

MM218 Marine Colliery Pumping Engine, Cwm, Blaenau-Gwent: Archaeological Setting Assessment

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A report for Blaenau Gwent Borough Council by
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**MM218 Marine Colliery Pumping Engine, Cwm, Blaenau Gwent:
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Summary

On behalf of Blaenau Gwent County Borough Council, the Glamorgan-Gwent Archaeological Trust, (GGAT Projects) has undertaken an archaeological setting assessment on a proposed central depot building development to the south of the scheduled monument of Marine Colliery Pumping Engine (MM218). During redevelopment/reclamation works of Marine Colliery the engine was moved from its original setting and re-sited to its present location off a roundabout on the A4046. The report provides an assessment of the impact of the proposals on the setting of the monument and recommends mitigation to lessen the impact on setting.

The report concluded that the development would have no impact on the scheduled monument.

Acknowledgements

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Abbreviations

GGAT:	Glamorgan Gwent Archaeological Trust
HER:	Historic Environment Record (curated by GGAT Curatorial)
LB:	Listed Building
MM:	Scheduled Monument ie MM218
NGR:	National Grid Reference
NMR:	National Monuments Record (curated by RCAHMW)
NMGW:	National Museum and Galleries of Wales
NPRN:	National Primary Record Number (in NMR) ie 43478
OD:	Ordnance Survey
OS:	Ordnance Survey
PRN:	Primary Record Number (in HER) ie 04700g
RCAHMW:	Royal Commission on the Ancient and Historical Monuments of Wales

1. Introduction

1.1 Background

Blaenau Gwent County Borough Council is proposing to construct a new central depot building at Cwm, Ebbw Vale. The northern extent of the proposed building lies approximately 150m to the south of the scheduled monument of Marine Colliery Pumping Engine (MM218), the remains of a steam pumping engine, at the former now demolished Marine Colliery.

‘The monument consists of the remains of a steam pumping engine, dating to the 19th century. It was built in 1893 at Marine Colliery, in a chamber beneath the winding engine on the downcast shaft. The engine could deal with 50,000 gallons of water per hour when working at seven strokes per minute. It has a 68-inch low-pressure cylinder with a 10 feet stroke. The engine cost £4,630 to install and was built entirely of cast iron. The engine was moved to its current location in 2003 following the construction of a new road. The monument is of national importance for its potential to enhance our knowledge of mining in Wales. It retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. The structure itself may be expected to contain archaeological information concerning chronology and building techniques. An engine house may be part of a larger cluster of industrial monuments and their importance can further enhanced by their group value. The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive’ Cadw 2021.

As the proposed scheme is within the vicinity of the existing scheduled monument of Marine Colliery Pumping Engine (MM218), Blaenau Gwent County Borough Council has requested a Setting Assessment.

The Glamorgan-Gwent Archaeological Trust Ltd (GGAT Projects) were commissioned to undertake an archaeological setting assessment of the impact of the proposed central depot building on the scheduled monument.

1.2 Methodology

The assessment of asset setting follow the draft guidance set out in the document *Setting of Historic Assets in Wales*, published by Cadw in 2017. This sets out a four stage approach:

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.

The assessment was undertaken to an agreed methodology to fully conform with the specifications detailed by the *Chartered Institute for Archaeologists Standards and*

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guidance for archaeological desk-based assessments (1994; amended 1999, 2001, 2008, 2012 and 2014).

The methodology adopted by GGAT has been standardised as follows:

1.2.1 Existing archive material

Information recorded on the regional Historic Environment Record (HER) and National Monuments Record (NMR) will be assessed. Cartographic and documentary sources will be consulted, along with relevant published information. Current Listed Building data and information on Scheduled Monuments will be obtained from Cadw. Where necessary, collections of aerial photographs (such as that held by the Central Register of Air Photography for Wales) will be accessed, as will relevant LANDMAP and Historic Landscape surveys.

The following bodies will be consulted, as necessary:

- Cadw: Scheduled Monuments, Listed Buildings and Registered Landscapes, Parks and Gardens
- RCAHMW: NMR, aerial photos, archive and upland survey
- Regional HER: HER information and further information files
- Natural Resources Wales: Historic landscape issues
- Local archaeological and historical societies, museums and individuals
- Local Archive Service: Historic maps, plans and records
- CRAPW: Aerial photographic records

Site visits

A site visit will be made to primarily record extant lines of sight, i.e. views from and to the archaeological asset(s), the potential significance of lines of sight, and assess any potential visual impact(s) to lines of sight deemed to hold likely archaeological significance. The visit will also inform the formulation of potential mitigation. Archaeological sites and views will be photographed by digital camera of no less than 9mp and notes made on significant views and site condition.

1.2.2 Criteria for Evaluation of the Archaeological Resource Assessment criteria

The historic assets within the study area will be categorised in accordance with the only available criteria that are nationally agreed; these are set out in the *Department of Transport/Welsh Office/Scottish Office Design Manual for Roads and Bridges paragraph 3.4 Vol. 11 Section 3 Part 2 (Cultural Heritage)*.

- Category A: national importance
- Category B: regional importance
- Category C: local importance
- Category D: low importance
- To these two additional categories have been added:
- Category U: unknown
- Category N/A: not applicable

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Table 1. Categorisation of archaeological sites

Category	Importance	Equivalent to
A	National	Scheduled monument Grade I or II* listed building/structure Site of national importance
B	Regional	Grade II listed building/structure Site of regional or county importance
C	Local	Site with local value
D	Low	Site with little or no significant value or which is so badly damaged that too little now remains to justify their inclusion in a higher grade
U	Unknown	Site of unknown condition or uncertain whether any remains survive and/or is of unidentified form, therefore
N/A	Not Applicable	Sites known to have been completely destroyed or those deemed as natural features

The assessment of the importance of individual historic assets is essentially a subjective exercise based upon the experience of the project team. The importance of certain historic assets will be implied by their status within the statutory framework. Scheduled Monuments will always be of national importance; Listed Buildings will be of at least regional importance. Values assigned to other sites are given both in relation to their individual importance and to their context within the wider landscape, whilst considering the following criteria:

- Condition
- Rarity
- Group association
- Historical association
- Confidence

Historic assets are attributed with values for each of these factors as detailed below. A combination of all these elements as well as professional judgement results in an overall designation for each site based on the categories listed above. A breakdown of the values given for each element of every site will be provided.

The **condition** of individual historic assets and the general overall condition of surviving remains has a bearing on the value of the sites themselves and on the value that they impart within a wider landscape context. The condition of sites is recorded following the system used by the Welsh Archaeological Trusts (WATs) HERs, using the following criteria:

- Intact
- Near intact
- Damaged
- Near destroyed
- Destroyed
- Restored
- Moved: the site has been moved (most likely to refer to loose finds)
- Unknown

For the purposes of desk-based and setting assessments, **rarity** is assessed at regional level only.

The following criteria are used:

- High: very few sites of this type are known
- Medium: the site is not unusual, but cannot be considered common
- Low: the site is quite common

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Group association is where a connection between sites within the landscape can be demonstrated. These will usually be of the same period, but may include groups where the presence of an earlier site or sites has led to the formation of a later complex, or where an earlier site or sites can be shown to have acquired importance as part of a later complex. The criteria are as follows:

- High: the site forms part of an interconnected complex occupying a clearly definable landscape where little or no fragmentation has occurred
- Medium: the site is part of an interconnected complex which is either limited in scope or badly fragmented
- Low: there are few or no other sites which are associated

Historical association is where there is a link between the historic asset and known historical or cultural persons or events. Prehistoric sites, which are by definition before historical evidence, cannot have any contemporary historical association, but they may acquire later associations. For the Roman and Early Medieval periods, where survival of historical evidence is poor and patchy, any contemporary documentation at all will be important. Two classifications are given for historical association, one reflecting the certainty of the identification, and the other its importance. Only sites with certain or possible association can be assessed for importance, and historical association can only increase the importance of a site; the absence of it will never decrease its importance.

Historical association- identification

- Certain
- Possible
- Unknown

Historical association-importance

- High: proven connection with a nationally or regionally important character, event or process; detailed contemporary information about the site
- Medium: proven connection with a locally important character, event or process; possibly connection with a nationally or regionally important character, event or process; limited contemporary information about the site
- Low: non-specific mention of site; not necessarily contemporary; folk story

The assignment of values to identified interests requires consideration of the reliability and accuracy of the source data, ranging from fully recorded features seen in open excavation to antiquarian comments on finds of note from a poorly defined location. This may also be determined by any historical associations as described above. The **confidence** with which the values have been assigned is noted, using the following criteria:

- Very high: existing information is derived from excavation to modern standards with full supporting detail
- High: existing information is reliable and detailed
- Medium: existing information is apparently reliable but limited in detail
- Low: existing information is too limited to allow its reliability to be assessed

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1.2.2 Archaeological assessment criteria: Indirect Effects (monument and landscape setting)

Indirect effects identified for the archaeological resource include those of visibility and setting issues. Only monuments of National and Regional importance with a direct visual significance will be assessed for indirect effects. If the development is situated within (or sometimes in close proximity to) an historic landscape then an ASIDOHL2 (Assessment of the Significance of the Impact of Development on Historic Landscape²) assessment will be required.

Where an ASIDOHL2 is *not* required but indirect effects would still need detailed assessment then the following criteria will be used. Indirect effects to category A and B sites will be measured against criteria for the assessment of indirect, visual impacts based upon the ASIDOHL2 methodology in *Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process* (2nd Edition 2007). The grading for the assessment is as follows:

- **Very severe:** the setting of, key views and/or essential lines of sight to and from the monument are dominated or obscured by the development. The form, scale and appearance, including motion, of the development, compromises the cultural integrity of the monument and its setting resulting in severance of historical links and/or degradation of an unaltered setting.
- **Severe:** the setting of, key views and/or essential lines of sight to and from the monument are interrupted by the development. The form, scale and appearance, including motion, of the development, largely affects the cultural value of the monument and its setting resulting in possible severance of historical links and/or uncharacteristic change to a largely unaltered setting.
- **Considerable:** the development is significantly visible in or interrupts the setting of, key views and/or essential lines of sight to and from the monument. The form and appearance, including motion of the development results in discordance with the monument and change to a largely unaltered setting.
- **Moderate:** the development is visible in key views and/or essential lines of sight to and from the monument and its setting. The form and appearance, including motion of the development results in discordance with the monument and/or alteration to its setting.
- **Slight:** the development is noticeable in key views and/or essential lines of sight to and from the monument and its setting. The form and appearance, including motion of the development is noticeable and results in minor alteration to the setting of the monument.
- **Very slight:** the development is barely noticeable within the setting of, key views and/or essential lines of sight to and from the monument. OR: The setting is already largely altered and unsympathetic and/or the form and appearance, including motion of the development is barely noticeable and results in little discernible change to the setting.
- **None:** the development is not noticeable within the setting of, key views and/or essential lines of sight to and from the monument. OR: The setting is already altered and unsympathetic and/or the form and appearance, including motion of the development is not noticeable and results in no discernible change to the setting.

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The assessment of individual sites is essentially a subjective exercise based upon the experience of the project team. The following aspects will be considered when determining the results of the assessment.

- Any potential impacts that the development may have on the relationships of the monument to its surrounding landscape, including other monuments.
- The nature, extent and intrinsic value of the monuments setting, including its role in relation to the monument; the impact to both the immediate, essential setting and the wider setting is considered.
- Interference with the intervisibility between the monument and other related monuments or particular landscape elements, impact to key viewpoints, vistas and lines of sight.

The purpose of the monument and significance of views to and from it will be considered in terms of visual intention. Whilst the location, construction and function of some monuments were specifically chosen to afford views of a particular area or monument(s), others may instead have been the targets of observation. The visual impact of the development in terms of form, scale, appearance and the effect of movement of constituent parts as well as the extent of encroachment of the development into the setting (both immediate and wider) of the monument should be considered.

Inter-visibility between monuments will be determined and cross-referenced, where possible, to assist in determining the impact of the development on the between monuments. Impacts to the direct lines of sight as well as impacts upon wider views of monuments will be determined and graded using the categories described above (very severe down to very slight).

1.3 The Study Area

The study area (Figure 1) centred on SO 18906 03976 lies encompasses part of the site of Marine Colliery to the south of the town of Cwm, Ebbw Vale. The site is currently occupied predominantly by a mixture of scrubland and modern gravel surfaces on a flat surface at a height of around 200m OD. Lying within a valley, it is bounded by the Ancient Semi Natural Woodlands 14603 to the west and 14604 to the east and within mountainous terrain at heights of between 300 to 400m OD. The Ebbw River lies approximately 80m to the west of the site.

1.4 Archaeological interests within the Study Area

A search of local site data held at the HER, NMR and Cadw was undertaken to inform the study (see Table 2 below). A list of all known sites within the study with those sites identified for further analysis as part of the current setting assessment, i.e. taken forward to Stage 1, indicated is presented in Table 3, below:

Table 2: Interests initially examined to identify historic assets within the study area

ID	Name	NGR	Period	Type
06708g	Building	SO186042	Post Medieval	Barn
11454g	Cwm Colliery	SO18830375	Post Medieval	Colliery

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ID	Name	NGR	Period	Type
04594g / 85083	Cwm Ventilation Furnace	SO1878803759	Post Medieval	Furnace
02995g / 33571	Marine Colliery	SO18850393	Post Medieval	Colliery
85084	Cwm Colliery, Ebbw Vale: Level Entrance	SO1884303758	Post Medieval	Level
33572	Marine Colliery, Cwm: Engine House No.2	SO1888003900	Post Medieval	Engine house
MM218 / 04700g / 275979	Marine Colliery Pumping Engine	SO1888704300	Post Medieval	Steam engine

1.5 Site visit

Site visits were undertaken on Sunday 18th and Tuesday 20th April 2021 to record the views to and from the monument(s), and to record site condition. It was found that the site of the proposed development was in use as a Covid-19 drive-through testing station, with consequent entry restrictions enforced by marshals. This meant that GGAT staff could only drive down to the bottom of the access, turn round without stopping at the foot, and drive straight out. Staff were able to observe the site from the footpath, which runs alongside it, but were informed by site security that photography from the path was not permitted. However, enough information was obtained to determine the likely view-shed in the direction of MM218.

The weather was fine, the light condition hazy sunshine, allowing unhindered views and photography to and from the scheduled monument, although longer distances were affected by the haze.

1.6 Significance of the Historic Assets

The six relevant interests (see Table 4, below) identified within the study area were assessed according to the assessment criteria. A single relevant protected interest (i.e. Scheduled Monuments or Listed Buildings) was identified within the study area; this is Marine Colliery Pumping Engine (MM218).

2. Stage 1. The Historic Assets Relevant to the Study

2.1 The Development and the Study Area

The proposed development is the construction of a central depot building at Marine Colliery, Cwm (Figure 1). The proposed development lies 150m to the south of the scheduled monument of Marine Colliery Pumping Engine MM218. This historic asset differs considerably from the usual run of Scheduled Monuments in that it is not *in situ*. It was removed from the colliery during demolition, and has been re-sited on a concrete plinth by the side of the main road on the hillside above the cleared colliery site.

A local study area was devised for the current project taking in the main visual aspect or view-shed associated with the scheduled monument MM218. The study area measured 482m (E-W) by 677m (N-S) and was centred on SO 18906 03976 (Figure 1).

2.2 The Historic Assets

The sites identified in the study area were screened to identify those with potential relevance to the setting of MM218. The results are presented in Table 3.

Table 3: Relevant Historic Assets

ID	Name	NGR	Period	Type	Status
11454g	Cwm Colliery	SO18830375	Post Medieval	Colliery	-
04594g / 85083	Cwm Ventilation Furnace	SO1878803759	Post Medieval	Furnace	-
02995g / 33571	Marine Colliery	SO18850393	Post Medieval	Colliery	-
85084	Cwm Colliery, Ebbw Vale: Level Entrance	SO1884303758	Post Medieval	Level	-
33572	Marine Colliery, Cwm: Engine House No.2	SO1888003900	Post Medieval	Engine house	-
MM218 / 04700g / 275979	Marine Colliery Pumping Engine	SO1888704300	Post Medieval	Steam engine	Scheduled Monument

The key monument, MM218 Marine Colliery Pumping Engine, consists of the remains of a steam pumping engine, dating to the 19th century. It has been moved from its original setting from a chamber beneath the winding engine house to its current setting to the north of the colliery to the west verge of the A4046, north of the Cwm roundabout, and directly to the north of the Marine Colliery site boundary. Two other assets on the list relate to the Marine Colliery: the colliery itself has been assigned an overall number 02995g/33571, and the NMR assigned the NPRN 33572 to one of the engine houses (no.2). When the colliery was constructed, an iron platform was built out from the steep hillside above the River Ebbw to provide a level surface on which to construct some of the pithead structures. The engine houses are shown in archive photographs as rectangular buildings founded on the ground, several storeys tall and with long axis east-north-east to west-south-west (Archive Images 2021). The 2nd and 3rd OS maps show that they stood at the eastern edge of the southern part of the site.

The colliery itself was operational between 1893 and 1989. In its heyday it employed over a thousand men. It is best known as the site of an underground gas and coal dust explosion which killed 52 men of the night shift in 1927. Following its closure, the colliery was demolished and no traces of it survive on its original site. The site as it

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now exists is comprised only of the ground surface on the valley floor, together with any below-ground structures. This has significance as one of the last vestiges of the colliery: Cadw’s official scheduled monument report (Cadw 2012) notes that it retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. Anything that may survive below ground of the associated engine house would add materially to the understanding of the surviving engine. In any case, it is likely that the foundations of the engine houses survive along with the foundations of other buildings, most of which seem to have been added between the surveys for the 2nd and 3rd OS maps, and other sub-surface colliery features. However, from a purely visual point of view, the site has limited potential of itself to provide any other information that of the geographical location.

The engine itself was built in 1893 at the colliery, and was housed in a chamber beneath the winding engine on the downcast shaft. The engine could deal with 50,000 gallons of water per hour when working at seven strokes per minute. It has a 68 inch low pressure cylinder with a 10 feet stroke. The engine cost £4,630 to install and was built entirely of cast iron. The engine was moved to its current location in 2003 following the construction of a new road. This monument is of national importance for its potential to enhance our knowledge of mining in Wales (Cadw 2012).

The other relevant historical assets relate to the neighbouring Cwm Colliery. Most of the structures relating to this have also been demolished, but an adit and ventilation shaft remain on the wooded hillside on the opposite (west) side of the river.

2.3 Significance of the Historic Assets

The six relevant interests (see Table 4, below) identified within the study area were assessed according to the assessment criteria.

Table 4: Appraisal of Value of Historic Assets

ID	Name	Condition	Rarity	Group Association	Historic Association	Confidence	Value
11454g	Cwm Colliery	Near Intact	Low	Medium	Unknown	-	C
04594g / 85083	Cwm Ventilation Furnace	Near Intact	Medium	Medium	Unknown	-	C
02995g / 33571	Marine Colliery	Destroyed	Low	Medium	Certain	High	C
85084	Cwm Colliery, Ebbw Vale: Level Entrance	Near Intact	Low	Medium	Unknown	-	C
33572	Marine Colliery, Cwm: Engine House No.2	Destroyed	Low	Medium	Possible	High	C
MM218 / 04700g / 275979	Marine Colliery Pumping Engine	Moved	High	Medium	Possible	High	A

A single relevant protected interest, Scheduled Monument MM218, scheduled because of its importance as a rare surviving example of a once-common type constructed by the local ironworks. Of the six interests assessed, one site, the scheduled pumping engine (MM218 /04700g / 275979) was assessed as being of National significance (Category A).

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Conversely the condition, rarity and value of the Marine Colliery itself (02995g/43469) and that of its engine house (33572) are assessed as Destroyed (Condition D), Low (Rarity) and Local (Value category C) respectively, as collieries and their engine houses were very common in the Valleys: they would only have qualified for a high level if there were significant remains of their structures still *in situ*.

However, the colliery itself does rate an assessment as High for Historical Association because of the well-documented disaster of 1927 when an underground gas explosion killed 52 men (Northern Mine Research Society, nd), whilst the Historical Association of its pumping engine and engine house are assessed as Possible, as there is no information currently available as to whether either was involved in the events surrounding the explosion

The other relevant historical assets are part of the neighbouring Cwm Colliery, which help to fill out the mining history of the valley with typical and complementary mine features. Historic assets relating to Cwm Colliery were classed as Damaged (for the entire complex) and Near Intact (for the surviving features), with Rarity as Low, Historic Association (in the absence of the availability of online information) as Unknown, and Local (Value C).

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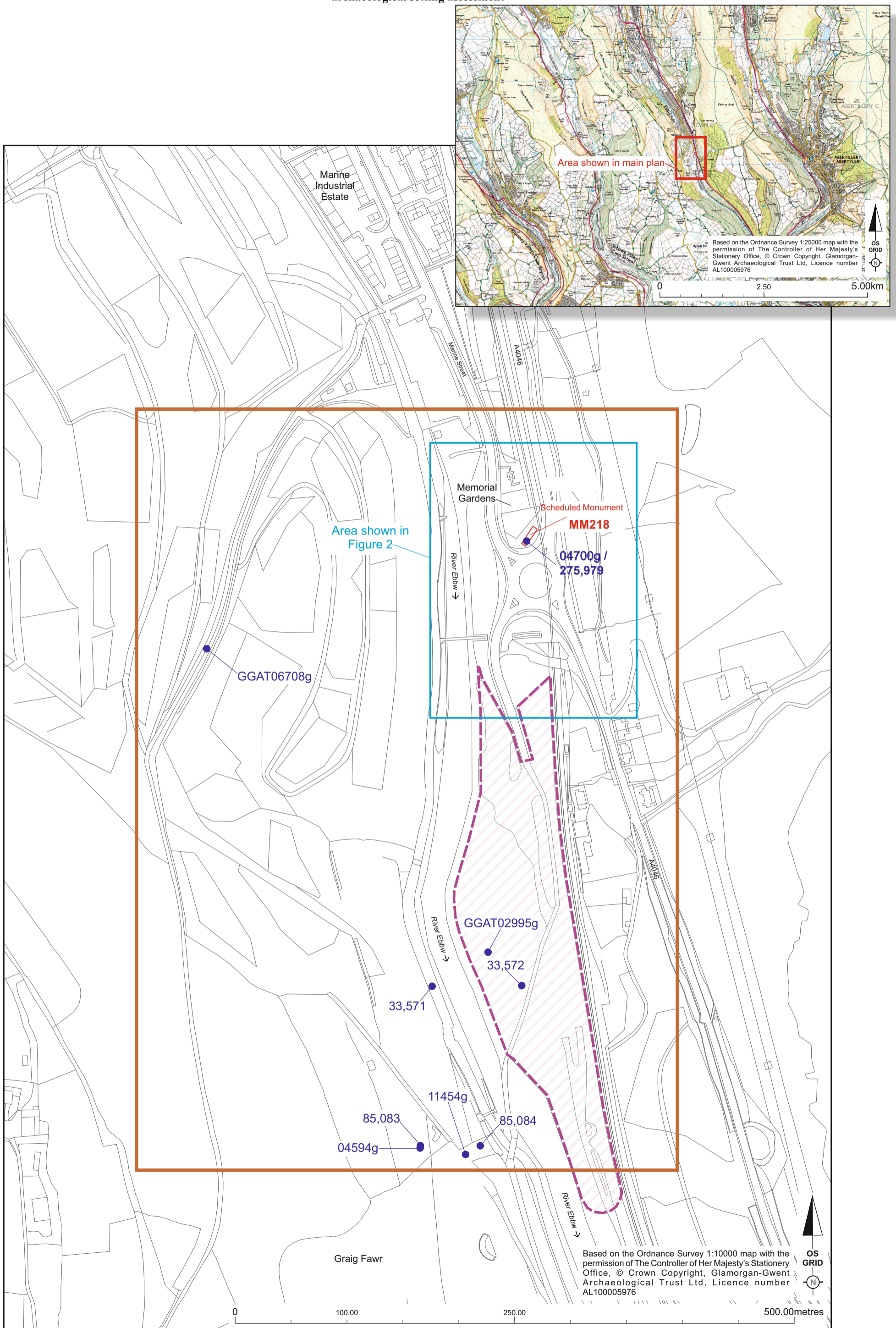


Figure 1. Plan showing proposed development area (purple), study area (orange), location of Marine Colliery Pumping Engine - Scheduled Monument MM218 (red) and sites of archaeological interest (blue).

3. Stage 2: Definition and Analysis of the Setting

3.1 Introduction

The main value of the current location of the pumping engine MM218 lies in its relationship to the site of the demolished Marine Colliery. It serves as a memorial of the former importance of the colliery to the local area. In a wider context, it also memorialises the coal industry and its importance to the Valleys communities of South Wales. The engine was taken from the colliery when it was demolished, and was placed in its current location when the A4046 viaduct was constructed in 2003. The site chosen was a convenient point close to the site of the former colliery pithead buildings.

3.2 The Setting of Marine Colliery Pumping Engine

The monument known as Marine Colliery Pumping Engine (MM218/GGAT00058m/275979) is located at the southern junction between the main Newport – Ebbw Vale road (A4046) and Marine Street, the main arterial street running through Cwm village (Plate 1 and Plate 3). There is a roundabout at the junction, from which the site of Marine Colliery is also accessed. The monument has been coated in black protective paint and stands in plot of grass between the two roads immediately south of the roundabout. This area is artificially built up, as the road runs on a viaduct with the Cardiff – Ebbw Vale railway line running underneath at this point in a short tunnel.



Plate 1: Pumping engine MM218 on the roadside of the A4046, adjacent to the Cwm roundabout

The engine is mounted horizontally on a very low concrete plinth, more or less level with the ground, and the whole ensemble is enclosed by a low wooden fence. The

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ground is covered with rough grass, with a number of young hazel bushes some of which form a row close to and parallel with the long side of the enclosure. A crash barrier separates this patch of grass from the road. On the north is a stand of trees which grow right up to the edge of the railway tunnel. Historic mapping surveyed at the end of the 19th and beginning of the 20th century when (1st and 2nd editions OS) shows that this position was occupied by a spoil heap at the edge of the railway line.

North of the engine, adjacent to the railway line is a small memorial garden, the centre point of which is a statue of a miner. This is the Miners' Memorial, which was inaugurated in 2009 to remember those who have lost their lives in the mines of the Ebbw Fawr valley, especially the victims of the 1927 explosion at Marine Colliery (Plate 2).



**Plate 2: The memorial garden looking south.
Marine Colliery pumping engine MM218 lies on the high ground behind the trees.**

Marine Colliery originally formed part of the mining landscape of the Ebbw Fawr valley, along with its neighbour, Cwm Colliery. Almost all vestiges of this have been swept away following the closure of the mines, demolition of the pithead buildings and reclamation work, the only remnants apart from MM218 itself that survive in the vicinity are on the hillside on the opposite bank of the river where vestiges of Cwm Colliery still survive in woodland. The site of Cwm Colliery was visited to assess any views from it towards the scheduled monument, but these were non-existent due not only to the trees, but also the fact that the shape and size of the scheduled monument means that it can barely be seen from a distance of a couple of hundred metres (see Plate 8).

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The visibility of Historic Assets from present site of the pumping engine is summarised in the following table:

Table 5: Visibility of Historic Assets from MM218 Marine Colliery Pumping Engine

ID	Name	Value	Approximate Distance from the current location of MM218	Visible from the current location of MM218	Key View
GGAT11454g / 85084	Cwm Colliery Level entrance	D	530m	View obscured by distance and trees	No
GGAT02995g / 33571	Marine Colliery	D	350m to central point	No, as far as can be determined in current conditions	No
GGAT 04594g / 85083	Cwm Ventilation Furnace/shaft	D	530m	View obscured by distance and trees	No
33572	Marine Colliery, Cwm: Engine House No.2	D	assessed as for GGAT02995g / 33571	No	No

The site of Marine Colliery is now a level area on the edge of the flood plain markedly below the level at which MM218 now stands. The drop is steep, and it is not possible to see anything of the colliery site from the location of the engine both because of the difference in level and the presence of a small stand of trees on the far side of the roundabout to the monument (Plate 2). According to information provided by Blaenau Gwent CBC, the height difference between the ground level adjacent to the proposed main building and the ground level of the middle of the roundabout is approximately 9.8m. The plinth of MM218 and the ground level of the roundabout are at approximately the same height.

The relationship between the engine and the site of the demolished pithead buildings is a key consideration in its setting. Although intervisibility is prevented by the difference in level between the A4046 and the colliery site, and by the presence of the trees on the slope between them, a key viewpoint was identified during the site visit, from which both the engine and part of the colliery site are both visible (Point A on Figure 2).

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Plate 3: View of MM218 from the northeast, looking towards the site of the demolished Marine Colliery and down the valley of the Ebbw Fawr towards the site of Cwm Colliery.



Plate 4: View SSE from Point A, looking towards the former site of Marine Colliery

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Plate 5: View NNE from Point A, looking towards the Marine Colliery pumping engine MM218



Plate 6: View NE from Point B, looking towards the memorial garden

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Plate 7: View SE from Point B, looking towards the Marine Colliery pumping engine MM218

Two other key viewpoints were noted during the site visit. The relationship between the engine and the memorial garden 50m to the north of the engine (see Plate 2) should also be considered a key consideration in its setting. As in the previous example, intervisibility is prevented by difference in level and another small stand of trees, but again a key viewpoint from which both memorials could be seen was identified during the site visit (Point B on Figure 2)

Visibility from the roads was also considered. Here, the desirability of seeing the monument must be balanced against potential driver distraction. The vicinities of Points A and B provide views from the roads towards the site and Cwm village respectively, and the pumping engine is in the direct line of sight for drivers approaching from the south; a representative view was photographed from Point C on Figure 2.¹ We have not classified the view travelling in the other direction as it is out of the direct line of sight to a vehicle approaching from the north.

¹ The effect of the approach can be simulated in the electronic version by zooming in to Plate 8.

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Plate 8: View of MM218 looking north along the A4046 towards Cwm roundabout. The engine (immediately above the yellow sign) stands out somewhat better when viewed with the naked eye than through a camera lens.

These key viewpoints are summarised in Table 6 and illustrated on Figure 2.

Table 6: Additional key viewpoints

Viewpoint	Location	Relevant viewshed
A (and approach to and from the development site)	West verge at top of access road to colliery site	East (arc of view approx. 90°): MM218 at north end, and colliery site at south end
B (and approach to and from Marine Street)	West pavement of Marine Street approximately 250m down from roundabout	East (arc view of approx. 145°): Memorial garden at north end, and MM218 at south end
C (and approach along the A4046 from the south)	Northbound carriageway of A4046 south of roundabout	North

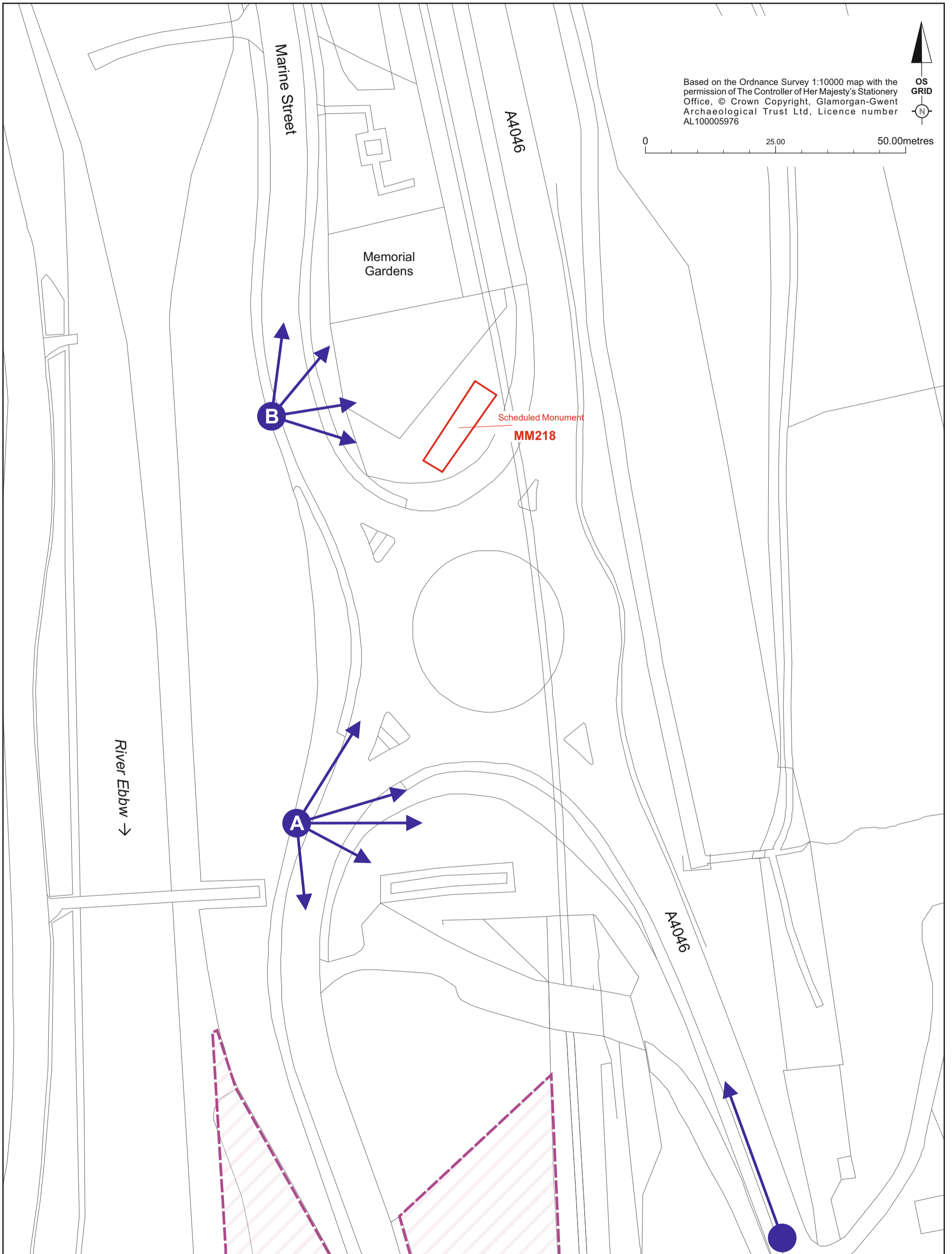


Figure 2. Plan showing northern extent of proposed development area (purple), location of Marine Colliery Pumping Engine - Scheduled Monument MM218 (red) and photograph viewpoints A, B and C (arrowed blue).

4. Stage 3: Evaluation of Potential Impact of Change or Development

4.1 Introduction

The main visual impact assessment on the Scheduled Monument was undertaken through two site visits, and involved cartographic sources, client-supplied information regarding the proposed development, assessment of local landforms and vegetation, and photography of existing conditions. The lack of access to the site resulting from its adoption as a Covid-19 testing centre made the process more difficult, but the sum of information available was judged adequate for the purpose.

The proposed development is for the construction of a county council depot. The height difference between the ground level of the proposed depot building and the highest point of the roof will be approximately 9.69m. The distance between the ground level adjacent to the proposed main building and the ground level of the middle of the roundabout is approximately 9.8m. The plinth of MM218 and the ground level of the roundabout are at approximately the same height. Therefore, the proposed building design, should avoid projecting into any potential line of sight from the scheduled monument. The height of an individual is also considered negligible whilst viewing the monument and facing the proposed building.

4.2 Effect on Known Interests

4.2.1 Direct effect

The development will occupy the former site of Marine Colliery, which was in production for nearly a century between 1893 and 1989. Although the number of buildings on the site was small at the outset, they were added to as time progressed and it should be anticipated that the foundations of at least some of them may remain *in situ* underground. Of particular importance in relation to MM218 would be the foundations of one or both of the engine houses, one of which originally housed the pumping engine.

4.2.2 Indirect effect

As far as could be ascertained during the site visits, the development area is essentially invisible from the monument, nor can the monument be seen from the development area. This effectively means that in relation to the views from the Marine Colliery pumping engine, lines of sight to and from the monument are self-screened, with the result that no effect on the setting of the monument would be caused by the development.

Table 7: Indirect visual effect of the development on archaeological interests

Effect on	Type of change/visual effect	Magnitude of Effect	Significance of Effect	Overall Significance of Impact
Views from Point A towards MM218 in one direction and the former site of Marine Colliery in the other	None	None	None	None
Views from Point B towards MM218 in one direction and the memorial garden in the other	None	None	None	None

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Effect on	Type of change/visual effect	Magnitude of Effect	Significance of Effect	Overall Significance of Impact
View of Marine Colliery pumping engine MM218 by drivers travelling north on A4046, exemplified by Point C	None	None	None	None

Overall, it is considered that the proposed development will have no visual impact on the historic asset and its setting **as far as it is possible to judge, given the fact that it was not possible to access the development site properly and subject it to a full examination.** The proposed development will not dominate the historic asset or detract from our ability to understand and appreciate it, even though its original setting has been compromised by being moved from its original 19th century setting to its current position.

5. Stage 4: Mitigation against Impact of a Proposed Change or Development

5.1 Introduction

The objective of mitigation is to limit and reduce any residual impact the development might have on the heritage resource to an acceptable level by a range of measures. The exact mitigation measures adopted are dependent on the nature and scale of the final detailed development plans.

5.2 Mitigation

No mitigation measures are required in respect of the setting of MM218. However, it is anticipated that the local planning authority's archaeological advisor will wish to recommend mitigation measures to the LPA in respect of groundworks to the development on the site of Marine Colliery.

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Appendix I

Gazetteer of Relevant Archaeological Interests in Study Area²

HER data

ID: 11454g **Name:** Cwm Colliery
NGR: SO18830375 **Type:** Colliery **Status:** -

Description:

Cwm Colliery is linked with the development of coal mining in Silent Valley from the mid 1900s. It was owned by the Monmouthshire & Cwm Colliery Company from 1877 - 1920s. It has an associated tramway south of Cwm Merddog, which was extended north towards Ty'n-y-Gelli Farm prior to 1901. It closed down in 1939. (Trett 2007)

ID: 04594g **Name:** Cwm Ventilation Furnace
NGR: SO1878803759 **Type:** Furnace **Status:** -

Description:

Probably dates from mining developments in the 1840s or 1850s and was disused by 1876. It is a typical mid C19th ventilation furnace. The shaft immediately beneath the chimney was connected to underground workings, and a fire in a furnace at the bottom of the shaft drew air through the mine to vent from the chimney.

It is of brown and yellow firebrick with black mortar and is circular in plan, approx. 3.5m diameter, and rising to about 7m high.

ID: 02995g **Name:** Marine Colliery
NGR: SO18850393 **Type:** Colliery **Status:** -

Description:

Marine Colliery was set up in 1889 and was demolished November 1990.

It was set up by the Ebbw Vale Steel, Iron and Coal Company Ltd and was completed in 1891, and open in 1893. In 1894 the output was recorded as 254k tons. (Trett 2007)

ID: 04700g **Name:** Marine Colliery Pumping Engine
NGR: SO1888704300 **Type:** Steam engine **Status:** Scheduled Monument

Description:

A steam pumping engine built by Hathorn Davey of Leeds in 1893 and formerly used at Marine Colliery. It was installed there when the colliery was completed, in a chamber beneath the winding engine on the down cast shaft. The engine could deal with 50000 gallons of water per hour when working at 7 strokes/minute. The engine was rescued during site clearance operations and relocated to one side of a new car park, set on a concrete plinth. It is built entirely of cast iron, and has been thoroughly painted since re-erection

NMR data

ID: 85083 **Name:** Cwm Colliery, Ebbw Vale: Ventilation Shaft
NGR: SO1879003758 **Type:** Chimney **Status:** -

Description:

² HER & NMR data given separately.

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On the hillside above the cleared site of Marine Colliery (nprn 33571) is a squat circular brick ventilation chimney and shaft, measuring approximately 4.2m diameter and 5.66m high, built in the 1840s or 1850s and disused by 1876. It is the only example of this once common pre-fan type of shaft ventilation known to survive in Wales. The shaft is connected to a stone-lined level of similar date (nprn 85054), entering the hill from the riverbank below.
B.A.Malaws, RCAHMW, 30 October 2009.

ID: 33571 **Name:** Marine Colliery, Cwm
NGR: SO1880003900
Type: Colliery **Status:** -

Description:

1. Marine Colliery has been demolished and the site cleared. A Hathorn Davey differential pumping engine has been left on the site near the entrance as a 'feature' (nprn 275979).
Site visited B.A.Malaws, RCAHMW, January 1993.
 2. The employment offered by Marine Colliery was the reason that Cwm was built. This large colliery, which first produced coal 1890, filled the bottom of a steep sided valley and so the need to provide a level pithead area entailed the construction of an extensive platform supported on a framework of high iron columns cast by the Isca Foundry at Newport. The twin steam-winding houses sat on tall pillars of rock-faced stone with vaults underneath which housed an additional three steam-engines near the lip of the adjacent shafts. Two were emergency winding-engines for shaft and sinking work and a third was a huge horizontal pumping-engine. These were moved when the mine closed in the early 1990s. One of the former was a rare Monmouthshire ironworks constructed machine; a two-cylinder simple vertical engine for flat-rope endless haulage built by the Ebbw Vale Iron Company (who owned Marine) in c.1864 and which has now been moved to the South Wales Miners Museum at Afan Argoed Country Park near Port Talbot. The entrance to the mine area alongside the valley road still has the Hathorn Davey horizontal compound pumping-engine, dating from 1893, now mounted on a concrete plinth. The high and low pressure cast-iron cylinders are arranged in line in this monstrous machine: 36 ins (0.91 metres) and 68 ins (1.73 metres) in bore, with a stroke of 120 ins (3.05 metres). The exhibition of this machine, away from its architectural context, reinforces the point that by the end of the nineteenth century, 'hidden' machines of this type had replaced the great beam-pumping engines which were integral with their upstanding engine-houses.
(Site entry by S.R.Hughes for Buildings of Gwent, John Newman, 2000)
B.A.Malaws, RCAHMW, 29 April 2003
 3. An 1893 Hathorn Davey horizontal tandem-compound pumping engine is now plinthed alongside the road outside the entrance to the former colliery site. Cylinders ; 36-inch and 68-inch in diameter and a stroke of 120 inch. Above the cleared site of Marine Colliery is a squat circular brick ventilation chimney and shaft (SO 187037), dating from the 1840s or 1850s and disused by 1876. Cwm village to N a good example of 1890s colliery settlement.
(A Guide to the Industrial Archaeology of South East Wales, AIA, 2003)
B.A.Malaws, RCAHMW, 03 August 2018
-

ID: 85084 **Name:** Cwm Colliery, Ebbw Vale: Level Entrance
NGR: SO1884303758 **Type:** Level **Status:** -

Description:

South of the site of Marine Colliery (nprn 33571) on the steeply sloping west bank of the Ebbw river stands the stone-built arched entrance of a level or adit, part of Cwm Colliery. Internally it measures approximately 1.9m wide and 1.5m high overall, the semi-circular arch rising 0.9m. The site is depicted with a single line of railway entering, as 'Old Level (Coal)' on the first edition Ordnance Survey 25in map of 1880, as 'Coal Level?' (apparently in use) on the second edition of 1901; by the third edition of 1921, the rails into the level have been removed and the site is not annotated. Connected to the level some 50m to the west is a ventilation shaft (nprn 85083). B.A.Malaws, RCAHMW, 30 October 2009.

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ID: 33572	Name: Marine Colliery, Cwm: Engine House No.2
NGR: SO1888003900	Type: Engine house Status: -

Description:

Part of: Marine Colliery (Nprn33571).

ID: 275979	Name: Marine Colliery Pumping Engine
NGR: SO1888704300	Type: Steam engine Status: Scheduled Monument

Description:

An 1893 Hathorn Davey horizontal tandem-compound pumping engine is now plinthed alongside the road outside the entrance to the former colliery site. It was removed from a chamber beneath a winding engine house at the former Marine Colliery (NPRN 33571). The engine's cylinders are 36-inch and 68-inch in diameter and a stroke of 120 inch

RCAHMW, 28 June 2011. Sources: Collieries of Wales, RCAHMW



**Glamorgan-Gwent
Archaeological Trust Ltd
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QUALITY CONTROL

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As part of our desire to provide a quality service we would welcome any comments you may wish to make on the content or presentation of this report.