Llyn Tegid Railway Extension, Bala, Snowdonia National Park:

Heritage Assets Setting Assessment

Grade II Listed Building - Pont Mwnwgl-y-llyn 'old bridge'

ARS Ltd Report 2021/66
May 2021

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ESTYNIAD I REILFFORDD LLYN TEGID, Y BALA, PARC CENEDLAETHOL ERYRI: ASESIAD O LEOLIAD ASEDAU TREFTADAETH

CRYNODEB ANNHECHNEGOL

Mae Archaeological Research Services Cyf. wedi cael eu comisiynu gan Caulmert Cyf. (ar ran eu cleient, Rheilffordd Llyn Tegid Cyf.) i baratoi asesiad o estyniad newydd arfaethedig i'r rheilffordd o Ben-y-bont i dref y Bala ym Mharc Cenedlaethol Eryri. Nod yr asesiad yw adnabod sut y gallai'r datblygiad arfaethedig effeithio ar leoliad yr asedau treftadaeth dynodedig o fewn 250m i'r ardal ddatblygu arfaethedig.

Mae'r asesiad hwn wedi nodi na fyddai unrhyw effeithiau andwyol ar leoliadau'r Adeiladau Rhestredig yn y Bala gan na fyddai'r ambell gipolwg prin y gellid ei gael o gyffiniau nifer fach o adeiladau yn fawr o bwys o ran yr effaith weledol ac na fyddai'n tynnu oddi ar y gallu i werthfawrogi neu ddeall arwyddocâd yr asedau hynny. O bosib, byddai'r cynigion datblygu'n cyfoethogi'n sylweddol gymeriad Ardal Cadwraeth y Bala drwy ailddatblygu a chwblhau ffryntiad y stryd ym mhen deheuol Stryd yr Aran gydag adeilad gorsaf o safon yn defnyddio palet dylunio sy'n gydnaws â'r amgylchedd adeiledig yn y cyffiniau. Byddai hyn hefyd yn helpu i adfywio pen yma'r dref fel porth newydd i ymwelwyr a thwristiaid sy'n dod oddi ar y trên ac fel hyn yn hybu gwerthfawrogiad, dealltwriaeth a mwynhad o'r dref hanesyddol a'i hasedau treftadaeth.

Yn fwy penodol, ceir cyfle i gynyddu'n sylweddol werthfawrogiad a dealltwriaeth o'r groesfan hanesyddol dros yr afon y byddai'r rheilffordd yn ei defnyddio ac yn benodol Heneb Gofrestredig Mwnt Castell Gronw a hen bont Restredig Gradd II Mwngwl-y-llyn a leolir yn y dirwedd hanesyddol bwysig hon.

EXECUTIVE SUMMARY

Archaeological Research Services Ltd has been commissioned by Caulmert Limited (on behalf of their client, Rheilffordd Llyn Tegid Ltd) to produce an assessment of a proposed new railway extension from Pen-y-Bont to Bala Town in the Snowdonia National Park. The aim of the assessment is to identify how the proposed development might affect the setting of designated heritage assets within 250m of the proposed development area (PDA).

This assessment has identified that there would be no adverse impacts to the settings of the Listed Buildings within Bala, as the rare glimpses that might be experienced from the vicinity of a small number of buildings would constitute a visual impact of negligible magnitude, which would not detract from an ability to appreciate or understand the significance of these assets. The development proposals have the potential to materially enhance the character of the Bala Conservation Area by redeveloping and completing the street frontage at the southern end of Aran Street with a high quality station building using a design palette in sympathy with the surrounding built environment. This would also have the effect of helping to regenerate this end of the town as a new gateway for visitors and tourists alighting from the railway, and thereby also increasing the appreciation, understanding and enjoyment of the historic town and its heritage assets.

More specifically, there is an opportunity to greatly increase an appreciation and understanding of the historic river crossing that the railway would utilise, and specifically of the Castell Gronw Castle Mound Scheduled Monument and Grade II Listed Pont Mwnwgl-y-llyn old bridge, which are both located at this important historic landscape locale.

TABLE OF CONTENTS

List of Appendices

List of Figures

List of Photographs

1 PROJECT AND PLANNING BACKGROUND

Archaeological Research Services Ltd has been commissioned by Caulmert Limited (on behalf of their client, Rheilffordd Llyn Tegid Ltd) to produce an assessment of a proposed new railway extension from Pen-y-Bont to Bala Town in the Snowdonia National Park. The aim of the assessment is to identify how the proposed development might affect the setting of designated heritage assets within 250m of the proposed development area (PDA).

A Scoping Request was made to Snowdonia National Park Authority (SNPA) by Caulmert Ltd, and the response from Cadw (via SNPA), dated 24th March 2020, stated the following with regard to the Historic Environment:

'Scheduled Monument:

ME067 Castell Gronw Castle Mound

Castell Gronw is less than 50m from the proposed development. The provisional outline drawings indicate that the scheme would not encroach on the designated area, but it will be considered to fall within the setting of the monument.

Listed Buildings:

4675 - Pont Mwnwgl-y-llyn

4912 - Ye Olde Bulls Head PH, Including Outbuildings Adjoining to the Rear

4913 - Aykroyd & Sons, Clothing Factory (Former Workhouse)

4914 - White Lion Royal Hotel, Including Former Stable Range and Associated Wall Adjoining to the Rear

4916 - Town Hall

4919 - Barclays Bank

18375 - Capel Tegid, Including Forecourt Railings, Gates & Gatepiers.

18376 - Statue of Rev Thomas Charles (including its railings), in front of Capel Tegid 26002 Cwpwrdd Cornel Café

26005 - Siop Bapur Newydd

26006 - China Treasure Takeaway

26007 - E.J. Theodore, Ironmonger

26008 -Siop Bapur Newydd

26009 - H Rowlands

26010 -Plas Deon

26011 - 37 Tegid Street

26012 - 39 Tegid Street

26013 - 41 Tegid Street

26014 - 43 Tegid Street

26015 - 34 Tegid Street

26016 - 36 Tegid Street

26017 - 38 Tegid Street

26018 - 40 Tegid Street

26019 - Y Gelli

26020 - 72, High Street

26022 - Plas Teg

26023 - Plas-yn-Acre

83585 - Agricultural range, Pen-y-bont

It is understood that the intension is for the railway to come across Pont Mwnwgl-y-Llyn which is a Grade II listed structure dating from at least the late 18th century. As such, it is expected that alteration to the bridge will be avoided or minimised as far as possible. Should the proposals entail work to the bridge, it will be necessary for a listed building consent application to be submitted alongside the planning application. This will need to be accompanied by a Heritage Impact Statement prepared by an appropriate conservation professional in accordance with published guidance, to describe how the significance of the bridge has been accommodated within the proposed scheme.

The other designated heritage assets listed above are located inside 250m of the proposed development. It has a potential to have an impact on their settings which is the way that they are experienced, understood and appreciated. The most likely impact to the settings of designated heritage assets are caused by visual changes but additional noise and smell can also have an impact. The proposed EIA should therefore consider the likely impact of the proposed development on the settings of these designated heritage assets following the Welsh Government guidance given in the document "The Setting of Historic Assets in Wales". We would expect a stage 1 assessment to be carried out for all of the above designated heritage assets, which will determine the need, if necessary, for stages 2 to 4 to be carried out for specific heritage assets.'

The Heritage Impact Statement for the *Pont Mwnwgl-y-Llyn* bridge is the subject of a separate report (Wyre 2021), and a separate ASIDOHL report (Brown 2021) discusses potential impacts to the settings of a number of heritage assets in the wider landscape, whilst this report will focus upon potential impacts within the 250m study area requested by Cadw.

2 METHOD STATEMENT

2.1 Approach

This Heritage Assets' Setting 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 which 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
- tranquillity, 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

In order to help to understand the extent of the potential intervisibility between the proposed development and the heritage assets within the 250m study area, a series of 'Zone of Theoretical Visibility' (ZTV) maps were produced. 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.

As part of the Landscape and Visual Impact Assessment (LVIA) produced to inform the ES (DSA Environment & Design 2021), ZTVs were created using five points along the length of the proposed railway extension with heights of 2m (to represent the train), 5m (to represent machinery in operation during construction), and 50m (to represent a 'worst case scenario' steam plume from the train). These illustrate that without the screening effects afforded by

the intervening vegetation and built environment, the proposed development would be visible across most of the landscape within 1km of the proposals, and extending across the majority of the Dee valley and to the tops of the higher peaks beyond, with broadly similar visual envelopes within Bala itself whether at 2m, 10m or 50m height (DSA Environment & Design 2021, Appendix D).

However, in reality these views could be largely screened by intervening vegetation and the built environment, and it is possible to produce an approximate model of this effect using LiDAR data, processed using the Quantum GIS Visibility Analysis plug-in. The LiDAR Digital Elevation Model (DEM) used was the Digital Surface Model (DSM) at 50cm resolution, 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.

In order to produce the ZTV, points were created (using the Quantum GIS software package) at each 50m chainage point along the centreline of the proposed railway (20 points in all), and these were assigned heights of 2m above ground level to represent the train at regular intervals moving through the landscape (Figures 2 and 5). In accordance with the LVIA methodology, a ZTV was also created with the points at 10m above ground level, to represent the potential height of machinery during the temporary construction phase (Figures 3 and 6). Based upon the results of these ZTVs, which, as discussed in section 3 below, both confirm the considerable screening afforded by the surrounding townscape in Bala, it was considered unnecessary to assess the effects of the 'worst case scenario' 50m high steam plume. At this height, when seen from within the town, the plume would be divorced from the train itself, which would not be visible, and would be largely dispersed having the appearance of low cloud or mist drifting in off the lake. Consequently, it is considered that whilst this this rare and ephemeral effect might have a visual impact at the landscape scale, it would have a negligible adverse impact upon individual Listed Buildings within the town.

There is also the potential for an indirect, visual impact from the new station building, and a third ZTV was created to illustrate this. Five points key points along the roofline of the Aran Street façade of the station using the heights from the architect's drawing for the proposed station were used to provide an indication of where this building might be visible from, again using the 50cm resolution LiDAR DSM as the DEM (Figure 4).

3 SETTING ASSESSMENT

3.1 Stage 1: Identify the historic assets that might be affected by a proposed change or development

The ZTVs described in section 2.3 above (Figures 2-6) can be used to identify the likely visual impacts to designated assets might result from the proposed development.

The majority of the Listed Buildings within the 250m study area are concentrated within the town of Bala at the northern end of the route, and these comprise 32 buildings listed at Grade II and one at Grade II*. It should be noted that the list of Listed Buildings to be

assessed identified in Cadw's scoping response increased slightly due to subsequent alterations to the 'redline boundary' of the proposed development area ('PDA'), which meant that the 250m study area requested by Cadw expanded to include an extra six buildings.

Eleven of the Listed Buildings within the 250m study area within the town are located on High Street:

- 4911 - Barclays Bank
- 4912 - Ye Olde Bulls Head PH, Including Outbuildings Adjoining to the Rear
- 4913 - Aykroyd & Sons, Clothing Factory (Former Workhouse) (Grade II*)
- 4914 - White Lion Royal Hotel, Including Former Stable Range and Associated Wall Adjoining to the Rear
- 4916 - Town Hall
- 25998 - Tenovus
- 25999 - Spar
- 26001 - Caffi'r Cyfnod
- 25002 - Cwpwrdd Cornel Café
- 26005 - Siop Bapur Newwydd
- 26020 – 72 High Street

Another eighteen of the Listed Buildings are located on (or set back from) Tegid Street, which runs in a south-easterly direction perpendicular to High Street:

- 18375 - Capel Tegid, Including Forecourt Railings, Gates & Gatepiers.
- 26006 - China Treasure Takeaway
- 26007 - E.J. Theodore, Ironmonger
- 26008 -Siop Bapur Newydd
- 26009 - H Rowlands
- 26010 - Plas Deon
- 26011 - 37 Tegid Street
- 26012 - 39 Tegid Street
- 26013 - 41 Tegid Street
- 26014 - 43 Tegid Street
- 26015 - 34 Tegid Street
- 26016 - 36 Tegid Street
- 26017 - 38 Tegid Street

- 26018 - 40 Tegid Street
- 26019 - Y Gelli
- 26020 - 72, High Street
- 26022 - Plas Teg
- 26023 - Plas-yn-Acre

The remaining three Listed Buildings within the 250m study area within the town form a short terrace on Mount Street, which runs parallel to High Street and perpendicular to Tegid Street:

- 4915 - 48 Mount Street
- 25966 - 50 Mount Street
- 25967 - 52 Mount Street

Figure 2 depicts the ZTV at a height of 2m to represent the moving train, and this illustrates that there would be no visibility of this along those stretches of High Street, Tegid Street and Mount Street where the Listed Buildings are located. On this figure, the Ordnance Survey (OS) Open Data buildings layer has been overlaid over the ZTV to mask out where the ZTV hits the roofs of buildings that are recorded in the DSM. The majority of the remaining discrete areas of the ZTV in the vicinity of the Listed Buildings, are either where the ZTV is highlighting the tops of mature trees, or where the roofs of buildings actually extend further than the OS buildings layer.

The one exception is *Plas-yn-Acre* (Cadw 26023), which is well-set back from Tegid Street itself, where the ZTV indicates that one of the assessed chainage points would be visible from the south-eastern façade of the building. The 'ground-truthing' of the view southwards from a location adjacent to the building confirmed that views across the nearby tofts are possible, although partially screened by an intervening hedge and outbuilding (Photograph 1). It would be possible to catch a brief glimpse of the train as it travelled along the southern edge of the rugby pitch, but this would be a relatively rare and ephemeral occurrence (Photograph 2).

Figure 3 depicts the ZTV created from 20 assessment points along the chainage, thought to be representative of the potential visibility of machinery during the construction phase of the project. This is likely to last for approximately a year in total, but would progress in relatively rapid stages so that the machinery would be not be at one location for any extended period. Notwithstanding this, the proposals for storing machinery within the compound area during the *c.*1 year-long construction period are not available so this could not be assessed. However, as the proposed compound area is located some distance from the Listed Buildings (more than 1km from the High Street, for example), and with a line of mature trees along its north-western boundary which would provide considerable level of screening (Photograph 3), it is considered that there would be no intervisibility between the compound and the heritage assets within the town.

Figure 3 illustrates no visibility of the assessment points for the construction machinery along that part of High Street where the Listed Buildings are located, and likewise no visibility from Tegid Street in the vicinity of the cluster of Listed Buildings there. The ZTV does indicate, however, that there could be glimpsed views of the construction machinery from the rear gardens of the terrace of five Listed Buildings on the south side of Tegid Street (Cadw Refs 26011-26016) and the two buildings adjacent, which are set back from the road (Cadw 26022-26023). This latter view is likely to be a similar view as described above for the visibility of the train (Photographs 1 and 2), although the additional height of the construction machinery and the possible visibility identified from the other nearby buildings along Tegid Street indicates that other glimpses of the machinery might be possible above the roofs of intervening buildings to the south-east.

In addition, the ZTV reproduced on Figure 3 indicates that it is possible that views of the construction machinery in the vicinity of the new station would be possible along much of the length of Mount Street, and potentially from the street opposite the terrace of three Listed Buildings at nos. 48-52(Cadw 4915, 25966 & 29567). However, the 'ground-truthing' of the view from Mount Street adjacent to these latter buildings indicates that any temporary glimpses of machinery during construction would result in a negligible visual impact from the vicinity of these buildings, and would not be visible from the buildings themselves due to the grain of the historic street pattern (Photographs 4 and 5).

Figure 4 depicts the ZTV based upon points located on the roofline of the Aran Street façade of the proposed station building. This ZTV illustrates that the building would be clearly visible from the open fields to the south of the town, and across the Plasey Street car park to the north-west, but beyond this, the visibility of the building across the townscape would be negligible, with just occasional glimpses possible. It would be visible along much of Plasey Street, but there are no Listed Buildings here, and its visibility would not extend into those areas of the town where the listed Buildings are clustered, apart from possible glimpses from the rear of the buildings on Tegid Street.

Beyond the town of Bala itself, there are also three designated assets towards the southern end of the scheme within the 250m study area, comprising a Scheduled Monument and two listed buildings:

- ME067 Castell Gronw Castle Mound (Scheduled Monument)
- 4675 - Pont Mwnwgl-y-llyn (Grade II Listed Building)
- 83585 - Agricultural range, Pen-y-bont (Grade II Listed Building)

The *Pont Mwnwgl-y-llyn* 'old bridge' is within the PDA of the scheme, and consequently there would therefore evidently be an impact to its setting. Figures 5 and 6 confirm that there would also be a potential visual impact from the scheme at the *Castell Gronw Castle Mound* due to its close proximity, and this warrants further assessment. However, the *agricultural range, Pen-y-bont* (Cadw 83585) would have no intervisibility with the scheme due to the screening effect of the intervening band of conifers (Photograph 6). It is possible that a brief glimpse of the train might be possible in the background of views towards the building from the opposite side of the road, but it is considered that this rare occurrence would have a negligible impact upon the setting of the building (Photograph 7).

As well as the potential visual impacts discussed above and in the LVIA chapter of the ES, potential impacts from noise and vibration are addressed in Chapter 3 of the ES (Bureau Veritas UK Ltd 2021). With regard to vibration, it is stated '*It is not expected that significant groundborne vibration will be generated by slow moving steam locomotives during the operation phase of the Development, and therefore this element has not been assessed*'. With regard to noise, it is stated that: '*Assessments have been based on measurements taken on the Site for existing noise sources, including steam engines pulling away from a station, steam engine pass-bys, and warning whistles. Baseline noise monitoring, including measurements of background sound levels at residential receptor locations, was also conducted … Baseline noise surveys were also conducted at non-human receptors locations (ecological and cultural heritage receptors) to provide a context for assessment in the relevant ES Chapters.*'

The cultural heritage receptors assessed included three representative samples within the town of Bala at the northern end of the route (CH1, CH4 and CH5), and the *Castell Gronw Castle Mound* (CH2) and *Pont Mwnwl-y-llyn* old bridge at the southern end of the scheme. The results of the assessment are provided in Table 1 below (reproduced from Table 3.15 in the ES).

Table 1: Predicted Railway Noise Levels - Cultural Heritage Receptors

Receptor	**Predicted Railway Noise Level, dB $L_{Aeq,1hr}$ (free-field)**		**Typical Baseline Ambient Sound Level, dB $L_{Aeq,1hr}$ (day)**	**Ambient Noise Change, dB**
	Baseline	**Future**		
CH1 - Akroyd & Sons Clothing Factory (Grade II* Listed)	8	21	52	0
CH2 - *Castell Gronw Castle Mound* - scheduled monument	28	35	48	0
CH3 - Pont Mwnwl-y-llyn (Grade II Listed) (Old Bridge)	24	51	52	+3
CH4 - White Lion Hotel (Grade II Listed)	1	9	64	0
CH5 - Statue of Rev Thomas Charles (Grade II Listed)	8	19	50	0

This table confirms that the predicted future railway noise level at all three receptors assessed within Bala despite increasing, would still be considerably lower than the typical baseline ambient sound level, resulting in no increase in ambient noise levels. Likewise, at the *Castell Gronw Mound,* there would be no increase in ambient noise levels, and it is only at *Pont Mwnwl-y-llyn* old bridge that noise levels are predicted to increase. This is unsurprising as the proposed railway extensive would cross the bridge itself, and this is discussed in more detail in section 3.3.2 below.

In conclusion, Stage 1 of the assessment has identified that overall the proposed development would result in negligible impacts to the settings of the heritage assets within Bala itself. Consequently it was considered appropriate to discuss these in general terms in

Stages 2 – 4 of the assessment, whilst the greater impacts at *Pont Mwnwl-y-llyn* and *Castell Gronw Castle Mound* will be discussed independently and in greater detail.

3.2 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

3.2.1 Listed Buildings within Bala

As discussed in Section 3.1 above, Stage 1 of the assessment has identified that there is likely to be very little visual impact from the proposed development on the Listed Buildings within Bala. The few buildings that might be very slightly affected can be divided into three groups. Firstly, a terrace of three early 19th century cottages (48-52 Mount Street), each listed as '*as one of a terrace of three second-quarter C19 cottages retaining good external vernacular Gothic character'*). Secondly, a terrace of four early 19th century town houses (37-43 Tegid Street), each Listed '*as part of a fine early C19 terrace of 4 houses retaining good original character')*. Finally, a large detached early 19th century town house set back from Tegid Street, later subdivided into two dwellings (*Plas-yn-Acre* and *Plas Teg*), each Listed '*as part of a former Georgian townhouse of distinctive design*').

With reference to Cadw's checklist of potential attributes of a setting which may help to elucidate its contribution to the significance of an asset (Cadw 2017, 5-6), the following key observations can be made regarding the settings of these Listed Buildings that could be affected in Bala:

- *functional and physical relationships with other structures/historic assets and how these have changed over time*

The buildings on Tegid Street and Mount Street have all retained their original domestic function.

- *topographic features that influenced its location*

The buildings are all located to conform with the medieval street pattern of the planned town.

- *physical character of the surrounding landscape or townscape, including any formal design or land use*

The surrounding townscape comprises the medieval street pattern of the planned town.

- *the original layout of the historic asset and how this has changed*

There has been some later modifications to the buildings, but the original layouts generally survive well.

- *potential buried or archaeological elements surrounding the historic asset*

This is unknown, but it is likely that archaeological remains associated with the medieval and later occupation of the curtilages of this buildings will survive to a greater or lesser degree.

- *views to, from and across the historic asset or place*

Views of the building frontages are relatively constrained by the width of the streets, but all can be viewed obliquely from close range. More open views across the fields to the south in the hinterland of the town are possible from the south-eastern façade of *Plas-yn-Acre.*

- *formal or planned vistas*

There are no formal or planned vistas associated with these buildings.

- *the prominence of the historic asset in views throughout the surrounding area*

The buildings are not prominent, but become visible at close range when navigating along the medieval streets.

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

None.

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

None identified.

- *other sensory elements — noise or smell associated with the historic asset*

None identified.

- *tranquillity, remoteness, 'wildness'.*

The buildings are all located within the medieval core of the town, therefore not applicable.

3.2.2 Pont Mwnwgl-y-llyn (Cadw ref. 4675)

The Cadw Listed Building entry describes this asset as follows:

<u>History:</u> Probably 18th century road bridge.

<u>Exterior:</u> Large road bridge built of coursed and squared local stone. Three spans with segmental arches and angled cutwaters on both sides. Plain parapet with stone slab coping over a continuous dripcourse.

<u>Location:</u> Redundant road bridge, sited at the junction between B4403 and B4391, and spanning the Afon Dyfrdwy at the E end of Lake Tegid.

Reason for designation: Listed as a well preserved late C18 road bridge.

The Gwynedd Archaeological Trust (GAT) HER entry provides the following additional descriptions, dating from 1964 and 1990 respectively:

Pont Mwnwgl-y-llyn is a stone built bridge formerly carrying the road leading S from Bala over the River Dee. The E, older part of the bridge, must date from at least the early C18th, and its relation to the Castell Gronw mound (SH93NW 3) makes it certain that this first bridge site over the Dee must have existed in medieval times. It consists of three segmental arches with a total span of 98ft 4ins. The piers have cutwaters on both the upstream, lake or W side and the downstream. Scheduled for demolition (Source: The Royal Commission on the Ancient and Historical Monuments of Wales, RC Buildings Records, 1964)

Phone call of 11.5.90 elicited the information on that the bridge is still standing - the highways engineer says it is 'scheduled' (as we have no record presumably he means listed) and has therefore been retained as a footbridge alongside the new bridge (Source: Gwynedd Archaeological Trust , PRN 3222).

In light of the historic background discussed above, and with reference to Cadw's checklist of potential attributes of a setting which may help to elucidate its contribution to the significance of an asset (Cadw 2017, 5-6), the following key observations can be made regarding the setting of this historic bridge (Photographs 8-14):

- *functional and physical relationships with other structures/historic assets and how these have changed over time*

The bridge is likely to have replaced an earlier bridge (or series of bridges) at this river crossing point, likely dating back to at least the medieval period when the adjacent *Castell Gronw castle mound* (Cadw ME 067) was constructed to control this strategic location. The *Pont Mwnwgl-y-llyn* new bridge was constructed in the 1950s to replace the old bridge, which subsequently continued in use as a footbridge, used mainly by passengers traveling on foot to Bala after alighting from the Bala Lake Railway at the station that is located *c.*85m to the south-west of the bridge.

- *topographic features that influenced its location*

The bridge was evidently sited at this location as it is the point where the River Dee historically flowed out of Llyn Tegid/Lake Bala. The lake is *c.*5.25km in length and up to *c.*1km in breadth, and this waterbody evidently is a major obstacle to travel in the region, and therefore this is a river crossing of some importance. The Welsh name *Pont Mwnwgl-y-llyn* means 'bridge at the neck of the lake', and this is an apposite toponym for this topographic feature.

- *physical character of the surrounding landscape or townscape, including any formal design or land use*

As discussed above, the landscape setting of the bridge at this important node in both the water and transport networks is a key aspect of its significance. Its position at the head of the lake with panoramic views along its length also imbues it with a high aesthetic value, adding to its significance.

- *the original layout of the historic asset and how this has changed.*

The eastern part of the bridge is considered to be older than the western side, and it is possible that the original 18th century bridge may have been widened in the early 20th

century to allow for use by motor vehicles, although this might have occurred earlier (Photograph 11).

The course of the River Dee was altered in the late 1950s as part of the Bala Lake Scheme, undertaken by the Dee and Clwyd River Board, which resulted in the entire river channel being re-routed *c.*100m to the north. Consequently, the new *Pont Mwnwgl-y-llyn* road bridge was constructed to take the B4391 over the new, more northerly, course of the river. The old bridge fell out of use as a river crossing, and was scheduled for demolition in 1964, but continued in use as a footbridge over the old river channel after being listed by the RCAHMW in 1966.

- *potential buried or archaeological elements surrounding the historic asset*

It is possible that buried archaeological remains associated with earlier bridges at this river crossing survive, although this remains to be proven, and later construction activity in the vicinity of the crossing may have destroyed much evidence that might have survived.

- *views to, from and across the historic asset or place*

Views towards, from and across the bridge are relatively constrained by the surrounding vegetation, although key views towards it are available at close range for pedestrians as they approach the bridge from the north (Photographs 9 & 13), and longer range views are possible towards the bridge from the south for pedestrians alighting from the Bala Lake Railway (Photographs 8).

- *formal or planned vistas*

There are no formal or planned vistas associated with the bridge.

- *the prominence of the historic asset in views throughout the surrounding area*

As discussed above, the surrounding vegetation largely screens views towards the bridge from the surrounding landscape, and therefore it is not a prominent feature, except for users of the Bala Lake Railway, where it is relatively prominent when leaving Bala Halt on foot. Historically, it was far more prominent in views in the vicinity of the eastern end of the lake, however.

- *views associated with the aesthetic, functional or ceremonial purpose of the asset; for example, defensive sites, beacons or designed landscapes.*

Views towards the river crossing from the adjacent *Castel Gronw* motte would have once been highly significant, but these are no longer possible due to the surrounding vegetation, and moreover these pre-date the bridge itself.

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

Historical photographs of the bridge when still in use as a road bridge spanning the Dee confirm that it once formed an important element of the scenic views of the lake from the east, and, as such, it is likely that it would have been the subject of artistic endeavours

(http://visitbala.org.uk/uploads/image-galleries/Bala-Penllyn-past/Bala_Lake_old_bridge_Medium.jpg)

- *other sensory elements — noise or smell associated with the historic asset*

None identified.

- *tranquillity, remoteness, 'wildness'*

Historically, this would have been a relatively busy river crossing, although conversely would also have been an ideal location to appreciate the tranquillity and 'wildness' of the panoramic views along the length of the lake.

3.2.3 Castell Gronw castle mound (Cadw ME 067)

The Scheduled Monument description for this asset provided by Cadw is as follows:

'The monument comprises the remains of a motte, dating to the medieval period (c.1066-1540 AD). A motte is a large conical or pyramidal mound of soil and/or stone, usually surrounded by either a wet or dry ditch, and surmounted by a tower constructed of timber or stone.

The motte is situated in the garden of Pen y Bont cottage. It is 23m in diameter at the base, between 4 and 4.5m high, and 10m diameter across the top. The north and east sides of the mound are terminated by retaining walls over 1m high, which mark the boundary of the cottage on the east and the pavement on the north.

The north side of the motte has been planted with flowering shrubs and other garden plants; the remaining sides are mainly grass covered, although the remains of a flower bed are visible on the south side. A concrete pad 2.5m by 2m has been laid on the top of the mound. The septic tanks which serve the cottage lie 8m to the south of the base of the motte.

A wooded area west of the motte is thought to be the site of the bailey (one or more embanked enclosures surrounding or adjacent to the motte). This area is bounded by a stream lying in a gully 2m deep on the west and south sides. The remains of a slight scarp or ditch are visible running in a south westerly direction from the motte, but it turns south before reaching the gully. There are no remains to suggest how the south side of the gully would have been connected to the motte.

The monument is of national importance for its potential to enhance our knowledge of medieval settlement and defence. It retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. The structures themselves may be expected to contain archaeological information concerning chronology and building techniques.

The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.'

In light of the historic background discussed above, and with reference to Cadw's checklist of potential attributes of a setting which may help to elucidate its contribution to the significance of an asset (Cadw 2017, 5-6), the following key observations can be made regarding the setting of this Scheduled Monument:

- *functional and physical relationships with other structures/historic assets and how these have changed over time*

The motte was evidently constructed to control the strategic crossing point across the River Dee, and it is assumed that there would have been a bridge, or series of bridges that were contemporaneous with the motte. The Grade II Listed *Pont Mwnwgl-y-llyn* 'old bridge' discussed above and the more recent 'new bridge' are successors to these earlier structures.

- *topographic features that influenced its location*

The bridge was evidently sited at this location as it is the point where the River Dee historically flowed out of Llyn Tegid/Lake Bala. At c.5.25km in length and up to c.1km in breadth, this waterbody would have historically a major obstacle to travel, as it is today, and therefore this is a river crossing of some importance. The motte would have been located here to control this strategically important location at 'the neck of the lake', controlling access to the burgeoning market town at Bala.

- *physical character of the surrounding landscape or townscape, including any formal design or land use*

As discussed above, the landscape setting of the bridge and motte at this important node in both the water and transport networks is a key aspect of its significance.

- *the original layout of the historic asset and how this has changed.*

The motte has been incorporated in to the garden of Pen y Bont cottage, which is likely to have been constructed in the 19th century, and has undergone some superficial landscaping as a result of this change of use.

- *potential buried or archaeological elements surrounding the historic asset*

It is highly likely that medieval archaeological remains of national importance associated with the motte and its appended bailey survive within the Scheduled area and potentially beyond.

- *views to, from and across the historic asset or place*

Views towards, from and across the motte are relatively constrained by the surrounding vegetation (Photographs 12-15), although glimpses of the mound are possible at close range from the B4361 (Photograph 16), from the footpath leading to the Bala Pen-y-bont station (Photographs 17-18) and from the eastern end of the Bala Halt platform (Photographs 19 & 20). Nevertheless, an image posted online indicates that panoramic views of the lake above the *Pont Mwnwgl-y-llyn* might still possible from the summit of the mound (although this photograph appears to have been taken from the roof of Pen y Bont cottage):

https://www.medievalists.net/wp-content/uploads/2015/08/Castell-Gronw.jpg

- *formal or planned vistas*

There are no formal or planned vistas associated with the motte, although it has been incorporated into the formal garden surrounding Pen y Bont Cottage.

- *the prominence of the historic asset in views throughout the surrounding area*

As discussed above, the surrounding vegetation largely screens views towards the motte from the surrounding landscape, and partial glimpses are only possible at close range.

- *views associated with the aesthetic, functional or ceremonial purpose of the asset; for example, defensive sites, beacons or designed landscapes.*

Views towards the river crossing from the *Castell Gronw* motte would have once been highly significant, and although no longer publically accessible, on line photographs indicate that views of the old bridge are possible from the top of the mound (see link above).

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

The name of this asset has been associated with Goronwy ab Ednyfed Fychan (d.1268), an ancestor of Henry Tudor (Henry VII of England) and steward to Llywelyn ap Gruffudd (the last sovereign prince of Wales before its conquest by Edward I of England). It was also referred to in the 17th century '*as the castle of ''Grono Bevr of Benllyn'', a personage who figures prominently in the Mabinogi of Math ab Mathonwy. Historically the founder is more likely to be a member of the great marcher family of Whittington in Salop whose name was also Goronwy and who claimed descent from the more mythic chieftain'* (RCAHMW 1921, 131).

- *other sensory elements — noise or smell associated with the historic asset*

None identified.

- *tranquillity, remoteness, 'wildness'*

This monument is located close to a relatively busy road junction and within the curtilage of a holiday cottage. Nevertheless, there is a level tranquillity and 'wildness' afforded by its location at the head of Llyn Tegid with the panoramic views across the lake.

3.3 Stage 3: Evaluate the potential impact of a proposed change or development on that significance

It is understood that, post-development, it is not intended to change the timetable of the Bala Lake Railway. Consequently, the following description of recent (i.e. pre-Covid-19) operations of the railway give some indication of the likely nature and frequency of railway traffic using the proposed extension, which would cross the listed *Pont Mwnwgl-y-llyn* old bridge, adjacent to the *Castell Gronw Castle Mound* Scheduled Monument:

'*The railway first opened in 1972 and has operated between Llanwchllyn and Pen y Bont since 1976.*

The railway is single track, with a maximum speed for trains of 15mph. The service is normally provided by a single passenger train, hauled by a steam locomotive. There is a passing place at Llangower and it is possible to run a two-train service when the traffic

demands. There is no goods traffic, other than trains running to serve the railway's own engineering requirements.

During 2019, the timetable shows trains running on 173 days/ year, all during daylight hours. The most common timetable (operating on 97 days) has 8 trains/ day (4 trains in each direction), while the busiest timetable (which requires two train operation) runs on 9 days and has 18 trains/ day (9 trains in each direction).

The railway has a fleet of six steam locomotives, many of which were built to work in the slate quarries of North Wales. They also have eight diesel locomotives, some of which can be used on passenger trains. Passenger trains are formed from a fleet is of 7 carriages. Trains are typically between 3 and 5 carriages long. The maximum length train to run on the railway will be 7 carriages, hauled by two locomotives.' (Caulmert 2020).

The direct, physical impact *upon Pont Mwnwgl-y-llyn* old bridge is addresses in a separate HIA (Wyre 2021) and also in a separate ASIDOHL2 report (Brown 2021), but in broad terms this would include the insertion of a new handrail for pedestrian use, and the re-surfacing of the bridge for a new footway and to allow for the insertion of the rail track on a new trackbed with a waterproofing layer. This would occur across the full width and length of the current surface of the footbridge, but it is understood that impacts to the original fabric of the bridge are to be minimized or avoided, and the impacts would largely occur across the bridge's modern tarmac surface.

3.3.1 Listed Buildings within Bala.

Using Cadw's 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 following observations can be made:

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

The height of the train moving through the landscape, when occasionally visible, would appear diminutive in size when seen from these buildings.

- *the visual impact of the proposed change or development relative to the location of the historic asset*

All of the buildings that would be affected are some distance from the proposed railway, and therefore this would occupy a very small visual envelope within their settings.

- *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 the proposed development is some distance from the nearest Listed Buildings, this would not dominate these historic assets or detract from our ability to understand and appreciate them.

- *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*

Whilst the railway itself would be a new built element not currently present within the town, this would be largely invisible from the Listed Buildings. Likewise the proposed new station would be barely visible from any of the Listed Buildings within the town, and, moreover, will use a design palette that is sympathetic to the built character of the Conservation Area.

- *the lifespan of the proposed change or development and whether or not the impact might be reversible*

The proposed lifespan of the proposed development is not known, but evidently could be reversible if circumstances dictated it.

- *the extent of tree cover, whether it is deciduous or evergreen, and its likely longevity*

There are occasional trees within the vicinity of the PDA and in the intervening areas between the PDA and the Listed Buildings which afford some screening, but it is the built environment itself which provides the most screening.

- *the impact of artificial lighting — for example, on night-time views*

It is understood that no additional artificial lighting would be required for the proposed railway extension.

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

The current landscape setting of the monument already includes the Bala Lake Railway as a Historic Landscape Character Area within the wider *Bala and Bala Lakesides Registered Landscape of Special Historic Interest in Wales*. Consequently, it is considered that the proposed development would strengthen one of the key characteristics of the landscape, whilst having only a minor adverse impact on other key characteristics (this is discussed in detail in the ASIDOHL2 report that accompanies the ES).

- *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 historic town of Bala, but conversely could have a beneficial impact by increasing visitor numbers increasing public awareness, enjoyment, amenity and understanding.

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

The noise assessment undertaken as part of the ES included an assessment of three Listed Buildings within Bala as receptors (see Table 1 above). Despite the expected increase in predicted future railway noise level at all three receptors, this would still be considerably

lower than the typical baseline ambient sound levels that would be expected, resulting in no increase in ambient noise levels at these three representative receptors.

- *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 are no known other developments proposed that would result in a cumulative effect. The proposed NRW Llyn Tegid Reservoir Safety Project would be constructed in tandem with the Railway Extension, and therefore both should be regarded within the same context. Neither of these developments would have a cumulative effect upon the Listed Buildings within Bala.

3.3.2 Pont Mwnwgl-y-llyn (Cadw ref. 4675)

Using Cadw's 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 following observations can be made:

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

The long-term (though largely reversible) change that would be brought about by the development comprises the new laying of the new rail track and footway, and the new handrails inserted into the new footway surface just inside of the bridge parapets. The visual impact of the rail track and new footway would be minimal in relation to the scale of the asset, being changes to the surface of the bridge only. The handrail would add some height to the bridge, as well as adding a modern feature in a material at odds with the palette of the original design.

Short-term visual impacts would also occur as a result of the locomotive and carriages crossing the bridge. Although the locomotives and carriages are relatively diminutive in height (c.2m), the LVIA has identified the potential for a 'worst case' 50m high steam plume from the locomotives, and the potential lengths of the trains (up to seven carriages in length) are also on a far greater scale than the bridge. Nevertheless, these visual events would be temporary, ephemeral, and irregular occurrences that would not happen at all for more than six months in the year, with a maximum of eighteen occurrence's per day for just nine days per year, and usually just eight per day when running.

- *the visual impact of the proposed change or development relative to the location of the historic asset*

The visual impact relative to the location of the bridge is coterminous, due to the fact that the new trackway, handrails and trains would all affect the surface of the bridge.

- *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 proposed new structural elements added to the bridge would not dominate it, although the new handrails would be clearly visible modern additions. However, the trains crossing the bridge, though relatively infrequently, would indeed temporarily visually dominate it. Notwithstanding this, at the same time they would also draw attention to the original functional aspect of the bridge, albeit transporting a steam train rather than the horse drawn and, later, motorised vehicles that it accommodated in the past.

- *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 Bala Lake Railway already terminates close to the bridge, c.75m to the south-west, and therefore the railway extension would serve to bring additional emphasis to this existing element of the built environment, whilst preserving the current use of the bridge as a footbridge used by pedestrians.

- *the lifespan of the proposed change or development and whether or not the impact might be reversible*

The proposed lifespan of the proposed development is not known, but evidently could be reversible if circumstances dictated it.

- *the extent of tree cover, whether it is deciduous or evergreen, and its likely longevity*

There are numerous trees within close proximity to the old bridge, and these have been identified as part of the tree survey undertaken by Cheshire Woodlands to inform the ES. A cluster of trees in the area immediately to the west of the bridge includes young to semi-mature sycamore, early mature goat willow and plum, and young ash, elder and hawthorn. To the west, growing within the triangle formed by the old bridge, the B4403 and B4391 is another cluster comprising semi-mature ash, goat willow and alder. All of these trees are deciduous, and some would require pruning to obtain a vertical clearance of no less than 3m over the bridge.

- *the impact of artificial lighting — for example, on night-time views*

It is understood that no additional artificial lighting would be required for the proposed railway extension.

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

The current landscape setting of the bridge already includes the Bala Lake Railway as a Historic Landscape Character Area within the wider *Bala and Bala Lakesides Registered Landscape of Special Historic Interest in Wales*. Consequently, it is considered that the proposed development would strengthen one of the key characteristics of the landscape, whilst having only a minor adverse impact on other key characteristics (this is discussed in detail in the ASIDOHL2 report that accompanies the ES).

- *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 historic asset, but conversely could have a beneficial impact by increasing visitor numbers increasing public awareness, enjoyment, amenity and understanding.

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

The noise assessment undertaken as part of the ES has identified that there would be a net increase in ambient noise at the bridge due to the railway, calculated as a net increase of +3db. However, as discussed above, this would be an infrequent, temporary and ephemeral effect that would only occur when the train was using this stretch of track, and it is not considered that this would have an adverse effect upon the significance of the asset, which is already located adjacent to two moderately busy roads.

- *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 are no known other developments proposed that would result in a cumulative effect. The proposed NRW Llyn Tegid Reservoir Safety Project would be constructed in tandem with the Railway Extension, and therefore both should be regarded within the same context.

3.3.3 Castell Gronw castle mound (Cadw ME 067)

Using Cadw's 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 following observations can be made:

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

The visual impacts of the structural changes that would occur as a result of the proposed development would be barely perceptible from this heritage asset. However, the movement of the locomotive, its steam plume, and the carriages would be of a moderately large scale when viewed from, or within the immediate setting of this asset, albeit, as discussed above, infrequent, temporary and ephemeral effects.

- *the visual impact of the proposed change or development relative to the location of the historic asset*

The edge of the Scheduled Monument is located *c.*10m from the edge of the red line boundary of the proposed development, and therefore is in close proximity. However, the visual impact is greatly reduced due to the screening afforded by the dense vegetation growing upon the mound, as well as the infrequency of the visual effect, as discussed above.

- *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 infrequency of the visual effect that would result from the passing of the train means that this would not dominate the asset or detract from our ability to understand it. The train passing close by the mound immediately prior to traversing the old river crossing offers the opportunity for an increased understanding and appreciation of these heritage assets through greater interpretation to the public.

- *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 Bala Lake Railway already terminates in close proximity to the castle mound, c.85m to the south-west, and therefore the railway extension would serve to bring additional emphasis to this existing element of the historic built environment.

- *the lifespan of the proposed change or development and whether or not the impact might be reversible*

The proposed lifespan of the proposed development is not known, but evidently could be reversible if circumstances dictated it.

- *the extent of tree cover, whether it is deciduous or evergreen, and its likely longevity*

There is considerable tree cover on the castle mound that prevents all but the occasional glimpsed view towards, and from the mound (Photographs 16-20). The trees appear to be mostly mature or semi-mature, and although largely deciduous, a number of tall evergreen conifers are also present, as well as well-established rhododendron of the evergreen variety. As these trees form an integral part of the garden of Pen y Bont Farmhouse, it is likely that these will have considerable longevity.

- *the impact of artificial lighting — for example, on night-time views*

It is understood that no additional artificial lighting would be required for the proposed railway extension.

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

The current landscape setting of the monument already includes the Bala Lake Railway as a Historic Landscape Character Area within the wider *Bala and Bala Lakesides Registered Landscape of Special Historic Interest in Wales*. Consequently, it is considered that the proposed development would strengthen one of the key characteristics of the landscape, whilst having only a minor adverse impact on other key characteristics (this is discussed in detail in the ASIDOHL2 report that accompanies the ES).

- *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 historic asset, but conversely could have a beneficial impact by increasing visitor numbers to the area thereby potentially increasing public awareness, enjoyment, amenity and understanding of the monument.

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

The noise assessment undertaken as part of the ES has identified that the predicted future railway noise level at this heritage asset, despite increasing, would still be considerably lower than the typical baseline ambient sound level, resulting in no increase in ambient noise levels.

- *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 are no known other developments proposed that would result in a cumulative effect. The proposed NRW Llyn Tegid Reservoir Safety Project would be constructed in tandem with the Railway Extension, and therefore both should be regarded within the same context.

3.4 Stage 4: If necessary, consider options to mitigate or improve the potential impact of a proposed change or development on that significance

The LVIA included There are also numerous landscape mitigation proposals which seek to reduce impacts and/or have beneficial landscape effects. These are discussed in greater detail in the LVIA that accompanies the ES (DSA Environment & Design 2021, 71-2) but include, for example:

- the planting of a new hedge along the southern boundary of the proposed station which would in the medium and long term grow to form a dense visual screen to ground level views from the lakeside footpaths and reduce the likelihood of adverse visual effects on Bala Conservation Area;
- the planting of a new hedge along the northern boundary and eastern side of the proposed station to visually enclose the proposed loading bay and storage areas;
- a new locally characteristic stone wall at the roadside frontage of the station to 'visually extend' the built frontage adjoining Aran Street;
- the opportunity to enhance Pen y Bont station by removing incongruous features such as the existing 'station shelter' and refresh the existing footbridge by painting it;
- there are proposals to enhance the experience of the users of both the railway and landscape more generally by incorporating 'sculptural interpretation' that further illustrate the heritage of Bala and the railways.

4 CONCLUSION

This assessment has identified that there would be no adverse impacts to the settings of the Listed Buildings within Bala, as the rare glimpses that might be experienced from the vicinity

of a small number of buildings would constitute a visual impact of negligible magnitude, which would not detract from an ability to appreciate or understand the significance of these assets. The development proposals have the potential to materially enhance the character of the Bala Conservation Area by redeveloping and completing the street frontage at the southern end of Aran Street with a high quality station building using a design palette in sympathy with the surrounding built environment. This would also have the effect of helping to regenerate this end of the town as a new gateway for visitors and tourists alighting from the railway, and thereby also increasing the appreciation, understanding and enjoyment of the historic town and its heritage assets.

More specifically, there is an opportunity to greatly increase an appreciation and understanding of the historic river crossing that the railway would utilise, and specifically of the *Castell Gronw Castle Mound* Scheduled Monument and Grade II Listed *Pont Mwnwgl-y-llyn* old bridge, which are both located at this important historic landscape locale.

5 STATEMENTS AND ACKNOWLEDGEMENTS

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

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APPENDIX 1: FIGURES

Site name: Llyn Tegid Railway Extension Date: April 2021 Drawn by: AB Scale: 1:10,000 @ A4 (main map)	Snowdonia National Park	250m study area	Application boundary

N

Figure 1:
Site location

Archaeological Research Services Ltd

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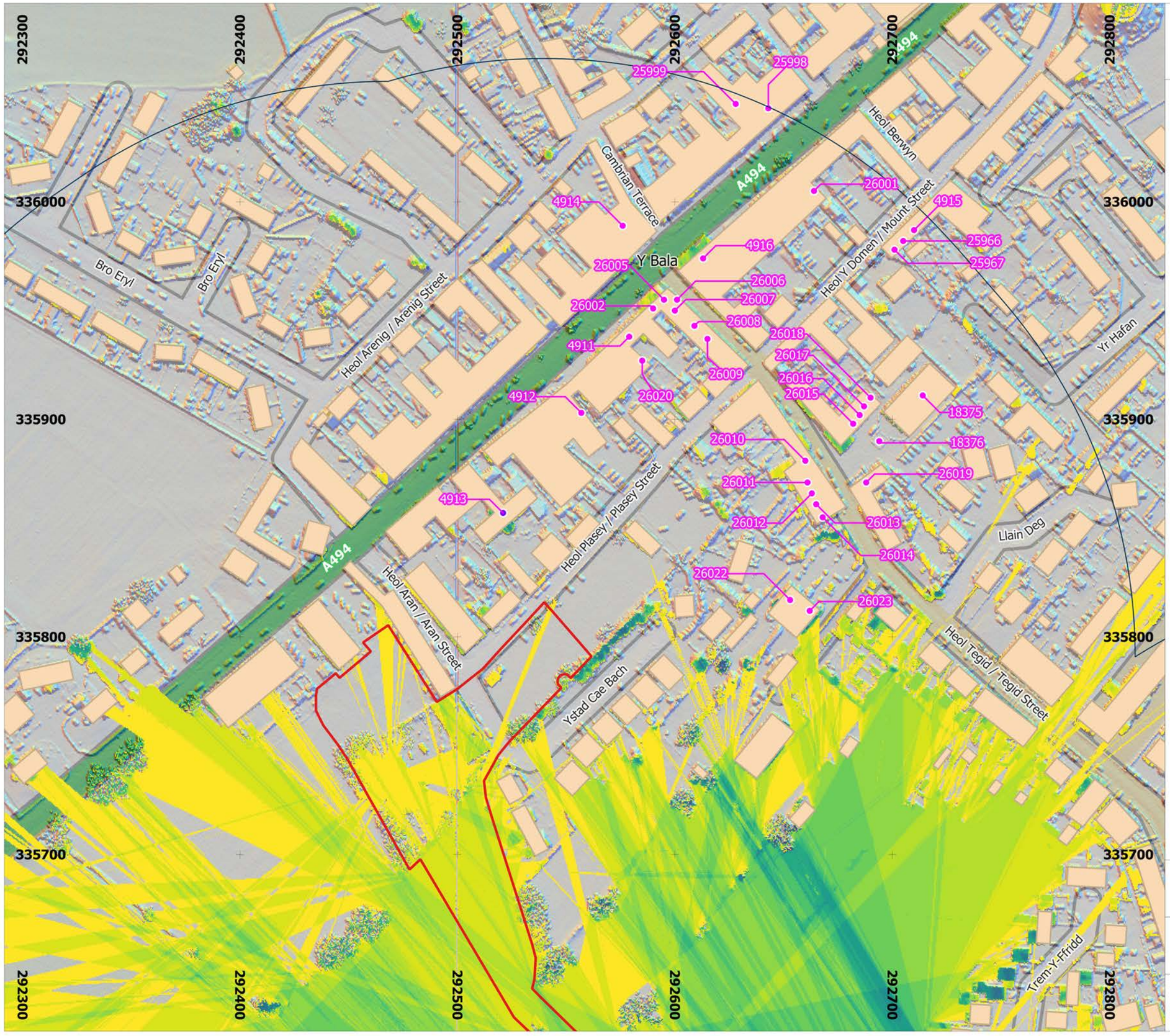

Figure 2: ZTV with points at 2m height to represent the train (northern area)

- Application boundary
- 250m study area
- Grade II Listed Building
- Grade II* Listed Building
- 1 point visible
- 5 points visible
- 10 points visible
- 15 points visible
- 18 points visible

ZTV showing the theoretical visibility of 20 points located at 50m chainage intervals along the proposed railway track with a 2m height to represent the train.

ZTV based upon the Lidar DSM @ 50cm resolution which provides some indication of the screening afforded by the intervening vegetation and buildings.

ZTV created using the Quantum GIS Visibility Analysis plugin. Observer height set at 1.75m. Earth's curvature is taken into consideration.

0 20 40 60 80 100 m

N

Site name: Llyn Tegid Railway Extension
Date: April 2021
Drawn by: AB
Scale: 1:1750 @ A3

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Figure 3: ZTV with points at 10m height to represent machinery during construction (northern area)

- Application boundary
- 250m study area
- Grade II Listed Building
- Grade II* Listed Building
- 1 point visible
- 5 points visible
- 10 points visible
- 15 points visible
- 20 points visible

ZTV showing the theoretical visibility of 20 points located at 50m chainage intervals along the proposed railway track with a 2m height to represent the train.

ZTV based upon the Lidar DSM @ 50cm resolution which provides some indication of the screening afforded by the intervening vegetation and buildings.

ZTV created using the Quantum GIS Visibility Analysis plugin. Observer height set at 1.75m. Earth's curvature is taken into consideration.

0 20 40 60 80 100 m

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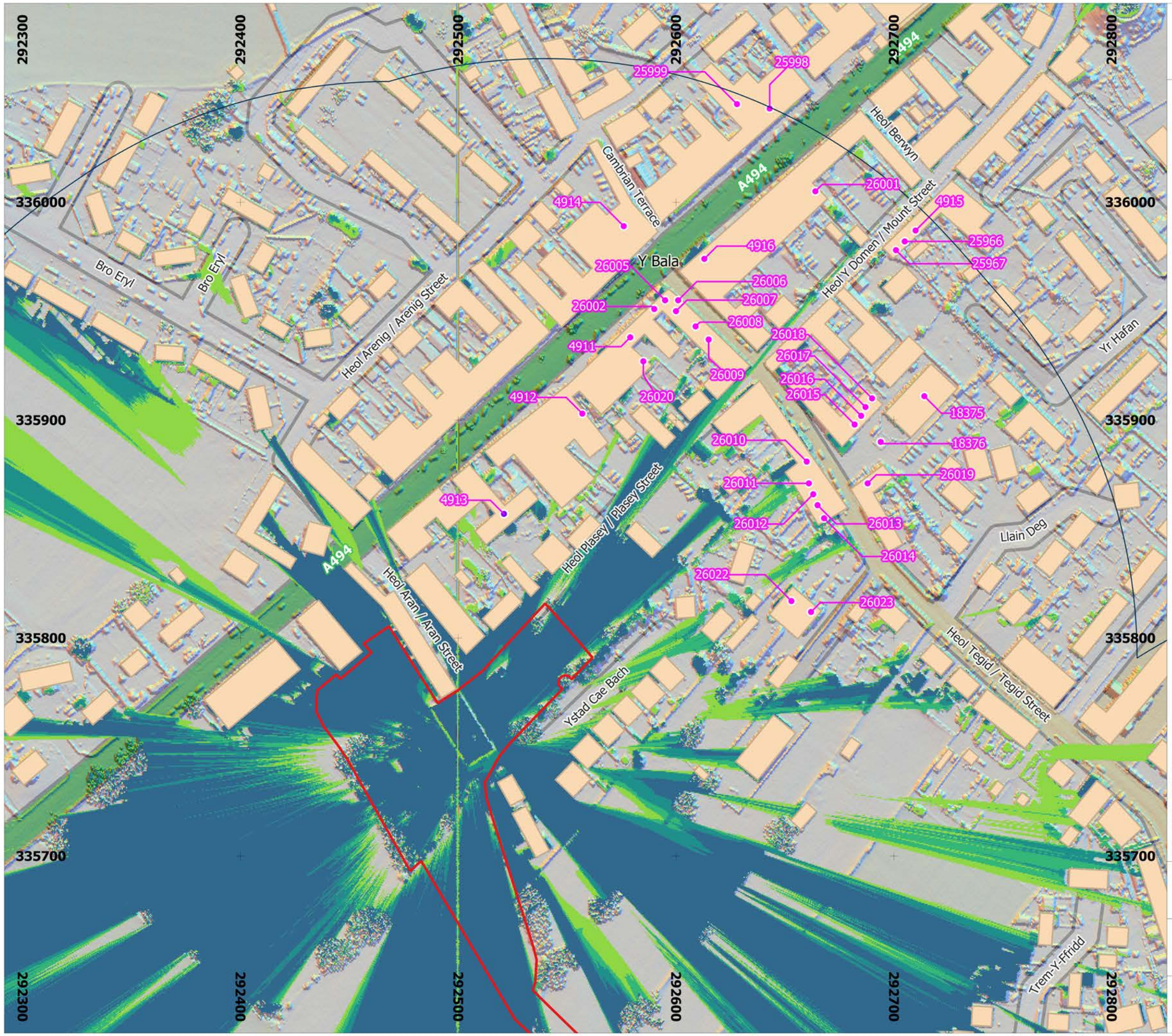

Figure 4: ZTV with points representative of the roofline of the proposed station building

- Application boundary
- 250m study area
- Grade II Listed Building
- Grade II* Listed Building
- 1 roofline point visible
- 2 roofline points visible
- 3 roofline points visible
- 4 roofline points visible
- 5 roofline points visible

ZTV showing the theoretical visibility of 20 points located at 50m chainage intervals along the proposed railway track with a 2m height to represent the train.

ZTV based upon the Lidar DSM @ 50cm resolution which provides some indication of the screening afforded by the intervening vegetation and buildings.

ZTV created using the Quantum GIS Visibility Analysis plugin. Observer height set at 1.75m. Earth's curvature is taken into consideration.

0 20 40 60 80 100 m

N

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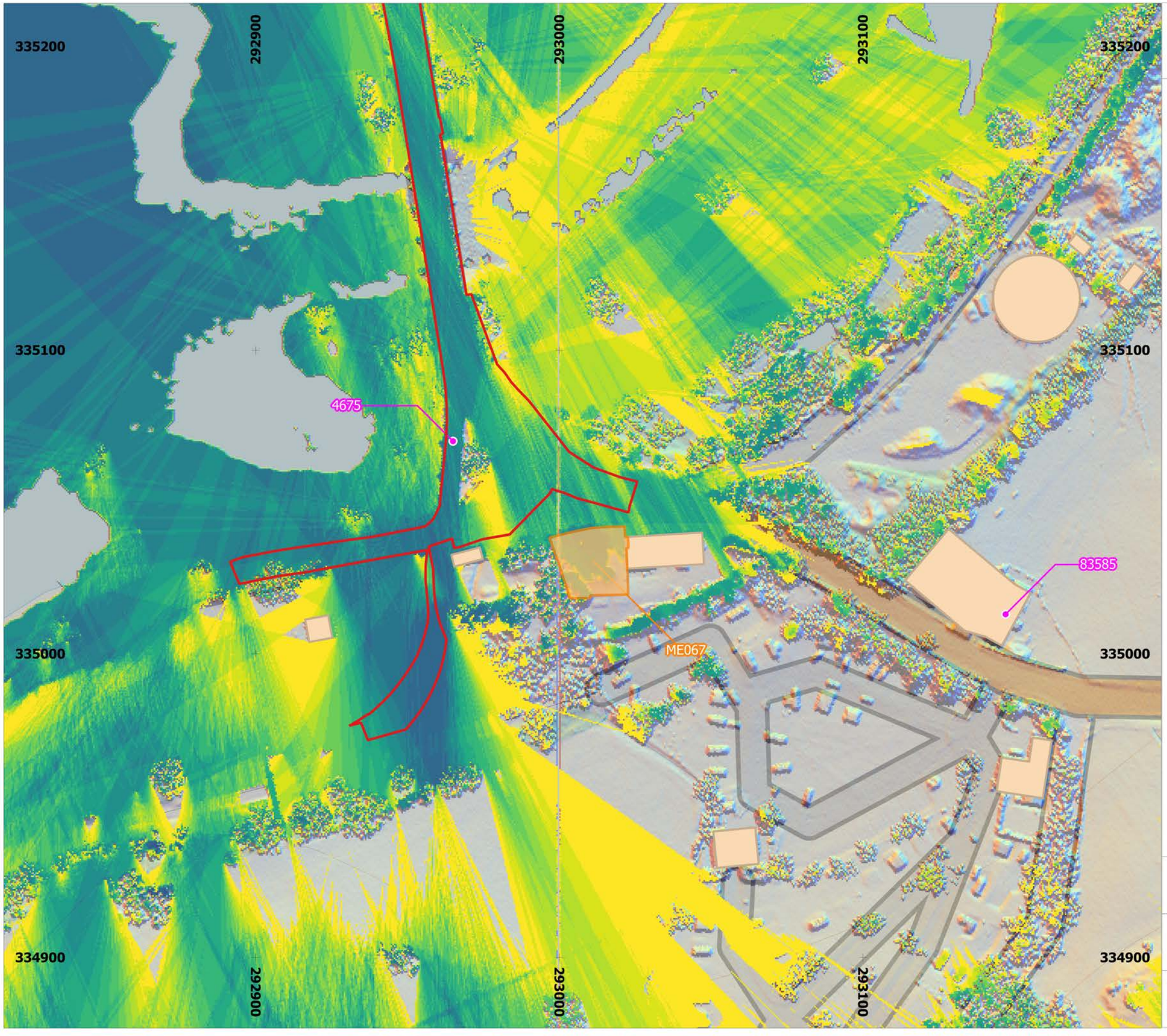

Figure 5: ZTV with points at 2m height to represent the train (southern area)

- Application boundary
- 250m study area
- Grade II Listed Building
- Scheduled Monument
- 1 point visible
- 5 points visible
- 10 points visible
- 15 points visible
- 18 points visible

ZTV showing the theoretical visibility of 20 points located at 50m chainage intervals along the proposed railway track with a 2m height to represent the train.

ZTV based upon the Lidar DSM @ 50cm resolution which provides some indication of the screening afforded by the intervening vegetation and buildings.

ZTV created using the Quantum GIS Visibility Analysis plugin. Observer height set at 1.75m. Earth's curvature is taken into consideration.

0 20 40 60 80 100 m N

Site name: Llyn Tegid Railway Extension
Date: April 2021
Drawn by: AB
Scale: 1:1250 @ A3

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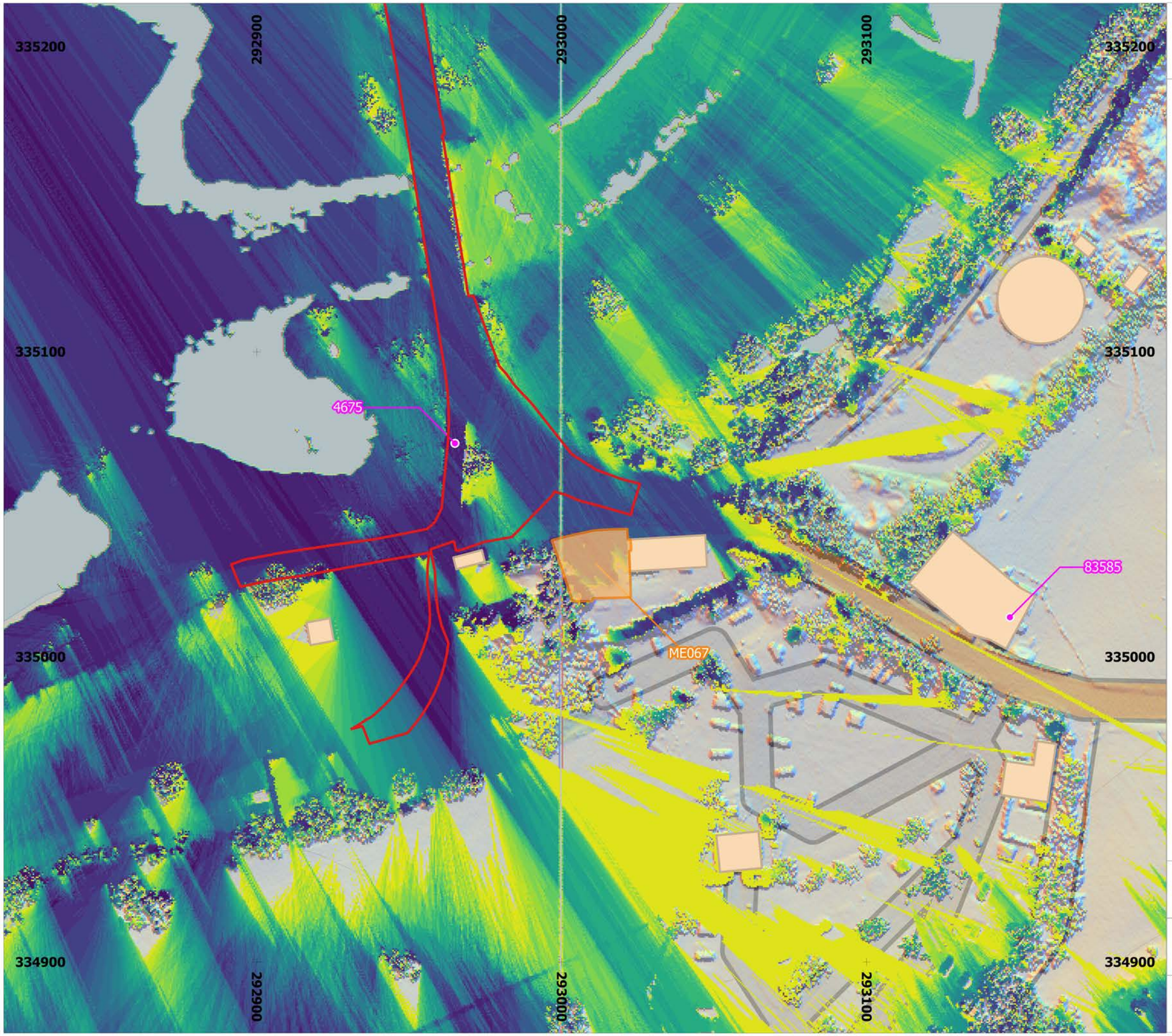

Figure 6: ZTV with points at 10m height to represent machinery during construction (southern area)

- Application boundary
- 250m study area
- Grade II Listed Building
- Scheduled Monument
- 1 point visible
- 5 points visible
- 10 points visible
- 15 points visible
- 20 points visible

ZTV showing the theoretical visibility of 20 points located at 50m chainage intervals along the proposed railway track with a 2m height to represent the train.

ZTV based upon the Lidar DSM @ 50cm resolution which provides some indication of the screening afforded by the intervening vegetation and buildings.

ZTV created using the Quantum GIS Visibility Analysis plugin. Observer height set at 1.75m. Earth's curvature is taken into consideration.

0 20 40 60 80 N 100 m

Site name: Llyn Tegid Railway Extension
Date: April 2021
Drawn by: AB
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APPENDIX 2: PHOTOGRAPHS

Photograph 1:
View south towards the PDA from adjacent to Grade II Listed Building *Plas-yn-Acre*.

Photograph 2:
Zoomed view as above.

Photograph 3:
View north-west towards Bala from the edge of the proposed compound area

Photograph 4:
View south-west along Mount Street towards the proposed new station area from 48-50 Mount Street (Cadw Grade II Listed Buildings 4915, 25966 and 25967), centre left.

Photograph 5:
Zoomed view as above.

Photograph 6:
View north-west towards the PDA and *Agricultural range, Pen-y-bont* (Cadw Grade II Listed Building 83585)

Photograph 7:
Zoomed view as above looking towards the PDA.

Photograph 8:
View north-east towards *Pont Mwnwgl-y-llyn* old bridge (Cadw Grade II Listed Building 4675 – centre left in photo) when leaving the platform of the Bala Lake Railway halt. *Castell Gronw Castle Mound* (Cadw Scheduled Monument SH93NW 3) is within the dense vegetation, centre right.

Photograph 9:
View south-east across the *Pont Mwnwgl-y-llyn* old bridge towards the Bala Lake Railway halt.

Photograph 10:
View north-east towards the *Pont Mwnwgl-y-llyn* old bridge.

Photograph 11:
View south beneath the southern arch of the *Pont Mwnwgl-y-llyn* old bridge, showing the original eastern structure (left) and the later widening (right)

Photograph 12:
View south-east from the *Pont Mwnwgl-y-llyn* old bridge towards *Castell Gronw Castle Mound* which is located centre left surmounted by a flagpole)

Photograph 13:
View south from the B4391 towards *Castell Gronw Castle Mound* (in vegetation surmounted by flag pole centre left) and the *Pont Mwnwgl-y-llyn* old bridge (centre right).

Photograph 14:
View west from the B4391 towards *Castell Gronw Castle Mound* (surmounted by flag pole centre left) and the *Pont Mwnwgl-y-llyn* old bridge (centre).

Photograph 15:
View east-north-east towards *Castell Gronw Castle Mound* (centre, within vegetation) from the footbridge over the Bala Lake Railway.

Photograph 16:
View south across the B4391 towards *Castell Gronw Castle Mound* (just visible, centre).

Photograph 17:
View east from the course of the proposed railway extension towards *Castell Gronw Castle Mound* (behind modern disturbance).

Photograph 18:
Zoomed view as above.

Photograph 19:
View north-east towards *Castell Gronw Castle Mound* and Pen y Bont Cottage from the eastern end of the Bala Halt platform

Photograph 20:
Zoomed view as above, eastern edge of mound visible (centre).