's best-practice guidance Setting of Historic Assets in Wales (2017).*

*The completed report should be included with the documentation accompanying the planning application.'*



## 2 METHOD STATEMENT

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### 2.1 Approach

This Heritage Impact Assessment has been produced in accordance with the guidelines set out in Cadw's guidance document *Setting of Heritage Assets in Wales* (Cadw 2017). The approach to the assessment of significance is that set out in *Conservation Principles* (Cadw 2011), which states that the significance of heritage assets derives from the 'heritage values' that they possess, which may be *evidential, historical* (either *illustrative* or *associative*), *aesthetic* or *communal*.

### 2.2 Methodology

*The Setting of Heritage Assets in Wales* (Cadw 2017) recommends a 4-stage approach to the assessment of impacts to settings of heritage assets:

- ◆ Stage 1: Identify the historic assets that might be affected by a proposed change or development.
- ◆ Stage 2: Define and analyse the settings to understand how they contribute to the significance of the historic assets and, in particular, the ways in which the assets are understood, appreciated and experienced.
- ◆ Stage 3: Evaluate the potential impact of a proposed change or development on that significance.
- ◆ Stage 4: If necessary, consider options to mitigate or improve the potential impact of a proposed change or development on that significance.

For Stage 2, the guidance provides a detailed, but non-exhaustive, checklist of potential attributes of a setting that may help to elucidate its contribution to the significance of an asset' (Cadw 2017, 5-6). However, it should be noted that it may be the case that only a limited selection of the attributes listed is likely to be particularly important in terms of any single asset. The factors that might contribute to the setting of a heritage asset include:

- ◆ functional and physical relationships with other structures/historic assets and how these have changed over time
- ◆ topographic features that influenced its location
- ◆ physical character of the surrounding landscape or townscape, including any formal design or land use
- ◆ the original layout of the historic asset and how this has changed
- ◆ potential buried or archaeological elements surrounding the historic asset
- ◆ views to, from and across the historic asset or place
- ◆ formal or planned vistas
- ◆ the prominence of the historic asset in views throughout the surrounding area
- ◆ views associated with the aesthetic, functional or ceremonial purpose of the asset; for example, defensive sites, beacons or designed landscapes
- ◆ historical, artistic, literary, place name, cultural or scenic associations might all contribute to the significance of a historic asset
- ◆ other sensory elements — noise or smell associated with the historic asset

- ◆ tranquility, remoteness, ‘wildness’.

Similarly, for Stage 3, the guidance provides a ‘detailed, but non-exhaustive checklist of potential factors to be considered when assessing the impact of a proposed change or development within the setting of a historic asset’ (Cadw 2017, 8-9):

- ◆ the visual impact of the proposed change or development relative to the scale of the historic asset and its setting
- ◆ the visual impact of the proposed change or development relative to the location of the historic asset
- ◆ whether the proposed change or development would dominate the historic asset or detract from our ability to understand and appreciate it — for example, its functional or physical relationship with the surrounding landscape and associated structures and/or buried remains
- ◆ the presence, extent, character and scale of the existing built environment within the surroundings of the historic asset and how the proposed change or development compares with this
- ◆ the lifespan of the proposed change or development and whether or not the impact might be reversible
- ◆ the extent of tree cover, whether it is deciduous or evergreen, and its likely longevity
- ◆ the impact of artificial lighting — for example, on night-time views
- ◆ the capability of a landscape setting to absorb change or new development without the erosion of its key characteristics
- ◆ the impact of the proposed change or development on non-visual elements of the setting and character of the historic asset, such as sense of remoteness, evocation of the historical past, sense of place, cultural identity or spiritual responses
- ◆ the impact of non-visual elements of the proposed change or development, such as the removal or addition of noises and smell
- ◆ the cumulative effect of the proposed change or development - sometimes relatively small changes, or a series of small changes, can have a major impact on our ability to understand, appreciate and experience a historic asset.

## 2.3 Visibility Analysis

To inform an understanding of the extent of the potential intervisibility between the proposed development and the heritage assets within the 2km study area, two ‘Zone of Theoretical Visibility’ (ZTV) maps were produced (Figures 2 & 3). Such maps can be used to depict the predicted visibility of a development using a ‘bare-earth’ Digital Terrain Model (DTM) (i.e. without any vegetation or buildings) which would be indicative of a ‘worst case scenario’, which would not necessarily be a true reflection of the situation in reality. An initial ‘bare earth’ ZTV was produced using the DTM derived from the Ordnance Survey Landform Panorama data, which is a digital representation of the contours from Ordnance Survey’s 1:50 000 scale Landranger maps, at 50m resolution (Figure 2).

A second ZTV was then produced which utilised the Natural Resources Wales’ LiDAR data, which is available for most of the study area at 1m resolution (Figure 3). The LiDAR Digital Elevation Model (DEM) used was the Digital Surface Model (DSM), rather than the Digital Terrain Model (DTM) or ‘bare earth’ model, which removes buildings and vegetation from the DEM. The DSM takes into account the

likely screening effect of buildings and vegetation, thereby giving a more realistic impression of where visibility might be possible, albeit still an approximation. However, it should be noted that there was no LiDAR coverage for part of the study area to the south-west of the PDA (depicted as a shaded wedge on Figure 3), and therefore the ZTV did not extend into this area.

Both of the ZTVs were created by creating a series of points along the rooflines of each of the proposed new houses, assuming an average roofline height of 8m above ground level, (an approximate roof height confirmed by the architects' building elevation drawings). The Quantum GIS Visibility Analysis plugin was used to produce a cumulative 'viewshed' from these points, thereby giving an indication as to the extent of the visibility of the proposed new buildings within the surrounding landscape, as represented by the DTM (Figure 2) and DSM (Figure 3).

### 3 SETTING ASSESSMENT

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#### 3.1 Step 1: Identify which heritage assets and their settings are affected

The following discussion will make reference to the ZTVs discussed above in order to help identify which of those heritage assets highlighted by Cadw might be affected by the proposed development, in addition to providing a discussion of the 'ground truthing' visits undertaken at a number of the assets under consideration. It should be noted that since Cadw's original consultation response was provided in June 2021, *The Slate Industry of North Wales* candidate World Heritage Site (WHS) has been inscribed onto the World Heritage list by UNESCO. In addition to this, two elements of the new WHS have also been designated as Scheduled Monuments by Cadw (CN415 & CN417), and consequently these assets have also been given due consideration in the discussion that follows.

##### 3.1.1 Cadw Scheduled Monument CN056 - Rhiw Coch Camp

This late prehistoric settlement site is described by Cadw as '*The remains of an enclosed hut group standing on a level terrace on a W-facing hillslope*', and is located c.1.36km to the north-east of the PDA (Photograph 1). This Scheduled Monument is located within the both the 'bare earth' ZTV (Figure 2) and the ZTV created from the LiDAR DSM (Figure 3), which takes some consideration of the potential screening effect of any intervening woodland and buildings. A 'ground-truthing' visit was undertaken to test this, and this identified that, in reality, views of the PDA are screened by the intervening dense vegetation in the foreground (Photographs 2 and 3). Buildings located on the higher ground beyond the DBA in the Dob area of Tregarth are visible above the treeline in the foreground, and to the south (left) of this, the cluster of buildings forming the area of the village known as Braich are visible. Even more visible is the 20<sup>th</sup> century development to the north (right) of the PDA, which spreads along the hillside above *Ffordd Tanrhiw* (see later discussion regarding the *Tal-y-Cae* development in section 3.3.4 below). *Ffordd Tanrhiw* is where terraced housing was built by Lord Penrhyn for those workers who were willing to break the 1900-1903 strike at Penrhyn Quarry, whilst the white buildings visible to the right in Photograph 2 are the later *Tal-y-Cae* development on the hillside above.

It should be acknowledged that the 'ground-truthing' visit to this site was undertaken in August when the intervening trees were fully in leaf, and views would evidently be more permeable in the winter months once the leaves have been shed. Nevertheless, even if glimpses of the roofs of the proposed new housing within the PDA were possible through the bare trees, the visual impact of this would be negligible, and they would be seen in the general context of the other scattered buildings associated with the extended settlement at Tregarth. It is concluded, therefore, that the setting of the Rhiw Coch Camp Scheduled Monument would remain unaffected by the proposed development, and this will not be assessed further.

### **3.1.2 Cadw Scheduled Monument CN119 - Sling Burial Chamber**

This Scheduled Monument is c.1.4km to the south of the PDA and is a considerable distance outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3), and therefore would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.3 Cadw Scheduled Monument CN120 - Pen Dinas Camp**

This Iron Age promontory hillfort is located c.290m to the south-east of the PDA, and occupies a commanding hilltop position overlooking the River Ogwen valley which lies beyond to the east. The 'bare earth' ZTV suggests that theoretically, there could be intervisibility between part of the western area of the Scheduled Monument and some of the roofs of the proposed new buildings within the PDA (Figure 2). However, the ZTV created from the LiDAR DSM indicates only a very small area along the western edge of the scheduled area might be within the visual envelope of the roofs of the proposed new houses. In reality, however, this is merely indicating potential intervisibility between the proposed new building and the tops of the trees along the western edge of the scheduled area. The hillfort is in fact densely wooded as well as not being publically accessible, and there would be no visual impact upon its setting as a result of the proposed development, and therefore will not be assessed further.

### **3.1.4 Cadw Scheduled Monument CN195 - Caer Pencraig Fort**

This small hillfort occupies a prominent rocky hill and is located c.1.55km to the south-west of the PDA. The 'bare earth' ZTV suggests that theoretically, there could be intervisibility between part of the northern area of the Scheduled Monument and some of the roofs of the proposed new buildings within the PDA (Figure 2). Unfortunately, there is no LiDAR data available for this part of the study area and therefore the theoretical visual envelope of the proposed development with the screening afforded by the intervening vegetation does not extend this far (Figure 3). However, it is evident that this screening effect would be considerable, as there is a dense swathe of woodland c.0.5km in length in the intervening area immediately to the south-west of the PDA, and the northern slopes of the rocky hill upon which the Scheduled Monument is located (where the 'bare earth' ZTV suggests there is potential intervisibility) is also heavily wooded. Even if glimpsed views of some of the rooftops of the proposed development were possible, for example in the winter when the trees have shed their leaves, similarly to Rhiw Coch Camp (see 3.1.1 above) these would be seen within the general context of the surrounding buildings and rooflines associated with the dispersed settlement already extant at Tregarth. It is concluded, therefore, that the setting of the Caer Pencraig Fort Scheduled Monument would remain unaffected by the proposed development, and this will not be assessed further.

### **3.1.5 Cadw Scheduled Monument CN202 - Parc Gelli Hut Group and Ancient Fields**

This Scheduled Monument is c.450m to the north-west of the PDA and almost wholly outside of the visual envelope of the PDA indicated by the 'bare earth' ZTV (Figure 2), and some distance beyond the visual envelope indicated by ZTV produced from the DSM (Figure 3). Consequently, it is concluded that it would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.6 Cadw Scheduled Monument CN252 - Hut Circle Settlement NW of Tan-y-Marian**

This Scheduled Monument is c.1.9km to the north-east of the PDA and is a considerable distance outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3), and therefore would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.7 Cadw Scheduled Monument CN268 - Enclosed Hut Circle Settlement at Cororion Rough**

This Scheduled Monument is c.1.16km to the WNW of the PDA and is a considerable distance outside of the visual envelope of the PDA indicated by the 'bare earth' ZTV (Figure 2). Although only the

eastern side of the scheduled area is covered by the LiDAR data used to produce the ZTV illustrated on Figure 3, it is clear from Figure 2 that it would remain unaffected by the proposed development, and therefore need not be assessed further.

### **3.1.8 Cadw Scheduled Monument CN287 - Hut Circles West of Corbri**

This Scheduled Monument is c.1km to the ENE of the PDA, and, as well as being densely wooded, is also outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3), and therefore would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.9 Cadw Scheduled Monument CN297 - Slate Gwaliau at Felin Fawr, Penrhyn**

This Scheduled Monument is c.1.96km to the ESE of the PDA and is a considerable distance outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3), and therefore would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.10 Cadw Scheduled Monument CN393 - Carnedd Howel Round Cairn**

This Scheduled Monument is c.1.58km to the north-east of the PDA and is a considerable distance outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3), and therefore would remain unaffected by the proposed development, and will not be assessed further.

### **3.1.11 Cadw Scheduled Monument CN415 – Penrhyn Slate Quarry Railroad**

There are four separate sections of this Scheduled Monument within the 2km study area, including two areas to the north of the PDA (bisected by the A55), and an area which terminates c.1km to the south of the PDA, which are all wholly outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3). These areas would not be affected by the proposed development, and will not be assessed further. A fourth section is located c.290m to the north-east of the PDA at its closest point, and is c.300m in length. This is also largely outside visual envelope of the proposed development indicated by the ‘bare earth’ ZTV (Figure 2), although two of the roof points could theoretically be visible along a length of c.140m of the Scheduled Monument. However, in reality, this part of the course of the former railroad passes through a sewage treatment plant in a largely wooded area, and confirmation of the consequent lack of intervisibility with the PDA is provided by the LiDAR DSM ZTV (Figure 3). Consequently, this Scheduled Monument will not be assessed further, although nearby elements of the wider WHS are within the ZTV, and this will be addressed further in section 3.1.13 below.

### **3.1.12 Cadw Scheduled Monument CN417 – Penrhyn Quarry Railway**

The Penrhyn Quarry Railway was constructed in the 1870s to replace the earlier Penrhyn Slate Quarry Railroad (see CN415 above), and reused much of the same foundation from Penrhyn Quarry as far as the Dinas incline, c.285m to the east of the PDA. All of the scheduled area to the south of the Dinas incline is outside of the visual envelope of the PDA (as illustrated on Figures 2 and 3) and would not be affected by the proposed development. However, after the course of the later railway veers off to the south-west rather than descending the Dinas incline along the course of the earlier railroad, it subsequently enters into the visual envelopes of both the ‘bare earth’ and DSM ZTVs. The potential effects of this will be discussed in more detail in section 3.3 below.

### **3.1.13 UNESCO WHS 1633 - The Slate Landscape of Northwest Wales - Penrhyn Slate Quarry and Bethesda, and the Ogwen Valley to Port Penrhyn**

The part of this newly inscribed WHS that could be affected by the proposed development almost wholly corresponds with that part of Scheduled Monument CN417 as described above. Consequently, the potential impacts to these coterminous designated areas will largely be discussed in tandem in section 3.3 below.

However, the ZTVs also indicate that glimpsed views towards the PDA might be possible from those parts of the WHS to the north of the PDA that extend further to the west than the more narrowly defined Scheduled Monument CN415 discussed in section 3.1.11 above. Consequently, this area was assessed as part of the 'ground-truthing' exercise, but it was readily apparent that the intervening dense vegetation prevents any intervisibility between this part of the WHS and PDA (Photographs 4-9). This intervening vegetation is of such a density that it is considered unlikely that there could be intervisibility with this inscribed area and the PDA even during the winter when views would be more permeable.

An attempt was also made to 'ground-truth' the potential visual impacts from that part of the WHS that is coterminous with Scheduled Monument CN417. However, that part of the former course of the Penrhyn Quarry railway to the east of *Tal Gae* (the road adjacent to the PDA) is not publically accessible and could not, therefore, be assessed on the ground. Nevertheless, it can be concluded that as this part of the former trackbed for the railway is fenced off from the adjoining fields and has been colonised by mature trees (Photographs 11 and 12), it is considered that any visibility of the PDA that might be possible would be very limited and intermittent. Indeed, it was not possible at the time of the 'ground-truthing' exercise to obtain any clear views of the trackbed itself from the vicinity of the PDA due to the dense intervening vegetation (Photographs 10-12). Whilst views might be more permeable in the winter months when the trees have shed their leaves, it is still considered that intervisibility between this part of the WHS and Scheduled Monument and the PDA would be very limited. It might be possible to obtain glimpsed views into the PDA for example, from the nearby area of the embankment adjacent to the former *Corrig-Llwydion* Bridge (GAT HER PRN 65560) which took the railway over *Tal Gae* (Photograph 13). However, as this area is not publically accessible, this could not be confirmed either way.

It was, however, possible to access that part of the WHS to the west of *Tal Gae*, and this was achieved by following the permissive footpath from the western (Dob) area of Tregarth along the top of the railway embankment. This confirmed that although much of this area falls within the theoretical visual envelope of the proposed development, in reality the embankment here is densely vegetated with mature trees that effectively screen views towards the PDA along most of its length (Photograph 14). As the embankment passes the southern end of the field that contains the PDA, it is possible to obtain occasional glimpsed views into this area through the trees, but these are rare (Photograph 15).

Running beneath the embankment, part of the former course of the Bethesda branch of the London & North Western Railway (L&NWR) is also included within the WHS (but not the Scheduled Monument), but this is almost wholly screened from the PDA, most of sitting within a railway cutting (Photograph 16). Continuing in a north-westerly direction beneath the brick-built single-arch skew bridge (GAT HER PRN 65561) which was built to carry the Penrhyn Quarry Railway over the L&NWR, it is possible to obtain glimpsed views through the trees into the field containing the PDA (Photographs 18 and 19). However, similarly to those views from the embankment above, these glimpses are rare, although it is likely that the view through the vegetation would be more permeable in the winter months.

### **3.2 Step 2: Assess whether, how, and to what degree these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated**

Step 1 of this assessment has identified that part of the newly designated *Penrhyn Quarry Railway* Scheduled Monument could be affected by the proposed development, and that this scheduled area is largely coterminous with part of the newly inscribed WHS *The Slate Landscape of Northwest Wales (Component Part 1- Penrhyn Slate Quarry and Bethesda, and the Ogwen Valley to Port Penrhyn)*. As



the elements of these two designated areas which could be affected are essentially referring to the same heritage asset (i.e. the Penrhyn Quarry Railway), they will be discussed in tandem in the discussion that follows, although reference will also be made to elements of the wider WHS where this would help to understand its significance.

The following sections make reference to Cadw's checklist of 'potential attributes of a setting which can help to elucidate its contribution to the significance of an asset' (Cadw 2017, 5-6), and provides key observations that can be made regarding the setting of the Scheduled Monument and the wider WHS of which it forms a part.

### **3.2.1 Functional and physical relationships with other structures/historic assets and how these have changed over time**

The Penrhyn Quarry Railway was constructed in the 1870s to replace the earlier Penrhyn Slate Quarry Railroad (Scheduled Monument CN415), and, as discussed previously, re-used much of its earthwork formation in the area to the north of the quarry, as far as the Dinas incline. At this point, it veered off to the south-west and continued on to Tregarth, and it is within the setting of this section of the railway that the PDA is located. When the new railway was completed, the earlier railroad fell out of use and was dismantled, c.1879.

Other heritage assets associated with this section of the railway include the *Corrig-Llwydion* Bridge, (GAT HER PRN 65560), which carried the railway across the road known as *Tal Gae*, which abuts the north-eastern edge of the PDA. The steel bridge spanning the road has since been dismantled, but the stone abutments to either side of the road are still extant (Photograph 13). When the L&NWR Bethesda Branch was constructed in the early 1880s (opened 1884), a new brick built bridge was constructed (GAT HER PRN 65561) which was required to take the recently built Penrhyn Quarry Railway over the new line (Photograph 17).

The Penrhyn Quarry Railway ceased to operate in 1962 (passenger services for the quarry workers having ceased in 1947), and was subsequently dismantled in 1965, and the steel structure of *Corrig-Llwydion* Bridge was removed down to its wing walls and abutments. Similarly, the L&NWR Bethesda branch line was closed to passengers in 1951 and was closed in 1963 when goods services also ceased. Whilst the former embankment of the Penrhyn Quarry Railway has become largely overgrown and abandoned it is still used as a permissive footpath, whilst the L&NWR has been re-developed as part of the Ogwen Trail, which forms the first section of the National Cycle Network's route 82 that runs from Bangor and enters the Snowdonia National Park at Bethesda.

### **3.2.2 Topographic features that influenced its location**

The Penrhyn Quarry Railway was constructed to take slate from Penrhyn Slate Quarry to the coastal port at Porth Penrhyn, from where it was then exported across the globe. The section under consideration here was constructed along a more circuitous route than the earlier railroad that it replaced, as it was designed to avoid having to utilise inclined planes, of which the earlier route required three. It was for this reason that the new course of the railway swerved to the south-west c.285m to the east of the PDA, at the site of the former winding drum house (GAT HER PRN 65540) at the top of the Dinas inclined plane (GAT HER PRN 65539).

### **3.2.3 Physical character of the surrounding landscape or townscape, including any formal design or land use**

As the WHS covers a large part of North-West Wales, the physical character of the surrounding landscapes and townscapes are varied. The following description from UNESCO's Statement of Outstanding Universal Value for the WHS provides useful context: *'The quarries and mines are monumental in scale, comprising stepped hillside workings, deep pits and cavernous underground*

*chambers, massive cascading tips, ingenious water systems, and a range of industrial buildings. Outstanding technical equipment and major engineering features survive. Innovative transport systems linked quarries and processing sites with purpose-built coastal export harbours and with main-line railways. Grand country houses and estates built by leading industrialists contrast with workers' vernacular settlements, with their characteristic chapels and churches, band-rooms, schools, libraries and meeting-places.'*

The area surrounding the PDA which includes the affected part of the WHS was mapped as part of the Arfon Historic Landscape Characterisation (HLC), as belonging to the *Sling and Tregarth* HLC unit. The following description is provided regarding the historic landuse of this specific area: *'An area formerly part of the Penrhyn estate, and largely made up of ffriddoedd in the mid-eighteenth century. Part remains unenclosed, but much of it was given over to housing for quarrymen and quarry officials in the nineteenth century'* (GAT 2000, 74). The key historic landscape characteristic is described as 'Industrial settlement': *'An area which retains some of the open fields of the pre-Modern sheepwalk, as well as some possibly early slate-quarrying sites (Chwarel Goch) but which is largely given over to nineteenth century housing, partly vernacular, partly 'estate vernacular'. These preserve many distinctive estate features, such as the use of ornamentation in porches etc, suggesting that they were for quarry stewards. The course of the Penrhyn Railway of 1801 passes through the area'* (Ibid.).

### **3.2.4 The original layout of the historic asset and how this has changed**

As discussed in section 3.2.1 above, the Penrhyn Quarry Railway ceased to operate in 1962 (passenger services for the quarry workers having ceased in 1947), and was subsequently dismantled in 1965. Although the associated embankments and cuttings remain largely *in situ*, some areas, such as that passing close to the PDA, has become overgrown and densely vegetated, whilst other areas have been re-used as roads or trackways.

### **3.2.5 Potential buried or archaeological elements surrounding the historic asset**

The WHS passes through an area that is relatively archaeologically rich, and especially replete with remains dating to the prehistoric, Romano-British, medieval and industrial periods.

### **3.2.6 Views to, from and across the historic asset or place**

Whilst no specific 'Significant Views', 'Arcs of View' or 'Essential Setting' have been mapped alongside the boundaries of this WHS, the following describes the significant views associated with *Component Part 1 (Penrhyn Slate Quarry and Bethesda, and the Ogwen Valley to Port Penrhyn)*: *'Views within the quarry convey the immense size of the relict workings. Views from the southern part of the relict quarry take in the settlements associated with it, including Penrhyn Castle, as well as the Menai Straits and Liverpool Bay. The 'moving view' for travellers making their way north on the historic Telford post road (the A5) shows how the giant tips of slate rubble have encroached on the pre-existing farmland of Nant Ffrancon, and for those on the Chester-Holyhead railway and the A55, the Neo-Norman keep of Penrhyn Castle dominates the landscape around the northern, coastal end. Views towards the quarry from the castle are for the most part restricted by the trees in the parkland; however, notably the quarry is visible from the 'slate bedroom', a room with public access, in the castle.'* (The Slate Landscape of Northwest Wales Partnership Steering Group n.d, 67).

With regard to that part of the *Penrhyn Quarry Railway* under consideration here, due to its highly vegetated nature, views to from and across the asset are screened and it is largely hidden from view, and likewise all but the occasional glimpse out into the surrounding landscape are possible from it.

### **3.2.7 Formal or planned vistas**

There are no formal or planned vistas associated with the industrial elements of WHS, but Penrhyn Castle and its surrounding parkland have elements of formal design. The Listed Building description

for Penrhyn Castle (Cadw 3659) states that it was '*sited and built so that it could be seen not only from the quarries, but most parts of the surrounding estate, thereby emphasizing the local dominance of the Dawkins-Pennant family*'.

### **3.2.8 The prominence of the historic asset in views throughout the surrounding area**

Whilst certain elements of the WHS, not least Penrhyn Quarry itself and Penrhyn Castle (see listing description above), are especially prominent features in the landscape, the course of the Penrhyn Quarry Railway as it passes through the study area is largely hidden from view due to the dense covering of vegetation. Nevertheless, the surviving abutments and wing walls of *Corrig-llwydion* Bridge (GAT HER PRN 65560) are locally prominent features in the immediate vicinity of the PDA for those travelling along *Tal Gae*. In addition, the brick-built single-arch skew bridge (HER 65561) built to carry the Penrhyn Quarry Railway over the L&NNWR appears as a prominent feature from a short section of the Ogwen Trail as it approaches and passes beneath (Photograph 17).

### **3.2.9 Views associated with the aesthetic, functional or ceremonial purpose of the asset; for example, defensive sites, beacons or designed landscapes**

As noted in section 3.2.7 above, Penrhyn Castle was sited to dominate the surrounding landscape, but there are no key views associated with the Penrhyn Quarry Railway element of the WHS.

### **3.2.10 Historical, artistic, literary, place name, cultural or scenic associations might all contribute to the significance of a historic asset**

The affected part of the Penrhyn Quarry Railway passes through an area which was mapped as *Bethel (between Clynog and Bangor)* (GWNDDCLS008) as part of the Cultural Landscape Aspect of Natural Resources Wales' Landmap assessment. As part of this assessment, the following questions were asked: *Are there any art/artistic expressions associated with the landscape/area? Are there any folklore/legends associated with the landscape/area? Are there any events/traditions associated with the landscape/area?* As no answers were provided for any of these questions, it is assumed that no such associations are known, and therefore these do not contribute to the significance of the railway.

### **3.2.11 Other sensory elements — noise or smell associated with the historic asset**

None identified.

### **3.2.12 Tranquility, remoteness, 'wildness'.**

There is some sense of tranquillity and remoteness afforded by the surrounding dense vegetation when walking along the overgrown former railway embankment from the Dob area of Tregarth and continuing alongside Tregarth Park. However, when this footpath subsequently descends to meet the Ogwen Trail to the south-east of the PDA, this sense is reduced as this cycle route is relatively busy, being popular with both cyclists and walkers.

## **3.3 Step 3: Assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it**

### **3.3.1 The visual impact of the proposed change or development relative to the scale of the historic asset and its setting**

Both the WHS and, albeit to a lesser degree, the Scheduled Monument and their settings extend across a large part of North-West Wales, and the proposed development is consequently considered to be diminutive in relation to this. Consequently, there would be a negligible overall impact upon the wider significance or the ability to appreciate it.

### **3.3.2 The visual impact of the proposed change or development relative to the location of the historic asset**

Notwithstanding the previous point regarding the scale of the WHS and Scheduled Monument, the ‘ground-truthing’ of the ZTV indicates that it is very difficult to gain views into the PDA from the surrounding landscape due to the surrounding dense vegetation. Similarly, that part of the Penrhyn Quarry Railway that falls within the ZTV is also very difficult to appreciate from the surrounding landscape for the same reason, except for when actually walking along it. It is likely that it will be possible to obtain glimpsed views of the proposed development along a discrete area of the WHS/Scheduled Monument, when looking through the trees that line both the permissive footpath that runs along the top of the railway embankment (Photograph 15), and the Ogwen Trail below (Photograph 18). Whilst these views would be more permeable in the winter when the trees have shed their leaves, they would still not be particularly prominent, and would be peripheral to the visual focus along the direction of travel.

### **3.3.3 Whether the proposed change or development would dominate the historic asset or detract from our ability to understand and appreciate it — for example, its functional or physical relationship with the surrounding landscape and associated structures and/or buried remains**

As discussed above, the proposed development would not be prominent in views from the WHS/Scheduled Monument. Whilst there is some functional relationship between the former railway and the row of terraced housing to the north of the PDA built by Lord Penrhyn along *Ffordd Tanrhiw* for his quarry workers, there is no visual relationship between the two due to the dense intervening vegetation. The proposed development would not, therefore, dominate the historic asset or detract from our ability to understand and appreciate it.

### **3.3.4 The presence, extent, character and scale of the existing built environment within the surroundings of the historic asset and how the proposed change or development compares with this**

Although the proposed development would be located in a ‘greenfield’ location, this is immediately adjacent to a north-eastern lateral extension to the settlement at Tregarth. This is a polyfocal settlement, which originally developed around two areas, Dob or Tregarth to the west, and Braich or Thalgae further to the east. Whilst there were a number of isolated farmsteads and cottages in the area to the north of the PDA by the close of the 19<sup>th</sup> century (e.g. *Tanrhiw* and *Tal-y-cae*), it wasn’t until the turn of the 20<sup>th</sup> century that this area saw more sustained settlement activity. This occurred when Lord Penrhyn built a series of terraces along the north side of *Fford Tanrhiw* to house those workers who were prepared to break the 1900-03 strike at Penrhyn Quarry. These stone and slate fronted buildings along the north side of the road have a distinctive character, and are fine examples of the vernacular estate housing. Subsequently, this part of Tregarth expanded further in the 1960s when further terraced housing was constructed along a parallel street to the south, *Bro Syr Ifor*, probably named in honour of Sir Ifor Williams, the noted local academic who had died in 1965. These modern pebble dashed terraces with separate garage blocks were set at a lower level than the grander terraces along *Fford Tanrhiw* and this created a dichotomy between these two disparate elements of this expanding 20<sup>th</sup> century townscape. In addition, a third character area was added at around this time to the rear (north) of *Fford Tanrhiw*, with the construction of a *cul-de-sac* named *Erw Faen* which comprised a series of semi-detached, clad houses. More recently, further housing comprising detached two-storey dwellings and bungalows has been built further up the hill to the north of *Ffordd Tanrhiw* along a circular *cul-de-sac* behind the dwelling named *Tal-y-cae*, which gave its name to this new development.

In conclusion, the part of the polyfocal settlement of Tregarth that coalesced around *Ffordd Tanrhiw*

in the area immediately to the north of the PDA is largely 20<sup>th</sup> century in date, and comprises four disparate elements or character areas which infilled the gaps between the scattered pre-existing 19<sup>th</sup> century or earlier farmsteads and cottages. The proposed new development would add to this mix by appending a fifth character area to the southern edge of the settlement. This would comprise 12 affordable homes, each with off-road parking provision for two vehicles. To the rear, each dwelling will have a patio, a laid to lawn garden, a shed and an area for bins and recycling. The buildings would comprise three semi-detached blocks and two terraces of three dwelling each. The detailed design of the buildings has yet to be determined, but the Planning Statement provides the following details: *'The proposed dwellings will be constructed from either traditional brick and block or timber frame. Elevational treatment is proposed to include facing brick, render and cladding; all of which will be confirmed via the imposition of a 'materials condition'. Windows and door will be uPVC and it is proposed that the roof covering will be slate or roof tiles, again this will be confirmed via the imposition of a 'materials condition' (Caulmert Ltd 2021)*

### **3.3.5 The lifespan of the proposed change or development and whether or not the impact might be reversible**

It is to be assumed that the development is intended to be permanent, but evidently could be reversible if circumstances dictated it, or the PDA could be re-developed at some point in the future if this was deemed desirable.

### **3.3.6 The extent of tree cover, whether it is deciduous or evergreen, and its likely longevity**

As discussed at various points during this assessment, the PDA is surrounded on three sides by dense tree cover, which affords a considerable amount of screening to and from the surrounding landscape. The north-western side of the PDA which abuts *Tal Gae* also has scattered trees along the boundary. It is understood that some of the smaller trees along this boundary would be removed as part of the development proposals, but the two large oaks on this boundary will be retained. It is also understood that there might be some tree removal associated with the diversion of the watercourse towards the northern end of the PDA, but many of the trees are likely to be retained in this area, which will be developed as an ecological corridor. It is also noted that planting of new native trees, shrubs and hedges is proposed to mitigate impacts associated with tree removals.

### **3.3.7 The impact of artificial lighting — for example, on night-time views**

There will evidently be a requirement for new street lighting associated with the development, however, it has already been noted there would be very limited intervisibility between the proposed development and the nearby WHS/Scheduled Monument due to the surrounding dense vegetation. In addition, there is already extant street lighting nearby along *Ffordd Tanrhiw* and *Bro Syr Ifor*.

### **3.3.8 The capability of a landscape setting to absorb change or new development without the erosion of its key characteristics**

The key historic landscape characteristic of this area surrounding the PDA is described as 'Industrial settlement', and, as discussed above, this has seen gradual expansion throughout the latter part of the 20<sup>th</sup> century, and is an ongoing landscape process. The earthworks associated with the formation of the Penrhyn Quarry Railway which are the main subject of this assessment have a setting which would remain a mix of the former sheepwalks and settlement, and whilst the latter element is no longer purely industrial in nature, the evolving landscape is able to absorb this change with the key historic characteristics intact.



### **3.3.9 The impact of the proposed change or development on non-visual elements of the setting and character of the historic asset, such as sense of remoteness, evocation of the historical past, sense of place, cultural identity or spiritual responses**

It is considered that the proposed development would not adversely impact any non-visual elements of the setting and character of the WHS/Scheduled Monument.

### **3.3.10 The impact of non-visual elements of the proposed change or development, such as the removal or addition of noises and smell**

Whilst it is possible that there could be a temporary increase in noise during construction that could potentially be heard from the WHS/Scheduled Monument, it is considered that there would be no further additional impacts subsequent to this. This impact, should it occur, would have only a very minor effect upon the WHS/Scheduled Monument and would not affect the ability to understand, appreciate or experience the asset.

### **3.3.11 The cumulative effect of the proposed change or development - sometimes relatively small changes, or a series of small changes, can have a major impact on our ability to understand, appreciate and experience a historic asset**

There has been some cumulative effect upon the industrial housing along *Ffordd Tanrhiw* with the addition of the later housing developments discussed in section 3.3.4 above, and the proposed development would add to this. However, the historic character of this industrial housing and its connection with the story of Penrhyn Slate Quarry and the wider slate industry can still be readily understood, appreciated and experienced.

## **3.4 Step 4: Explore ways to maximise enhancement and avoid or minimise harm**

As the only potential impacts identified as a result of this assessment are of a very minor nature, it is not considered appropriate to suggest any detailed mitigation strategy. Nevertheless, any additional screening that could be incorporated in to the design along the south-eastern edge of the PDA or in the area beyond would serve to reduce any slight suburbanising effect that might occur as a result of the glimpsed views of the modern housing development from the discrete parts of the WHS/Scheduled Monument discussed above.

## **3.5 Step 5: Make and document the decision and monitor outcomes.**

This report documents the decision-making process with regard to this assessment, but the outcomes cannot be considered until after the application has been determined and therefore this is outside the scope of this assessment.

## **4 CONCLUSIONS**

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This assessment has assessed the potential impacts of the proposed development upon the settings of the eleven Scheduled Monuments identified by Cadw as requiring assessment. In addition, the recently inscribed WHS *The Slate Landscapes of North-west Wales - Penrhyn Slate Quarry and Bethesda, and the Ogwen Valley to Port Penrhyn* and two newly designated Scheduled Monuments (*The Penrhyn Slate Quarry Railroad* and *Penrhyn Quarry Railway*) have also been assessed, in accordance with the methodology detailed in *The Settings of Heritage Assets in Wales* (Cadw 2017).

The assessment has identified that there would be no impact upon the majority of the assets assessed due to the lack of intervisibility between them and the proposed development. There could be occasional, glimpsed views of the proposed development from a short length of the WHS/Penrhyn Quarry Railway Scheduled Monument as it traverses the hillside to the east. However, this area is not publically accessible



and therefore this is a potential impact that would rarely be experienced. There is also a dense band of trees growing upon this section of the embankment that would prevent all but the occasional view into the development. Further glimpsed views of the development might be possible from two very small discrete areas where the former railway passes close to the south-eastern boundary of the PDA, and below this where the former L&NWR line (now the Ogwen Trail) passes beneath the embankment. Whilst these views would be more permeable in the winter when the trees have shed their leaves, they would still not be particularly prominent, and would be peripheral to the visual focus along the direction of travel for walkers and cyclists utilising these former railway routes.

It is concluded that these slight visual impacts, and other potential temporary noise impacts during construction, would overall have a negligible effect upon how the physical remains of the Penrhyn Quarry Railway Scheduled Monument and the wider WHS are understood, appreciated and experienced.

## 5 STATEMENTS AND ACKNOWLEDGEMENTS

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### 5.1 Publicity, Confidentiality and Copyright

Any publicity will be handled by the client. Archaeological Research Services Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

### 5.2 Statement of Indemnity

All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

### 5.3 Acknowledgements

Archaeological Research Services Ltd would like thank Neil Foxall of Caulmert Ltd for commissioning this work on behalf of the client, Jane Davies of MacLennan Construction Ltd for arranging site access. Also *diolch yn fawr* to Martin Davis and *Afiaith Gwasanaeth Cyfiethnu* for providing the executive summary translation.

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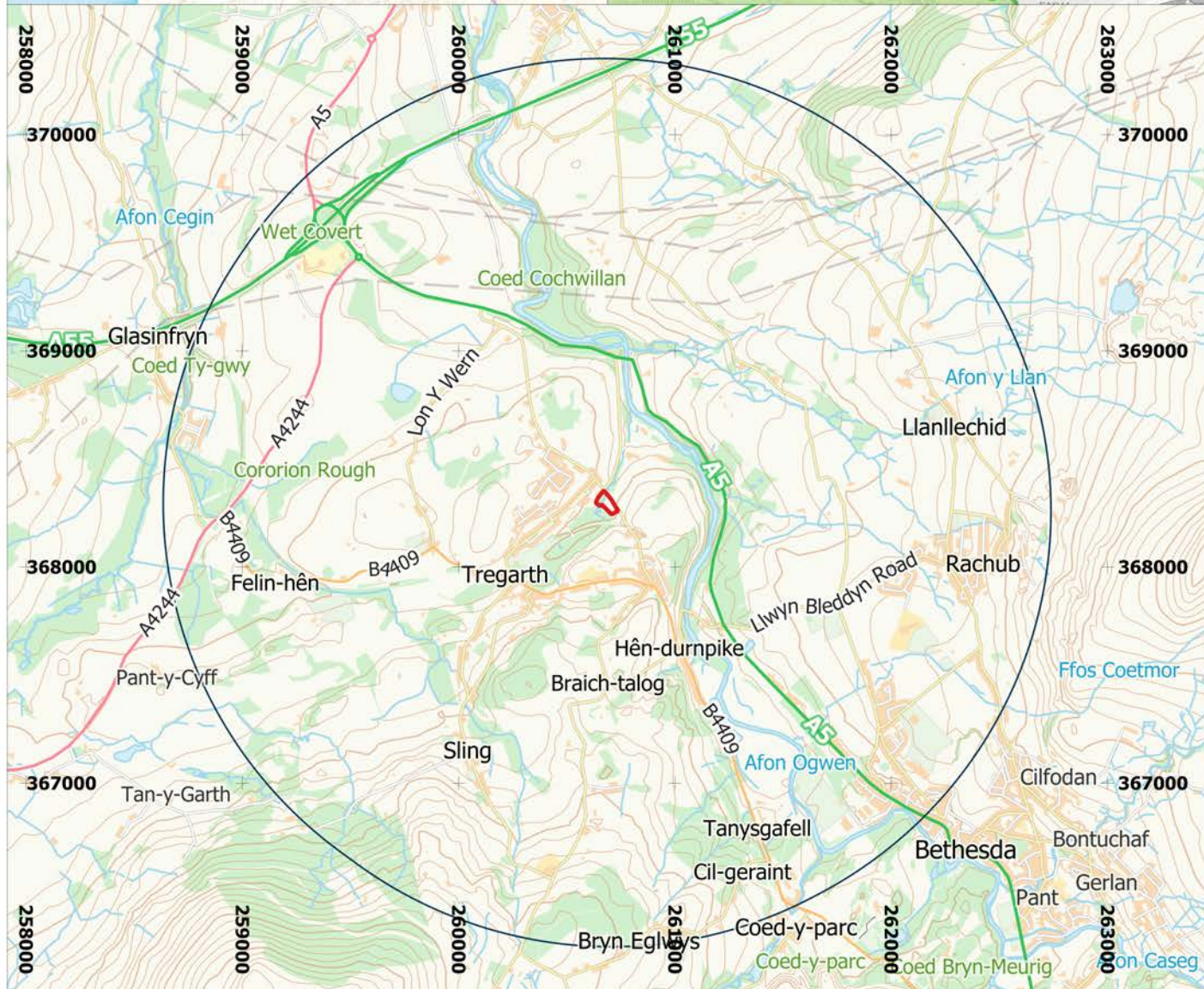
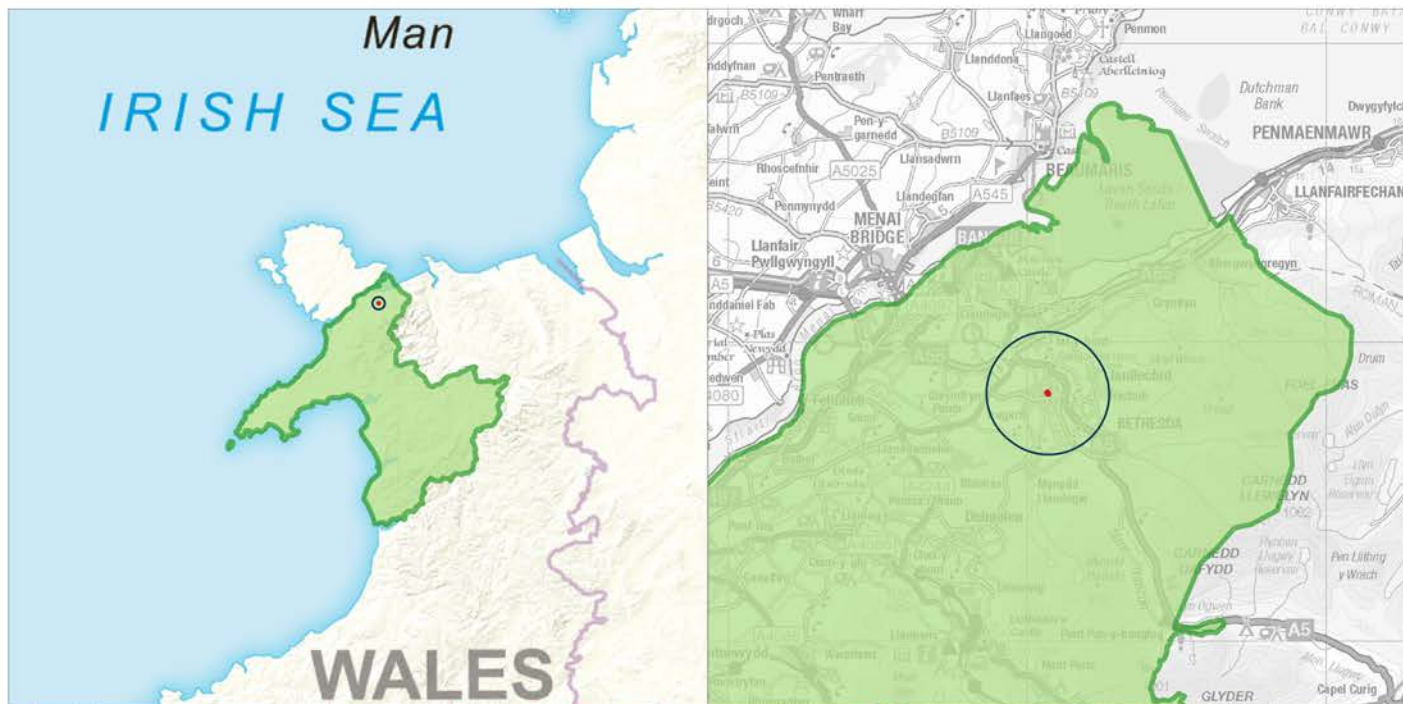
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*Site: Property Management Plan 2020–2030.*

## APPENDIX I      FIGURES

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Site name: Land adjacent to Caes Gors, Tregarth  
 Date: August 2021  
 Drawn by: AB  
 Scale: Varies

This drawing: © ARS Ltd

Contains Ordnance Survey data.  
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Gwynedd

2km study area

Application site boundary



**Figure 1:**  
**Site location**

**Archaeological Research Services Ltd**

Angel House  
 Portland Square  
 Bakewell  
 Derbyshire  
 DE45 1HB

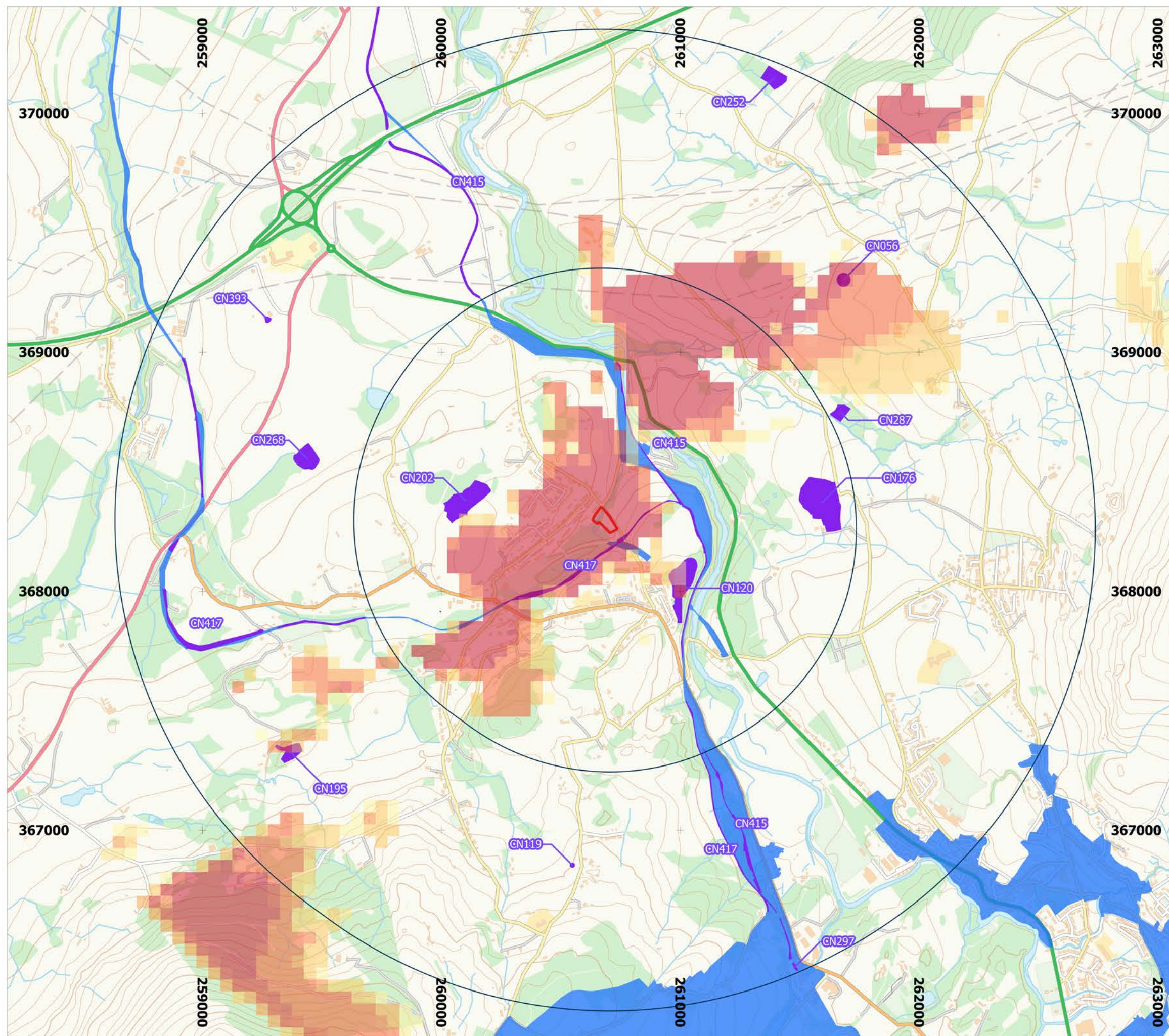
Tel: 01629 814540

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**Figure 2: Assessed heritage assets and 'bare earth' ZTV**

- Site boundary
- 1km & 2km study area
- Scheduled Monuments
- The Slate Landscapes of North Wales WHS
- 1 roof point visible
- 5 roof points visible
- 10 roof points visible
- 15 roof points visible
- 21 roof points visible

Information based upon Scheduled Monument data © Cadw 2021. Contains public sector information licensed under the Open Government Licence v2.0.



Site name: Land adjacent to Caes Gors,  
Tregarth  
Date: August 2021  
Drawn by: AB  
Scale: 1:8500 @ A3

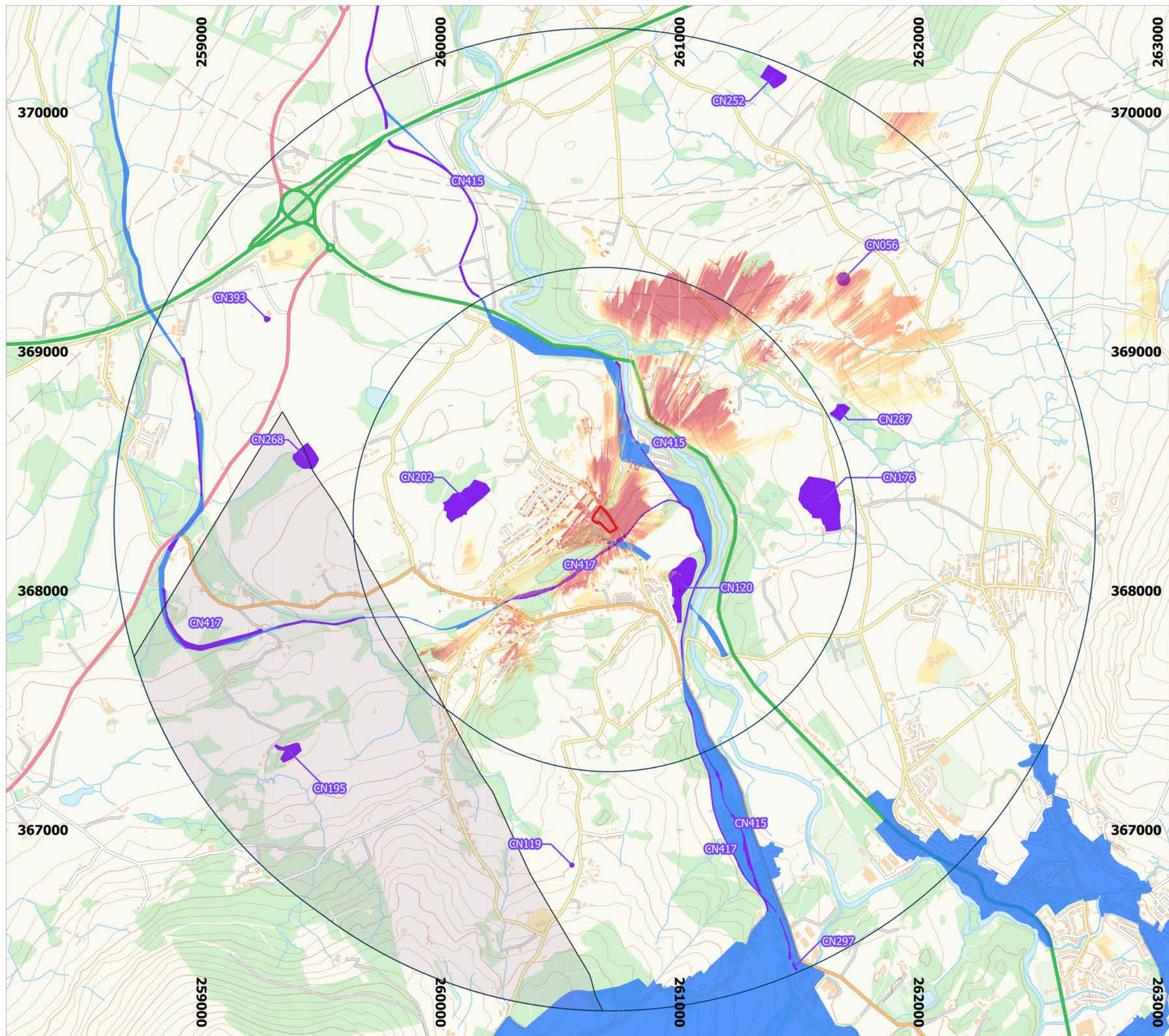
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**Figure 3: Assessed heritage assets and ZTV (created using LiDAR DSM)**

- Site boundary
- 1km & 2km study area
- Scheduled Monuments
- The Slate Landscapes of North Wales WHS
- 1 roof point visible
- 5 roof points visible
- 10 roof points visible
- 15 roof points visible
- 21 roof points visible
- No LiDAR data available

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Site name: Land adjacent to Caes Gors,  
Tregarth  
Date: August 2021  
Drawn by: AB  
Scale: 1:8500 @ A3

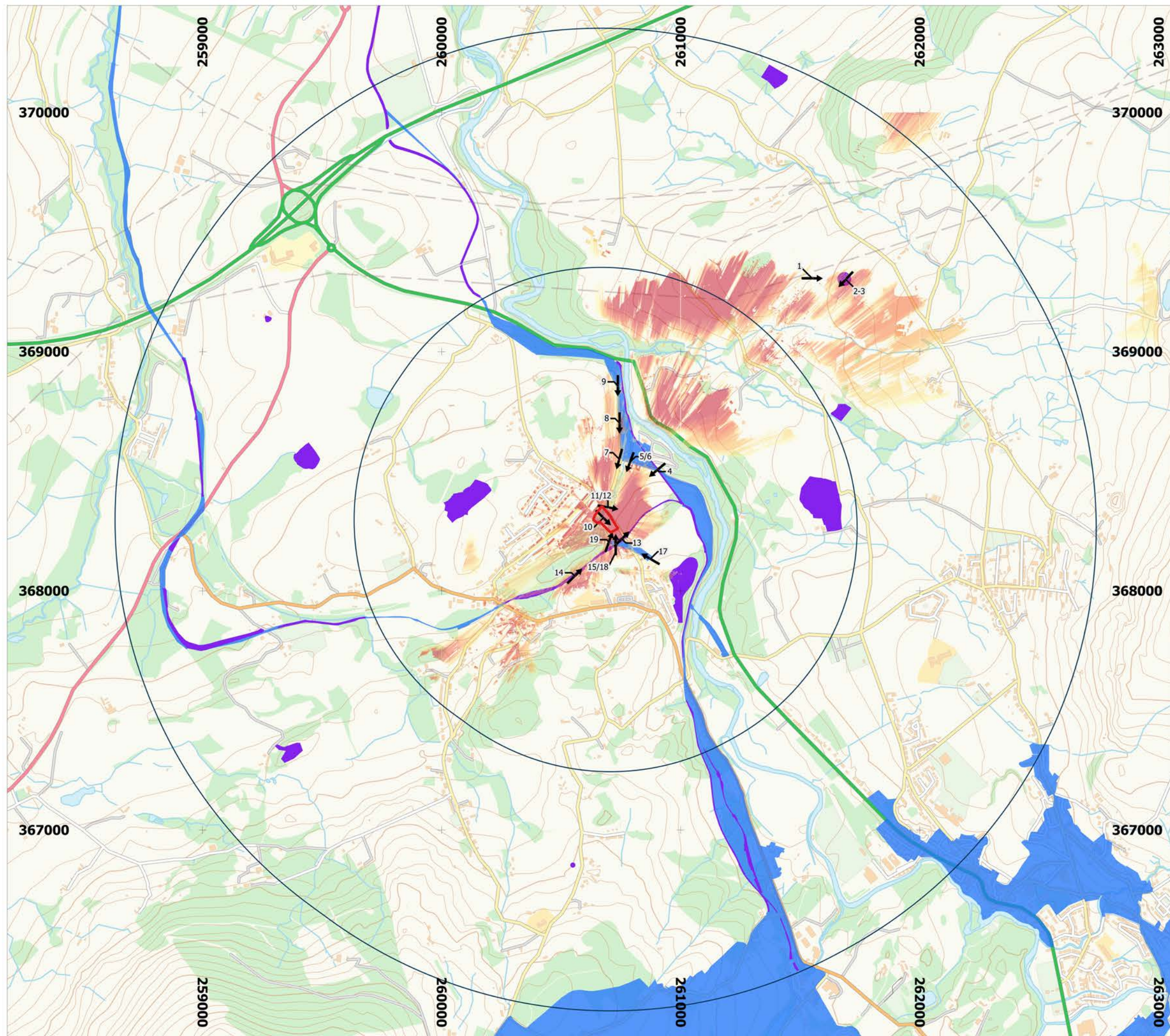
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**Figure 4: Photograph location plan**

- ▭ Site boundary
- 1km & 2km study area
- ▭ Scheduled Monuments
- ▭ The Slate Landscapes of North Wales WHS
- ↑ Photo locations

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Site name: Land adjacent to Caes Gors,  
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## APPENDIX II      PHOTOGRAPHS

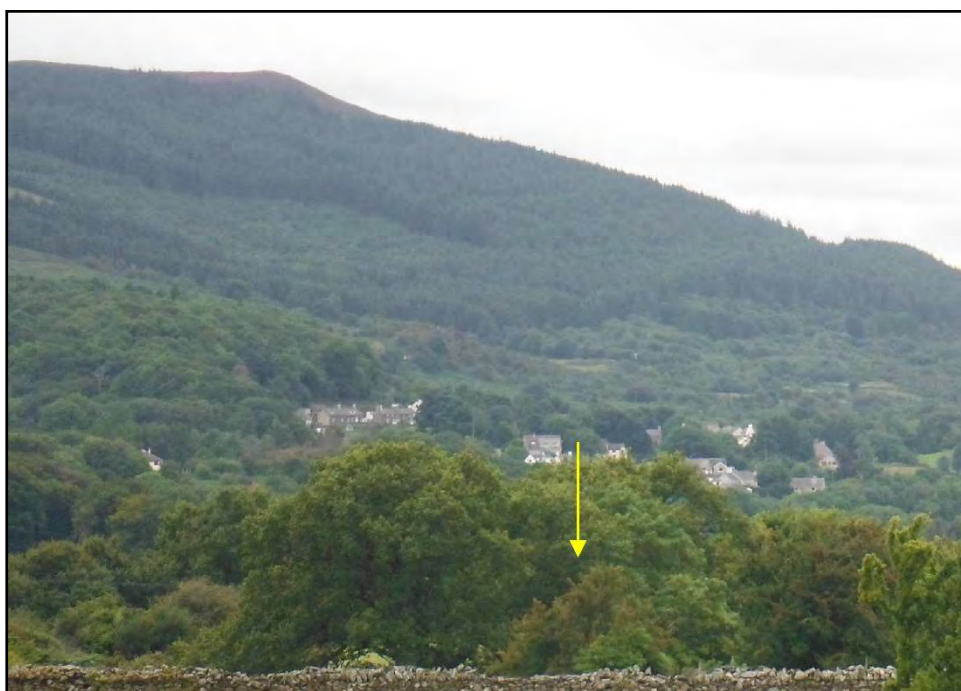
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Photograph 1:  
View east towards *Rhiw Coch Camp* (Cadw CN056).



Photograph 2:  
View south-east towards the PDA (approximate centre indicated) from *Rhiw Coch Camp* (Cadw CN056).



Photograph 3:  
Zoomed view as above.



Photograph 4:  
View SSW towards the PDA from the edge of the WHS at the bottom of the Dinas incline  
at the point where Scheduled Monument CN415 crosses the lane to the east of Dinas  
Farm.





Photograph 5:  
View SSW towards the PDA from the edge of the WHS, adjacent to the cluster of Listed Buildings at Dinas Farm.



Photograph 6:  
Zoomed view as above.



Photograph 7:  
View SSE towards the PDA from the edge of the WHS at the junction of the unnamed lanes  
that meet immediately to the west of Dinas Farm



Photograph 8:  
View south towards the PDA from the western edge of the WHS, looking along the  
unnamed lane to the north of Dinas Farm.





Photograph 9:  
View south towards the PDA from the western edge of the WHS, looking along the unnamed lane to the north of Dinas Farm.



Photograph 10:  
View south-east towards the WHS (within the trees) from within the PDA.



Photograph 11:  
View east towards the WHS (within the trees on the horizon) from adjacent to the northern entrance into the PDA.



Photograph 12:  
Zoomed view as above.





Photograph 13:

View north-west from the south-western abutment of the Corrig-Llwydion Bridge (GAT HER PRN 65560), formerly part of the Penrhyn Quarry Railway (Scheduled Monument CN417). Looking across *Tal Gae* to the embankment opposite.



Photograph 14:

View north-east towards the PDA along the embankment of the Penrhyn Quarry Railway (Scheduled Monument CN417).





Photograph 15:  
View north towards the PDA from the embankment of the Penrhyn Quarry Railway  
(Scheduled Monument CN417).



Photograph 16:  
View north-west along that part of the WHS that includes the cutting for the Bethesda  
branch of the London & North Western Railway (now the Ogwen Trail). Looking from the  
Tregarth Tunnel towards the *Tal Gae* bridge.





Photograph 17:  
View east towards the brick-built single-arch skew bridge (HER 65561) built to carry the Penrhyn Quarry Railway over the Bethesda branch of the London & North Western Railway (now the Ogwen Trail). The *Tal Gae* road bridge is in the distance.



Photograph 18:  
View north-west towards the PDA from the top of the bank visible at the bottom left of Photograph 16.



Photograph 19:  
View north-towards the PDA from the former course of the London & North Western  
Railway (now the Ogwen Trail).