

Heritage Impact Assessment: Penallta Colliery Engine Hall and Fan House

December 2025



Report No. 2446



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Prepared for The Power Hall Ltd via BBA Architects and Planners

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Summary

Archaeology Wales was commissioned by BBA Architects and Planners on behalf of The Power Hall Ltd to carry out a Heritage Impact Assessment on proposed works at Penallta Colliery Engine Hall and Fan House, a Grade II Listed Building (LB13579). The Colliery is located approximately 1.5km north of the town of Ystrad Mynach, in the County Borough of Caerphilly and built between 1906 and 1909 by the Powell Duffryn Steam Coal Company. Since the Colliery's closure in 1991, the Engine Hall and Fan House have remained abandoned.*

The report has assessed the heritage value of the asset following the methodology outlined in the Cadw guidance document Heritage Impact Assessment in Wales (2017). The Penallta Colliery Engine Hall and Fan House has a High heritage value, derived from each of its evidential, historic, aesthetic, and communal value. These are based on its strong visual character, and the largely intact physical fabric of the buildings. Its associations with coal mining history in South Wales and its importance to the local community also enhances this value.

Proposed works involve the wider development of Penallta Colliery, including converting the Engine Hall into apartments, as well as constructing new terraced housing. This assessment is solely related to the proposed development of the Engine Hall. This will involve the construction of 51 apartments within the existing shell of the building. The preferred option is for the proposed works to proceed. The retention of the Fan House would be preferred, as it is part of the original design of the Colliery, and would result in significant loss of physical fabric if removed. The restoration of the exterior of the Engine Hall and Fan House will help prevent the building falling into further disrepair. Matching the finish on the converted Workshops, Old Stores, and Lamp Room would be preferred, to create a continuity between the Colliery buildings. Conducting a building recording survey on the Engine Hall and Fan House, prior to commencement of the works, would help document historic elements and details that would otherwise be lost during the development.

Overall, the proposals are considered to have both beneficial and adverse outcomes but ultimately resulting in a Low to Moderate beneficial impact on the heritage value of Penallta Colliery Engine Hall and Fan House.

Crynodeb Annechnegol

Comisiynwyd 'Archaeology Wales' gan 'BBA Architects and Planners' ar ran The Power Hall Ltdi, gynnal Asesiad Effaith Treftadaeth ar gyfer gwaith arfaethedig yn y Tŷ Injan Glofa Penallta a Thŷ Fan, sy'n adeilad cofrestredig II (LB13579). Lleoli'r lofa tua 1.5 cilometr gogledd o'r dref Ystrad Mynach, yn Bwrdeistref Sirol Caerffili, a chafodd ei adeiladu rhwng 1906 a 1909 gan y 'Powell Duffryn Steam Coal Company'. Mae'r safle wedi'i anghyfannedd ers i'r lofa gau ym 1991.*

Mae'r adroddiad hwn wedi asesu'r gwerth treftadaeth yr ased yn unol â'r fethodoleg yn y ddogfen arweiniad Cadw, Asesiadau o'r Effaith ar Dreftadaeth Yng Nghymru (2017). Mae gan y Tŷ Injan Glofa a Thŷ Fan gwerth treftadaeth uchel, yn deillio o'i gwerth tystiolaethol, hanesyddol, esthetig a cymunedol. Mae hyn yn seiliedig ar ei chymeriad gweledol cryf, a'i ffabrig fissegol, sy'n gyflawn ar y cyfan. Ymhellach, wrth ystyried y pwysigrwydd yr adeilad i'r gymuned leol, yn ogystal â'r cysylltiad gyda'r hanes diwydiant glo yn De Cymru, mae ei werth yn cynyddu.

Mae'r gwaith arfaethedig yn cynnwys y datblygiad ehangach o Lofa Penallta, gan gynnwys trosi'r Tŷ Injan mewn i fflatiau, yn ogystal ag adeiladu tai teras newydd. Mae'r asesiad hwn yn berthynol i'r datblygiad y Tŷ Injan yn unig. Bydd hwn yn cynnwys adeiladi 51 fflatiau i mewn i'r plisgyn presennol yr adeilad. Mae'r opsiwn ffafrio yw mynd ymlaen gyda'r gwaith arfaethedig, ac i gadw Tŷ Fan, oherwydd bod yn rhan o'r cynllun gwreiddiol y lofa, a bydd ei golled yn golygu gostwng arwyddocaol ffabrig fissegol. Bydd adferiad i'r tu allan Tŷ injan a Thŷ Fan yn helpu atal difrod i'r adeilad yn y dyfodol. Yn ddelfrydol, bydd gorffeniad cydweddu ar y gweithdai, hen storfeydd a'r ystafell lamp pan wedi eu trosi, er mwyn creu parhad rhwng yr adeiladau glofa. Bydd cynnal cofnod adeilad ar y Tŷ Injan a Thŷ Fan, cyn i'r gwaith dechrau, yn helpu cofnodi manylion hanesyddol, cyn bod nhw'n cael ei golli yn ystod datblygiad.

Yn gyffredinol, byddai'r cynigion yn achosi canlyniadau buddiol ac andwyol, a byddai hynna yn arwain at effaith fuddiol isel i gymedrol ar werth treftadaeth Tŷ Injan Glofa Penallta a Thŷ Fan.

1. Introduction

- 1.1.1. In November 2025, Archaeology Wales (henceforth – AW) was commissioned by BBA Architects and Planners on behalf of The Power Hall Ltd (henceforth – the Client) to carry out a Heritage Impact Assessment (HIA) on proposed works at Penallta Colliery Engine Hall and Fan House, a Grade II* Listed Building (LB13579), located near Hengoed in Caerphilly (Plate 1). The Engine Hall was part of the wider Colliery, built between 1906 and 1909 by the Powell Duffryn Steam Coal Company. The site is centred on NGR ST 13986 95802 (Figure 1).



Plate 1. Southern aspect of Penallta Colliery Engine Hall and Fan House (LB13579), looking north.

1.2. Objectives

- 1.2.1. The aim of this HIA is to assess the impact of the proposed development on the Listed Building and to provide the local planning authority (in this case Caerphilly County Borough Council) with the information needed to make a decision on providing consent. It has been undertaken in line with relative

legislation and in accordance with *Heritage Impact Assessment in Wales* (Cadw 2017a), which sets out clear guidance for HIAs. The production of a HIA is intended to be an iterative process to produce the best design solution, which minimises impacts on the Listed Building while achieving the design objectives.

1.3. Site Description

- 1.3.1. Penallta Colliery is located approximately 1.5km north of the town of Ystrad Mynach, in the County Borough of Caerphilly, South Wales. The Colliery is located between the villages of Hengoed and Penybryn, just west of a small tributary of the Rhymney River, Nant Cylla. The Colliery is bounded by housing estates to the east and west, and by Penallta Industrial Estate to the north. The southern edge of the site is bordered by the green space and woodland of Parc Penallta. The site is located at approximately 177m aOD.
- 1.3.2. Eight Listed Buildings are associated with Penallta Colliery, including the building of the proposed development, the Engine Hall and Fan House (Figure 2). The Listed Buildings associated with the Colliery are listed in Table 1.

Table 1. Listed Buildings associated with Penallta Colliery

ID	Name	Grade
13579	Penallta Colliery Engine Hall and Fan House	II*
13580	Penallta Colliery Baths Building	II*
13581	Penallta Colliery Workshops	II
13582	Penallta Colliery Old Stores	II
13583	Penallta Colliery Lamp Room	II
13584	Penallta Colliery Pit-top Offices	II
13585	Penallta Colliery No. 1 Headframe	II*
13586	Penallta Colliery No. 2 Headframe	II*

- 1.3.3. Penallta Colliery Engine Hall and Fan House (LB13579) is listed for:

“its impressive architectural qualities, its rarity as an example of surviving large

colliery buildings in South Wales, and its important influence on the development of colliery buildings in Britain” (Cadw a).

- 1.3.4. A site visit was conducted in December 2025 to assess the current character and condition of the site. The visit was conducted on an overcast, dry day, with good visibility. The site was made fully accessible, as were the surrounding public areas. As discussed in later sections, some parts of the Engine Hall were not reachable due to blocked in doorways.

2. Legislation and Guidance

- 2.1.1. The Historic Environment (Wales) Act 2023 (November 2024) provides consolidated legislation for the effective protection and management of Wales’ historic environment.

- 2.1.2. National planning policy concerning the treatment of archaeological remains, Listed Buildings, Conservation Areas, and the wider historic built environment in Wales, is detailed in Chapter 6 of *Planning Policy Wales, Edition 12* (Welsh Government 2024). Chapter 6 of the Planning Policy outlines the policy relating to Distinctive and Natural Places which includes the Historic Environment. Paragraph 6.1.7 states that:

“It is important that the planning system looks to protect, conserve and enhance the significance of historic assets. This will include consideration of the setting of an historic asset which might extend beyond its curtilage. Any change that impacts on an historic asset or its setting should be managed in a sensitive and sustainable way.”

- 2.1.3. The policy regarding Listed Buildings is detailed in Chapters 6.1.10 to 6.1.13 and states that there should be a presumption in favour of preservation of the designated building. It goes on to state that:

‘the aim should be to find the best way to protect and enhance their special

qualities, retaining them in sustainable use.'

2.1.4. *Technical Advice Note (TAN) 24* states that planning proposals should fully consider the impact of the development on the historic environment (Welsh Government 2017).

2.1.5. At a local level, the Caerphilly County Borough Local Development Plan (LDP) up to 2021 (Caerphilly County Borough Council 2010), includes Specific Policy 6: Place Making, which states that:

"Development proposals should contribute to creating sustainable places by having full regard to the context of the local, natural, historic, and built environment"

2.1.6. The following guidance documents were consulted in the production of this report:

- *Sustainable Management of the Historic Environment in Wales (Conservation Principles)* (Cadw, 2011)
- *Heritage Impact Assessment in Wales* (Cadw 2017a)
- *Managing Changes to Listed Buildings in Wales* (Cadw 2017b)
- *Principles of Cultural Heritage Impact Assessment in the UK* (IEMA, IHBC and CIfA 2021)

3. Methodology

3.1.1. The production of a HIA is intended to be an iterative process to understand and minimise the impact of development proposals on the significance of historic assets within the design process. This assessment has followed the methodology outlined in Cadw's *Heritage Impact Assessment in Wales*. The guidance states that the assessment '*should be proportionate both to the significance of the historic asset and to the degree of change proposed*' (Cadw

2017a).

3.1.2. The identification and assessment of significance for the various historic assets draws on the four heritage values defined by Cadw in *Conservation Principles* (Cadw 2011). These values consist of the asset's:

- Evidential value: the extent to which the physical fabric tells how and when the historic asset was made, how it was used and how it has changed over time. There may be buried, or obscured elements associated with the historic asset which may also be an important potential source of evidence.
- Historical value: the historic asset may illustrate a particular past way of life or be associated with a specific person or event; there may be physical evidence for these connections which it could be important to retain.
- Aesthetic value: the design, construction and craftsmanship of the historic asset. This can also include setting and views to and from the historic asset, which may have changed through time.
- Communal value: the historic asset may have particular significance to people for its commemorative, symbolic or spiritual value, or for the part it has played in local cultural or public life. This will be particularly important in the case of buildings in public use or sites where public access must be maintained or improved.

3.1.3. Assessing the significance of the asset in this way will allow any potential impacts of the proposed development, both beneficial and harmful, on the asset and its setting to be identified. In order to identify and assess the significance of the asset, the assessment draws on the following sources:

- Cof Cymru – National Historic Assets of Wales, Cadw data on designated heritage assets;

- Historic mapping, including historic Ordnance Survey maps and tithe maps;
- Aerial photography from the Central Registers of Aerial Photography Wales (CRAPW), Cambridge University Collection of Aerial Photography (CUCAP) and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW); and satellite imagery via Google Earth; and,
- Site walkover.

3.1.4. The heritage value of the assets has been assessed using the assessment criteria based on those provided in the *Design Manual for Roads and Bridges, LA104* (Highways England *et al.*, 2020). The values are defined as:

Table 2. Asset value criteria

Value	Description
Very High	Assets of international importance
High	Assets of national importance. Assets that contribute to regional research objectives.
Medium	Assets of regional importance. Assets that contribute to regional research objectives. Assets with lower levels of preservation
Low	Assets of local importance. Includes locally Listed Buildings and assets of limited value or poor preservation
Negligible	Assets with little surviving archaeological, architectural, or historic interest.

3.1.5. The magnitude of the potential impact of the development proposals on assets is also assessed using criteria based on the same documents. Impacts can be adverse or beneficial. The criteria are defined in the table below:

Table 3. Magnitude of impact criteria

Magnitude	Description
Major	<p>Adverse: Total loss or substantial harm to key elements of the heritage interest of the asset or features or characteristics of the baseline (pre-development) conditions such that the adverse impact seriously affects a key element of its special interest of the asset.</p> <p>Beneficial: Significant removal of detracting elements or restoration of key elements of special interest strongly contributing to the asset's heritage value</p>
Moderate	<p>Adverse: Partial loss or harm to one or more important elements or features or characteristics of the baseline (pre-development) conditions such that post development character or composition, or attributes of baseline will be significantly changed.</p> <p>Beneficial: Partial removal of detracting elements or restoration of key elements of special interest contributing to the asset's heritage value</p>
Low	<p>Adverse: Minor loss. Change arising from the loss or alteration will be discernible but underlying character or composition or attributes of the baseline condition will be similar to pre-development circumstances or patterns.</p> <p>Beneficial: Minor removal of detracting elements or restoration of elements of special interest contributing to the asset's heritage value</p>
Negligible	<p>Adverse: A slight loss of heritage interest through limited physical impact on the asset's value or a change within its setting that would be barely perceptible and the appreciation and understanding of the historic asset would be largely unchanged</p> <p>Beneficial: Slight removal of detracting elements or restoration of elements of special interest contributing to the asset's heritage value</p>
None	<p>No loss or alteration.</p> <p>Change not distinguishable or does not result in loss of heritage significance. Change does not result in any removal of detracting elements or restoration of elements of special interest.</p>

4. Understanding the Significance of the Asset

4.1. Historic Background

- 4.1.1. The earliest map of the area is the George Yates's *A Map of the County of Glamorgan* from 1799. Although lacking detail, it shows the undulating nature of the area of the site. The towns of Caerphilly, Ystrad Manach (Ystrad Mynach) and Gellygaer (Gelligaer) are all noted on the map. A few buildings are located along either side of a tributary of the Rhymney, like Nant Cylla. To the west of this stream, a small village "Penaltau" is labelled, on a small promontory. The name, meaning 'top of the incline' in Welsh, probably refers to this location on a small hill.
- 4.1.2. During the 19th century, historic map regression demonstrates that the vicinity of the proposed development consisted of mixed agricultural fields and woodland. Despite being predominantly an agricultural landscape, as early as the 1813 Ordnance Survey Drawing there are several collieries shown in the area, including Gellyhave (Gelli-hâf) c. 2km to the east and Werngaeach c. 2km to the west. These would have been small-scale enterprises with insubstantial surface level structures. The 1842 Tithe map is the first survey that shows the area in considerable detail. The fields that would later become the location of the Colliery are part of the Penallta Farms – Penallta Fawr and Penallta Isha – and are occupied by Charles Edwards. The area continues to be largely agricultural in nature.
- 4.1.3. By the late 19th century, the South Wales coal industry had developed significantly, particularly in the Rhondda valleys, dramatically changing the character of the area as railways were constructed to take coal to the docks for export and workers' settlements grew up around the collieries. The First Edition OS map of 1886 (surveyed between 1873 and 1879) shows that development of the Rhymney and Cylla valleys had not advanced so rapidly but there was still evidence of industrialisation. Several railways are shown,

including the Great Western Railway (G.W.R.) and the Rhymney Railway Penalltau Branch – along which Penalltau Colliery is located. Several trial shafts and air shafts are noted throughout the Cylla valley. Little has changed in the landscape by the Second Edition Ordnance Survey, revised between 1898 and 1899 and published in 1901. The field of the proposed development is now a forest and is labelled as “Old Levels”. Less than 500m to the east, Hengoed Colliery has been constructed. Penalltau Colliery has fallen into disuse.

- 4.1.4. Penallta Colliery was built between 1906 and 1909 by the Powell Duffryn Steam Coal Company. The Colliery appears to have taken its name from two farms to the south, Penallta Fawr and Penallta Isha, first noted on the Tithe map. It was one of the last collieries constructed that were powered by steam (Newman, 1995). As its engineer George G Hann noted, it would have been preferred to place the shafts at the bottom of the basin, but the only available site of an appropriate size was on the hillside (Hughes, 1994). The area of the Colliery was artificially levelled, with the surface buildings built to a matching architectural style, on a rectilinear plan. The Ordnance Survey map from 1919 shows the initial layout of the colliery. The focal point of the complex is the large engine hall, running east to west, with the two shafts and winding engines to the south. The pit-top offices, lamp room, workshops, and store are located to the west. Various tracks wind around the buildings, linking with the newly constructed Cylla Branch of the Rhymney Railway to the east. Rows of terraced housing have been constructed to the north, east and west, to accommodate workers at both Penallta and Hengoed collieries.
- 4.1.5. Coal production at Penallta grew quickly through the first half of the 20th century. By the 1930s, 3,200 men were employed by the Colliery, with over 975,000 tons of coal being produced in 1930 (Northern Mine Research Society). An aerial photograph from 1930 shows the Colliery located in a largely agricultural setting. The engine hall, workshops, offices, and the two

headframes are all clearly visible. The boiler house with its tall chimney can be seen to the north of the engine hall. Other infrastructure such as sheds, sidings, and screens can be seen (Plate 2).

- 4.1.6. In 1938, as part of a national programme by the Miners' Welfare Committee, a bathhouse was built. It was built in a house style, drawing inspiration from European pithead baths, and design principles from the International Modern movement (Cadw b). The bathhouse, although unlabelled, is seen on the Ordnance Survey map published in 1951, located to southwest of the other colliery buildings. A couple of extra buildings have been included built in the Colliery, but largely the complex layout remains the same. A few of the nearby housing estates have expanded in size. An aerial photograph from 1945 shows the area, much the same as seen on the 1951 map. The bright roof of the bathhouse is distinct from the other buildings of the Colliery, whilst the coal tip, located on a hill to the southwest is obvious (DataMapWales).
- 4.1.7. The National Grid map published in 1960 shows the area in proximity to Penallta in detail (Figure 2 and 3). Little appears to have changed however, with no indication of the slow decline in both the number of workers employed at the Colliery, nor the amount of coal being produced. The nationalisation of the Colliery in 1947 appears to also have no effect on the number of buildings in the complex. The next map National Grid map, published in 1965, shows the removal of a few buildings with the Colliery complex, most notably, the building to the immediate north of the engine house – the boiler house and its chimney. The Colliery's coal tip has grown considerably to the southwest. Further afield, the residential areas in nearby Gelligaer and Ystrad Mynach continue to grow.
- 4.1.8. By the mid-1970s, the number of men working at Penallta had reduced to just 700, with only 210,000 tons being produced per year. This decline in production matched a similar trend seen in collieries across South Wales

(Hughes 1994). The late 1980s saw an investment in modernised technology at the Colliery, leading to an increase in output. However, Penallta Colliery was closed on 1st November 1991 after the economically workable reserves of coal were exhausted (Northern Mine Research Society). The closure of the colliery can be seen in aerial photography from 1991. The railway, including the Cylla branch, has begun to be dismantled. The Colliery's coal tip to the southwest has begun to be restored, with most of the eastern portion returned to green space. The buildings of the Colliery complex all appear to remain intact at this stage. The Penallta Industrial Estate having been built to the immediate north.

4.1.9. After the closing of Penallta, the area saw large changes. On the 5th November 1991, just four days after the closure of the Colliery, eight of its buildings related were listed (Table 1). The location of the old coal tip was regenerated into a large green space – Parc Penallta. The centrepiece of the Pact is Sultan the Pit Pony. Created by artist Mick Petts, it was made used 60,000 tons of stone, earth and coal shale to create the 200m long sculpture, as a tribute to the pit ponies of the local mines; it was built between 1996 and 1999. The regeneration of the area also saw the addition of cycle and walking trails, as well as two fishing lakes (Brough, 2014). Ysgol Gymraeg Penalltau, a Welsh primary school, was built immediately to the northeast of the Colliery and opened in 2009 (Gurner, 2009).

4.1.10. Modern aerial photography, accessed through Google Earth, shows the changes to the area during the 21st century. In the 2001 photograph, all buildings and infrastructure related to the Colliery, aside from the eight Listed Buildings, have been removed, with the space now mostly scrubland. Sultan the Pit Pony is clearly visible to the southwest. Further reclamation and restoration of the land to the east of the Colliery occurs in the late 2000s, with Ysgol Gymraeg Penalltau present in the 2010 photograph. The new Winding Wheel Lane runs through the middle of the old Colliery following the

conversion of the workshops to an apartment block. The large housing development of Cwm Calon to the east is built in phases between 2010 and 2016.

4.2. Engine Hall and Fan House

- 4.2.1. The Engine Hall and Fan House (LB13579) was the first building constructed at Penallta Colliery, in 1906. At this time, the Engine Hall of Penallta Colliery was an innovative design, creating a single building for all surface machinery, rather than individual engine houses. The internal machinery included the winding engines, air-compressors, ventilation fans, and generators. This reduced the number of required pipework and meant that one overhead crane could service all machines. The approach was subsequently adopted as a standard for British collieries (Salway, 2008).
- 4.2.2. The Engine Hall building is built on an east-west axis, with the Fan House articulated at its eastern end. It comprises a large open hall, 91m long by 23m wide. The building is of 16 bays to the long sides and four bays to the gable ends. It is constructed of Pennant sandstone rubble with red brick pilasters and eaves course. It is one of the eight building remaining from the original layout (Figure 3).

4.3. Significance of the asset

Evidential value

The evidential value of the Penallta Colliery Engine Hall and Fan House is drawn from its largely untouched exterior structure. Information relating to the Engine Hall and Fan House's evidential value was gathered during the site visit – the plates location plan is included in Figure 4. The building, due to its location and size, remains the focal point for the remaining colliery buildings. Despite its abandonment almost 35 years ago, its exterior is largely intact (Plate 3). The Pennant stone of which the Hall is formed is visible on three sides; the western aspect has a rough render (Plate 5). The red brick pilasters and eave courses are almost completely intact, with little evidence of damage (Plate 6). All the windows on the southern and western aspects, and all the windows on the bottom half of the northern aspect have

been filled in with breezeblocks or bricks (Plate 7). The upper windows contain the original metal frames with single pane glazing, as do some of the lower windows (Plate 8). The large doorway, at the centre of the southern façade, is unblocked, except for a modern gate with the stone "P. D. 1906" sign above (Plate 9). The northern aspect has evidence of the openings at the basement level, although most are similarly filled in with bricks (Plate 8). The eastern aspect is where the Fan House is attached to the main Hall (Plate 10). Generally, the building's walls are often overgrown, especially on the northern and eastern aspects (

- 4.3.1. Plate 11). The roof is comprised of corrugated panels, punctuated with skylights (Plate 12). This is not the original roof, with the original roof profile being raised in the middle – this can be seen in the shape of the gables ends (Plate 5). This is visible in the aerial photograph from 1930 (Plate 2).

Internally, all the machinery has been completely removed from the Engine Hall, leaving an enormously empty single space (Plate 13, Plate 14). There is continuous arcading on all four sides with carved pilasters to each bay (Plate 15). The roof is held up by the original steel trusses, with the occasional roof panel missing (Plate 16). Brickwork and stonework are often exposed along the walls, with occasional patches of painted plaster and tiling remaining (

Plate 17). The lattice girder crane is still in place, located at the eastern end (Plate 18). Openings in the floor – where the machines were once located – show the basement has been filled in with loose material below (Plate 19). The Fan House is accessible through a doorway in the eastern wall. It contains an accessible L-shaped room, with a tiled floor and painted walls, and some remaining machinery infrastructure (Plate 20,

Plate 21). Views from the windows on its eastern end show the Cwm Calon housing estate below (Plate 22). Some parts of the Fan House were inaccessible due to bricked up openings, but machinery could be seen through gaps in the bricks (

- 4.3.2. Plate 23).

- 4.3.3. Modern additions to the building are limited, except for the blocking up of the windows, lighting above the main entrance, and a gate installed below. After the removal of the machinery, the structure of the building appears to have been largely untouched, except for expected wear and tear, and regular graffiti (Plate 24).

- 4.3.4. The physical fabric of the exterior of the Engine Hall appears largely intact from

its construction in the 1900s. The removal of the boiler house to the rear will have resulted in some loss to the original fabric, although the detailed National Grid map from 1960 appears to show that the two buildings were not physically attached, so this is likely minimal. The removal of the original roofing has led to the loss of this physical fabric. The bricking up of the windows has resulted in some of the original window frames being removed, although a large number remain. Some of the vegetation is quite extensive and may have caused damage to some of the structural elements of the Engine Hall. The addition of modern elements such as lighting will have seen minor loss of physical fabric. Internally, the loss of the original machinery, itself an important element of the physical fabric of the building, has had a moderate impact on the Engine Hall. The vast majority of the site was accessible, except for some rooms of the Fan House and the infilled basement. There is a likelihood that historical elements are hidden within these areas, especially in the basement.

Historical value

- 4.3.5. Penallta Colliery draws its historical significance from its role in the history of the coal mining industry of South Wales. Its owners, Powell Duffryn Steam Coal Company, had humble roots. In the early 19th century, Thomas Powell recognised the potential of the coal-rich Welsh valleys, buying a piece of land at Llanhilleth in 1810, and digging for coal there himself. Over the next few decades, Powell purchased further land, opening more collieries. This was timed with the high demand for coal following the more common usage of steam-driven engines. By 1842, Powell was the world's largest coal producer. Further land and colliery acquisitions, as well as a merger with Sir George Elliot's holdings, through the 19th century saw the company continue to grow. Investment in new mining technologies saw Powell Duffryn Steam Coal Company's annual coal output increase to four million tons in 1904 (Grant, 2000).

- 4.3.6. Penallta was one of many collieries opened by the company in the Rhymney valley at this time – including Bargoed in 1897 and Britannia in 1910. The sinking of the shafts started in 1906 and 1907 and was completed in 1909. At the time, Penallta's shafts were the deepest in the South Wales Coalfield. The surface buildings followed a unique layout, with efficiency as its central tenet. The colliery was self-contained, with its own workshops that could repair most onsite machinery, as well as its own power station (Salway, 2008). The Engine Hall itself is a pioneering example of a colliery surface building. Previous collieries had been built with separate engine houses for differing functions, whereas Penallta had an innovative design. It's one large engine hall was easier to construct, and created a more flexible space, allowing the use of one large overhead crane to service all the equipment. It is thought to be the first of its type in Britain, becoming a model for later collieries (Cadw a).

Aesthetic value

- 4.3.7. The Engine Hall draws its aesthetic value from its large size with the retention of original materials, as well as its group value with the other remaining colliery buildings. The most obvious visual aspect of the building is its size. The Engine Hall measures 91m in length, 21m in width, and at least 18m in height; of the colliery buildings, only the headframes are taller. The scale of the building is especially striking on the inside, as the removal of the machines has created a vast open space (Plate 13, Plate 14). This building is made more impressive with the retention of historical materials and details. Externally, this is a result of the Pennant stonework and the red brick pilasters, as well as the "P. D. 1906" stone sign. Internally, the arcading with its exposed brickwork adds to this aesthetic. The aesthetic quality of the Engine Hall is detracted from elements in both the exterior and interior. The exterior of the building sees the bricking up of the windows, the overgrown vegetation, and the late 20th century roof detract from its aesthetic value. Generally, the Engine Hall lacks modern additions or alterations, and those that are there are small or well hidden.

Internally, the degradation of plaster and decoration, as well as graffiti also reduces this value.

Aesthetic value of the Engine Hall at Penallta Colliery is also drawn from its surroundings. The other remaining buildings of the Colliery, all Listed Buildings in their own right, provide a sense of the historic usage of the space. Although the Workshops, Old Stores, Lamp Room, and Pit-top Offices have all been developed into apartments, they retain their Pennant stone and red brick exteriors, except the Pit-top Offices to the south which has a white render finish (

- 4.3.8. Plate 25, Plate 26). The Old Stores are located behind the workshop and are not visible from the Engine Hall. The Baths Building is located to the rear of these buildings, but has not been renovated, with the portions visible from the Engine Hall looking tired and in need of repair (Plate 26). To the immediate south of the Engine Hall stand the two Headframes (Plate 27, Plate 28, Plate 29). They appear to be largely intact, with the eastern No. 2 headframe containing later addition metal and concrete structures around its base. The area around the headframes is the largely overgrown with vegetation (Plate 30), as is the area to the immediate north of the Engine Hall (Plate 31). The modern road – Winding Wheel Lane – runs between the Engine Hall and the other buildings and roughly aligns with one of the Colliery's rail tracks. The overground vegetation in areas to the north and south of the Engine Hall, plus the modern road do slightly detract from the aesthetic character of the space. The Colliery complex sits in its own area, and despite nearby housing estates and an industrial estate, has an isolated feel, with modern developments largely hidden behind vegetation (Plate 26). The views of the Engine Hall from Cwm Calon, the housing estate to the east, are quite impressive (Plate 32). Aside from the other buildings of the Colliery, there are no nearby designated assets. The nearest - Capel Hengoed (LB13590) - is located 900m to the southeast, with the Colliery buildings hidden by intervening topography and

vegetation.

Communal value

- 4.3.9. The Engine Hall draws its communal value from its symbolic nature as part of Penallta Colliery. The Colliery is notable for several aspects of its operations. It was the deepest mine in South Wales at the time of construction and continued to be one of the deepest for the remainder of its working life. At its peak in the 1930s, it hired over 3,200 men and regularly broke national and European records for coal winding. The Engine Hall itself is significant as the first British 'powerhouse', a colliery building that housed all surface machinery under one roof, a trend that would be replicated across the country (Salway, 2008).
- 4.3.10. The Colliery has clear importance to the local community. When the Engine Hall and Bathhouse were added to SAVE Britain's Heritage's Buildings at Risk register in 2024, it prompted pleas from ex-workers and nearby residents to preserve the buildings (WalesOnline, South Wales Argus). Penallta RFC, a rugby club formed by workers at Penallta Colliery, is still playing to this day – evidence of the long-term impact of the Colliery in the community. The communal value of the Engine Hall is somewhat diminished by the lack of public access; it has always, and continues to be, a private space.

4.4. Overall heritage value

- 4.4.1. The Penallta Colliery Engine Hall and Fan House has a **High** heritage value, derived from each of its evidential, historic, aesthetic, and communal value. These are based on its strong visual character, and the largely intact physical fabric of the buildings. Its associations with coal mining history in South Wales and its importance to the local community also enhances this value.

5. The Development Proposals and their Impacts

5.1. Development Plans

- 5.1.1. As discussed in previous sections, in the 30 years since the closing down of Penallta Colliery in 1991, the Engine Hall has remained abandoned. The Colliery complex had become largely overgrown, with nearby areas seeing the building of housing estates and a school, but no development on the site itself. This changed between 2006 and 2010, when the Workshops and Old Stores were converted into apartments; the Lamp Room and Pit-top Offices were similarly converted in between 2013 and 2019. Only the Engine Hall, Fan House, and Baths Building remain as the undeveloped buildings of the Colliery complex.
- 5.1.2. The overall plan for the area involves the conversion of the Engine Hall and Baths Building into apartments, as well as the construction of new terraced housing and apartment blocks to the north and south of the Engine Hall. The plan also involves the construction of a public space and car park in the area of the Headframes. This assessment is solely related to the proposed development of the Engine Hall and Fan House, so impacts to the Headframes and the wider Colliery area will not be discussed.
- 5.1.3. Plans have been submitted to convert the Engine Hall into apartments (Appendix I). The original walls of the building remain intact, with the apartments constructed completely within this shell. The exterior of the building is to be restored. The stonework and brickwork will be repaired and cleaned, whilst all windows will be unblocked and replaced with modern frames to match the existing ones. The three large doorways on the southern façade will retain their shape, but large glass entrances are to be installed. As per the provided plans, all proposed all pre-existing windows and entrances will be retained.
- 5.1.4. A total of 51 apartments are planned – a mixture of one and two bedrooms –

spanning across three floors. Four sets of staircases and a lift provide access between floors. The centre of the building is to contain a line of green space with trees. The roof is to be replaced to match the original shape, with a raised portion in the middle, with glazed windows to allow light into the building. The provided plans indicate that the Fan House, located at the eastern end of the Engine Hall, is to be removed. However, in-person discussions with the developer indicated an openness to retaining this building. This would require a redesign of the eastern end of the Engine Hall.

- 5.1.5. As it stands, design options for the proposal development are limited. The design option of greatest impact will be whether the Fan House is removed or retained. The Fan House is a key part of the initial construction of Penallta Colliery and is under the same listing as the Engine Hall. Removing it would significantly alter the physical fabric of the eastern end of the building and vastly change the view from the Cwm Calon housing estate. From a heritage point of view, it is preferred that the Fan House remains in place.
- 5.1.6. In terms of the rest of the proposed plans, it is preferred that the works continue, versus the alternative of no development of the Engine Hall and Fan House. The retention of the exterior of the building, as well as repairing damaged portions, is preferential to the building falling into further disrepair. Matching the finish of the recently converted Workshops and Lamp Room would be preferred, to create a continuity between the Colliery buildings. The removal of bricked up windows and doorways, as well as the replacement of the roof, will help preserve the physical fabric of the building as well as restore its previous aesthetic quality. Plans to replace the existing window frames with replacements of a similar style are welcomed.

5.2. Heritage Impacts

- 5.2.1. The above section has documented the design process, and the reasons for selecting the preferred option to proceed with the proposed works. Based on

the information provided, the next section will assess the impacts of the proposed works on the individual heritage values of the building.

- 5.2.2. The construction of the apartments within the Engine Hall will have a direct impact on elements of the physical fabric of the building. The retention of the exterior shell of the Hall, with no changes to the current openings will limit the damage to the structure. The internal structure of the apartments will have to be built into the existing floor or a new raised floor constructed. Either way, the current floor of the Hall will see a loss in its physical fabric, especially in the central area, to make space for the green space and trees. This has already been previously damaged with the removal of the machinery. It appears from the plans that the internal structure will be largely free standing, with some supports affixed to the outer walls. This will largely reduce the impact on the walls of the Engine Hall. The replacement of the roof will see the loss of this element of the building. However, the current roof is not the original, and its substitution is an essential part of the works, helping to preserve the rest of the building from further damage.
- 5.2.3. There are some aspects of the development that are still unknown. For example, there is concern that the existing steel trusses will not provide enough support for the new roof and may need to be replaced with a new frame. This will result in the loss of this structure, and potential further loss of physical fabric of the walls with the installation of a new structure. Some elements, such as the corrugated steel extension on the Fan House (Plate 10), will clearly need to be replaced so to improve the structural integrity of the building. If the Fan House is to remain, parts of the remaining machinery will have to be removed. Within the Engine Hall, the lattice girder crane will be removed to make space for apartments at the eastern end, with plans to display part of it outside. The installation of services for the apartments will also lead to the loss of some physical fabric of the Hall.

- 5.2.4. There are opportunities for a positive impact on the evidential value of the Engine Hall. The replacement of the roof, removal of the vegetation, and repairing of structural elements will help improve the longevity of the building by preserving its remaining physical fabric. There is the potential for the uncovering of hidden elements during the proposed works. This is especially true in the basement, which has been infilled after the removal of the machines. If it is excavated as part of the proposed works, buried historic features would likely be uncovered. The Fan House also contained inaccessible rooms with hidden elements likely within.
- 5.2.5. The historical value of the Engine Hall will see no adverse effects as a result of the proposed development, as its associations with Penallta Colliery will remain. Retention of the “P. D. 1906” stone sign above the main doorway will provide a reminder of the building’s link to Powell Duffryn Steam Coal Company, and the date that the Colliery began to be constructed. The preservation of the Engine Hall, the first of its type in Britain, will maintain the historical value of the building. Beneficial impacts could be achieved because of the proposed works. As seen during the site visit, the Engine Hall and Fan House include a huge number of historic elements and details, including parts of machinery infrastructure and decorative finishes. The construction of the apartments will likely lead to the loss or concealment of such elements. It is therefore recommended, prior to the commencement of the works, that a building recording survey is carried out on the Engine Hall and Fan House.
- 5.2.6. There will be positive and negative impacts on the aesthetic value of the building, resulting from the proposed development. Although the overall structure will be retained, the construction of the apartments will divide up the interior, losing some sense of the large space of the current Hall. As far as can be seen from the plans, the apartments will also block views of the impressive internal arcading. Any designs of the apartments that highlighted or displayed

the Hall's internal detailing would be welcomed. Externally, the proposed development will result in positive impacts on the visual character of the Engine Hall. Removal of vegetation and bricked in windows, cleaning of the stonework and brickwork, and replacement of the roof will restore the building's former aesthetics. To match the finish of the other buildings of the Colliery, recently converted to apartments, would enhance the group value of all the Listed Buildings. No other heritage assets are within line of sight of the Engine Hall, so would not be impacted by the proposed developments.

- 5.2.7. The proposed development will see positive impacts to the communal value of the Engine Hall. The works to preserve the structure will allow it to remain as a symbol for the local community, rather than falling into disrepair. By creating apartments inside, the development would allow for the space to be more accessible than it currently, although it would ultimately remain private in nature. The transfer of parts of the crane structure to the outside would allow it to be visible to visitors to the area.
- 5.2.8. The proposals are considered to have **Low Adverse** impact on elements of the evidential and aesthetic value of the Penallta Colliery Engine Hall and Fan House. This is a result of the removal some physical fabric during construction of the apartments, and loss of the open space internally. The proposals are considered to also have a **Moderate Beneficial** impact on the evidential, aesthetic, and communal values of the building. This comes from repairing and cleaning of the exterior of the building, which would improve the visual character of the Engine Hall, and preventing further damage that could worsen its state. The proposed works will bring the aesthetic character closer to that of the other recently refurbished buildings of the Colliery, helping to improve their group value. Repairing the building also helps to improve its symbolic status, restoring its finish to a level seen when operational. Conducting a building recording survey on the Engine Hall and Fan House, prior to

commencement of the works, would help document historic elements and details that would otherwise be lost during the development. This would have a beneficial impact on the historical value of the building.

6. Conclusions

- 6.1.1. Penallta Colliery Engine Hall and Fan House (LB13579) is a Grade II* Listed Building located between Ystrad Mynach and Gelligaer in Caerphilly County. It is part of the Penallta Colliery, built in 1906, one of the largest and most productive mines in South Wales before its closure in 1991.
- 6.1.2. By the late 19th century, the South Wales coal industry had developed significantly, particularly in the Rhondda valleys, dramatically changing the character of the area from agricultural to industrial. This was largely in part due to Powell Duffryn Steam Coal Company, founded in 1810, that became one of the world's largest producers of coal. Penallta was one of many collieries opened by the company in the Rhymney valley near the turn of the century; the sinking of the shafts started in 1906 and 1907 and was completed in 1909. The Colliery was self-contained, with its own workshops that could repair most onsite machinery, as well as its own power station. Pride of place was the Engine Hall, one large building that housed all surface machinery, the first in Britain to use such a design. Penallta Colliery was one of the most successful of Powell Duffryn's mines. By the 1930s, 3,200 men were employed there, with over 975,000 tons of coal being produced in 1930. The Colliery saw large output for a number of decades before closing on the 1st November 1991. Although the other buildings of the Colliery have been converted into apartments, the Engine Hall, Fan House, and Bathhouse have remained abandoned.
- 6.1.3. The report has assessed the heritage value of the asset following the

methodology outlined in the Cadw guidance document *Heritage Impact Assessment in Wales* (2017). The Penallta Colliery Engine Hall and Fan House has a **High** heritage value, derived from each of its evidential, historic, aesthetic, and communal value. These are based on its strong visual character, and the largely intact physical fabric of the buildings. Its associations with coal mining history in South Wales and its importance to the local community also enhances this value.

- 6.1.4. Since the closing down of Penallta Colliery in 1991, the Engine Hall has remained abandoned. The Colliery complex had become largely overgrown, with nearby areas seeing the building of housing estates and a school, but no development on the site itself. In recent years, the Workshops, Old Stores, Lamp Room, and Pit-top Offices have been converted into apartments. The Engine Hall, Fan House, and Baths Buildings remain undeveloped. An overall plan for the area involves the conversion of the Engine Hall and Baths Building into apartments, as well as the construction of new terraced housing and apartment blocks to the north and south of the Engine Hall. This assessment is solely related to the proposed development of the Engine Hall, so impacts to the Headframes and the wider colliery area, were not discussed.
- 6.1.5. The conversion of the Engine Hall will see the original walls of the building remain intact, with the apartments constructed completely within this shell. The works will involve restoration of the exterior, including replacing the windows and repairing the stonework and brickwork. The interior will house 51 apartments across three floors, with the centre a green communal space. The roof is to be replaced with a raised portion matching the original shape. The provided plans show the Fan House is to be removed, but in-person discussions indicate a potential change in plans to retain this building. This would require a redesign of the eastern end of the Engine Hall.
- 6.1.6. The proposed design option was outlined in Section 5. The preferred option is

for the works to go ahead, versus the alternative of no development of the Engine Hall. The retention of the Fan House would be preferred, as it is part of the original design of the Colliery, and would result in significant loss of physical fabric if removed. The restoration of the exterior of the Engine Hall and Fan House will help prevent the building falling into further disrepair. Matching the finish on the converted Workshops, Old Stores, and Lamp Room would be preferred, to create a continuity between the Colliery buildings. The removal of bricked up windows and doorways, and replacement of the roof, will help preserve the physical fabric of the building as well as restore its previous aesthetic quality. Plans to replace the existing window frames with replacements of a similar style are welcomed.

- 6.1.7. The proposed works are considered to have a low adverse effect on the evidential value of the building, resulting from loss of physical fabric during the construction of the apartments. There is a moderate beneficial impact from the proposals, with the restoration of the exterior of the building helping to prevent further degradation of the Engine Hall and Fan House.
- 6.1.8. The proposed works will have no adverse effect on the historical value of the building. There is an opportunity for a moderate beneficial impact. Conducting a building recording survey on the Engine Hall and Fan House, prior to commencement of the works, would help document historic elements and details that would otherwise be lost during the development.
- 6.1.9. The proposed works will have a low adverse effect on the aesthetic value of the building, with the loss of the open space in its interior. However, there is opportunity for moderate beneficial impacts from the proposals, with the visual character of the exterior being improved with the restorative works. The aesthetic character will also be closer in nature to the other recently refurbished buildings of the Colliery, helping to improve their group value.
- 6.1.10. The proposed works will have a moderate beneficial impact on the communal

value of the building. This comes from restoring the exterior of the Engine Hall and Fan House, returning it to a similar finish as it was when operational, and thus helping to improve its symbolic status.

- 6.1.11. Overall, the proposals are considered to have both beneficial and adverse outcomes but ultimately resulting in a **Low to Moderate beneficial** impact on the heritage value of Penallta Colliery Engine Hall and Fan House.

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Figures

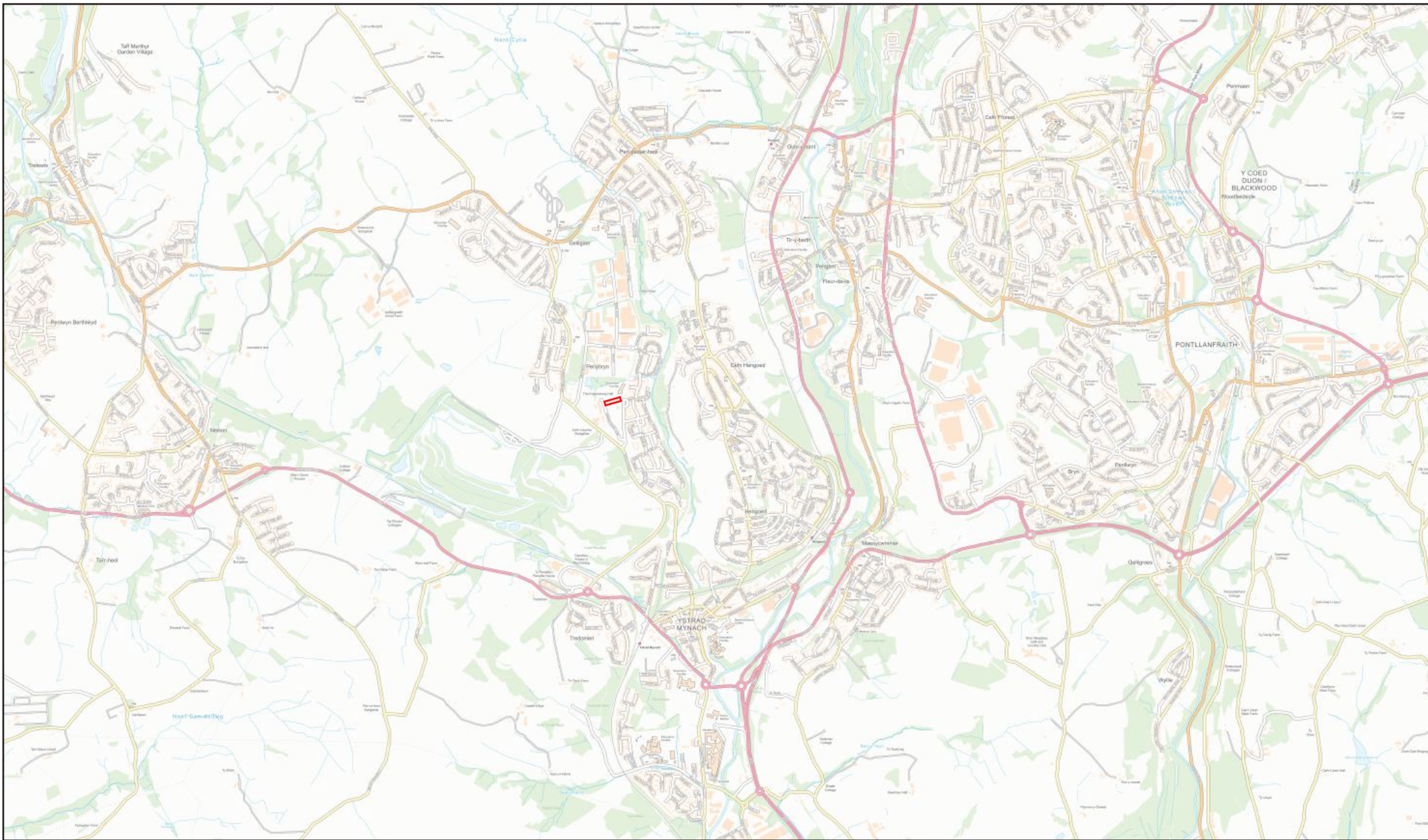


Figure 1. Location of proposed development

— Development Area



0 750m 1.5km



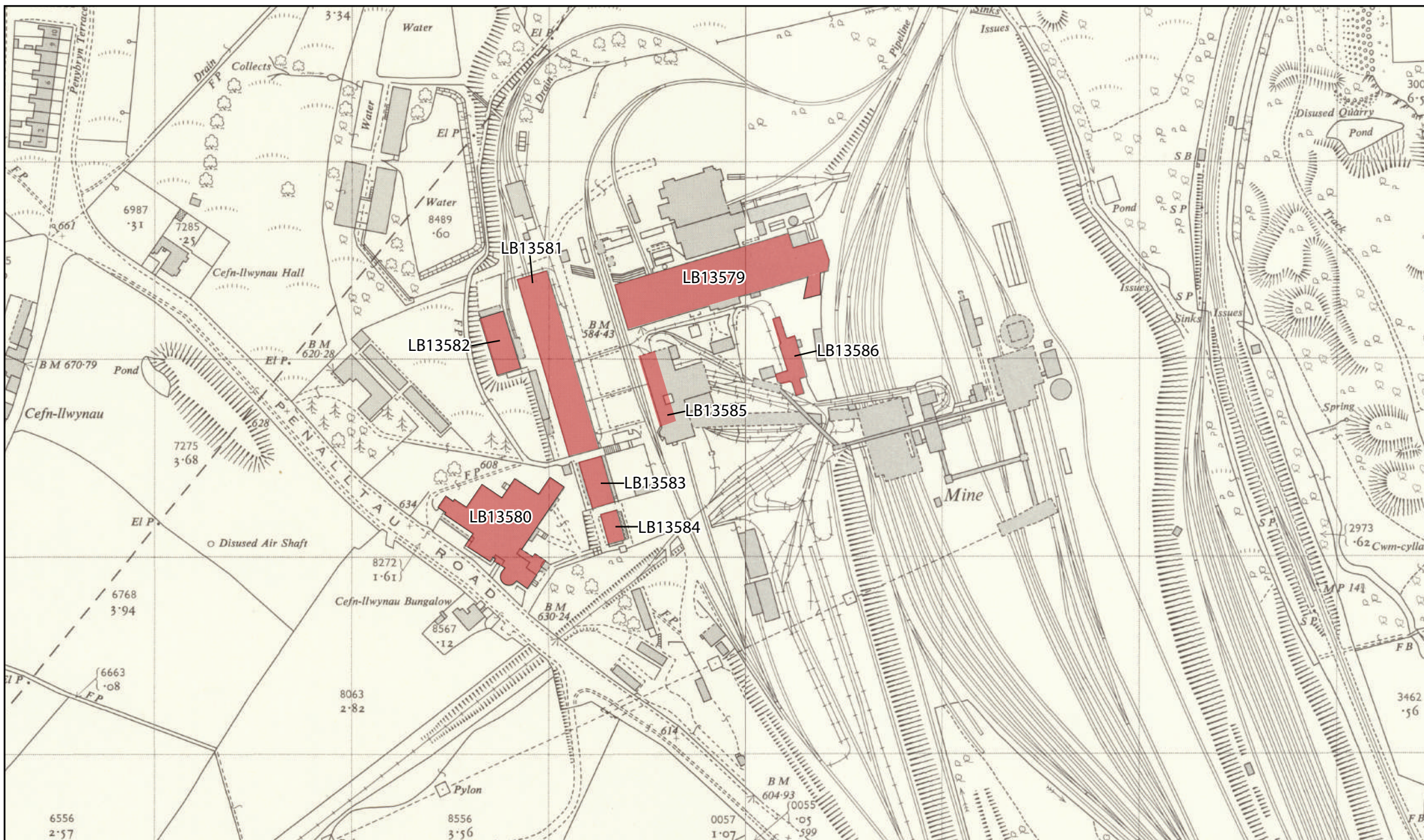
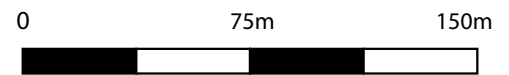


Figure 2. Colliery buildings still present with their listing references shown on the 1960s plan

Extant buildings



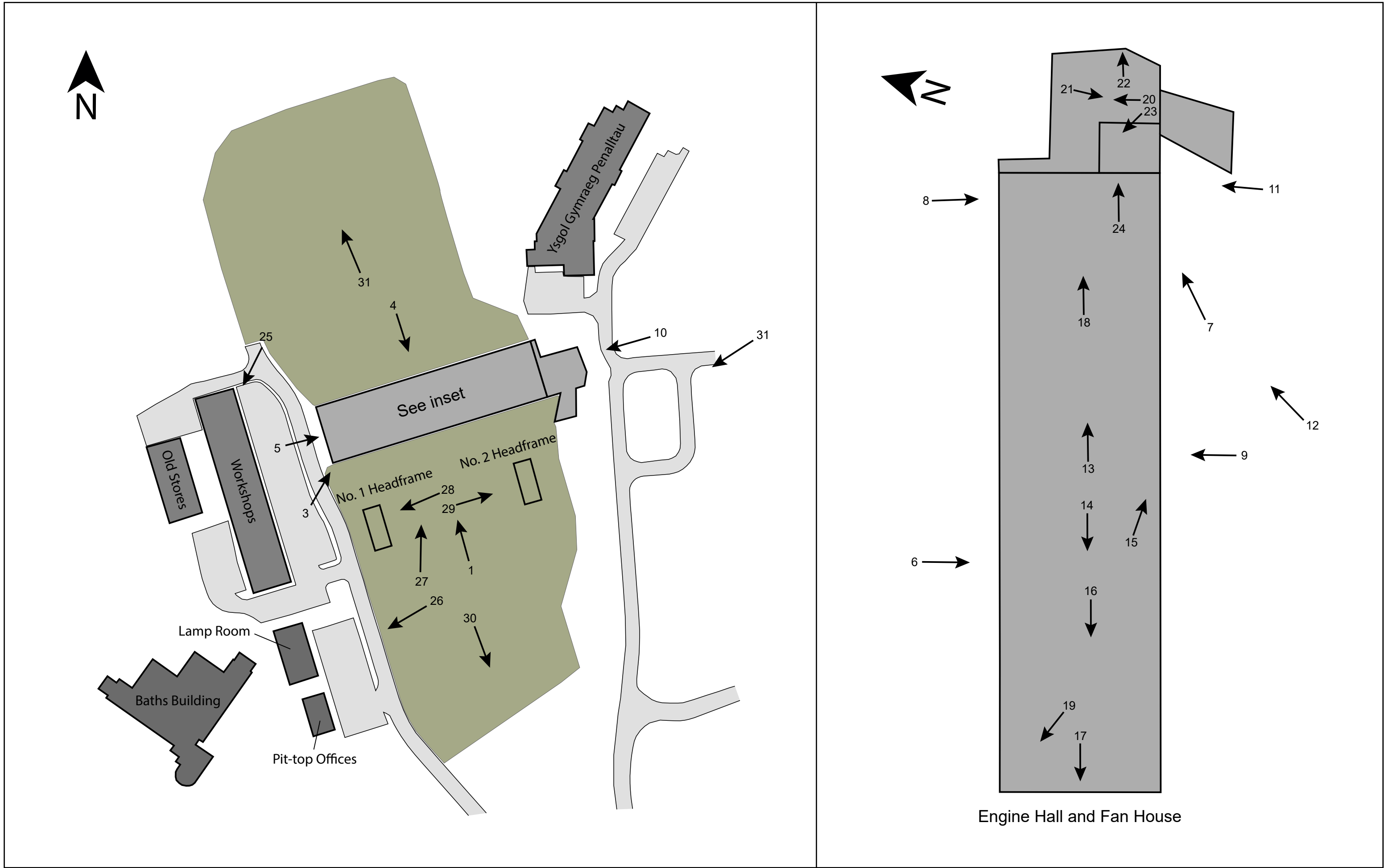


Figure 4. Plate location plan



Plates



Plate 2. Oblique aerial photograph of Penallta Colliery taken in 1930, looking northeast (Courtesy of Britain from Above).



Plate 3. Southern and western aspects of the Penallta Colliery Engine Hall (LB13579) showing largely intact exterior, looking northeast.



Plate 4. Northern aspect of the Engine Hall and Fan House, looking south.



Plate 5. Western aspect of the Engine Hall, looking east.



Plate 6. Example of redbrick seen on northern aspect of the Engine Hall, looking south.



Plate 7. Examples of infilled window openings on the southern aspect of the Engine Hall, looking northeast.



Plate 8. Eastern end of northern aspect of the Engine Hall, showing Fan House and examples of remaining window frames, looking south.



Plate 9. Main doorway on the southern aspect of the Engine Hall, showing "P.D. 1906" sign, modern gate and lighting, looking north.



Plate 10. Eastern aspect of the Engine Hall, showing the Fan House, looking west.



Plate 11. Example of overgrown vegetation on eastern end of southern aspect of the Engine Hall and Fan House, looking north.



Plate 12. Southern aspect of the Engine Hall, showing current roof, looking northeast.



Plate 13. Interior of the Engine Hall, looking east.



Plate 14. Interior of the Engine Hall, looking west.



Plate 15. Example of continuous arcading along the southern side of the interior of the Engine Hall, looking southeast.



Plate 16. Steel trusses holding up the roof, showing occasional skylights and missing roof panels, looking west.



Plate 17. Example of painted plaster and tiling remaining in parts of the interior of the Engine Hall, looking west.



Plate 18. Eastern end of the interior of the Engine Hall, showing the lattice girder crane, looking east.



Plate 19. Example of loose material used to infill the basement of the Engine Hall, looking northwest.



Plate 20. The L-shaped room of the Fan House, looking north.



Plate 21. The L-shaped room of the Fan House, showing remaining machinery, looking south.



Plate 22. View from the Fan House, showing Cwm Calon housing estate, looking east.



Plate 23. Machinery located in an inaccessible part of the Fan House, looking northwest.



Plate 24. Example of wear and tear, and graffiti, on the eastern wall of the interior of the Engine Hall, looking southeast.



Plate 25. The Old Workshops, converted into apartments, showing their resorted Pennant stone and red brick finish, looking southwest.



Plate 26. The lamproom and pit-top offices of the Colliery, and the Bathhouse in the background, looking west



Plate 27. The Engine Hall and two Headframes of Penallta Colliery, looking north.



Plate 28. No. 1 Headframe of Penallta Colliery, showing other Colliery buildings in the background, looking west



Plate 29. No. 2 Headframe of Penallta Colliery, showing concrete structures around its base, looking east.



Plate 30. Area to the south of Penallta Colliery's Headframes, looking south.



Plate 31. Large open area to the immediate north of the Engine Hall, with Penallta Industrial Estate barely visible through the trees, looking north.



Plate 32. View of the Engine Hall and Fan House, and the two Headframes of Penallta Colliery, from the nearby Cwm Calon housing estate, looking west.

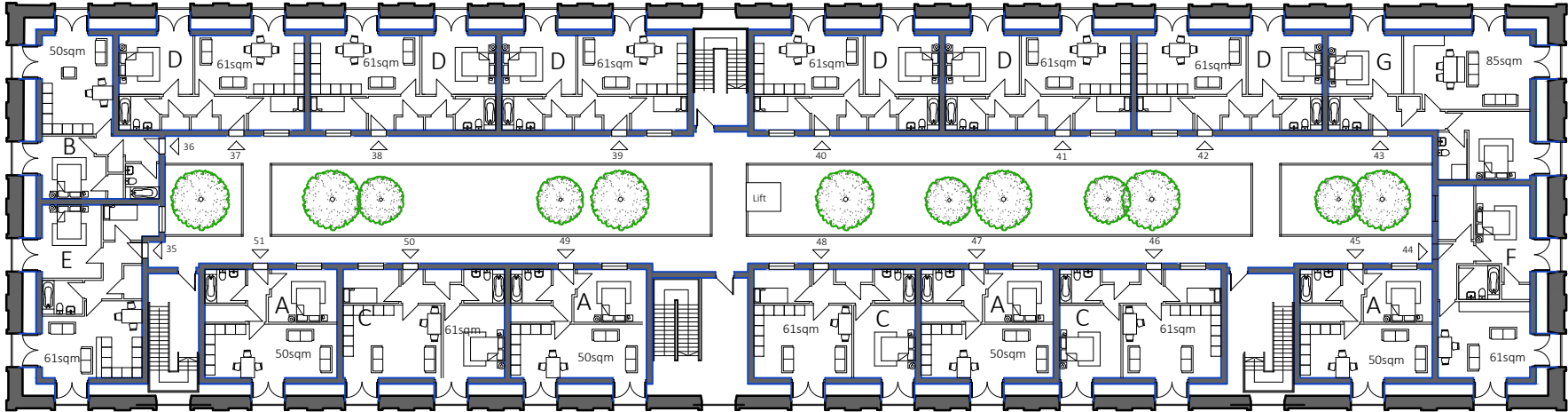


Appendix I – Draft proposed development plans

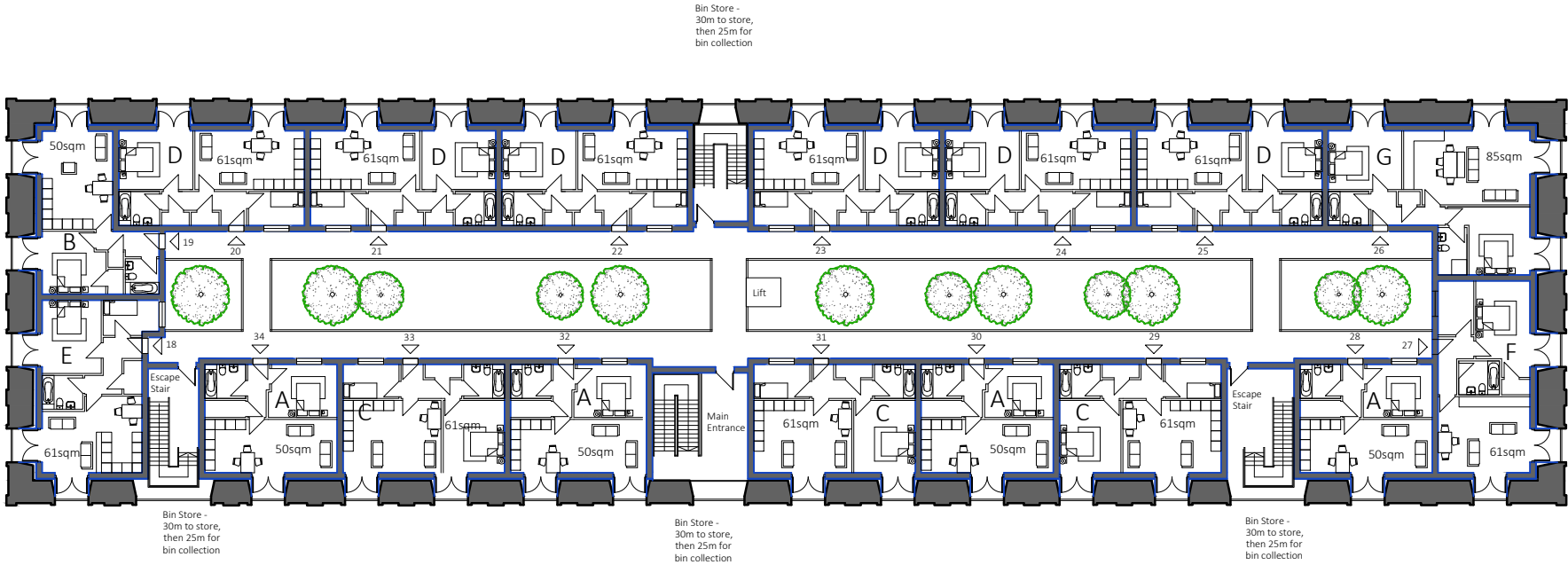
Penallta Industrial Estate



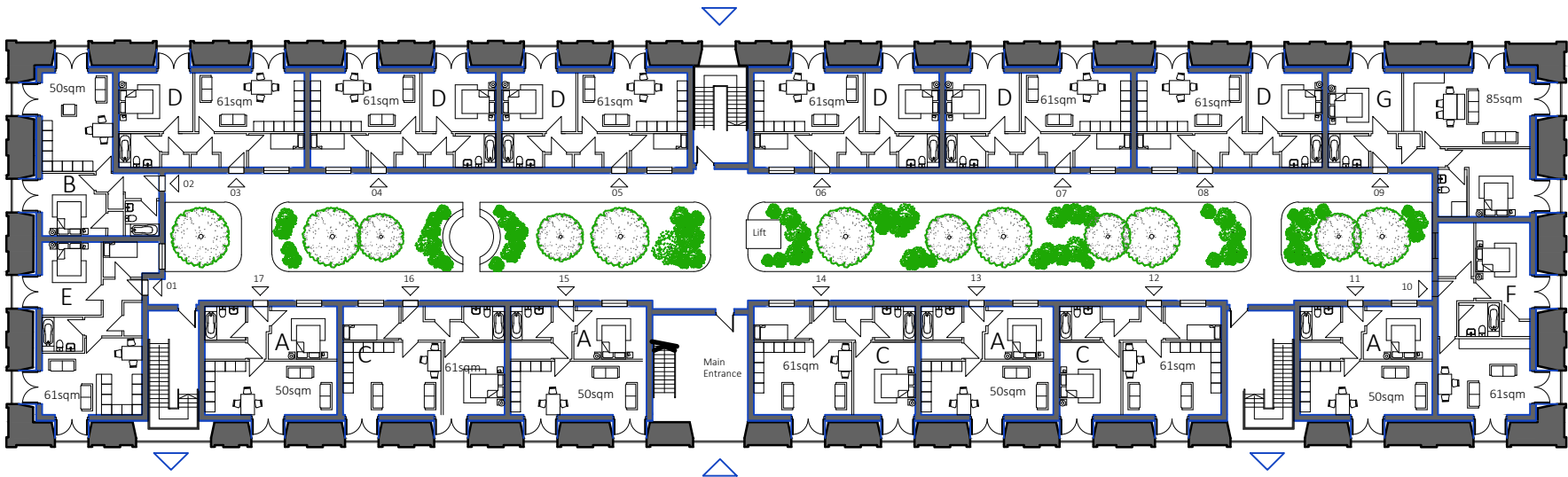
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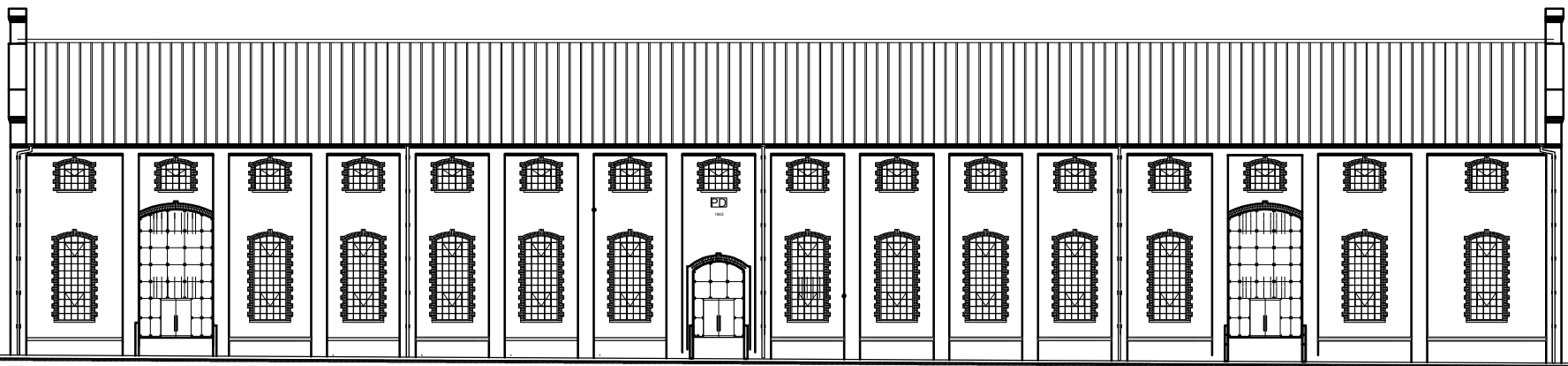
Second Floor Plan



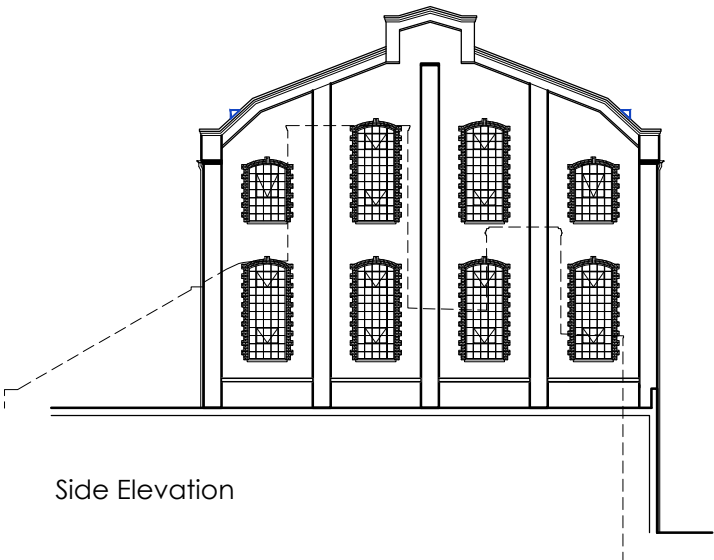
First Floor Plan



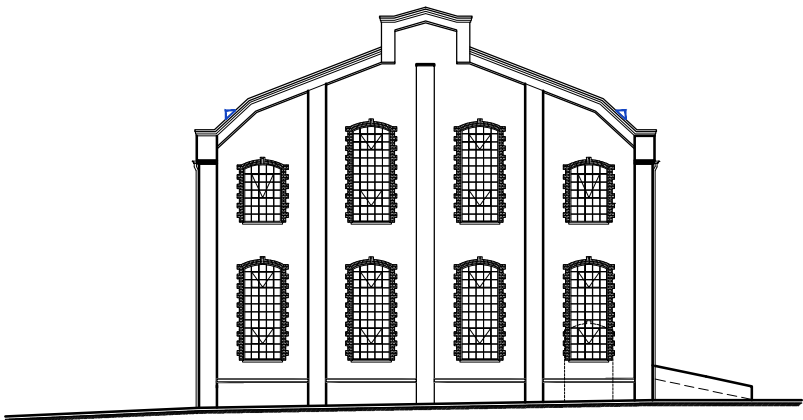
Ground Floor Plan



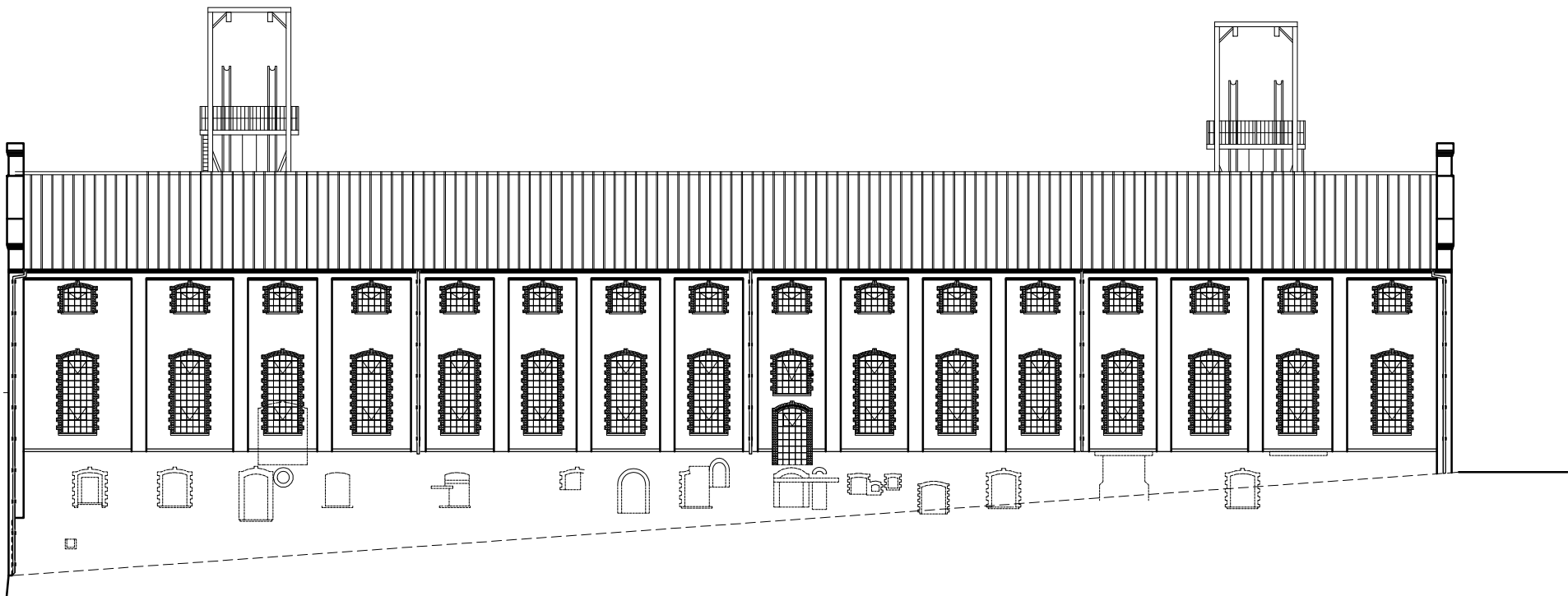
Front Elevation



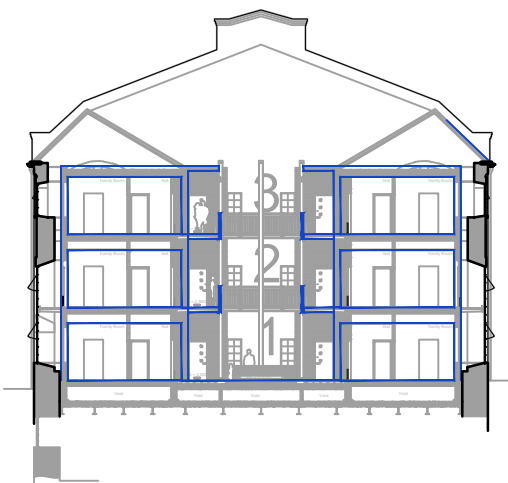
Side Elevation



Side Elevation



Rear Elevation



Illustrative Section



Sketch image depicts proposed terraced building within its immediate context for illustrative purposes.

Materials Pallet, inspired by existing surrounding buildings:
Walls - Local stone walling with red brick details
Roof - Slate



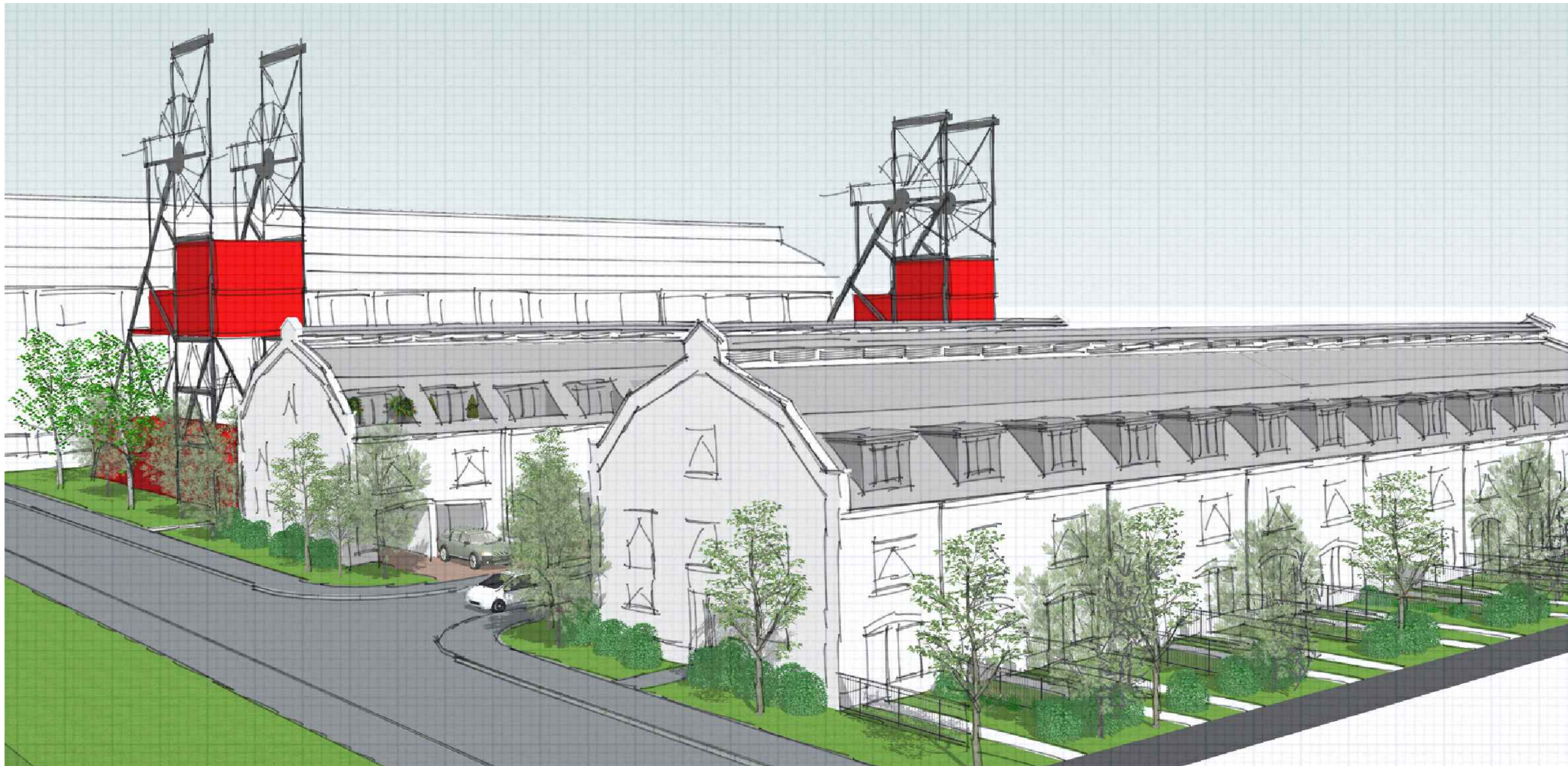
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4			6m	
Project	Stage	Drawing	Rev	Status
4459	2	140	—	FEASIBILITY
Scale	Size	Drawn	Check	Creation
1:100	A3 L	NDV	DW	Mar 24

Project
Former Penallta Colliery
Winding Wheel Lane, Penallta

Detail
Proposed House Type 1
Sketch Illustration

bba
bba architects & planners

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Responsibility is not accepted for errors made by others in scaling from this drawing
All construction information should be taken from figured dimensions only
Discrepancies must be reported to the Architect before proceeding



Sketch image depicts proposed terraced building within its immediate context for illustrative purposes.

Materials Pallet, inspired by existing surrounding buildings:
Walls - Local stone walling with red brick details
Roof - Slate



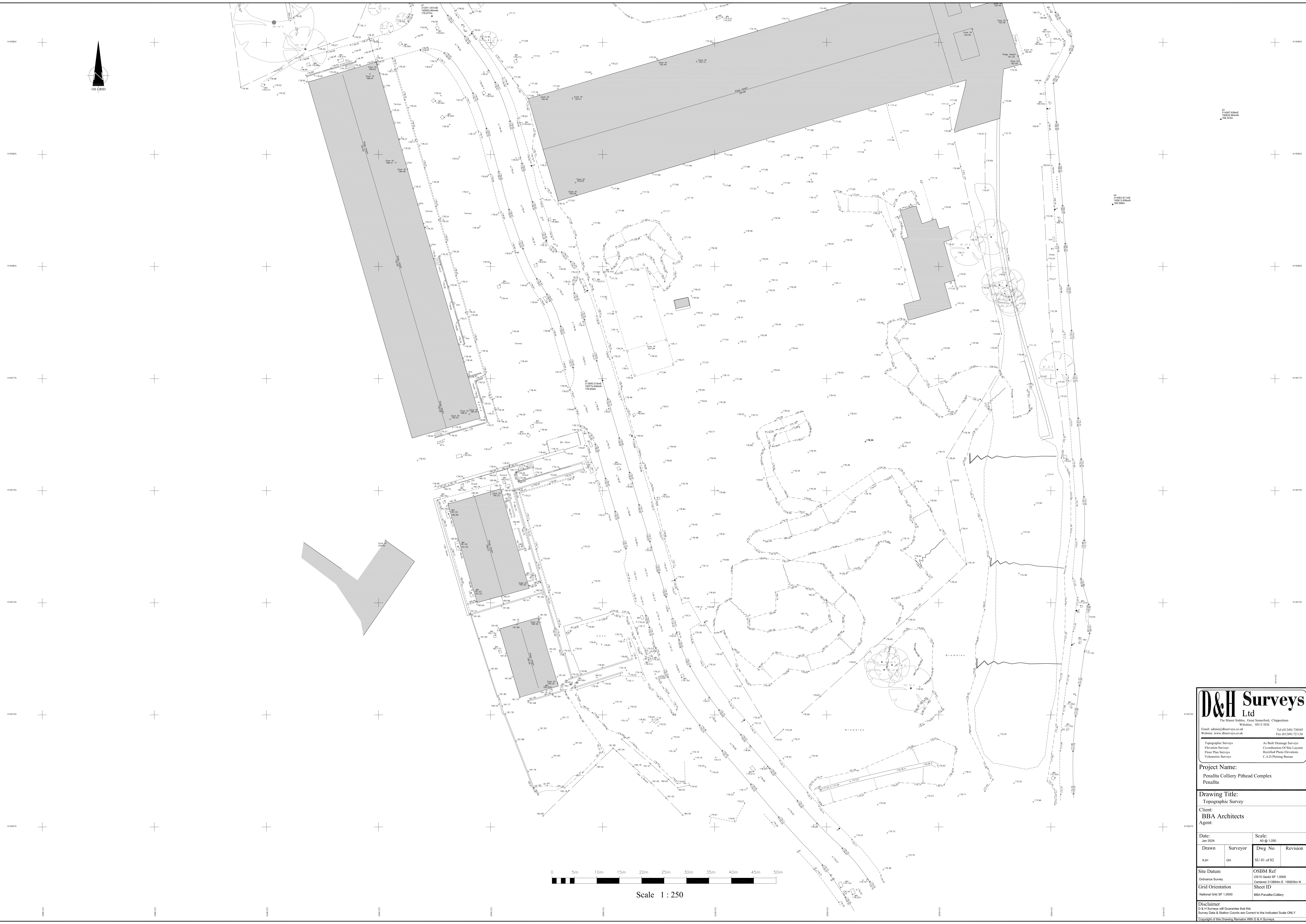
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Project
Former Penallta Colliery
Winding Wheel Lane, Penallta

Detail
Proposed House Type 4
Sketch Illustration - View 02



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Fax: 01249 721124

Topographic Surveys

Elevation Surveys

Floor Plan Surveys

Volumetric Surveys

As Built Drainage Surveys

Coordination Of Site Layouts

Rectified Photo Elevations

C.A.D Plotting Bureau

Project Name:

Penalla Colliery Pithead Complex

Penalla

Drawing Title:

Topographic Survey

Client:

BBA Architects

Agent:

Date:

Jan 2024

Scale:

A0 @ 1:250

Drawn

KJH

Surveyor

GH

Dwg No

SU 01 of 02

Revision

Site Datum

Ordnance Survey

Grid Orientation

National Grid SF 1.0000

OSBM Ref

OS15 Grid SF 1.0000

Centred 313964m E 195835m N

Sheet ID

BBA-Penalla-Colliery

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