

Heritage Impact Assessment: Cyfarthfa Castle, Merthyr Tydfil, Boiler Replacement

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By

Susan Stratton



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Edited by: Rowena Hart

Signed: 

Position: Commercial Director

Date: 03/10/2022

Authorised by: Rowena Hart

Signed: 

Position: Commercial Director

Date: 03/10/2022

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Prepared for Merthyr Tydfil County Borough Council

By

Susan Stratton

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Acclaim
Accreditation

Archaeology Wales Limited

Main Office, Unit D11.6 Treforest Industrial Estate

Pontypridd - CF37 5UR

Tel: +44 (0) 1686 440371

Email: admin@arch-wales.co.uk

Web: arch-wales.co.uk

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Summary

Archaeology Wales was commissioned to carry out a Heritage Impact Assessment by Merthyr Tydfil County Borough Council in relation to proposed works to Cyfarthfa Castle, which is a Grade I Listed Building (LB 11396). The Castle was constructed in the early 19th century by Robert Lugar for William Crawshay II, owner of the Cyfarthfa Ironworks. It is an example of Gothic, castle-style late Georgian period architecture built for a prominent Welsh industrialist. The proposed work relates to the installation of a new heating system, including the boiler, pumps, and control system.

Although Cyfarthfa Castle has a high heritage value, evidenced by its Grade I listing, the proposed work largely relates to the Boiler Room, part of a separate structure to the rear, connected to the main building via a covered walkway. Although some of the lower wall and walkway date to the alterations associated with the school c. 1910, the majority of the structure dates to the mid/late 20th century and the impacted fabric is considered of no historic significance. Two new flues will project from the south-west wall. These will not extend above the height of the structure and therefore the visual impact will be limited to views along the rear path between the Castle and the Boiler Room.

The proposed works will replace the existing inadequate system and will allow the rooms of the former school to be brought back into use. Continued use of the building will ensure its longevity and reduce maintenance issues that arise from the rooms being left vacant.

Crynodeb Annechnegol

Comisiynwyd Archaeology Wales gan Gyngor Bwrdeistref Sirol Merthyr Tudful I gynnal Asesiad a'r Effaith ar Dreftadaeth, yn gysylltiedig ar Waith arfaethedig I Gastell Cyfarthfa, sef yn Adeilad Cofrestredig Gradd I (LB 11396). Adeiladwyd y castell yn a 19eg canrif gynnar gan Robert Lugar ar gyfer William Crawshay II, perchennog Weithdy Haearn Cyfarthfa. Mae'n esiampl o bensaernïaeth sioraidd yn steil castell gothig, wedi'i hadeiladu ar gyfer diwydiannydd Cymraeg mawr. Mae'r Gwaith arfaethedig yn gysylltiedig â'r gosodiad o system gwersi newydd, yn cynnwys boeler, pypmiau, a system rheoli.

Er bod gwerth dreftadaeth uchel ar Gastell Cyfarthfa, mae ei Gradd I yn dystiolaeth o hyn, mae'r mwyafrif o'r gwaith arfaethedig yn cysylltu gyda'r ystafell boeler, sef rhan o adeiladwaith ar wahân i'r cefn, sydd wedi ei chysylltu â'r prif adeilad gyda ffordd cerdded wedi'i orchuddio. Er bod rhan o'r wal is ar ffordd cerdded wedi'i ei dyddio i'r newidiadau yn gysylltiol ar ysgol yn c. 1910, mae'r rhan fwyaf o'r adeiladwaith wedi'i dyddio i'r 20fed Canrif ganolig/hwyr ac mae'r ffabrig cywasgedig yn ystyried i fod o ddim arwyddocâd hanesyddol. Fydd dau ffliw Newydd yn dod allan o'r wal dde-orllewin, ni fydd y rhain yn mynd yn uwch nag uchder yr adeilad felly fydd yr effaith gweledol yn gyfyngedig i'r golygfeydd ar hyd y llwybr cefn rhwng y castell a'r ystafell boeler.

Fydd y gwaith yn amnewid y system annigonol bresennol a chaniatáu i'r ystafelloedd o'r hen ysgol i gael ei ddefnyddio unwaith eto. Fydd ddefnydd parhaus o'r adeilad yn sicrhau ei hirhoedledd ac yn lleihau'r chynnal a chadw sydd yn codi o'r ystafelloedd heb ei ddefnydd.

1. Introduction

- 1.1.1. In August 2022, Archaeology Wales (AW) was commissioned to carry out a Heritage Impact Assessment by Merthyr Tydfil County Borough Council (MTCBC). This assessment has been undertaken in relation to proposed work to Cyfarthfa Castle, which is a Grade I Listed Building (LB 11396). The Castle was constructed in the early 19th century by Robert Lugar for William Crawshay II, owner of the Cyfarthfa Ironworks. It is an example of Gothic, castle-style late Georgian period architecture built for a prominent Welsh industrialist.
- 1.1.2. Merthyr Tydfil is the main town of Merthyr Tydfil County Borough in the Taff Valley. It is 30km to the north of Cardiff, 7km to the north-east of Aberdare and 12km west of Ebbw Vale. The Castle is situated in the area of Cyfarthfa, which is to the north-west of Merthyr Tydfil town centre, bounded by the A470 to west and Heads of the Valleys Road to the north (Figure 1).
- 1.1.3. Cyfarthfa Castle is situated in its own landscaped park (Figure 2), which is also a Grade II* Registered Park and Garden (PGW(Gm)1(MER)). The park is bounded by Brecon Road to the west, Gurnos Road and Prince Charles Hospital to the north, and residential streets to the east and south. The River Taff is situated to the west and the park slope down towards the river.
- 1.1.4. The Castle lies in the centre of the Park, with views across the Taff to the former location of the Cyfarthfa Ironworks on the opposite bank. To the rear of the Castle is woodland, while to the front is a car park and then grassland with occasional trees down to a lake on the western edge.
- 1.1.5. This assessment has been undertaken in line with relative legislation and in accordance with the guidance set out in *Managing Heritage Impact Assessment in Wales* (Cadw, 2017).

2. Legislation and guidance

- 2.1.1. This assessment has been undertaken in line with the relevant legislation and guidance relating to the historic environment, listed buildings in particular, which is outlined below.
- 2.1.2. The Planning (Listed Buildings and Conservation Areas) Act 1990 is the primary legislative instrument addressing the treatment of listed buildings through the planning process in Wales. Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 sets out the statutory duty of the decision-maker, where proposed development would affect a listed building or its setting. This includes preserving the building, its setting or any special architectural and historical features that are of interest.
- 2.1.3. National planning guidance, 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 11 (February 2021). 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.”

- 2.1.4. 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.”

- 2.1.5. The policy sets out the need for planning proposals to have fully considered the impact of the development on the historic environment, with guidance on how to do this given in Technical Advice Note 24 (TAN 24). Within TAN 24 the process of conducting a heritage impact assessment is set out. Cadw have set out guidance on how to conduct and impact assessment in their document *Managing Heritage Impact Assessment in Wales* (2017). This assessment has been prepared in accordance with that guidance.

- 2.1.6. At a local level, the Adopted Merthyr Tydfil Replacement Local Development Plan (LDP) recognises that the area has valuable heritage assets relating to area’s industrial past that forms an important part of the Borough’s character and community. Policy CW1: The Historic Environment states that:

- 2.1.7. *“Development proposals will only be permitted where it can be demonstrated they would preserve or enhance the architectural quality, character or the historic or cultural importance of our designated historic environment assets”* (MTCBC 2020, 47).

- 2.1.8. Furthermore, it specifies that any Listed Building consent requires a heritage impact statement that explains the reasons for the work and examines how the development would impact the significance of the building.

- 2.1.9. Policy CW2: Cyfarthfa Heritage Area outlines the Council’s aim to develop an internationally significant visitor attraction based around Cyfarthfa Castle, Cyfarthfa Castle Park, and the Scheduled Monument Cyfarthfa Iron Furnaces.

- 2.1.10. The Cyfarthfa Conservation Management Plan (MTCBC 2009) recognises that the management of the historic area has the potential to create a significant resource for Merthyr Tydfil County Borough. The Plan also highlights threats to the preservation of Cyfarthfa Castle due to various maintenance issues. In Policy 4: Preservation commits to working to preserve the historic features and to ensuring that any works undertaken obtain the relevant consent.

- 2.1.11. The Chartered Institute for Archaeologists has also recently published guidelines on how to conduct a cultural heritage impact assessment and these have also been consulted during the preparation of this report (CIfA, 2021).

3. Methodology

- 3.1.1. The primary objective of this assessment is to assess the impact of the development proposals on the historic asset, specifically the Grade I listed building Cyfarthfa Castle (LB 11396). It will gather enough information to understand the significance of the heritage asset affected and assess the impact of the proposals on the asset. This will help inform future decision making, design solutions and potential mitigation strategies.
- 3.1.2. This report provides information of sufficient detail to allow informed planning decisions to be made which can safeguard the archaeological resource.
- 3.1.3. This assessment followed the methodology outlined in Cadw's *Heritage Impact Assessment in Wales* (2017a). 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.
- 3.1.4. To identify and assess the significance of the asset, the assessment considers the following:
- The significance of the existing site and its setting and its relationship to adjacent and non-designated heritage assets, through assessment of various readily available primary sources:
 - Assessment of all available reports and archives including unpublished

and unprocessed material affecting the site and its setting.

- Assessment of all relevant extant photographic evidence, including available historic photos.
- Map regression analysis using all relevant cartographic sources e.g., all editions of the Ordnance Survey County Series, tithe, and early estate maps (as available).
- Historic documents (e.g., Charters, registers, estate papers).
- The significance of the assets in their local, regional, and national context and considering the findings of the assessment.

3.1.5. 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.

4. Understanding the Significance of the Asset

4.1. Historical Background

4.1.1. Until the mid 18th century Merthyr Tydfil was a small settlement in a largely agricultural landscape, although there was probably some small-scale exploitation of the local coal and ironstone resources from the medieval period (ggat.org.uk/cadw/historic_landscape/Merthyr_Tydfil/English/Merthyr_Features.htm#indlan). Exploitation of the easily accessible outcrops increased in the 16th and 17th century, but it was in the mid 18th century that iron production took off, with the foundation of four major ironworks: Dowlais in 1757, Cyfarthfa in 1765, Plymouth in 1763, and Penydarren in 1784. The development of the ironworks and associated mines, tramways and railways led to the growth of Merthyr Tydfil into an important regional town.

4.1.2. The Cyfarthfa Ironworks were founded by Anthony Bacon and William Brownrigg in 1765, on 4000 acres of land leased from Lord William Talbot on a 99-year lease (Cadw, 2015). Under the management of Charles Wood, Cyfarthfa became the first in Merthyr Tydfil to produce wrought iron. In 1774, Richard Crawshay entered into partnership with Bacon, taking over Brownrigg's share of the works (Davies 2009, 8). Crawshay was originally from Yorkshire. He moved to London as a teenager, where he worked his way up in an iron warehouse to become the proprietor (biography.wales/article/s-CRAW-CYF-1739). Now wealthy, he saw the south Wales iron works as an opportunity for investment.

4.1.3. Crawshay continued to innovate, adopting Henry Cort's puddling process to produce wrought iron from pig iron, which increased efficiency (biography.wales/article/s-CRAW-CYF-1739). He also expanded the works, building new furnaces, forges, and rolling mills. By 1792 he had taken complete control of the works. Capitalising on the global demand for iron, by the time of his death in 1810 Cyfarthfa was the largest

ironworks in the world (MTCBC 2009).

- 4.1.4. Crawshay left only a share of his business to his son William, but William gradually removed the other shareholders to gain sole ownership of the ironworks. His son, William Crawshay II, managed the business for him. Initially he lived in Gwaelodygarth House (now a Grade II Listed Building, LB11487, to the south-east of Cyfarthfa Park), which had been built by Anthony Bacon, but in 1824 he commissioned the construction of Cyfarthfa Castle on a site overlooking the ironworks (Davies 2009, 9).

4.2. Cyfarthfa Castle

- 4.2.1. William Crawshay II commissioned the London architect Robert Lugar to build the Castle in 1824. The budget was only £30,000, and Lugar was under strict instructions not to exceed the budget. Costs were kept down by using the local Pennant sandstone stone quarried on site (Newman 1995, 441-442).
- 4.2.2. An original plan of the ground floor of the building exists from 1827 (Figure 3). It shows the residential rooms of the Castle, the rear service rooms including the slightly detached bakehouse and dairy block, and part of the Stable block. A terrace runs around the front and south-east elevation, while a wall is shown along the rear of the building representing the retaining wall required as the Castle was built slightly into the hillslope.
- 4.2.3. The Castle was already built by the time of the production of the earliest detailed map of the Merthyr Tydfil area, the 1850 Tithe map (Figure 4). It shows Cyfarthfa Castle, apportionment number 1811, surrounded by woodland to the north and east, meadows to the south and the pond to the west in a layout very strongly resembling the modern Park. Located south-west of Cyfarthfa Castle is Cyfarthfa Ironworks, apportionment no. 1603, and immediately west is the River Taff.
- 4.2.4. The Castle building itself is shown as a rectangular building with projecting elements to the front (south-west) and south-east facing elevations. To the north-west is the courtyard stable block, attached by a narrow element to the north-east corner of the Castle building, with a courtyard and garden between.
- 4.2.5. The Ironworks had continued to be highly profitable during the 1830s and 1840s, driven largely by the demand for iron caused by the expansion of railways across Europe and the USA (Davies 2009, 10). William Crawshay II died in 1867 and the ironworks were inherited by his son, Robert Thompson-Crawshay, who had been managing them since 1839. The business started to decline in the 1860s due to a number of factors. The local ironstone sources were being exhausted, meaning ore had to be imported at a higher cost. At the same time prices for iron were declining due to foreign competition. There were also workers' strikes over pay and conditions. Adaption to steel production, as happened at Dowlais in 1865, would have would have been more profitable, but was resisted by Robert. In 1874, after Robert tried and failed to sell the business, the works were closed for largescale

modernisation (www.engineering-timelines.com).

- 4.2.6. The First Edition Ordnance Survey Town Plan of 1875 (Figure 5) depicts the Castle and surrounding Park in greater detail than the Tithe map and demonstrates little change to the building over the intervening period. It shows the octagonal central tower with steps up to the main entrance, a circular tower in the south corner, a smaller octagonal tower on the south-east elevation with steps leading to the garden, and square towers to the corners. The stables are shown as a rectangular courtyard with the main covered entrance on the south-east side. There is an L-shaped building to the rear of the Stables not previously seen. Between the two main buildings are the connected bakehouse/dairy buildings and central courtyard and garden. A tramway to the rear service buildings runs through the central courtyard, around the pond to the north and joins the main Ironworks tramway.
- 4.2.7. To the rear of the building is the retaining wall noted on the original plans with the steep slope behind showing where the building was built into the hillside. To the centre of the slope along the rear of the building is a small square building which had not previously been shown on any mapping. Beyond the slope, to the north-east, are numerous glass houses.
- 4.2.8. Robert Thompson-Crawshay died in 1879 and his three sons re-opened the works (Davies 2009, 11). They finally made the decision to convert the works to produce steel, with production starting in 1883. However, it was not enough to save the business, and the Cyfarthfa works were sold to Guest, Keen and Nettlefolds, the owners of Dowlais steelworks, in 1902. The Crawshays had already moved out of the Castle in 1889, moving to their mansion in London (MTCBC 2009). The Castle was left empty until it and the park were purchased by the Merthyr Tydfil Corporation in 1909 at a cost of £18,000.
- 4.2.9. The 1904 revised County Series map shows that no changes were made to the building from the 1875 map, although steps have been added up the slope to the rear, immediately to the south-east of the new square building. Floor plans produced for the sale of the Castle (Figure 6) show that there had been minor changes made by the Crawshays to the interior of the building in comparison to the original plan of 1827. They included the conversion of an interior courtyard into a fernery, the partitioning of the butler's pantry, the conversion of three rooms (larder, scullery and unnamed) into two.
- 4.2.10. Changes to the exterior of the building can also be observed. A circular room shown at the north corner of the bakehouse element had been removed, and a new circular room built at the north-west end of the passage that ran to the south-west of the bakehouse and dairy. A small room, labelled Carpenter's Shop, had been added in the formerly open area between this and the Stables. The alterations to the larder and scullery appear to have resulted in the blocking of two windows and the opening of a new one to accommodate the new interior room layout. Also to the rear of the building, a garden wall is shown running between the larder and dairy and then continuing from the wash house before returning in line with the stables. On this

plan, the small, square building built into the slope to the rear of the Castle is labelled as a “Stoke Hole (For Hot Water Pipes to Conservatories).”

- 4.2.11. The Corporation planned to turn the Castle into a school and museum. Proposed architect’s plans produced in 1909 (Figure 7) illustrate the extensive changes required to the building to achieve this. They show that the intention was to largely retain the front and south-east side of the building, to be used for the museum, as it was while remodelling the rear rooms to create classrooms and other school rooms such as an assembly room and gymnasium. The main staircase was removed to create a courtyard and the former brewhouse structure was removed to expand the existing central courtyard. The plans also show two covered walkways or bridges from the rear of the building to the slope behind.
- 4.2.12. The alterations were carried out in 1910, with the Tender Specification document indicating that most of the service rooms, those to the rear of the building on the north-east side, including the former dairy building and the rear of the stables, were demolished and rebuilt (MTCBC 2009). The rebuilding was designed to match the appearance of the original building. The Specification states that the stones were retained for reuse and the mortar was specifically mixed to match the original. However, the upper storey windows were changed from Georgian sash to mullion and transom across almost the entire building. The original windows were retained only in the Caretaker’s House and Headmaster’s Office (MTCBC 2009).
- 4.2.13. The school was opened in 1912, with separate boys’ and girl’s schools. The 1919 County Series map, revised in 1914 – 1915, shows the new ground plan of the building, with the expanded rear range, new courtyard in the main house and extended central courtyard (Figure 8). It also shows that one covered walkway/bridge was built in the area where the Stoke House building was. This appears to have been built over by a larger, elongated structure. A separate long, narrow building is also shown to the north-west of this.
- 4.2.14. The schools merged to become a Cyfarthfa Castle Grammar School in 1945. In 1970 it merged with the local Secondary Modern to become a split-site comprehensive, with the Upper School using the Castle site. In 1981, the Upper School moved to a new site and the Lower School moved into the Castle. As the new premises expanded the Lower School also moved out, with the premises finally being vacated in 2013. The museum and gallery has continued to function since its foundation, and is an important social/educational and recreational hub for the local community (*VisitMerthyr 2022*).
- 4.2.15. The Ordnance Survey map of 1965 shows no obvious changes to Castle since the school alterations. By the time of aerial photographs taken in 2001 the narrow building to the rear of the Castle had been demolished (Google Satellite).

4.3. Existing building description

- 4.3.1. Cyfarthfa Castle is a large castle-style manor house, constructed of rough quarried

stone in a castle-like style (Plate 1). Window and door surrounds are of Bath stone. The house is two-storey with a basement storey to the rear. All windows are mullion and/or transom except for the circular tower, the windows being round headed.

- 4.3.2. The front of the building faces south-west and has nine bays (Plate 2). The north-westernmost bay is a three-storey square tower and the south-easternmost is a three-storey circular tower. The central projecting bay is an octagonal tower with a single-storey entrance porch flanked by crenelated towers. To the north-west is the attached stable block. The front elevation is single storey with a two-storey square carriage entrance. There is a second smaller entrance to a courtyard area to the south-east, between the house and stables, flanked by a circular tower to the south-east and square tower to the north-west. The east corner of the building has an octagonal tower.
- 4.3.3. The house has a second façade facing south-east to the gardens, which is a mirror of the front elevation. To the rear of the circular tower is the watchtower, the tallest of the castle's 15 towers.
- 4.3.4. The north-west elevation of the stables is single storey, eight bay, with a large, two-storey square tower to the north corner. The bay to the right of the tower has a modern door within a Bath stone surround in keeping with the rest of the building.
- 4.3.5. The rear of the building is two-storey and has 15 bays (Plate 3). The seventh bay projects forward slightly and is flanked by two tower-like pilasters. The rear of the building is dug into the hillside, and there is a tarmacked path between the rear of the building and a low, rubble stone retaining wall (Plate 4). A covered walkway extended from the second storey towards the north-western end of the elevation (Plate 5). The walkway is supported on joists by iron columns on stone plinths. It is of yellow brick in stretcher bond and has crenelations with coping stones.
- 4.3.6. The walkway leads to a separate, single storey building built into the hillslope at a higher level (Plate 6). The lower wall of the south-west elevation of the building is in the same rusticated stone as the castle while the upper is yellow brick like the walkway. It has a band of cement render with wooden framed windows. There is a small lean-to projecting element to the south-east also in yellow brick (Plate 7). It has a door on the north-west facing elevation accessed by a metal staircase. It also has a door at ground/basement level, which accesses the boiler room. The south-east facing elevation has a rectangular tower in yellow brick with crenelations. In the southern corner is the metal flue of the existing boiler. There is a single storey projecting element to the rear which is entirely rough cement rendered and has windows with cement sills that have been covered with security grills and a modern door. It is the same level as a road around the rear of the building.
- 4.3.7. The interior ground level of Cyfarthfa Castle has not undergone any major construction work in recent years, therefore many of the rooms previously used as classrooms remain the same. The library, entrance hall, the drawing room and dining room, are used as a space for the museum and art gallery and have undergone

refurbishment (Cadw 2022).

- 4.3.8. The boiler room is located in the separate rear building. It has a wooden vented door in poor condition (Plate 8). The interior has a poured cement floor. The south-west and south-east walls are of red brick (Plate 9), the north-east wall is of aerated blocks, and the north-west of rubble stone (Plate 10). The ceiling is of concrete beams supported by two central brick columns and two steel H-beams. The door and a blocked window on the south-west wall have concrete lintels (Plate 11). The existing boiler and pump frames are set into the floor (Plates 10 and 12). Pipes run around the north-west wall at high level (Plate 10).

4.4. Significance of the Asset

Evidential Value

- 4.4.1. The evidential value of Cyfarthfa Castle is affected by the alterations that have been made to the building since its construction.
- 4.4.2. The building is an example of a neo-Gothic castle-style architecture that became popular in Britain in the late 18th and early 19th centuries. The style was introduced by Robert Adam, a leader of the classical revival movement in British architecture, who built several castellated houses in Scotland towards the end of his career (britannica.com). Cyfarthfa's architect, Robert Luger, was not as well known or influential as Adam, but Cyfarthfa was a good example of the style.
- 4.4.3. The two main elevations of the castle remain unchanged from their initial construction and therefore are of high evidential value. However, the overall value of the building is reduced by the extensive changes made to both the interior and exterior of the building in the early 20th century. Although sympathetic in style to the original exterior the value of the rear exterior construction is lower. The alterations to the interior, changing the use of the building from a mansion house with stables to a school, significantly alter the understanding of movement around the original buildings.
- 4.4.4. Historic map regression indicates that the separate rear building did not exist in any form on the original building. The initial structure in the location, a small square building, was built sometime between 1850 and 1875. It is possible that part of this building is retained in the stonework visible to the lower part of the existing building, although based on its size it is more likely that this dates to the early 20th century when the building was enlarged. The building has been enlarged again at some point between the school alterations as shown on the 1919 Ordnance Survey map and the modern ground plan of the building. Unfortunately, available mapping and aerial photographs do not provide any evidence for when this was. Most of the building now consists of yellow brick, some rendered in cement. The bricks, render, and style of windows suggest a date around the 1960s for this extension. With the exception of the lower wall and cast iron pillars supporting the walkway, this part of the castle has very low evidential value.

Historical Value

- 4.4.5. Cyfarthfa Castle's historical value derives primarily from its association with the Crawshay family, the Cyfarthfa Works, and the iron industry in Merthyr Tydfil in general.
- 4.4.6. The Crawshays were important drivers of the development of Merthyr as an iron working town. Richard Crawshay in particular was an innovator, who adopted Cort's puddling methods to increase production and who was a big supporter of the Glamorgan Canal. The family presided over the largest ironworks in the world in the early 19th century, and the construction of the castle-style mansion for their residence demonstrated their importance and wealth. The builder of the castle, Richard's grandson William Crawshay II, was known as the 'Iron King' (biography.wales/article/s-CRAW-CYF-1739).
- 4.4.7. The building had a commanding view over the Cyfarthfa works, making a statement about the status of the family to their workers. The family were partially responsible (along with other iron and coal industrialists) for the massive population expansion in Merthyr Tydfil through the 19th century, and the development of the town as it is today. The Castle is therefore an important part of Merthyr's heritage.
- 4.4.8. The building was designed by Robert Lugar, a London-based picturesque architect who principally designed houses for wealthy businessmen and industrialists (www.scottisharchitects.org.uk). Many of his designs were in the neo-Gothic castellated house style seen at Cyfarthfa, including Tullichewan Castle, now demolished, and Balloch Castle in Dumbartonshire.

Aesthetic value

- 4.4.9. The building is an imposing structure that dominates the local area, designed to be seen from a distance. Located on the valley side, it looked directly over the Cyfarthfa Ironworks. Its architect, Robert Lugar, evocatively described its original setting: "on the foreground, the terrace, park and river Taff, beyond which the great iron-work become conspicuous; these, at night, offer a truly magnificent scene, resembling the fabled Pandemonium, but upon which the eye may gaze with pleasure," (Newman 1995, 441). The works over which the Castle looked no longer exist, but the Castle's location means it is visible from much of the west of Merthyr, including the A470 and the Taff Trail cycle route.
- 4.4.10. The building makes use of the materials from the surrounding landscape, constructed from locally quarried stone. Bath stone is used for door and window surrounds. It is designed to have a castle-like appearance, so there is little in the way of elaborate decoration beyond the turrets with their imitation machicolations and crenelations. Another castle-like design are dummy arrow loops on the towers. The Castle's most impressive elevations are to the front (south-west) and south-east, overlooking the ornamental gardens. The rear and north-west elevation are likely to have originally been less impressive than the front, as they were part of the stables and service areas. They have almost certainly been rebuilt during the alteration of

the house to a school, although this rebuilding has retained the aesthetic of the original building and its faux-castle elements. The Tender Specification for the works in 1910 specified that the original stones would be re-used and the mortar mixed to match the original (MTCBC, 2015).

- 4.4.11. The separate yellow brick building to the rear, which includes the boiler room, is not in keeping with the original building, although an attempt has been made in the construction of crenelations. The building detracts from the view of the rear of the building for visitors walking around the park. Indeed, the Cyfarthfa Conservation Management Plan recommended that it be demolished or remodelled (MTCBC 2015). The later addition of classrooms and other facilities to accommodate to needs of a school detracts from the original design, but the building remains impressive.

Communal value

- 4.4.12. There are two elements to the building's communal value, the first being that it has served the community of Merthyr since it was acquired by the Merthyr Corporation in 1909 and reopened for public use, and the second being its value as part of the community's industrial heritage.
- 4.4.13. The Castle's relationship with the community changed after the closure of the ironworks, as it went from a private house owned by a major local employer to being owned by the public. One of the main aims of the Merthyr Corporation when purchasing the Castle was to provide facilities for the residents of the town. The building was converted to a school and museum and art gallery, and the park was made public. Generations of local children have been educated in the building, with the school only closing in 2013. The museum and art gallery remain open, providing services to the local community and visitors, including the park grounds for events, museum exhibitions, educational services, and a tearoom.
- 4.4.14. The building itself is also a physical reminder of the community's ironworks heritage. Visible from many of the streets, it is an important architectural landmark in the town of Merthyr Tydfil (VisitMerthyr 2022). The importance of the building as a heritage asset is emphasised by MTCBC's intention to create an internationally significant visitor attraction around it and the former Ironworks.

5. The Development Proposals and Their Impacts

- 5.1.1. A summary of the proposals and their impacts is provided below in Table 1.

5.2. Summary of Development Proposals

- 5.2.1. The development proposals relate to the boiler house, located in the separate building at the rear of the Castle, and the Pump Room in the basement level at the rear of the house. The proposed alterations are to replace the existing boiler plant system and automatic control system, whilst retaining the heating system, pipework,

and gas detection system. This will include:

- The removal of existing crane pump sets and replacement with new LTHW circulating pumps.
- The removal of existing air inlet ducts and flues and replacement with new stainless steel boiler flues.
- The removal of the plant room door.
- The removal of existing heating and water services pipe work, pumps, valves, and fittings. The pipework is generally to be retained and renewed unless replacements are needed.
- The removal of existing gas fired boilers and frames and replacement with new rig/framed mounted gas fired condensing boilers.
- The removal of existing control panel. Existing controls are to be removed and replaced with BEMS Trend controls system, alongside new sensors, and field wiring.

5.3. Impacts and mitigations

- 5.3.1. The proposed works are almost exclusively within the Boiler Room, situated in the separate building to the rear of the Castle. This room is of mid to late 20th century date, and is considered of no historic significance, except the stone-built north-west wall, which may relate to an earlier structure. None of the works detailed will affect this wall.
- 5.3.2. Any systems deemed redundant are to be removed, with the exception of the boiler and crane pump sets, which will be left in place. The new rig/frame mounted gas-fired condensing boilers will be mounted on the floor in the north corner of the room. The concrete floor is of mid/late 20th century date and is considered of no historic significance.
- 5.3.3. The existing pipework is to be retained where possible. Only damaged and redundant pipes will be replaced, reducing any potential damage to the building's fabric.
- 5.3.4. The installation of the new boiler flues to replace the existing will involve creating new holes in the fabric of the structure. The proposed exit point for the flues is the south-west elevation. This wall is of mid/late 20th century date and of no historic significance. The flues will not extend above the height of the building, therefore visual impact on the main Castle building will be limited to views along the rear path between the Castle and the Boiler Room. The metal flue of the existing boiler is to be retained.
- 5.3.5. A new automatic control system is to be installed. This control panel will be located in the same place as the existing panel, which it will replace, on the south-west wall. This wall is of no historic significance.
- 5.3.6. The existing Boiler Room door is in a poor condition and will be replaced. The door is of mid/late 20th century date and considered of no historic significance. The new

door will enhance the appearance of the boiler room to the rear of the Castle, although this building is not itself historically significant.

- 5.3.7. The only works to be carried out within the Pump Room in the basement level of the house is the removal of existing redundant LTHW heating pumps and a small section of related pipework. The majority of the existing pipework in the room will remain. The removal of these elements would have no effect on any building fabric of historic significance.
- 5.3.8. The existing underground pipework between the Boiler Room and Pump Room will be retained, meaning no new excavation will be required.

Table 1. Summary of proposed work, impacts and proposed mitigations

Proposed Work	Objective	Significance of affected fabric	Assessing beneficial impact	Assessing harmful impact	Proposed Solution
The installation of new LTHW circulating pumps.	Part of new boiler system installation to allow future use of the building and its maintenance.	- Mid/late 20th century pump sets, of no historic significance. - Pumps are fixed to mid/late 20th century fabric, of no historic significance.	None	None	None
The removal of existing air inlet ducts and flues and replacement with new stainless steel boiler flues.	Part of new boiler system installation to allow future use of the building and its maintenance.	- Mid/late 20th century pump sets, of no historic significance. - Will require drilling of holes for two flues into the south-west elevation of the boiler room. The wall fabric is mid/late 20th century, of no historic significance.	None	The appearance of the flues exiting will have a negligible impact on the setting of the rear of the Castle building.	None
The removal of the plant room door.	Part of new boiler system installation to allow future use of the building and its maintenance.	Modern door in poor condition. Of no historic value and poor condition currently detracts from the	New door will enhance the appearance of the boiler room to the rear of the	None	None

Proposed Work	Objective	Significance of affected fabric	Assessing beneficial impact	Assessing harmful impact	Proposed Solution
		appearance of the rear of the building.	Castle, although this building is not itself historically significant.		
The removal of existing heating and water services pipe work, pumps, valves, and fittings. The pipework is generally to be retained and renewed unless replacements are needed.	Part of new boiler system installation to allow future use of the building and its maintenance.	• Mid/late 20th century pipe work and fittings, of no historic significance. • Attached to mid/late 20th century fabric, of no historic significance. • Existing pipework in trench to main building will be retained.	None	None	None
The removal of existing gas fired boilers and frames and replacement with new rig/framed mounted gas fired condensing boilers.	Part of new boiler system installation to allow future use of the building and its maintenance.	• Mid/late 20th century boilers and frames, of no historic significance. • Frames attached to mid/late 20th century fabric, of no historic significance.	None	None	None
The removal of existing control panel. Existing controls are to be removed and replaced with BEMS Trend controls system, alongside new sensors, and field wiring.	Part of new boiler system installation to allow future use of the building and its maintenance.	• Mid/late 20th century control panel, of no historic significance. • Attached to mid/late 20th century fabric, of no historic significance.	None	None	None

6. Conclusions

- 6.1.1. This Heritage Impact Assessment has examined the impact of proposed alterations to Cyfarthfa Castle, a Grade I listed building (LB 11396) located in Cyfarthfa Park, in the north-west of Merthyr Tydfil. The proposed work relates to the replacement of the existing heating system, including the boiler, pumps, and control system.
- 6.1.2. The report includes detailed research (including historic mapping and archival material) into the building's historical background and development to understand its significance as a heritage asset. The identification and assessment of significance draws on the four heritage values (evidential, historical, aesthetic, and communal) defined by Cadw in *Conservation Principles* (Cadw, 2011).
- 6.1.3. The Castle was built as a residence by the Crawshay family, owners of the Cyfarthfa Ironworks, which was located across the river Taff. The Castle was located on a hillside to overlook the works. It was built in 1824, when the Cyfarthfa works were the largest in the world. It is considered an excellent example of an ironmaster's residence and is a testament to the importance of the local iron industry.
- 6.1.4. As the Ironworks declined in the late 19th century, the Crawshays abandoned the house, and in 1909 it was purchased by the Merthyr Corporation. It has since been used as a school and museum and art gallery. Alterations for its use as a school involved the rebuilding of the rear of the structure. The museum and art gallery continue to function, but it ceased to function as a school in 2014.
- 6.1.5. Although Cyfarthfa Castle has a high heritage value, evidenced by its Grade I listing, the proposed work largely relates to the Boiler Room, part of a separate structure to the rear, connected to the main building via a covered walkway. Although some of the lower wall and walkway date to the alterations associated with the school c. 1910, the majority of the structure dates to the mid/late 20th century and the impacted fabric is considered of no historic significance. Two new flues will project from the south-west wall. These will not extend above the height of the structure and therefore the visual impact will be limited to views along the rear path between the Castle and the Boiler Room.
- 6.1.6. The proposed works will replace the existing inadequate system and will allow the rooms of the former school to be brought back into use. Continued use of the building will ensure its longevity and reduce maintenance issues that arise from the rooms being left vacant.

7. Sources

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Maps Consulted

Plan of the parish of Merthyr Tydfil in the County of Glamorgan, 1850, Michael Nunan and John Williams, 1:6,336.

Ordnance Survey Town Plan, Merthyr Tydfil – Glamorganshire XII.1.7., 1875, Scale: 1:500.

Ordnance Survey, Merthyr Tydfil – Glamorgan XII.1., 1904, Scale: 25 inch to the mile.

Ordnance Survey, Merthyr Tydfil – Glamorgan XII.1., 1912, Scale: 25 inch to the mile. View Map:

Ordnance Survey, Brecknockshire LI., 1922, Scale: Six-inch to the mile.

Ordnance Survey, Brecknockshire LI. NW, 1951, Scale: Six-inch to the mile.

Ordnance Survey, SO00NW – A. 1965, Scale: 1:10,560.

Figures

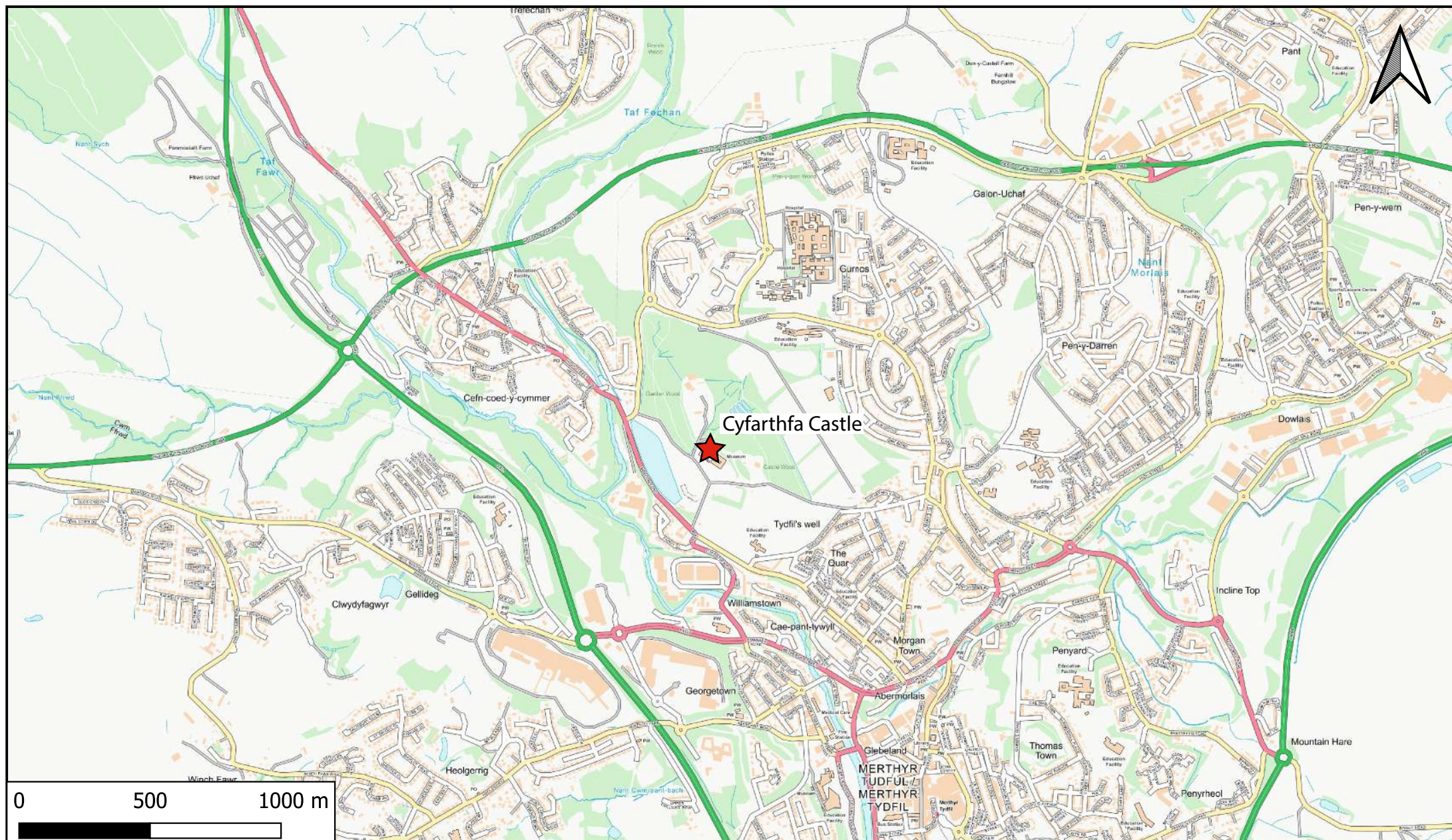


Figure 1. Location of Cyfarthfa Castle.

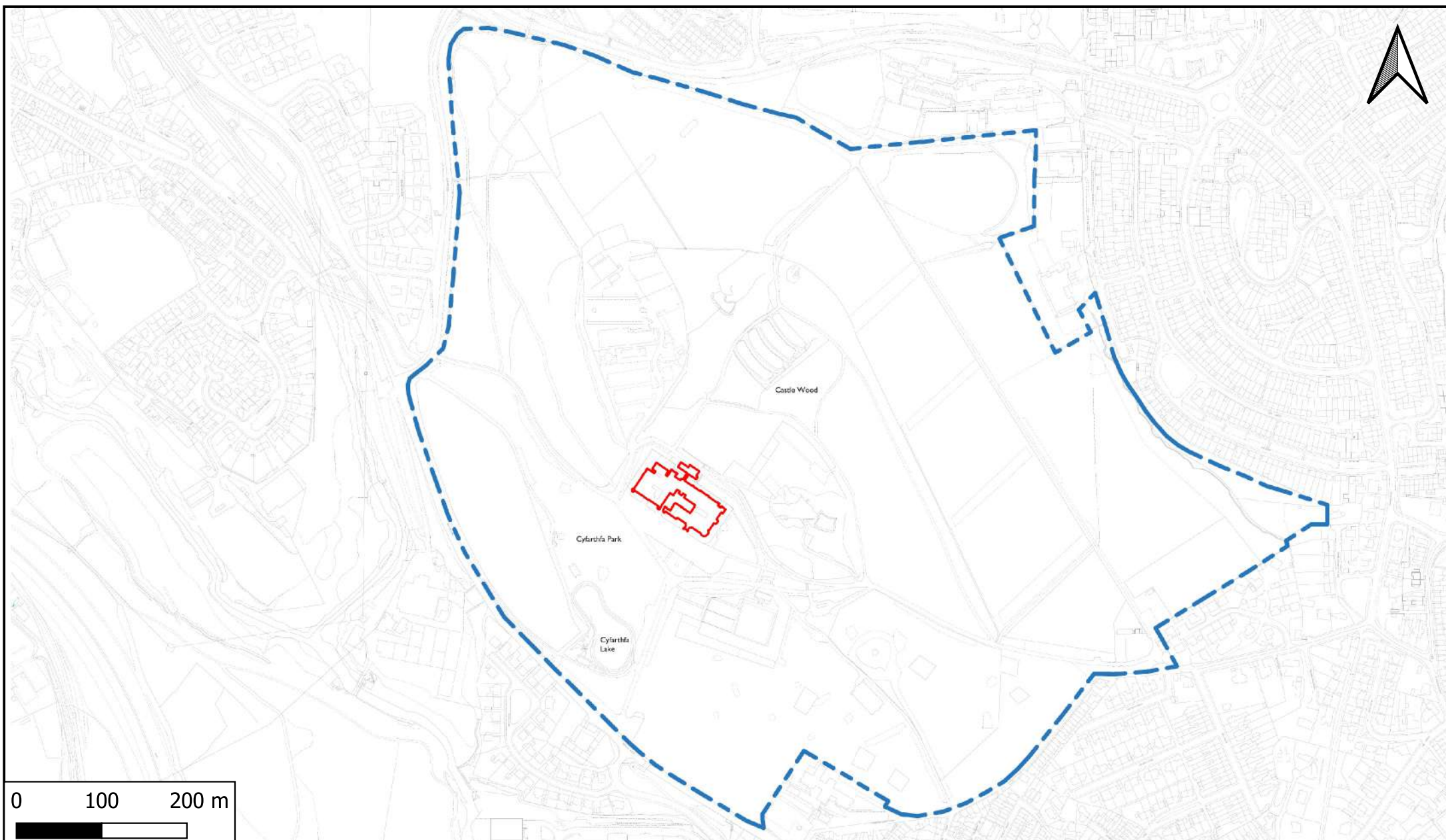
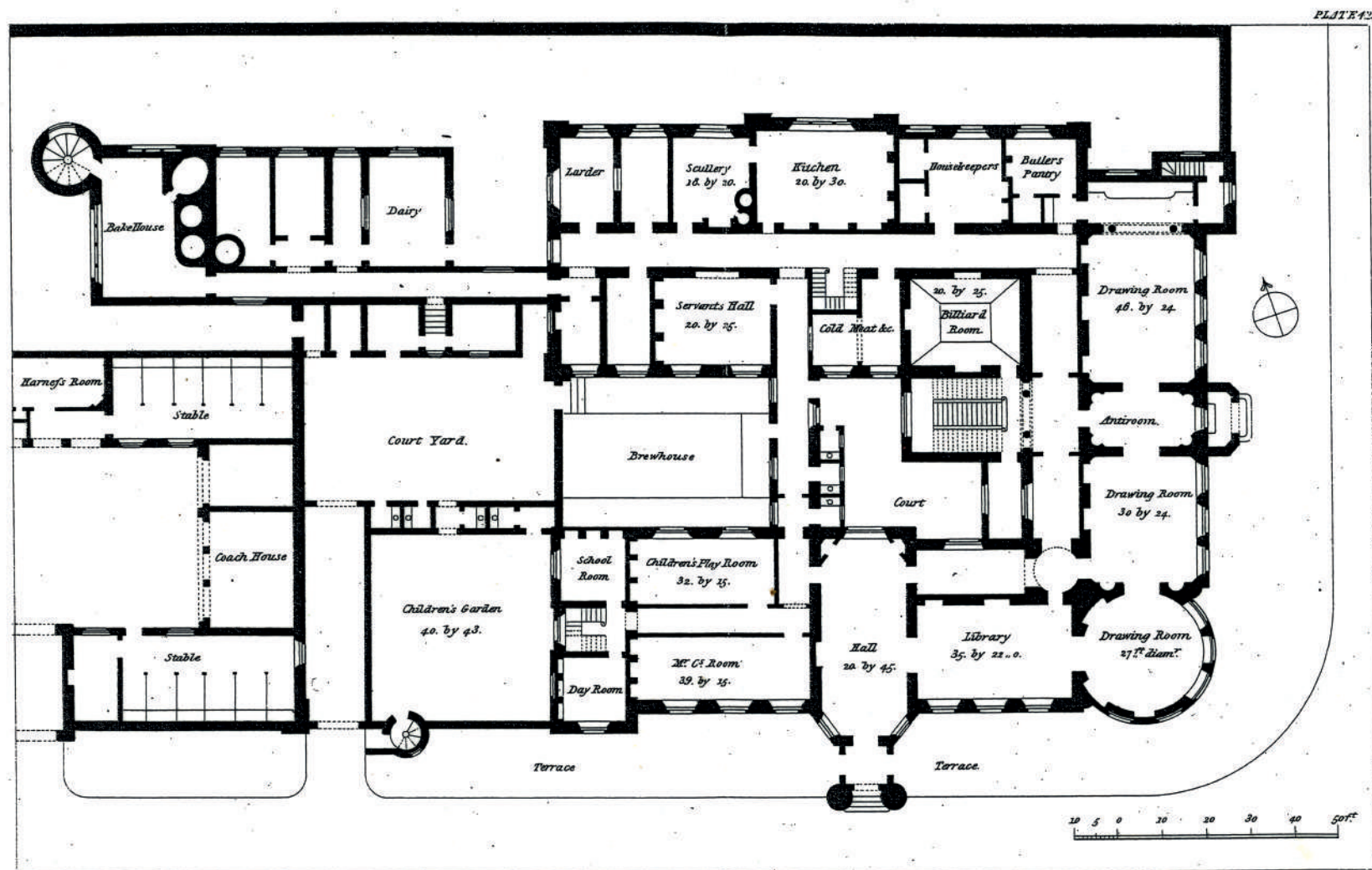


Figure 2. Plan showing the footprint of Cyfarthfa Castle (red) and Cyfarthfa Park (blue).

Based on original plan provided by Merthyr Tydfil County Borough Council, produced by Purcell.



Cyfarthfa Castle Glamorganshire.
London Publ. by J. Taylor 59 High Holborn.

Figure 3. Original floorplan of Cyfarthfa Castle, 1827.

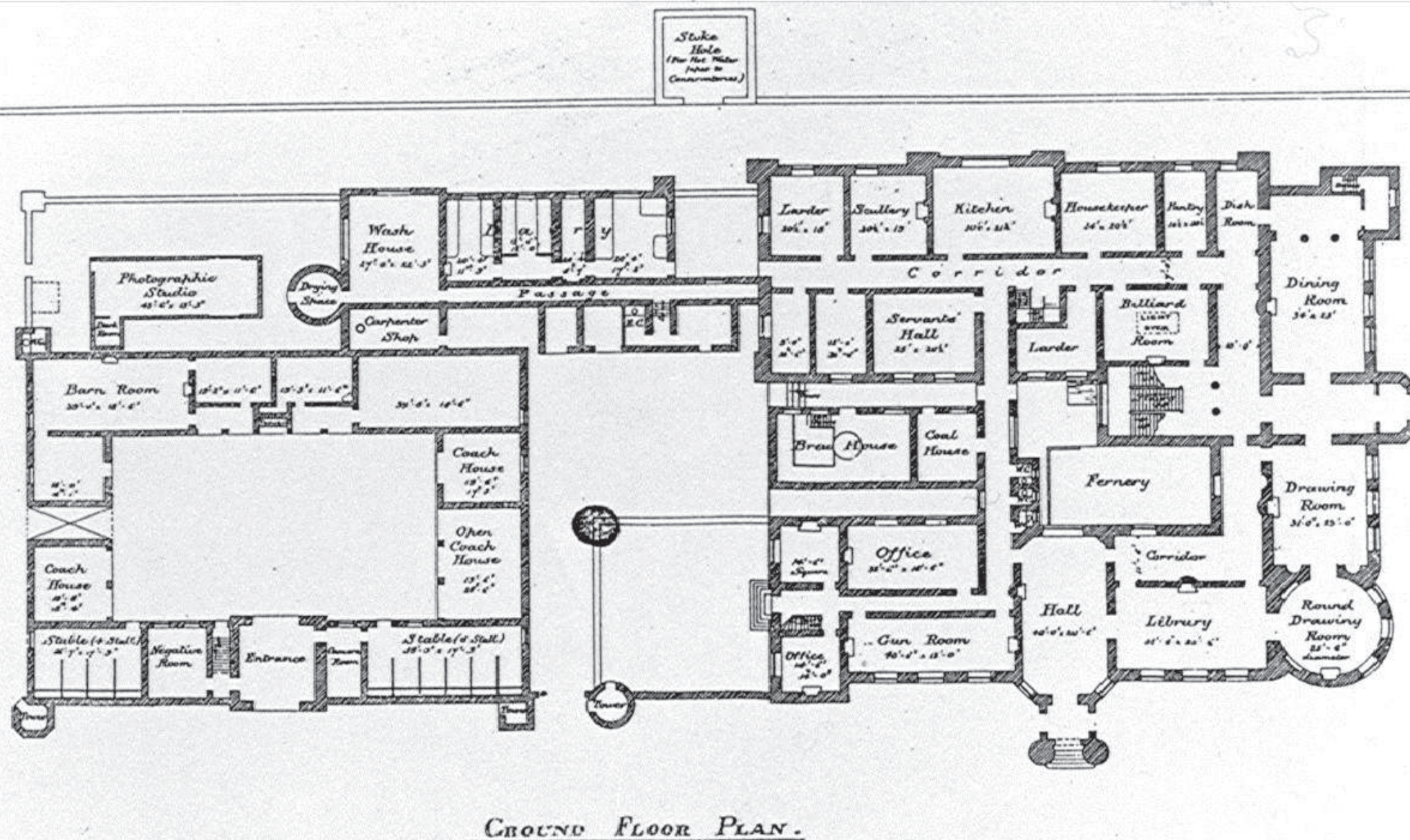


Figure 6. Ground Floor Plan of Cyfarthfa Castle produced by the Council when they purchased the building in 1909.

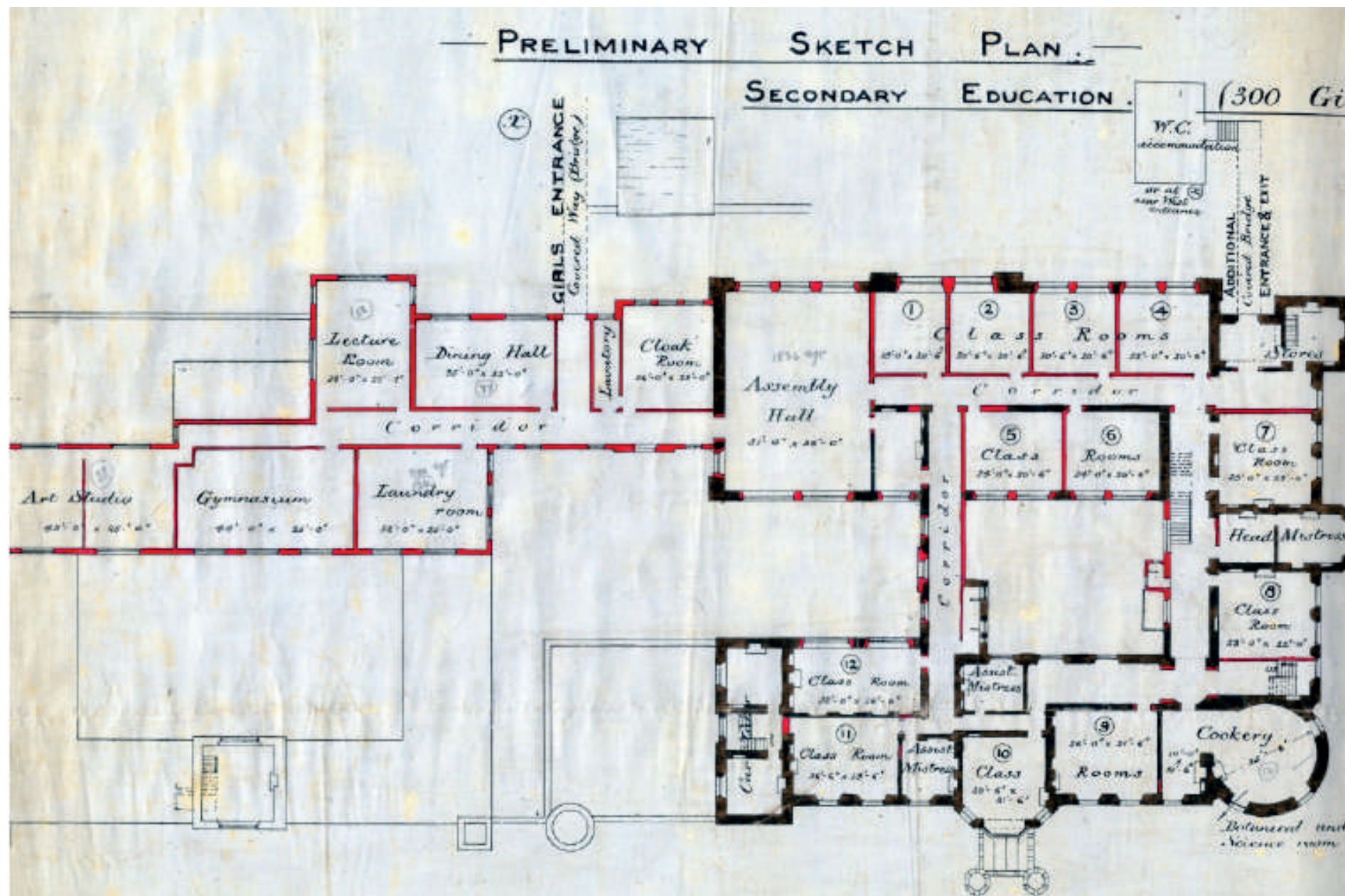


Figure 7. Plans for the conversion of Cyfarthfa Castle to be used as a school after the Council purchased the building in 1909.

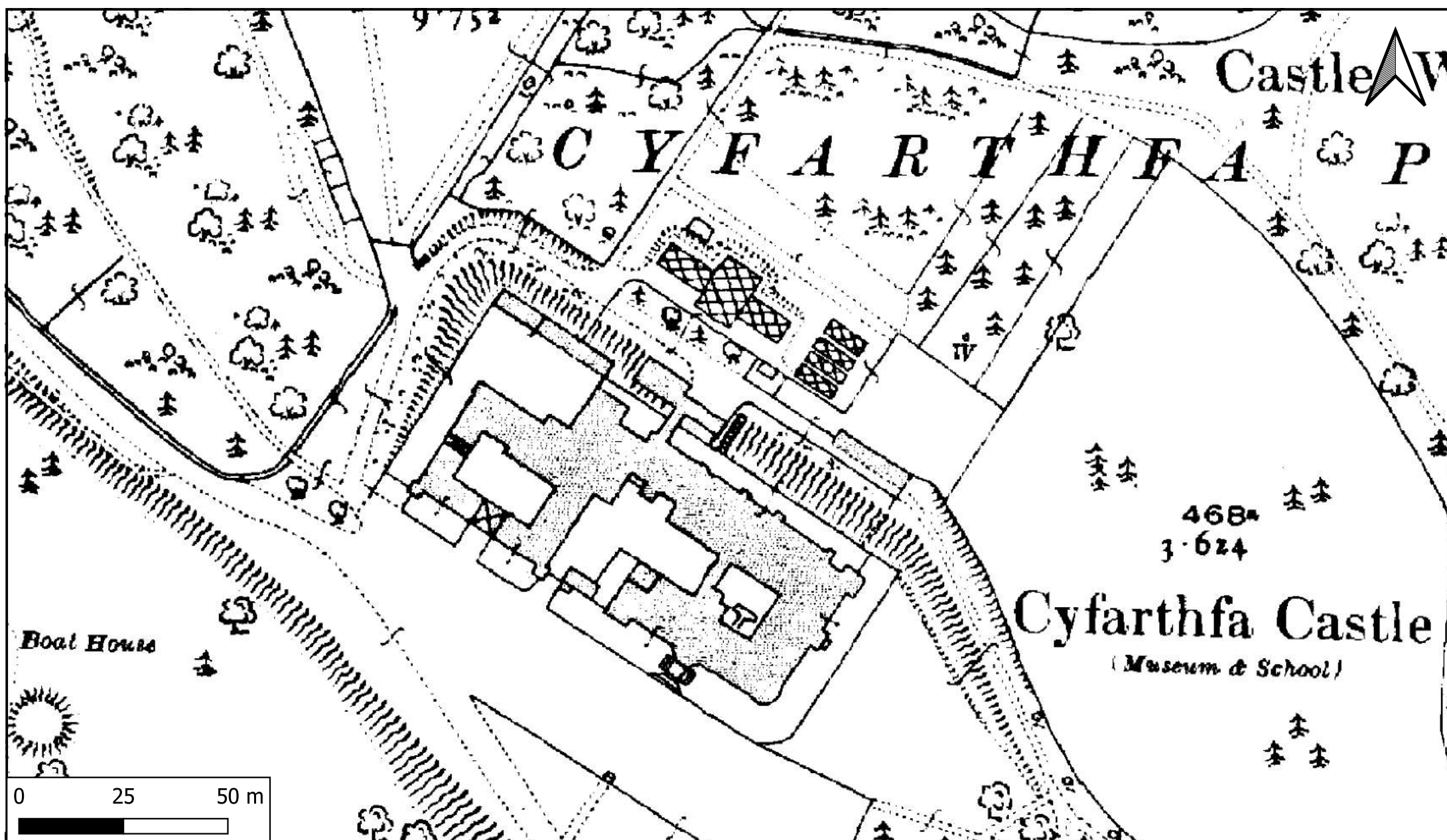


Figure 8. Ordnance Survey County Series map, 1919.

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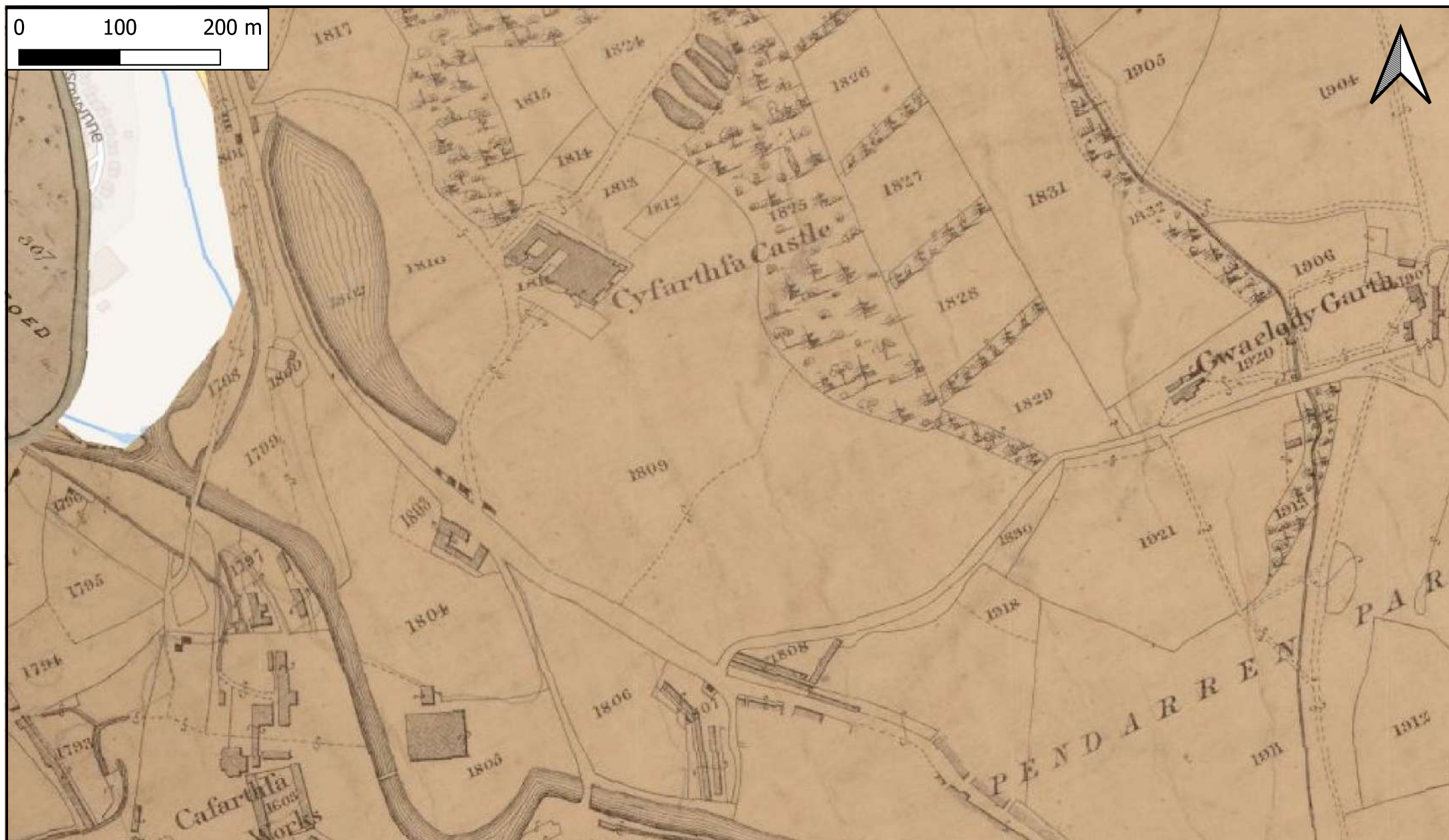


Figure 4. Tithe map of 1850 showing Cyfarthfa Castle, Cyfarthfa Ironworks, and the Crawshay's previous house, Gwaelody Garth.



Figure 5. Ordnance Survey Town Plan of 1875. Merthyr Tydfil, Glamorganshire, Sheet XII.1.7

Plates



Plate 1. Cyfarthfa Castle, looking north.



Plate 2. Front (south-west) facing elevation of Cyfarthfa Castle, looking north-east.



Plate 3. Rear of Cyfarthfa Castle, looking west.



Plate 4. Path to the rear of Cyfarthfa Castle, looking north-west.



Plate 5. Covered walkway between rear of Cyfarthfa Castle rear building, looking south-east.



Plate 6. Attached building to the rear of the Castle, including Boiler Room to the righthand side. Looking north-east.



Plate 7: Boiler Room to basement level of lean-to section, looking east.



Plate 8. Boiler Room door, in poor condition. Looking north-east, 1m scale.

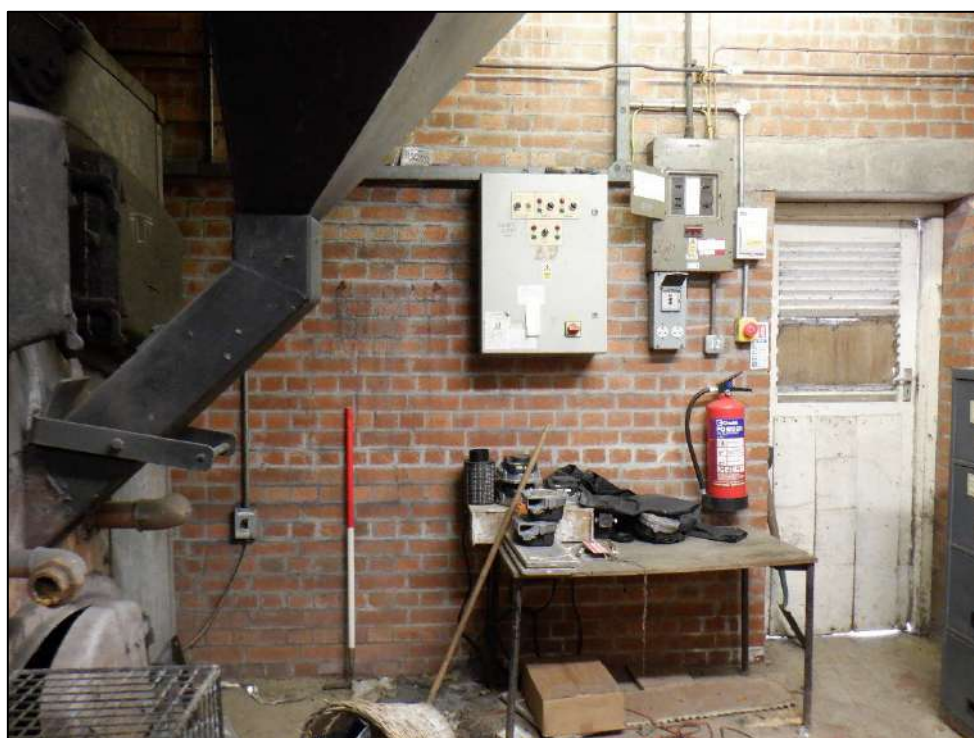


Plate 9. South-west wall of Boiler Room, looking south-west. 1m scale.



Plate 10. Rubble stone north-west wall and aerated block north-east wall, looking north-east. 1m scale.



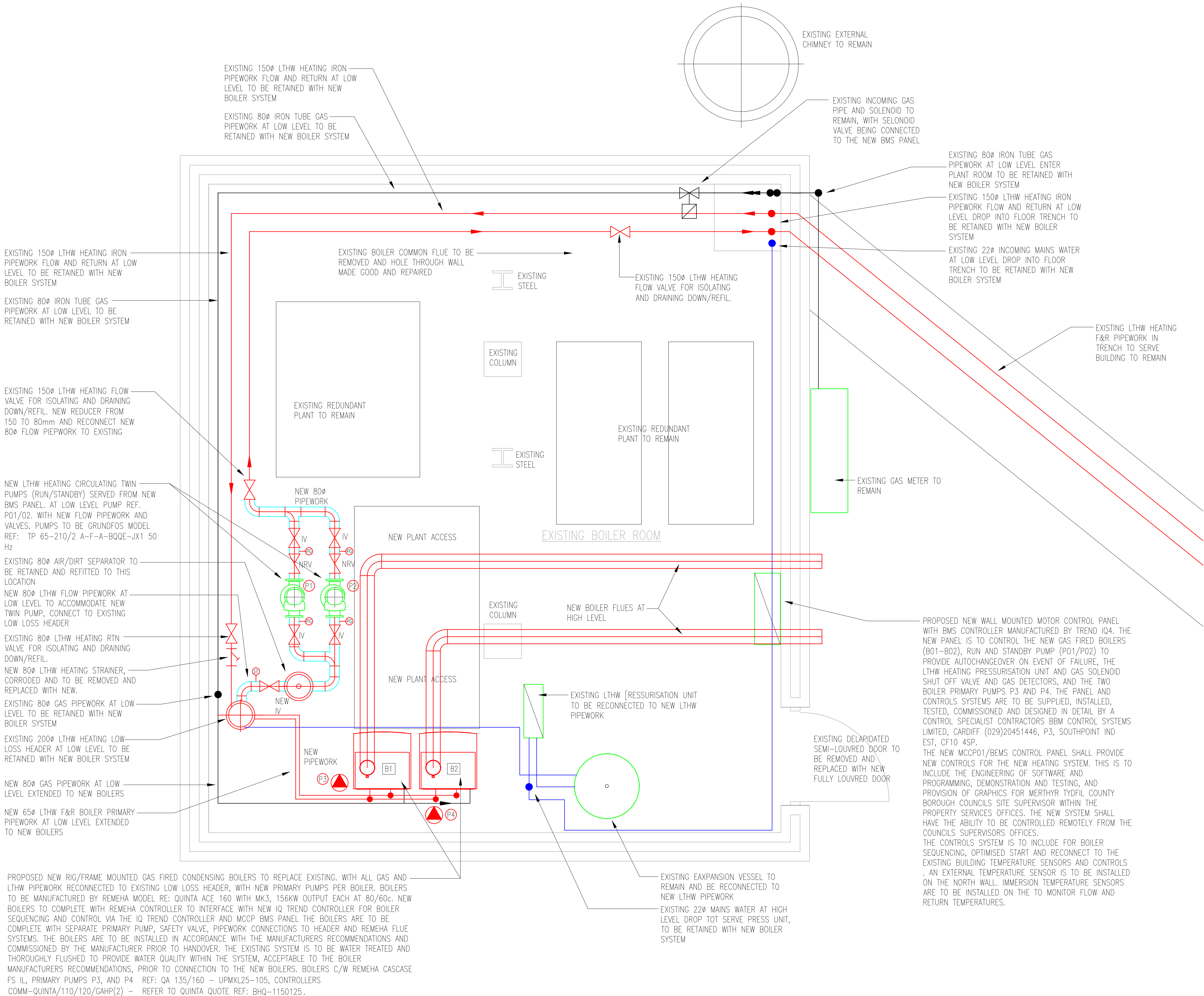
Plate 11. Blocked window with cement lintel on south-west wall to righthand side, looking south-east.



Plate 12: Existing boiler, looking east. 1m scale.

Appendix I. Proposal plans provided by Merthyr Tydfil County Borough Council

PROPOSED MECHANICAL SERVICES LAYOUT

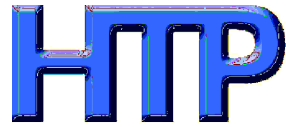


GENERAL NOTES:

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- DO NOT SCALE FROM THIS DRAWING.
- HEATING - AIR VENTS SHALL BE INSTALLED AT ALL HIGH POINTS AND DRAIN COCKS SHALL BE PROVIDED AT ALL LOW POINTS, INCLUDING ALL RADIATORS.
- ALL PIPEWORK PASSING THROUGH FIRE BARRIERS SHALL BE SLEEVED & FIRE STOPPED WITH PROPRIETARY FIRE STOPPING MATERIAL. (REFER TO ARCHITECTS DRAWINGS FOR FIRE BARRIERS).
- ISOLATING VALVES TO BE INSTALLED TO ALL MAIN AND SUB-BRANCHES.
- ALL HEATING SERVICES PIPEWORK TO BE THERMALLY INSULATED IN ACCORDANCE WITH THE SPECIFICATION WITH ISOGENOPAK FINISH.
- HEATING SYSTEM CONTRACTOR MUST BE GAS SAFE ACCREDITED.

LEGEND:			
mmØ	MILLIMETER DIAMETER.	PRV	PRESSURE REDUCING VALVE.
F&R	FLOW & RETURN.	IV	ISOLATING VALVE.
DTLL	DROP TO LOW LEVEL.	DCV	DOUBLE CHECK VALVE.
DFA	DROP FROM ABOVE.	LSV	LOCKSHIELD VALVE.
DTB	DROP TO BELOW.	NRV	NON-RETURN VALVE.
RTA	RISE TO ABOVE.	DCV	DOUBLE CHECK VALVE.
RFB	RISE FROM BELOW.	DOCC	DRAIN OFF COCK.
CV	CONTROL VALVE.	SC	STOP COCK.
LTHW	LOW TEMPERATURE HOT WATER.	CS	COMMISSIONING SET.
R00	RADIATOR REFERENCE.	W	WATER METER.
TH	ROOM THERMOSTAT.	P	PUMP.
MCW	MAINS COLD WATER.	SV	SAFETY VALVE.
AAV	AIR ADMITTANCE VALVE.		
TRV	THERMOSTATIC RADIATOR VALVE.		
TMV	THERMOSTATIC MIXING VALVE.		

Rev	BY	Description	Date



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Moy Road Business Centre
Moy Road
Taffs Well
Cardiff CF15 7DR
029 2066 0269

Hicks Titley Partnership
M&E Consulting Engineers

Project Title:
Merthyr Tydfil County Borough
Council Cyfarthfa Castle
Boiler Replacement

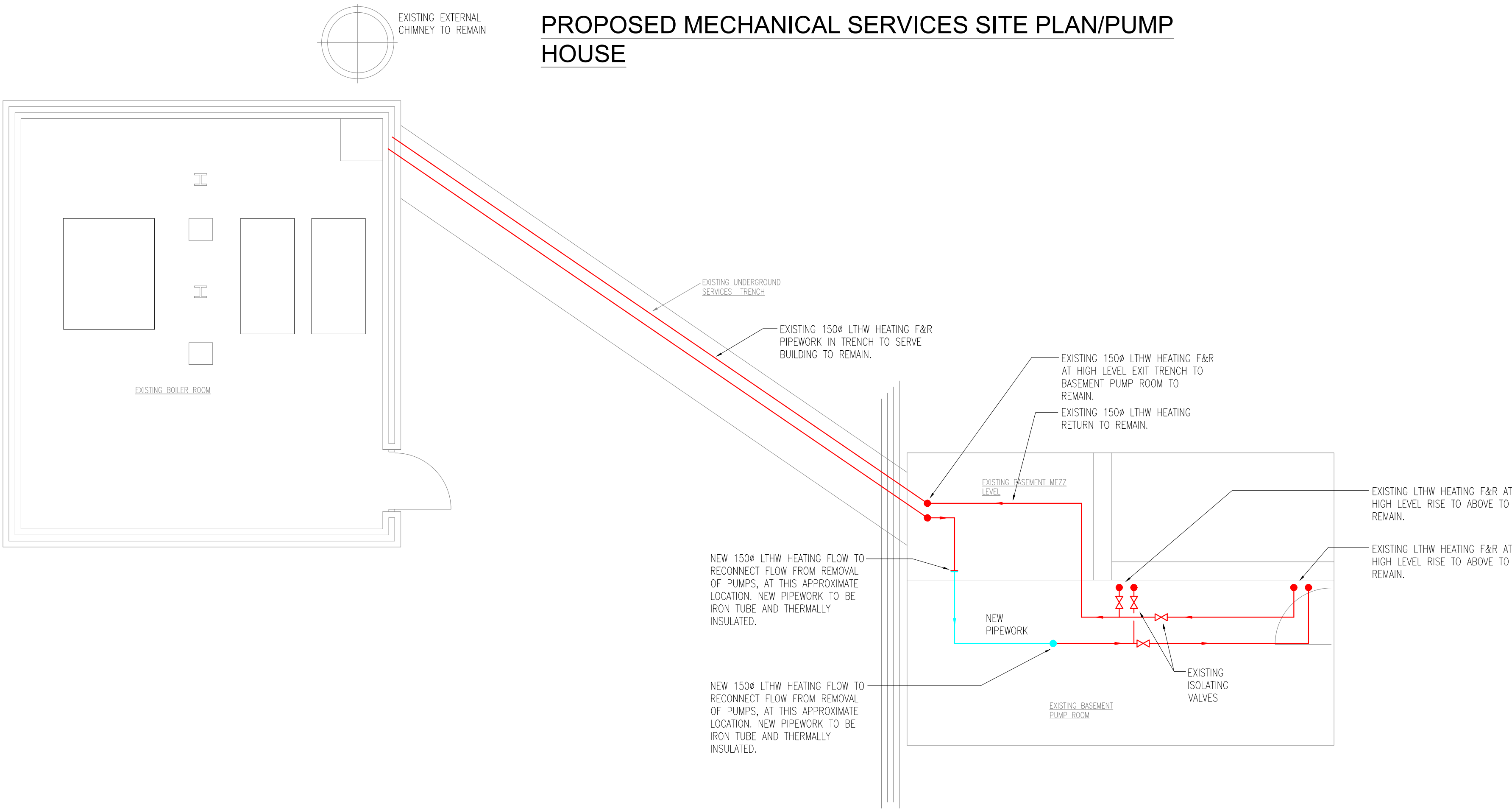
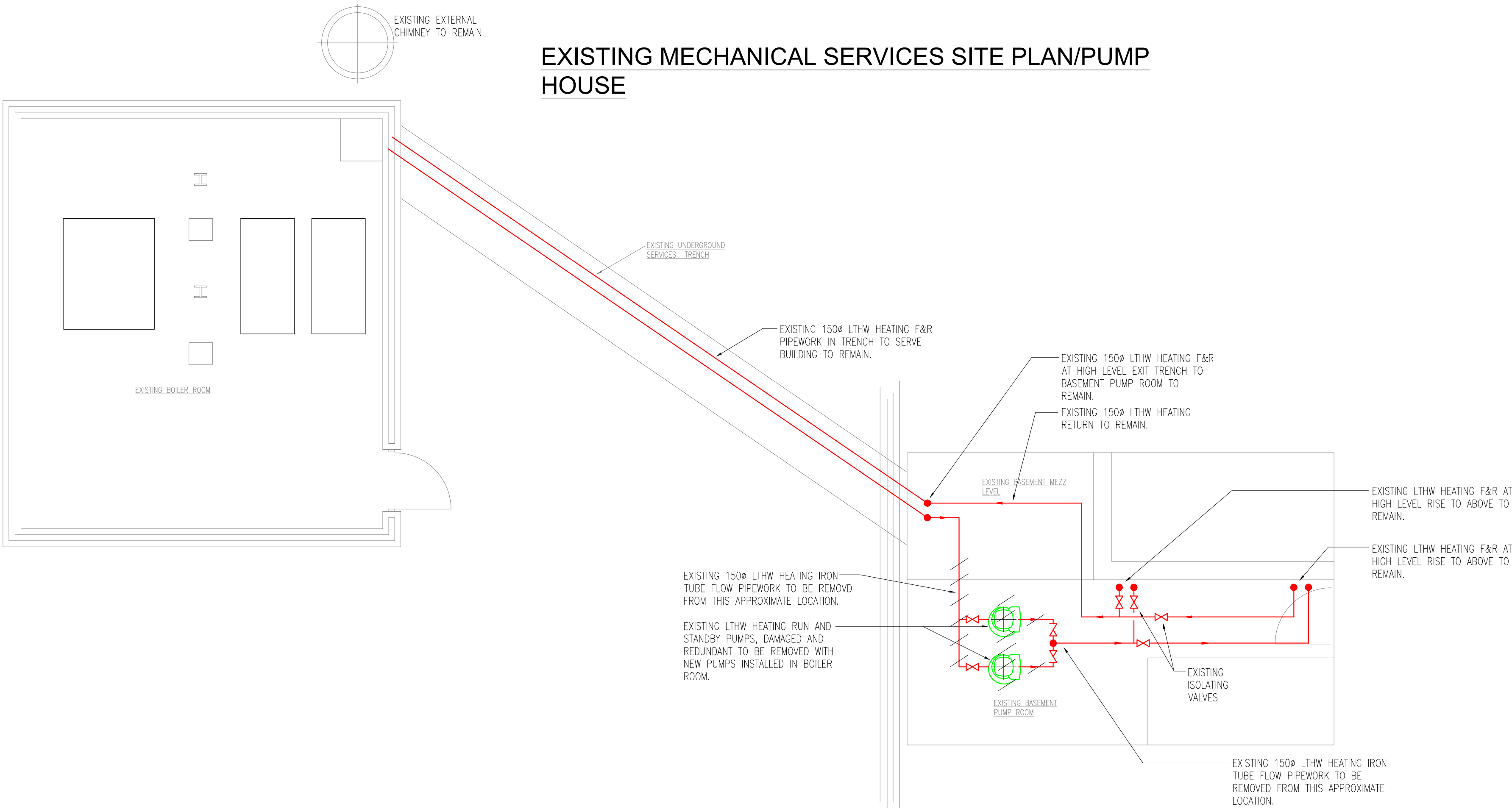
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SERVICES LAYOUT

Stage TENDER

Scale 1:20@A1

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Drawn MRT	Signed M. TITLEY	Date 26/06/2022
Approval PMH	Signed P. HICKS	Date 26/06/2022

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LEGEND:			
mmØ	MILLIMETER DIAMETER.	PRV	PRESSURE REDUCING VALVE.
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MCW	MAINS COLD WATER.	SV	SAFETY VALVE.
AAV	AIR ADMITTANCE VALVE.	TS	TEMPERATURE SENSOR.
TU	TUNDISH		
TMV	THERMOSTATIC MIXING VALVE		

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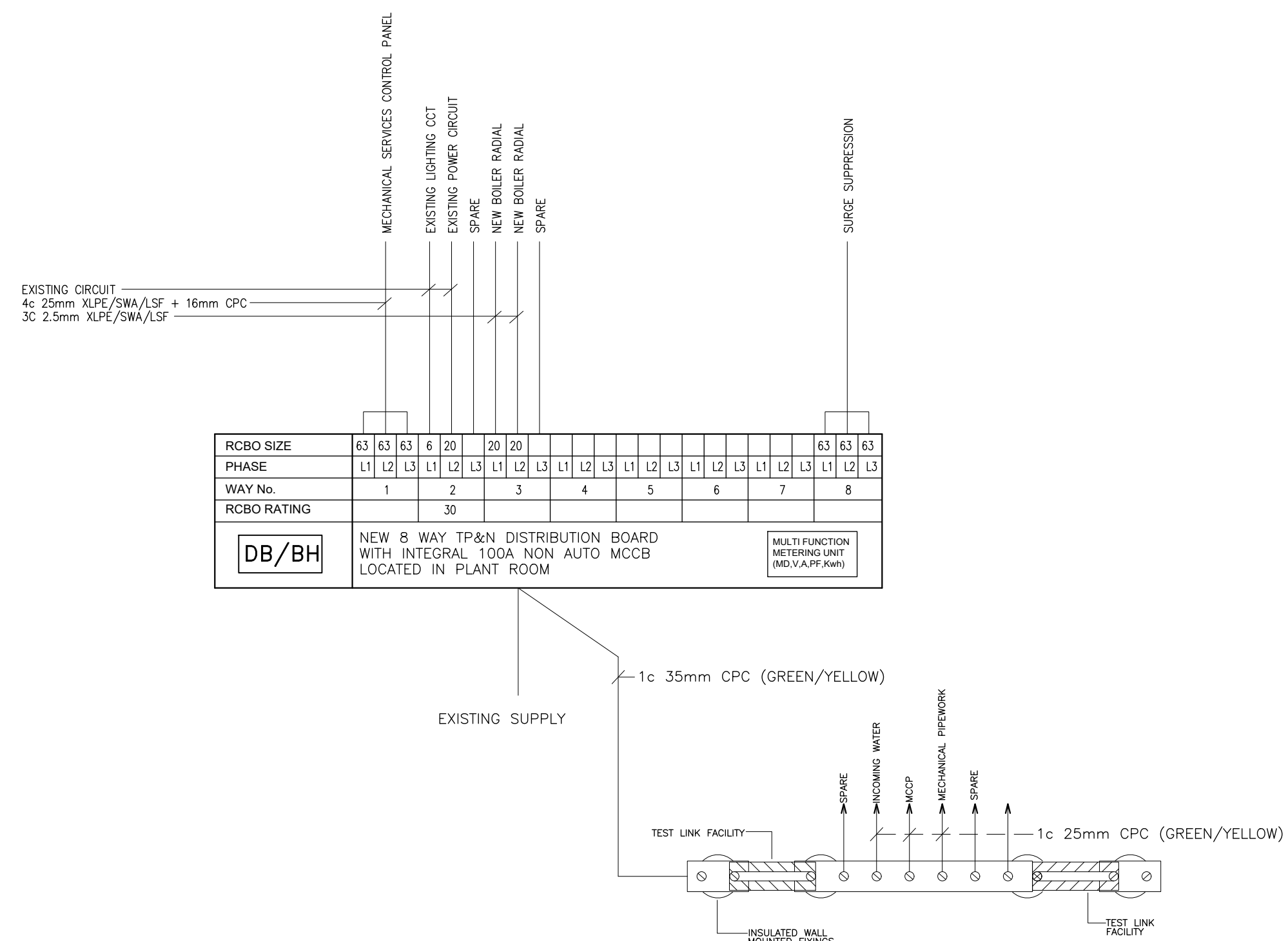
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PROPOSED MECHANICAL
SERVICES SITE PLAN AND
BASEMENT PUMP PLANT ROOM

Stage TENDER

Scale 1-50@A1

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Drawn MRT	Signed <i>M. TITLEY</i>	Date 26/06/2022
Approval PMH	Signed <i>P. HICKS</i>	Date 26/06/2022

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Archaeology Wales Limited

Main Office, Unit D11.6 Treforest Industrial Estate

Pontypridd - CF37 5UR

Tel: +44 (0) 1686 440371

Email: admin@arch-wales.co.uk

Web: arch-wales.co.uk

