

Archaeology Wales

Llwynypia Road, Tonypany Rhondda Cynon Taf

Archaeological Watching Brief



By
Cassandra Davis BSc MA


Report No. 1529


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Llwynypia Road, Tonypany Rhondda Cynon Taf

Archaeological Watching Brief

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Non-Technical Summary

Archaeology Wales Ltd was commissioned by Raymond Brown Construction Ltd to undertake an archaeological watching brief during ground works at the Gas Holder site to the East of Llwynypia Road Tonypany, Rhondda Cynon Taff (SS 99395 93184). This report results from the archaeological watching brief undertaken during the intrusive ground works associated with the development. The Planning Application Number is P2015/0965.

A total of five areas were machine excavated across the site. The areas comprised trenches for drainage or gas pipes. Areas 1-4 produced archaeological remains associated with the Coppee Coke Ovens that occupied the site from the end of the nineteenth century until the end of the First World War. Located directly to the north of this site is the Glamorganshire (Llwynypia) Colliery and its Grade II listed Engine House (13125) which still stands today.

No finds were revealed during the archaeological watching brief.

All work was undertaken to the Standards and Guidance for an Archaeological Watching Brief by the Chartered Institute for Archaeologists (2015).

1 Introduction

1.1 Planning Background

In August and September 2016 Archaeology Wales Ltd (Henceforth- AW) undertook an archaeological watching brief at Llwynypia Road, Tonypany, Rhondda Cynon Taff centred on SS 99395 93184. The development of a new gas station on the site required an archaeological watching brief to safeguard any archaeological remains during the intrusive ground works associated with the scheme.

An approved Written Scheme of Investigation (WSI) was produced by Rowena Hart (AW) in accordance with the Standards and Guidance for Archaeological Watching Brief (CIfA 2015). The WSI was designed to provide an approved methodology for the archaeological works implemented during the development of the Gas Station.

The watching brief commenced on the 10/3/2016 and completed by 2/11/2016 and was undertaken by Cassandra Davis (AW). The project was managed by Rowena Hart (MCIfA).

1.2 Site location, geology and topography

The site is largely flat with a steep downwards slope to the east towards the River Rhondda. The site is bounded to the west by Llwynypia Road, to the east by a fence which separates the site from the river. To the south is a light industrial estate and to the north is the site of the Engine House associated with Llwynypia Colliery.

The solid geology underlying the site comprises sandstone of the Rhondda Member. The superficial deposits include alluvium (clay, silt, sand and gravel) of the Quaternary period and Devensian Glaciofluvial deposits (sands and gravels) (BGS 2016).

1.3 Archaeological and Historical Background

The northern extent of the development area borders the southern edge of the Glamorganshire (Llwynypia) Colliery site (01457m). The grade II Listed Engine House (13125) associated with the colliery still stands; located some 20m to the north of the site. The first two pits at Llwynypia Colliery (also known as Glamorgan Colliery and The Scotch) were sunk in 1861 and 1862 as part of the Glamorgan Coal Company founded by Sir Archibald Hood, under the direction of Mr Begg. These pits reached the Bituminous coal seams. A third pit was sunk in the 1870's and reached to the steam coal seams. The colliery site also held brickworks, coke ovens, small lime kilns, a saw mill and gravel pits.

The area around Tonypany was the focus of the industrial development in the mid-Rhondda region. The development was driven by Sir Archibald Hood, a statue of whom stands on Institute Terrace some 200m to the south-west of the development area.

2. Objectives of the watching brief

The main objective of the watching brief itself was to safeguard any potential archaeological remains upon this site through observation and recording during the course of the intrusive ground works and development of the site.

3. Methodology

A watching brief complying with the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance For Archaeological Watching Briefs* (2015) was undertaken during all intrusive ground work on the site.

The watching brief was undertaken to allow the preservation by record of any archaeological deposits, the presence and nature of which could not be in advance of works. The watching brief also provides an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard (CIfA, 2015).

The report contains the following:

- A non-technical summary of the results.
- A plan showing the site's location in respect to the local topography, and a site plan showing the position of the excavations.
- A full description of the deposits identified, including their character, function, relationship to other deposits and their potential dates.
- Suitably selected photographs of the excavations as well as plans and sections, which are related to Ordnance Datum.
- A discussion of the local, regional and national context of the remains identified through a review of both published and unpublished reports, historical map data, documents held in local archives and HER data.
- A summary report on the artefactual assemblage and an assessment of its potential for further study, prepared by suitably qualified individuals or specialists.
- A detailed archive listing all contexts recorded, all samples, finds and find types, drawings and photographs taken.

The excavation was carried out by a 360° tracked excavator equipped with a toothless bucket. Where harder ground was encountered a toothed bucket was used and where a concrete pad sealed part of the site a pneumatic hammer was used. The entire process was monitored by a suitably trained archaeologist.

Sections and plans of the excavation were photographed using a 12MP digital camera. All the deposits encountered were recorded by means of a continuous context numbering system and recorded on pro-forma context sheets. All features and deposits are described in accordance with ClfA conventions and guidelines. A register of all contexts and photographs was also made.

4. Results

Area 1 consisted of four excavated trenches (1a, 1B, 1C and 1D) that formed a single drainage path. Together they totalled c. 100m in length with an average width of 3m. A maximum depth of 2m was reached in Area 1.

Area 2 comprised a single drainage trench measuring 20m by 2m. A maximum depth of 2m was reached in area 2.

Area 3 comprised of three trenches (3A,3B and 3C). Together these trenches measured 70m in length and 1m in width. These trenches were excavated for the installation of land drains. A maximum depth of 2m was reached in Area 3

Area 4 was a single trench excavated for the installation of a gas service. It measured a total of 28m in length, 5m in width at its southern extent and 3 m wide to the north. A maximum depth of 2m was reached in Area 4.

See Figure 3 for the positions of the excavated areas.

4.1 Area 1 (Figures 3 -7: Plates 1-10)

Area 1 consisted of 4 sub-sections (1A,1B,1C,1D) which together formed a continual drainage system from them East to the West of the site and then towards a catch pit (Drainage) in the South. The results for each area are set out below by sub-area.

Area 1A

Area 1A had a length of 58m and was located between man hole 1 in the North East and man hole 2 in the north-west. The width of the drainage trench was approximately 1m with a depth of 2m. The trench was not entered once the depth had exceeded 0.8m due to the instability of the sections.

Area 1A – 0m-25m

The natural deposit (104) was encountered at approximately 1.90m below modern ground level at approximately 1.50m from the north-west of Manhole 1 (See Figure 3). This was the only area that

the natural horizon was encountered in Area 1A. The natural comprised of firm, light orange yellow sterile clay into which feature [111] was cut.

Feature [111] was a cut that contained wall [112]. The cut was not obvious during excavation but was observed in the north-east facing section of 1A. Wall [112] comprised two to three courses of red bricks, measuring an average of 0.60m in height and was encountered at a depth of 1.40m below modern ground level. The wall appeared to continue below the level of excavation of 2m (below ground level) suggesting that some of this feature remains in situ below the drainage trench in area 1A. Wall [112] had a length of 4.20m however it continued into the north-east facing section.

Overlying [112] was context (114): a loose, light orangey, pinkish yellow clayey sand. Encountered at approximately 0.90m below current ground level, deposit (114) measured an average of 0.05m in depth and extended 4.20m in length overlying wall [112].

Deposit (114) was overlain by (103) that comprised black coal dust. The deposit varied between 0.20m and 1.20m in depth across area 1A and was found across the entire trench area. It was encountered at approximately 0.65m below current ground level. The majority of the features found in Area 1A cut this deposit eg. [117] [120] [123] below.

Deposit (103) was cut by [116] and contained wall [117]. Both wall and cut were first encountered at 19m from the eastern-most end of 1A near man hole 1. Encountered at 1.20m below current ground level, the linear cut [116] is orientated north-east to south-west and contains wall [117]. The wall measured 2m in length, 0.40m in depth and in excess of 1.20 in width. Wall [117] was constructed from yellow refractory bricks bonded by a yellow grey sandy lime mortar. The bricks measured c. 0.10mx0.20mx0.13m. Overlying [117] was a thin layer of moderately compact coal dust (119).

Deposit (103) was also cut by structure [118] that was formed almost entirely of sub-angular stones (measuring an average of 0.20mx0.15mx0.18m). Structure [118] appears to be a rubble core of a wall. Evidence of red brick dust on the vertical faces of the stone structure may suggest that the feature was originally faced with red bricks removed once the structure had gone out of use.

Context (102) was very similar in nature to (114). This moderately compact light brownish yellow clayey sand deposit measured c. 0.25m in depth and was encountered at approximately 0.40m below the current ground surface. Deposit (102) was mostly located in the north-east of Area 1A.

Overlying (102) was a deposit of loose greyish black coal dust deposit (101). This deposit was encountered at approximately 0.35m below the current ground surface and varied in depth between 0.10m to 0.80m. This context contained building debris including red bricks and faced/dressed stone. This context was found in Area 1A and 1B.

Cutting (101) a number of modern service pipes were recorded including cut [109] that was a 'U' shaped cut infilled by (110). It measured 0.50m in depth and 0.30m in width and was encountered at approximately 1.20m below current ground level. The cut contained an iron pipe which was encased by an asbestos lining.

Another iron pipe was found in the south eastern end of Area 1A to the south east of man hole 1. The cut [105] that contained the pipe was difficult to observe in plan and contained a fill (106). Approximately 1m of the redundant gas pipe was uncovered within cut [105] during excavation of

area 1A. The pipe itself was left in situ at approximately 1m below modern ground level. Due to the presence of this feature the excavation area was moved approximately 0.50m to the north-west for the installation of man hole 1. Fill (106) was not fully excavated but the loose light grey silty sand deposit was revealed. The third cut was [107] with a width of 0.3m and a depth of 0.4m. It entered the trench for 0.3m before ending, presumably truncated in recent times. The fill (108) was a moderately firm mid-brown silt which contained a modern ceramic pipe. This feature was encountered 0.5m below current ground level.

Further modern plastic service pipes were located throughout the excavation of area 1A. Due to their modern nature these features were allocated a group number [113]. The modern pipes cuts through (101) and is overlain by (115).

Deposit (115) was a compact light brownish yellow sandy clay found in across area 1A although it was not entirely continuous. The largest deposit of this context expanded approx. 2m in width and had a maximum depth of 0.10m. Context (115) was encountered at roughly 0.25m below modern ground level. Deposit (115) is a levelling deposit laid directly below the uppermost concrete surface (100). The concrete pad was laid during the 1970's. Surface (100) had a depth of 0.30m and was encountered throughout the first 35m of Area 1A.

Area 1A 25m-58m

The natural horizon was not encountered in this part of the trench. The stratigraphically oldest context is (103) – see description above. Deposit (103) was only observed up to 26m at which point it was completely obscured (cut) by structures [120] and [124]. Context (123) can be seen in both sections from 35-36m and appears to be the same context as (103). Context (123) is cut to the east by structure [120] and to the west by [124=128].

Structures [120] and [124=128] both comprised of stone and red brick which appears to be very heat affected. The red bricks themselves measured 0.10mx0.20mx0.13m were stamped with the word 'HEATHFIELD'. The sub angular stones measured an average of 0.25x0.20mx0.20. Although [124=128] are substantially larger than [120] they are all formed from the same material and are likely to be contemporary and even part of the same structure. Structure [120] comprised of a rubble core [121] and brick facing [122]. This extended into Area 1B.

Structure [120] extends from 26m to 35m along Area 1A and therefore measured 9m in length. It had a depth in excess of 1.40m and a minimum width of 1.20m. This feature continued beyond the level and width of excavation with the feature extending into both the north and the south sections. Structure [120] was encountered at roughly 0.55m below the current ground level.

Structure [124=128] extended from 36m to 58m in Area 1A giving a length of 22m and a depth in excess of 1.60m. The structure itself continues into the north and south sections in Area 1. The full dimensions of this feature could not be obtained due to the limited area excavated.

Area 1B

Area 1B was excavated in order for further drainage pipes from man hole 1 into man hole 4. In total Area 1B measured 54m in length.

Area 1B 0m to 15m

A firm yellow natural clay deposit (104) was visible in the base of manhole 2 in the south-east facing section at a depth of approximately 1.15m below current ground level. The depth of the natural visible in section was approximately 0.50m and spanned approximately 3m in length although continued below the level of excavation at 1.60m as well as into the eastern and western sections.

Where structure [124=128] was encountered in this area it was overlain by a loose black/grey coal and ash deposit (129) with a maximum depth of 0.2m and a length of 1.5m. An additional structure [131] was exposed in this area contained by cut [132]. This structure was smaller than [124=128] although similar in its composition. It was exposed for 3.5m in length, 1.6m in depth (although not fully exposed) and 1m in width (continued in to trench section). It had a red brick facing and rubble core. This was overlain by deposit (101).

Stratigraphically later than (129) and physically overlying the natural was context (103). Encountered at approximately 0.80m below modern ground level and measured approximately 0.20m in depth. Deposit (103) was overlain by (137) which was a loose mid brown/black mottled silty deposit only seen in section and measured 1.5m in length and 0.1m in depth. This deposit contained a single layer of bricks (126) measuring c. 0.07m in height with a length of 1.3m and thought to be a floor surface.

Area 1C/1D

The basal deposit encountered in this area was a compact bright red-orange clay (141) though to be a redeposited natural. Structure [139] was a later context although its relationship with (141) was not established. The structure was a continuation of [124=128] in this area. Into (141) a cut [142] was seen aligned north-east to south west and measured 1m in length, 0.3m in depth. Its width was unknown as it continued into the section. The cut contained a brick wall [140]. This wall was built with refractory bricks with a maximum of six courses surviving. The mortar was sandy yellow/grey serving as refractory mortar. The structure was exposed for a depth of 0.8m and encountered at 0.6m below current ground level.

4.2 Area 2

The trench in area 2 measured 20m in length by 2m in width. Due to the relatively small area the stratigraphic information has been provided as a whole rather than being divided into subsections as in Area 1.

The natural horizon was not visible within this area as the limit of excavation (1m) was significantly shallower than in Area 1. The stratigraphically oldest context within this area were archaeological structures [210] [203] and [206]. No relationship between these contexts was apparent, meaning the chronology could not be established.

Structure [203] was red brick wall feature with a length of 2m. Two courses of bricks were visible in section at a depth of 0.60m below the modern ground level. It appeared that this feature continued below the limit of excavation at a depth of 1m. Structure [203] measured 2m in length and survived to a width of 0.13m. This features full dimensions were not obtainable due to its continuation into the western section and below the excavation area.

Structure [206] was a stone wall, visible in plan and was encountered at 1m below modern ground level. The stones appear to be dressed although a function for this wall was not obvious. The remainder of this feature continues below the excavation level and remains in situ. The surviving remains of [206] measured 2m in length and approx. 0.30m in width.

Structure [210] was a bricked faced structure with a stone rubble core which was encountered at approximately 5m from the southern edge of excavation in area 2. Three courses of bricks and a single course of stones was visible. The surface of the red bricks were glazed. It is not obvious whether these were glazed prior to building or significant heat has caused the bricks to vitrify in situ.

Overlying these structures was context (202). This context was the same as (101) from Area 1. The deposit spanned the entire trench and its depth varied between 0.60m maximum and 0.40m at its shallowest. The width of (202) exceeded the 2m trench width as it continues into the west and east sections.

Above (202) context (201) spanned the length of the excavation area (20m) but was only visible in the east facing section. Context (201) was a relatively compact pinkish orange gravel sand material which appears to be a modern building sand material. This context was similar to (102) and (134) in area 1.

Cutting into (201) feature [207] was a linear cut measuring in excess of 2m which was infilled by (208). Context (208) comprised of a moderately compact dark grey blackish, brown gravely silt material with contained an iron pipe. This feature was encountered at approximately 0.40m below the modern ground surface.

Context [211] was a group number allocated to the modern service pipes within area 2 which cuts through context (201) and was overlaid by (200).

Encasing the entirety of area 2 context (200) measured in excess of 20m in length, in excess of 3m in width and 0.20m in depth. This context is the same as context (100) in area 1.

4.3 Area 3

Area 3 consisted of 3 subareas (Area 3A, 3B and 3C) which together measured 71m in length. Area 3A and 3C measured 32m in length by 1m in width, whereas Area 3B measured 7m in length by 1m in width. Due to being relatively small areas and the limited amount of archaeological contexts and features, area 3 has been described below in its subsections.

Area 3A

Area 3A measured 32m in length and ranged between 0.80 to 1m in width. Drainage catch pits were located to the south and north of the excavation area.

The basal deposit encountered was (103) see above. Into (103) were cuts [305] and [307] and their respective fills (306) and (308). These were the only archaeological features within this subsection of

area 3. Cut [305] and its fill (306) is a continuation of a brick and stone platform feature the same as [120] from within area 1A. For further information see context [120]. [305] measured approximately 2m in length and exceeded the 0.80m width of the trench itself continuing into the east and west sections. A depth of 0.10m was visible in section, although evidence suggested that the structure continued below the limit of excavation at 1.40m. The structure itself was encountered at approximately 0.75m below the modern ground surface.

Cut [307] and its fill (308) represent the continuation of structure [124] from within area 1A. In this instance the structure measured approximately 20m in length and exceeded the width of the excavated area (0.80m), continuing into the north and south sections. A maximum depth for this feature in area 3A was 0.10m although it continued below the limit of excavation for the area at 1m.

Overlying these features context (302), which was the same as (101) in area 1 and (201) in area 2, measured in excess of 32m in length and exceeded the excavation areas width of 0.80m, continuing into the east and west section. A maximum depth for (302) within this area was 0.30m.

Context (301) overlay context (302) in irregular deposits below the modern ground level (300). Interpreted as a stabilising building sand this relatively compact yellow sand appears to be the same as context (102) from area 1. (301) measured approximately 1m in length and exceeded the excavation width of 0.80m, continuing into the east and west sections. A maximum depth for this context within this area was recorded as 0.10m. Context (301) was encountered at approximately 0.10m below (300).

Overlying area 3A was context (300) (equivalent to 100 in A1 and 200 in A2) exceeded the excavation length of 32m and its width of 0.80m. This solid concrete and gravel context represents the modern day ground surface and measured 0.10m in depth.

The most modern feature that overlies Area 3 is the modern concrete pad constructed during this development as a base for the new gas station. This feature in area 3 has been given the number (309), which is the same as (144) from area 1. In this area the length of (309) was 30m and 0.40m in depth. The pad itself extends 30m by 30m and is located to the north of area 3A.

Area 3B

Area 3B measured 7m in length and approximately 0.80m to 1m in width. A drainage catch pits was located east of the excavation area connecting area 3B and area 3A.

The basal deposit in this area was context (311) that comprised of a loose orangey red sand that measured 5m in length and 1m in depth and width. It continued into the eastern and western sections as well as continuing below the limit of excavation depth of 1m. This context is the same as (145) from area 1D.

Structures [310] and [312] both cut into (311) and are represented in Area 1 D as contexts [140], [146] and (145) respectively. Structure [310] was a refractory brick faced feature that measured in excess of 5m in length as well as exceeding the depth of the trench at 1m. A width of 2m for this feature was observed, however its true dimensions cannot be established as it continued into the west and north sections. Structure [312] was the rubble core associated with [310] and measured 5m in length and exceeded the trench depth of 1m. The true width of this feature could not be obtained as it continued into the sections. For further information see contexts [140] and [145], [146] in area 1D.

Overlying the above structures and deposits was (302). Context (302) measured 0.10m in depth and was encountered at approximately 0.10m below the modern day ground surface and 0.50m below the top of (309). Context (301) was not as abundant in area 3B as it was in Area 3 A measuring a maximum of 0.08m in depth.

Context (300) overlaid contexts (302) and (301) and measured approx. 0.10-0.15m in depth in area 3B. The most modern feature in this area was (309), the modern concrete pad. Due to the positioning of the trench for area 3B, (309) appears in the east facing section. Slab (309) measured approx. 30m in length, of which 7m appears in the excavation area. The depth of (309) remains consistent and measured 0.40m in depth in this area.

Area 3C

Area 3C measured 32 m in length and between 0.80m and 1m in width. Drainage catch pits were located to the east and west of the excavation area.

The only feature visible in this area was stone structure [304]. This feature was located at the base of area 3C and was only visible in plan. Due to its positioning this feature was left in situ below the limit of excavation depth of 0.80m. In plan [304] was linear in shape and measured approximately 9.50m in length and exceeded the width of the trench (0.80m) by continuing into the north and south sections. Only 0.10m of this feature was visible in the base of the trench, suggesting that this feature continues below the limit of excavation depth of 0.80m.

Context (302) measured approx. 0.20m in depth in this area and overlaid structure [304]. Above this context (300) was observed measuring approx. 0.10m in depth. Due to the positioning of this trench (309) provided the modern day ground level encasing (300) by a depth of 0.40m.

4.4 Area 4

Area 4 measured 34m in length and was excavated for the input of a new gas pipe. Separated into three separate sub areas area 4 consisted of Area 4 A, 4B and 4C. The positioning of area 4A is located directly to the north of the western most gas substation and measured 5m in length by 1m in width. Area 4B was located 1.5m away from the western substation and runs 28m to the east. Area 4C is located at the end of area 4B and measures 1.5 m in length to the south towards (144). These subareas have been described below as a collective area, and were only divided in order for easier understanding of their location.

Structures [405], [406] and [408] [409] were found within area 4 but no stratigraphic relationship could be observed. [405] is the linear cut of structure [406] located at approximately 3m to the east in area 4B. This structure was a very heavily disturbed wall which was mainly constructed of large/medium stones and occasional red bricks. Structure [406] measured approximately 1.10m in length and exceeded 1m in width, continuing into the north and south sections. The depth of the feature itself was 0.40m and was encountered at 0.60m below the modern day ground level.

Cut [408] was linear in form and contained red brick structure [409]. Located 9m to the east within Area 4B structure [409] comprised of red bricks bonded with an orange sandy mortar. Encountered at

approximately 0.80m below modern ground surface, only two courses are visible in section measuring approx. 0.30m in depth. The feature itself is orientated north to south and continues into the sections.

Overlaying these structures was context (402). This relatively loose black deposit comprised of black coal dust and building debris relating to building demolition. This context spanned the entire length of the excavation area (34m) and continued outside the excavation area. The width of (402) in this area was in excess of 0.80m as it continued into the north and south facing sections.

Structure [404] was located in Area 4A, 3m north of the gas substation. Measuring about 1m in length and 0.60m in width structure [404] was constructed from concrete and fragmentary bricks. Encountered at approximately 0.40m below modern ground level, structure [404] only survived at a depth of 0.25m.

Another feature that cut through context (402) was modern service pipes. Due to their modern nature they have been given a group number (407).

Overlaying these modern day service pipes was context (401) a moderately compact yellowish brown sandy deposit which is likely to be modern building sand. Measuring a maximum of 1.20m in length and in excess of 0.80m in width this context was likely used as a means of stabilisation for the instillation of the concrete pad (400) in the 1970s.

Located in Area 4B and C context (400) is a concrete pad which was placed in the 1970s. Comprised of gravel and concrete this context in this area encased approximately 4m of Area 4 and exceeds the limit of excavation width of 0.80m. Surviving to depth of 0.15m this context is covered by (410) to the south. Context (410) was the same as (133) in area 1B. This humic soil is a build-up of organic material which measured approximately 0.40m in depth at its deepest.

4.5 Area 5

Area 5 comprised a 15 metre long drainage trench, which was excavated to a depth of 3 metres and a width of 2 metres. At its south-eastern end a manhole was excavated, which was 4.80 metres in length and 3 metres wide, with a depth of 3 metres. The drainage trench was originally to extend further from the south-east corner of the manhole. However, after a short section, approximately 1 metre in length, had been excavated it was realised the ground was too unstable for the trench to be excavated safely and so it was backfilled and abandoned.

The Manhole

The top of the natural horizon (524) was encountered at a depth of approximately 3 metres at the manhole. This was the only area where the natural horizon was reached in Area 5. It was formed of a yellow brown clay, which measured in excess of 4.80 by 3 metres in length. This was overlain by deposit (506), which was a loose dark black coal dust, approximately 0.25m thick and included infrequent fragments of bricks and large sub-angular stones. This

deposit extended across the manhole, measuring in excess of 4.80 by 3 metres. Over this was deposit (523), a mid greyish black silt, which was predominately comprised of coal dust. It contained more frequent brick and sub-angular stones than (506). The deposit again measured in excess of 4.80 by 3 metres with a thickness of 0.80 metres. This was cut by [522], which was filled by [520] concrete structure. Both the cut, [522] and the structure [520], measured in excess of 4.80 by 3 metres with a depth of 0.80 metres. This formed the base for a structure connected to the coke works. This was overlain by a further concrete layer, [521], which would have formed the floor of the structure.

Drainage Trench

The natural horizon was not reached along the length of the drainage trench, instead at the base of the trench deposit (506) was encountered. This ran the entire length of the trench, and was again 2 metres wide with a thickness of 0.25 metres.

In the central area of the drainage trench (506) was cut through by [511], which contained metal pipe (512) and fill (515). The pipe was aligned east to west and was observed for a length of 6 metres. Fill (515) comprised of a loose dark black coal dust. To the north-east (506) was also cut by [506], which was filled by a concrete structure, [505]. The structure measured 2 metres in length and was 0.20 metres wide by 0.35 metres thick. The function of the structure is unclear but it is likely connected to the colliery works.

North-west of this, towards the end of the drainage trench, cut [510] was encountered, which again cut through (506). The cut contained two metal pipes, (507) and (508), the latter of which was a gas main. Both pipes ran across the trench on a north to south alignment. Pipe (508) was much larger than (507), being 0.30 metres wide with (507) being only 0.05 metres wide. Pipe (507) ran along the top of (508). Cut [510] was filled by (509), again a loose dark black coal dust.

This was cut through by [503], which was a steep sided cut, ending in a pointed base. The length of the cut is unknown but in excess of 2 metres, with a width of 0.50 metres and a depth of 0.35 metres. It was filled by (504) a light grey gravel. The function of this cut is unknown but the gravel fill may suggest it was a drainage feature. However, it may be that (504) was actually the upper fill of [510] with the gravel acting as a marker to warn of the gas main buried below.

This was overlain by deposit (502), which ran the entire length of the drainage trench. The deposit comprised a mid yellowish brown sandy silt, which had very frequent brick, large sub-angular stones, and concrete dust within. This deposit was 0.10 metres thick. A loose grey gravel deposit overlay this. This deposit measured 0.30 metres thick and again was encountered along the length of the drainage trench. Both of these deposits are likely to have been deliberately laid in order to build up and stabilise the ground surface, and are thought

to have been deposited within the last 50 years. Over the top of this a deposit of bricks, (513), had been lain down to a thickness of 0.07 metres. The bricks appear to have formed the base of a modern trackway, (514), which was comprised of a very thin layer of grey gravel.

Drainage Trench South-East of Manhole

The drainage trench was originally planned to extend from the south-east corner of the manhole, to the south-eastern extent of the site. However, as stated above, the ground in this part of the site was too unstable to excavate safely and so only a short length of trench, approximately 1 metre in length, was excavated before being immediately backfilled. Within the small area excavated, at the very south-east extent of Area 5, archaeology was encountered.

At the base of the excavated section rubble deposit (519) was recorded. This comprised of a mid orange brown, silty clay with frequent sub-angular stone inclusions. This deposit measured in excess of 1 metre in length by 2 metres wide and to a thickness of 0.90 metres. The deposit was likely deliberately dumped in order to build up and stabilise the ground in this area of the site, as it drops away steeply to meet the river Rhondda, which lies just to the south of the site. This was cut through by [518], which contained a concrete foundation, which is likely part of building foundations, connected to the colliery works. The foundations was 3 metres wide, 0.90 metres in length and 0.60 metres thick.

A further rubble deposit, (516), overlay this foundation. This was comprised of a mid orange brown, silty clay with frequent sub=angular stones and brick fragments. This deposit is thought to have been deliberately deposited to raise the ground level, most likely after the colliery had gone out of use.

4.6 Finds

A single brick marked HEATHFIELD was recovered during the works. This is likely to derive from the fire clay brickworks in Scotland. The company was initially called Peter Ferguson & Company after its founder and established in 1832. It continued uninterrupted production until 1970.

5. Conclusion

The archaeological watching brief revealed brick and stone features relating to the industrial period of Tonypany. Following map regression and through the detail of the features recorded it is likely that they relate specifically to the coke ovens shown on the Ordnance Survey map of 1900. The first edition Ordnance Survey map shows only railway lines crossing the development area (Figure 8).

The quality of the coal extracted from Llwynypia Colliery and throughout the Rhondda was high and suitable for coking. Coke from the Glamorganshire Colliery, Llwynypia was used by the Admiralty. Towards the last two decades of the nineteenth century Llwynypia had 300 coke ovens of the Welsh type. They would have measured 12ft in length by 6ft in width and had a height of 5.5ft. Each oven would produce around 6 ton of coke a week. The ovens would have been charged from the top with rope-haulage employed to move the coal from the pit bank to the ovens. The coke would have been watered whilst still in the ovens while small steam cranes would have moved the batch after coking. This information was gathered by the Institute of Mechanical Engineers during their visit in 1884 (IME 1884). During the last few years of the nineteenth century two long banks of Coppee coke ovens had been constructed with up to 140 individual ovens in use (Figure 9) (Jackson 2010). This would have produced an efficient output of output good quality coke. It is the remains of these structures that were revealed during the watching brief. Significant remains of these Coppee ovens survive outside of the trenches excavated for the current development of the site. The remains are encountered at an average depth of 1.1m below the upper surface of the concrete pad which coincides approximately with the current ground level. The structures revealed are likely to be the outer walls of the Coppee ovens with the areas most heat affected being nearer to the heat source.

The Glamorgan Gwent Archaeological Trust excavated a large part of a double bank of Coppee ovens at Cyfarthfa in 2012-2013 and the resulting report would be a useful comparison once available (Roberts forthcoming).

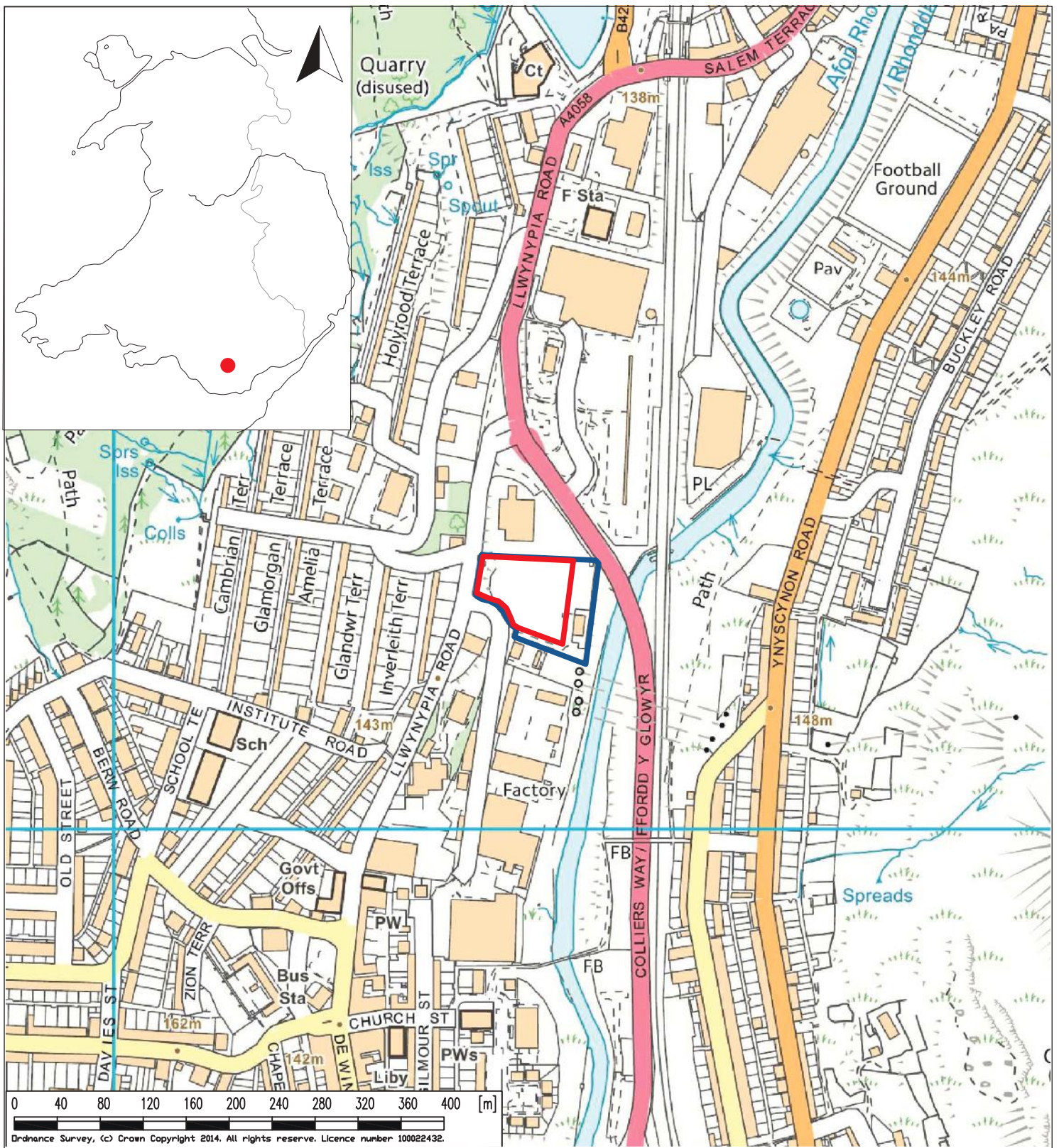
6. References

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Hart, R, 2016, Llwynypia Road, Tonypany: archaeological watching brief – Written Scheme of Investigation.

Jackson, P, 2010, *Non-recovery coke making in the UK. Part 2: The Coppée oven continued: a survey of Coppée non-recovery coke ovens built and use in the United Kingdom*. In *Archive Issue* 65 pp 34-51

Robert, R, *Forthcoming, Excavations at Cyfarthfa Coke Works*. GGAT Unpublished report



Key:

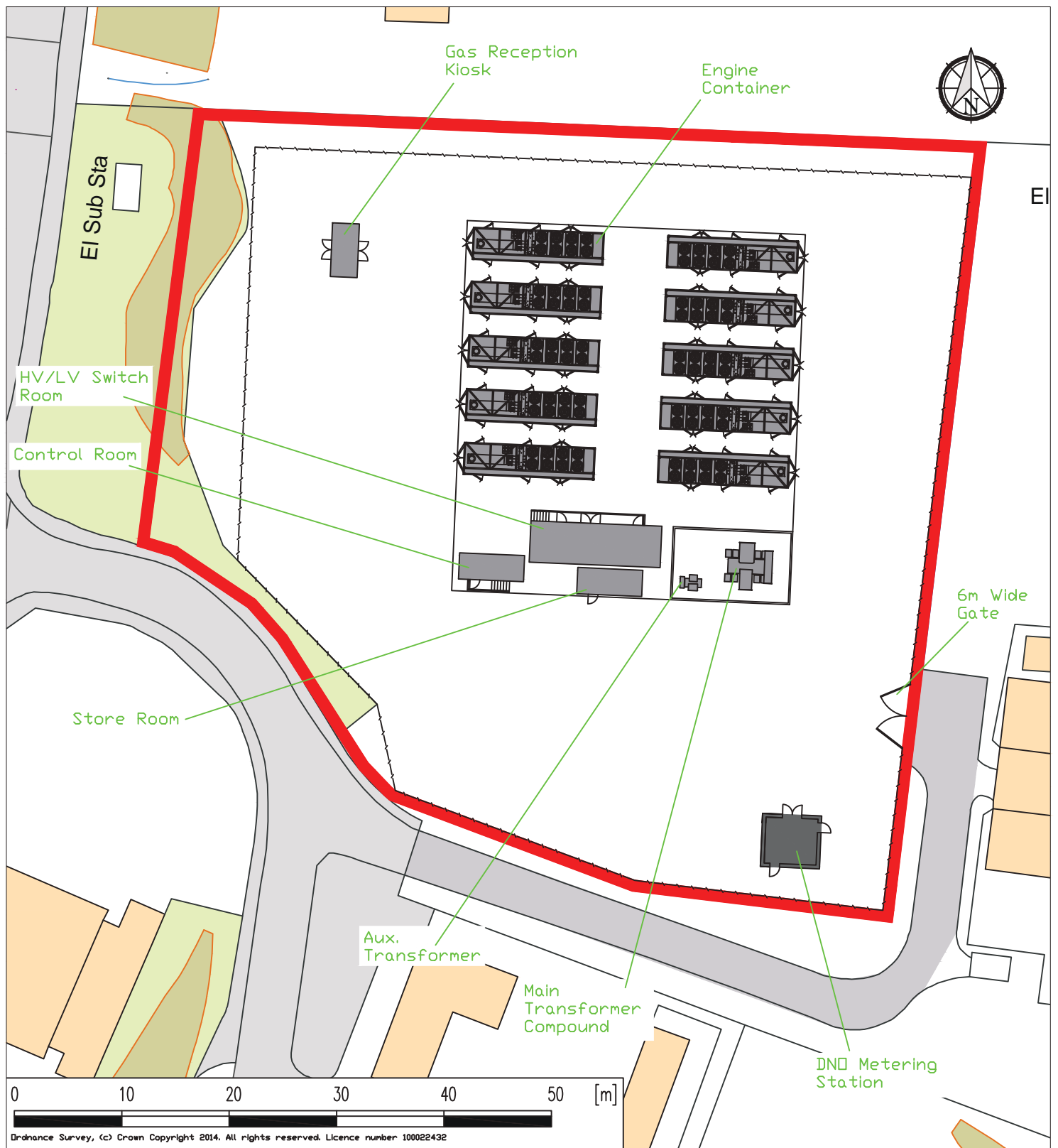
Development Area (0.44Ha):



Land Owner Boundary:



Figure 1. Location of Site



Key:

Development (0.44Ha):



Figure 2. Plan showing Development Area

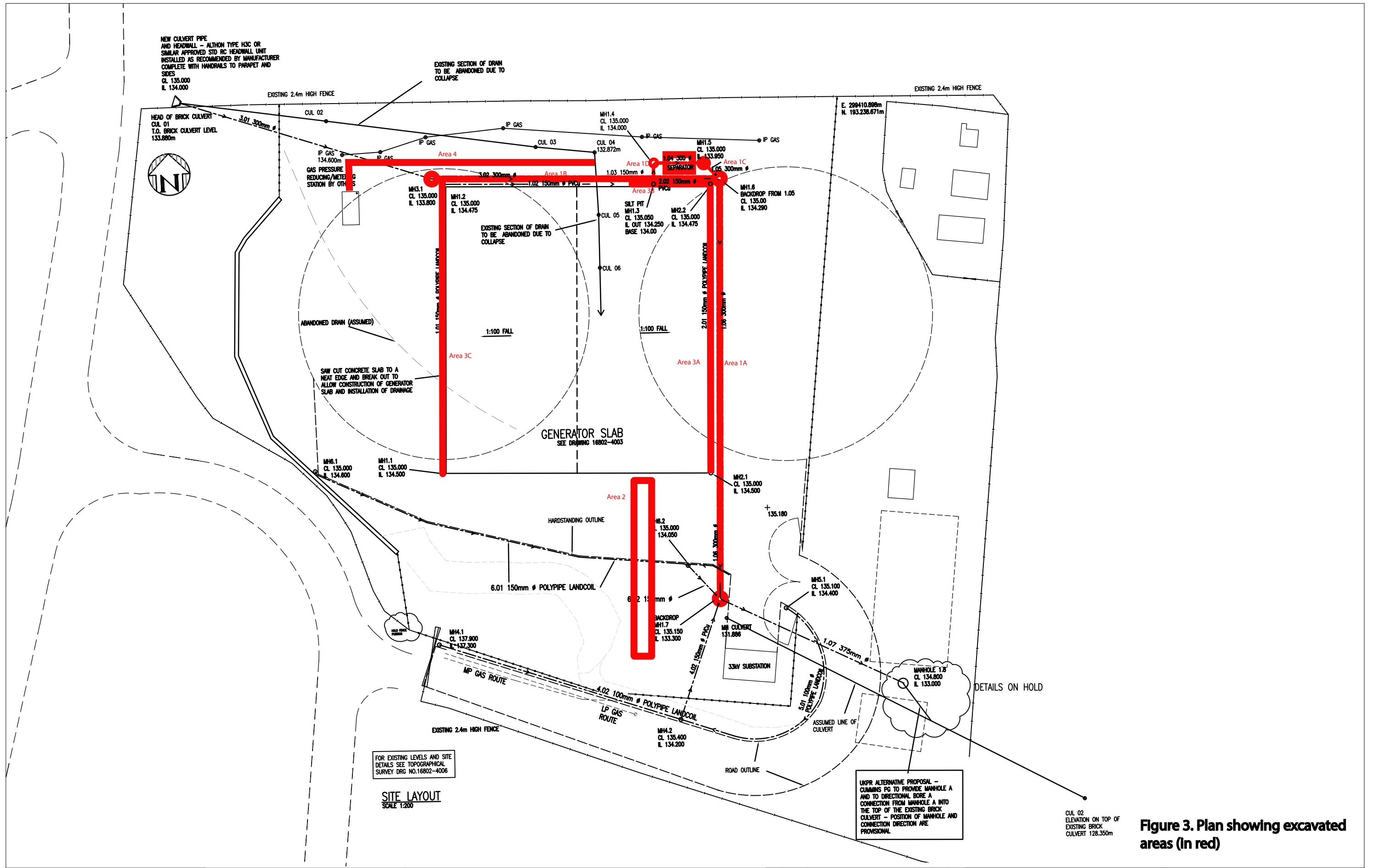


Figure 3. Plan showing excavated areas (In red)

REFERENCE DRAWINGS	
DESCRIPTION	DRAWING No.
TOPOGRAPHICAL SURVEY	16802-4006
DUCT LAYOUT AND DETAILS	16802-4009
SITE DRAINAGE SCHEME	16802-4011
TYPICAL DRAINAGE DETAILS	16802-4012
ACCESS ROAD SHEET 1 OF 2	16802-4013
HARDSTANDING AREA SHEET 2 OF 2	16802-4016

DESCRIPTION	DRAWING No.
TOPOGRAPHICAL SURVEY	16802-4006
DUCT LAYOUT AND DETAILS	16802-4009
SITE DRAINAGE SCHEME	16802-4011
TYPICAL DRAINAGE DETAILS	16802-4012
ACCESS ROAD SHEET 1 OF 2	16802-4013
HARDSTANDING AREA SHEET 2 OF 2	16802-4016

**CDM DESIGNER RISK ASSESSMENT
RESIDUAL DESIGN HAZARDS**

DESCRIPTION
EXCAVATION - CAT SCAN LOCATION AND CHECK UNDERGROUND SERVICE DRAWINGS PRIOR TO ANY EXCAVATION.

REV	DATE	DESCRIPTION	BY	CHK	APP	CLIENT
B1	25/05/16	ISSUED FOR CONSTRUCTION	SLB	SH	GS	DRAWN BY
0	18/05/16	ISSUED FOR COMMENT	SLB	SH	GS	DATE
						CLIENT



On Line House
Pelham Road
Irmingham
North Lincolnshire
DN40 1AB
Tel 01469 577695
www.oline.co.uk

TITLE			CUMMINS POWER GENERATION LLWYNYPIA RD, TONYPANDY SITE DRAINAGE LAYOUT		
SCALE AT A1	DRAWING NUMBER	REVISION			
AS SHOWN	16802-4011	B1			

Figure 4. Section showing Brick Wall [112]

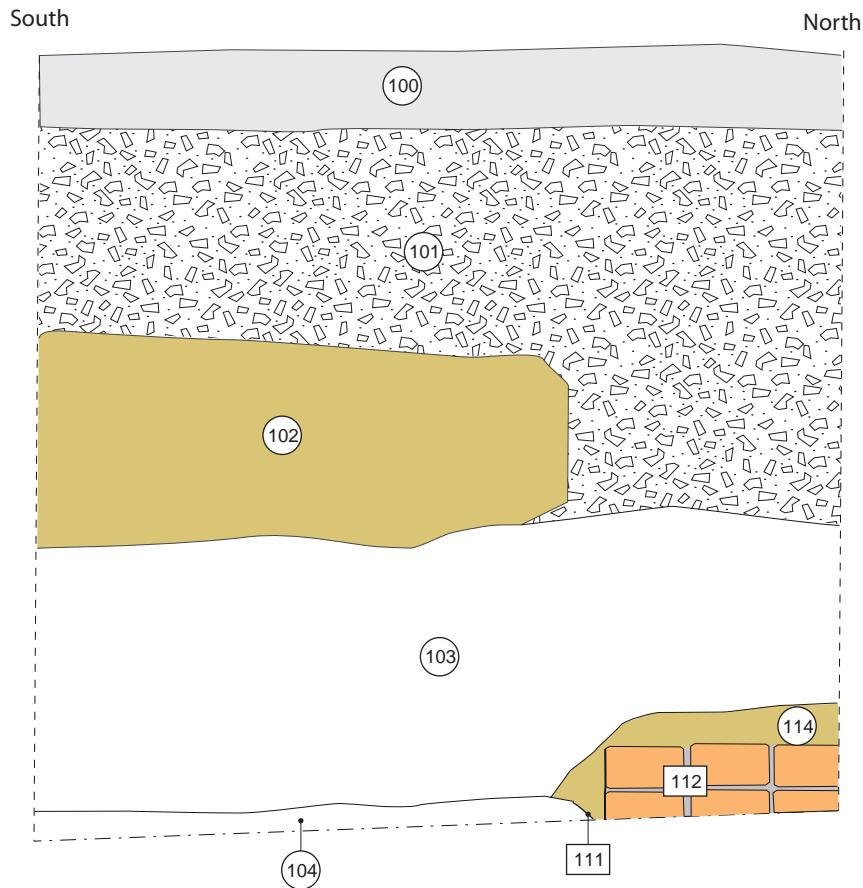
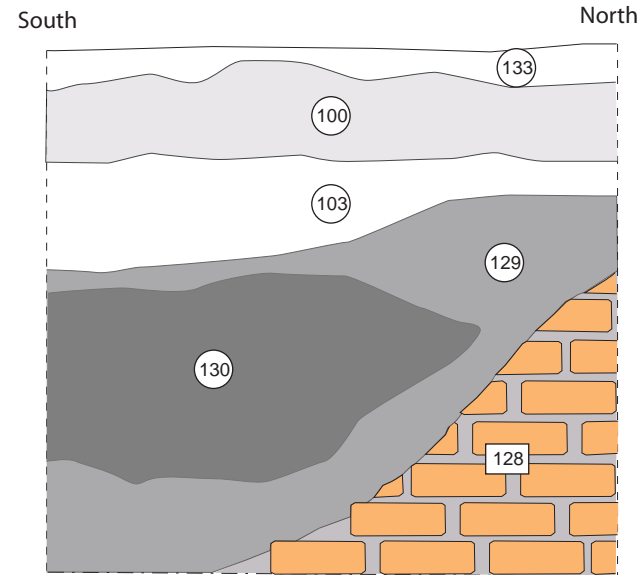


Figure 5. Section showing Brick Wall [128]



Key

- Ash & coal dust deposit
- Ash & charcoal deposit
- Building sand/clay
- Rubble deposit

Figures 4 and 5
Sections showing Brick
Walls [112] and [128]

Figure 6. Section of showing Wall [139]

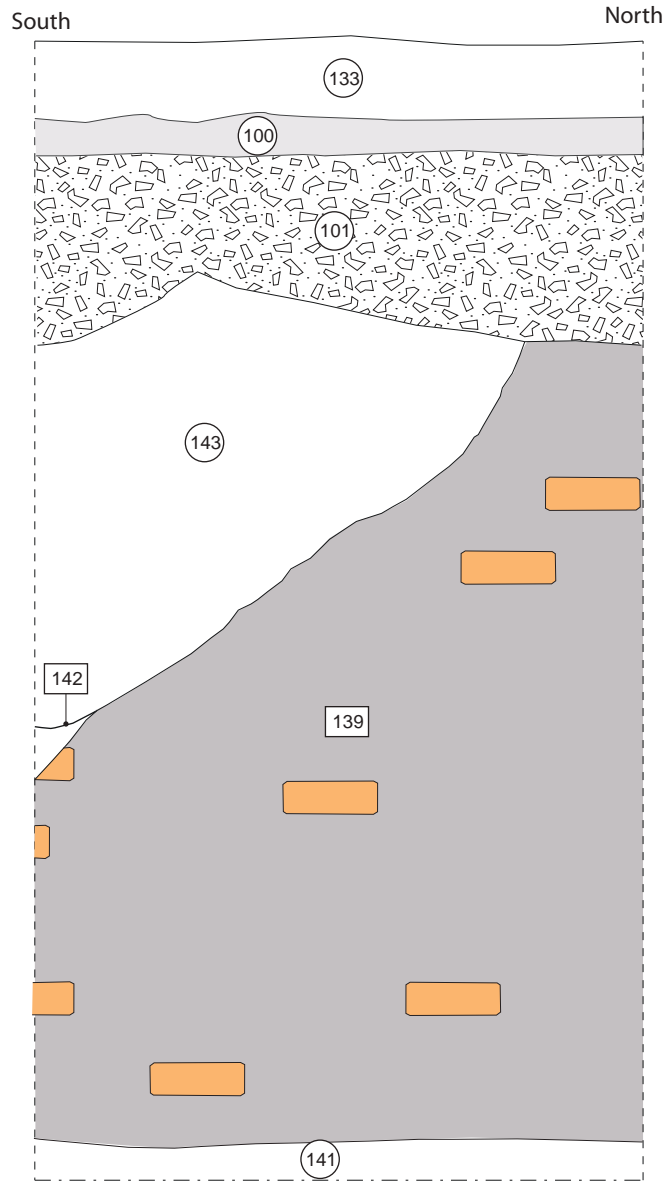
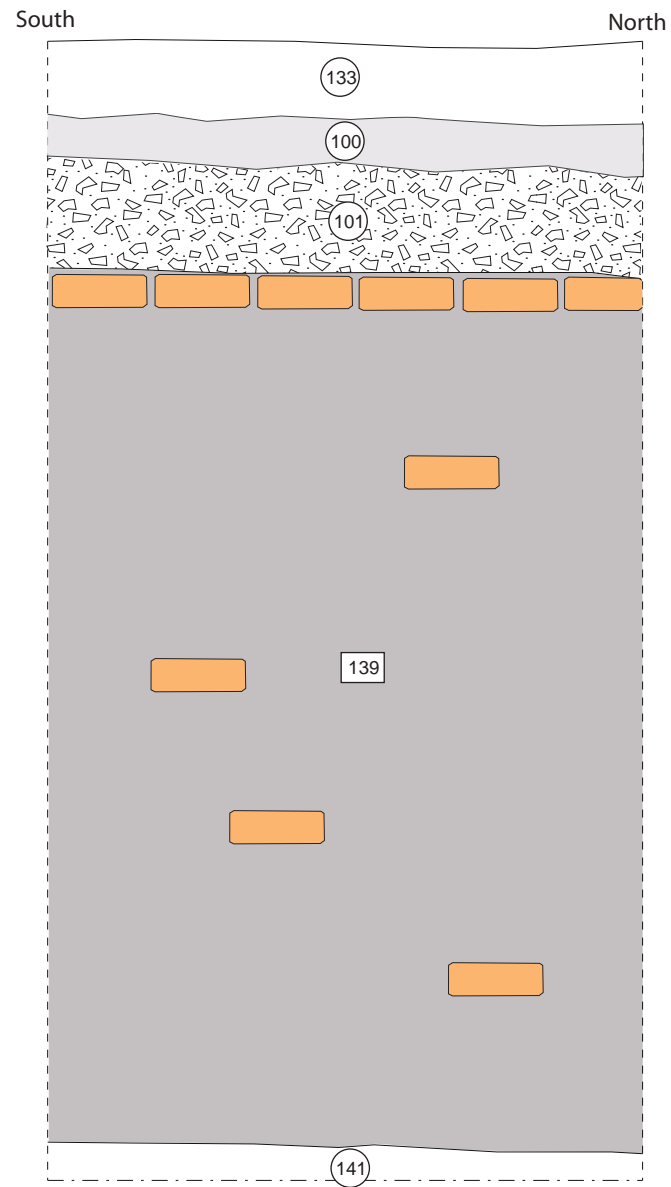



Figure 7. Section of showing Wall [139]



Key

 Rubble deposit



Figures 6 and 7
Sections showing
Wall [139]

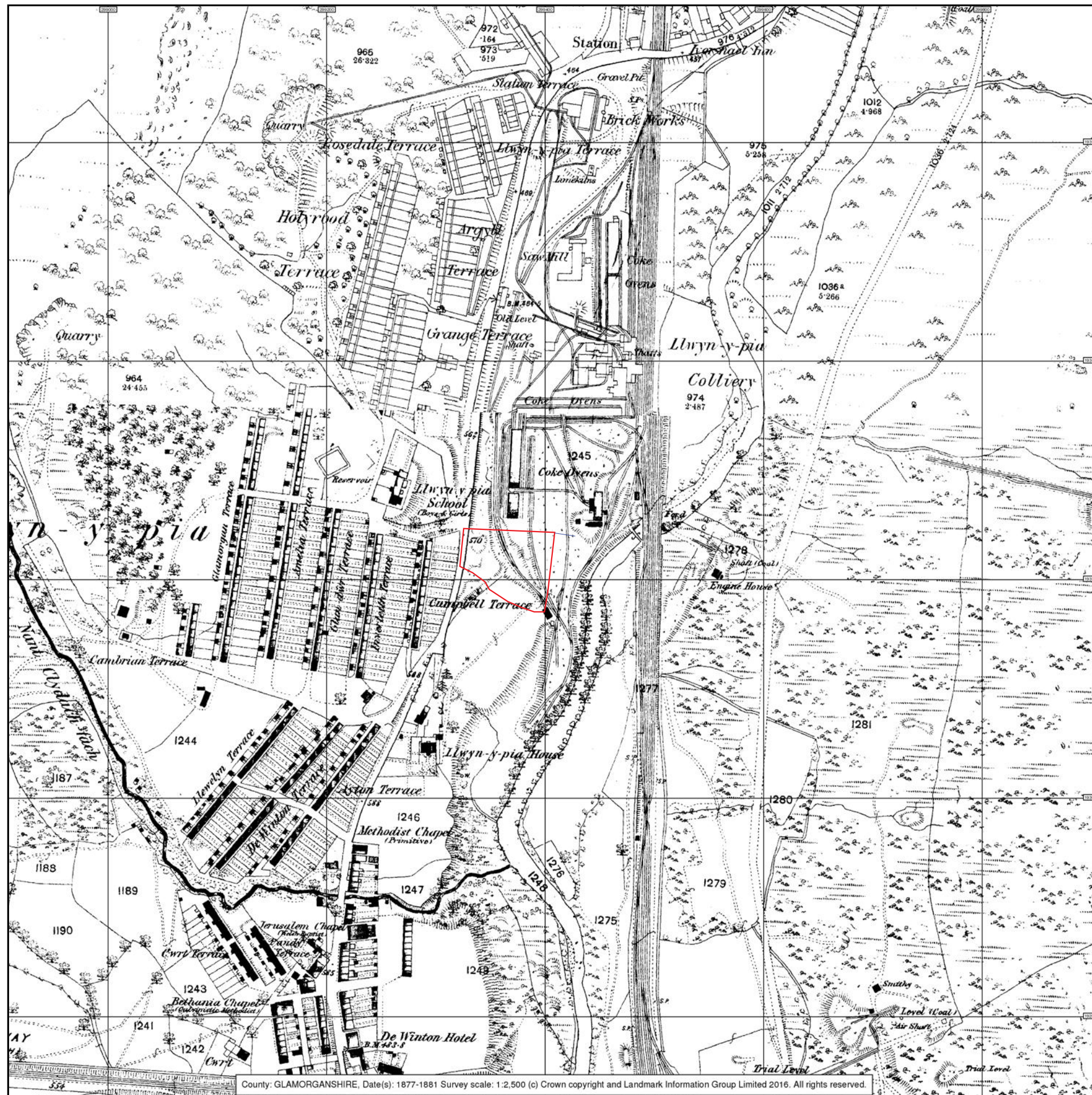


Figure 8. First Edition Ordnance Survey map showing development area in red.

Landmark
 INFORMATION GROUP

Landmark Historical Map
 County: GLAMORGANSHIRE
 Published Date(s): 1877-1881
 Originally plotted at: 1:2,500



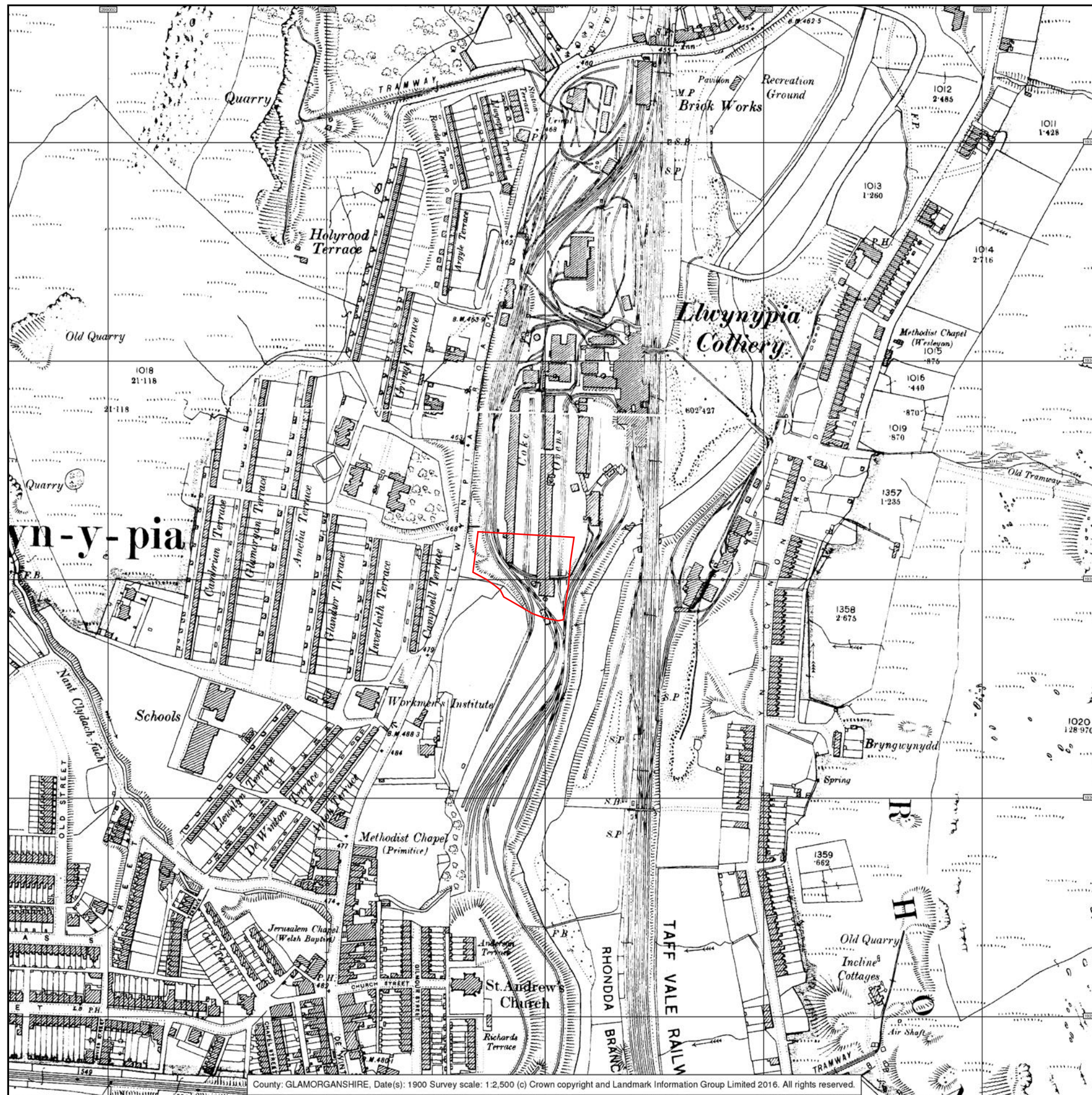


Figure 9. Ordnance Survey map of 1900 showing development area in red.

Landmark
INFORMATION GROUP

Landmark Historical Map
County: GLAMORGANSHIRE
Published Date(s): 1900
Originally plotted at: 1:2,500

ARCHAEOLOGY WALES
Revealing the past, informing the future



Plate 1. Wall [111] at base of trench. North facing section.

Plate 2. Wall [117] at base of trench. North facing section.



Plate 3. Rubble core of wall [117] visible in base of trench. View to the south.
Plate 4. Wall [120] showing stone core of the structure. South facing section.



Plate 5. Stone structure [124]. View to the north.

Plate 6. Area 1C. View of structure [140]. View to the south-west.



Plate 7. Area 3C. Brick surface [308]. View along the trench to the east.

Plate 8. Refractory brick structure in centre of photograph [310]. View to south-west.



Plate 9. Stone wall [406] at base of trench. View to the west.

Plate 10. Top of red brick structure [409] at the base of the trench. View along trench to the south.

Appendix I: Context Inventory

Context	Area/Trench	Identifier	Description	Depth (m)	Date
100	1A	Deposit	Modern ground surface. Formed of concrete and gravel. Mainly gravel to the W, concrete slabs to the E. Machine excavated. Encases the whole site. Includes some steel reinforcement rods in places. Same as (200, 300, 400)	0.40m	Modern (1970s)
101	1A	Deposit	Slightly compact black silty coal dust deposit with a grey hue in places. Frequent building debris noted. Machine excavated. Found across the entirety of the site. Same as (201, 301,401). Encountered at approx. 0.40m below modern ground surface (100).	0.10m	Modern
102	1A	Deposit	Moderately compact yellow sandy clay with some light brown mottled building sand. Appears across the excavation e.g. See (202 etc.) encountered at approx. 0.50m below modern ground surface (100).	0.25m	Modern
103	1A	Deposit	Loose black coal dust deposit. Contained building debris. Machine excavated. Features cut through this but also are sealed by it providing stratigraphic relationships. Encountered at approx. 0.70m below modern ground level (100).	-	Modern-industrial
104	1A	Deposit	Firm yellow clay. Not excavated. Witnessed in a single area into which (112) was cut. Continues below limit of excavation. Encountered at approx. 2m below modern ground level (100).	Unknown	Modern-Industrial
105	1A	Cut	Linear cut of redundant gas pipe (appears on gas map). Machine excavated. 1m exposed during excavation. Left in situ. Excavation moved to the W. Encountered at approx. 1m below modern ground surface (100).	1m	Modern-Redundant Gas pipe
106	1A	Deposit	Slightly compact light to medium grey sandy silt fill of [105]. Machine excavated. Approx. 1m exposed. Continued to the NE and SW. Included redundant FE Gas pipe. Encountered at approx. 1m below modern ground surface (100).	1m	Modern-Redundant Gas Pipe
107	1A	Cut	Linear cut of clay pipe orientated NE-SE. Only visible in section. Machine excavated. Approx. 0.30m protruding from the E facing section. Cut itself was feint in nature but measured approx. 0.40m in depth. The profile could not be obtained due to obscurity. Encountered at approx. 0.50m below modern ground surface (100).	0.40m	Modern

108	1A	Deposit	Moderately firm mid brown silty fill of [107]. Some black mottling was noted. Rare sub-angular pieces of coal and pebble inclusions. Contained modern clay pipe. Machine excavated. Encountered at approx. 0.50m below modern ground surface. (100).	0.40m	Modern
109	1A	Cut	Linear cut containing FE pipe. U shaped in profile. Infilled by (110). 1.20m in length uncovered roughly 1.50m from modern ground surface. Continues into the N and S sections.	0.50m	Modern-Industrial
110	1A	Deposit	Relatively loose dark brown silty fill of [109]. Slight black hue noted. Machine excavated. Fe pipe itself left in-situ although all fill removed during undermining of feature. Continues into the N and S sections. Encountered at approx. 1.50m below modern ground level (100).	0.50m	Modern-Industrial
111	1A	Cut	Linear cut of wall into (104) orientated SE-SW. Continues in the N facing section of Area 1. Machine excavated. Approx. 4.20m in length. Depth continues below the drainage LOE. Encased by (103). Encountered at approx. 1.80-2m below modern ground level (100).	0.40m due to LOE	Modern Industrial
112	1A	Structure	Red brick wall noted at the base of drainage LOE. 2-3 courses of bricks noted in section. Continues below current LOE and to the NE-SE. The bricks measured approx. 12.5x20x10 cm. Cuts [104] natural-suggested to be the earliest archaeological remains upon uncovered. Encountered at approx. 1.40m below (100).	0.40m	Modern-Industrial (Collieries)
113	1A	Group	Number given to modern services within area 1. (See [105] (106) etc.)	-	Modern
114	1A	Deposit	Relatively loose yellow/ light beige clayey sand found above structure [112]. Modern building deposit. Appears in crops throughout the excavation, particularly associated with structures/concrete levelling. Possibly an act of stabilisation. Encountered at approx. 1.20m below (100).	0.20m	Modern-Industrial
115	1A	Deposit	Slightly compact yellow/ light orange with very light brown hue sandy clay. Stabilisation deposited below modern concrete level (100). Stratigraphically younger than other building sands (114) (102) (134). Encountered at approx. 0.25m below modern ground surface (100).	0.10m	Modern

116	1A	Cut	Linear cut of yellow brick structure [117]. Orientated NE-SW. Vertical sides. Shape of base unknown- whole feature not observed due to LOE. Continues below LOE at approx. 2m from (100), approx. 2m exposed continues into N and S sections.	0.40m	Modern-Industrial
117	1A	Structure	Yellow brick wall filling [116]. Bricks approx. 0.10x0.20x0.12.5m. Yellowy grey sandy mortar with some lime noted. Encountered at approx. 1.20m below (100). Continues below LOE and into N and S sections. Approx. 2m in length. Function unknown, associated with the industrial activity within this area.	0.40m	Modern-Industrial
118	1A	Structure	Rubble core of wall. Comprised of medium to large stones. Approx. 0.20x0.15x0.18m. Evidence of brick dust suggesting that this was once faced by bricks. Related to the industrial activity within this area. Approx. 1m in length, Continues into N and S sections and below LOE at approx. 2m below (100). Encountered at approx. 1.40m below (100)	0.60m	Modern-Industrial
119	1A	Cut	Moderately compact black coal dust with grey hue. Coal shard inclusions noted. Approx. 1.20m in length.	0.10m	Modern-Industrial
120	1A	Structure	Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.65m below (100). Continues below LOE at 2m below (100) and into the N and S sections. Bricks measured approx. 0.10x0.12.5x0.20m and were stamped with the word 'HEATHFIELD'. Similar to [124] [128] [131] [139].	1.40m	Modern-Industrial
121	1A	Structure	Part of 120 – brick face	1.60m	Industrial period
122	1A	Deposit	Part of 120 – rubble core?	1.60m	Industrial period
123	1A	Deposit	Loose black silty coal dust deposit. Same as (103). Contained building debris inclusions. Cut by structures [124] [125]. Encountered at approx. 0.50m below (100)	1.00m	Modern-Industrial

124	1A	Structure	Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.35m below (100). Continues below LOE at 2m below (100) and into the N and S sections. Bricks measured approx. 0.10x0.12.5x0.20m. Similar to [120] Same as [128] [131] [139] [308].	1.60m	Modern-Industrial
125			VOID		
126	1A-B	Structure	Single line of red bricks. Not substantial, not load bearing, possible Encountered at approx. 0.60m below (100). Function unknown. Date unknown. All bricks heads were facing to the south. Possible a temporary structure associated with the industrial railway within this area. Continues W and N in the sections. Within (137).	0.20m	Modern-Industrial
127			VOID		
128	1B	Structure	Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.40m below (100). Continues below LOE at 2m below (100) and into the E and W sections. Bricks measured approx. 0.10x0.12.5x0.20m. Similar to [124] Same as [120] [131] [139].Cut by [126] in the NW corner of Man Hole 2.	1.50m	Modern-Industrial
129	1B	Deposit	Loose black ash	1.5	Industrial
130	1B	Deposit	Loose dark grey ash, charcoal rich deposit. Associated with industrial activity within this area. Suggesting very heat intensive activities within this area. Contemporary with (129)	0.56m	Modern-Industrial
131	1B	Structure	Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.40m below (100). Continues below LOE at 2m below (100) and into the E and W sections approx. length 3.50m. Bricks measured approx. 0.10x0.12.5x0.20m. Similar to [124] Same as [120] [131] [139] [308]. Orangey yellow sandy mortar noted.	1.60m	Modern-Industrial
132			VOID		
133	1B	Deposit	Moderately compact dark brown humic, loom soil. Contained building debris and fragments of concrete. Accumulation of natural soils that have covered over (100) in Area 1B overtime.	0.10m	Modern

134	1B	Deposit	Relatively loose clay sand. Building sand used for stabilisation. Encountered at approx. 1.40 below (100). 1.60m below top of (133).	0.25m	Modern-Industrial
135	1B	Group	Group number given to modern services.	-	Modern
136	1B	Structure	Highly disturbed red brick structure. Lots of red brick dust noted. Disturbed by modern plying in this area. Encountered at approx.0.50m below (133).	1.00m	Modern-Industrial
137	1B	Deposit	Brick rich deposit	1.00m	Industrial
138	1B		VOID		
139	1C	Structure	Brick faced stone rubble structure. Continuation of [128] [124]. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.50m below (100) and continues into the W sections. Bricks measured approx. 0.10x0.12.5x0.20m. Similar to [124] Same as [120] [131] [139] [308]. Cut by [143] [140].	1.80m	Modern-Industrial
140	1C	Structure	Yellow Brick wall structure. First encountered at approx. 0.80m below modern ground level (133). Bricks measure approx. Bricks measure approx. 0.10x0.12.5x0.20m. Yellow grey sandy mortar was noted. Could continue below LOE and into the N facing section. Appears to cut furnace platform [128] etc. Depth of structure to (141) was approx. 2.50m. Likely that [128] [124] [138] [131] [308] expand to this depth.	2.50m	Modern-Industrial
141	1C	Deposit	Very compact bright red orange clay. Encountered at approx. 2.95m below (133). Approx. 0.05m deep and continues below LOE at approx.3m. Possible stabilisation for large platform [128] etc.	0.05m	Modern-Industrial
142	1C	Cut	Deep although gradual sloping industrial cut for [140]. Infilled by (143)[140]. Continues into Area 1B see (129). Encountered at approx. 0.55m below (133).	0.30m	Modern-Industrial
143	1	Deposit	Relatively loose light brown humic silty soil. Root actions and sub angular stone inclusions are noted. Infill of [142].	0.30m	Modern-Industrial
144	3 A-D	Structure	Modern concrete pad input by Raymond Brown over previous excavation area (excavated by Louis) Approx. 30x30m	0.40m	Modern.

Context	Area	Identifier	Description	Depth	Date
200	2	Deposit	Modern ground surface. Formed of concrete and building gravels. Mainly gravel to the W, more intense concrete slabs to the E. Machine excavated. Encases the whole site. Includes some steel reinforcement rods in places. Same as (100, 300, 400)	0.20m	Modern
201	2	Deposit	Firm to relatively compact pinky orange gravel sand. Building sands associated with the concreting of this area. Similar to 102. Machine excavated encountered at approx. 0.20m below (400).	0.20m	Modern
202	2	Deposit	Loose black coal dust deposit. Contained building debris. Machine excavated. Result of industrial activity within the area. Features cut through this dep but also are encase by it providing stratigraphic relationships. Encountered at approx. 0.70m below modern ground level (400). Some evidence of railway debris.	0.40m	Modern-Industrial
203	2	Cut	VOID- Not visible in section	-	
204	2	Structure	Reb brick linear wall. Roughly 2m in length, 2 courses of bricks visible in section. Continue below LOE at approx. 1.20m. Only visible in the SE section suggesting the structure itself is outside the parameters of the excavation. Only 1m exposed likely to continue to the SW. Encountered at approx. 0.60m below (400). Possibly associated with the industrial railway known to be within this area	0.10m	Modern-Industrial
205	2	Cut	VOID- Not visible in section		
206	2	Structure	Rubble core structure visible at base of LOE at approx. 1.10m below (400). Continues below LOE. Function is unknown. No obvious structure associated with this feature. Cut into (202).	Unknown	Modern-Industrial
207	2	Cut	Linear cut with vertical sides to flat base. Cut of FE pipe related to the colliery. Connected to high pressure water. Continues into NE and SW section. FE left in situ. Infilled by (208). Encountered at approx. 1.00m below (400).	1m	Modern-Industrial
208	2	Deposit	Moderately to relatively compact black brown gravely silt. Building gravels used to infill [207]. Encountered at approx.1m below (400).	c.1m	Modern.
209	2	Cut	VOID- not visible in section		
210	2	Structure	Brick faced rubble core wall. Continues into the NE facing section. Function is unknown. 3 courses of bricks visible in section as well as high levels of disturbed deposits (Brick Dust). Reb brown glaze on some of the bricks which	0.50m	Modern- Industrial

			measured approx. 10x12.5x20cm. No heat affected evidence. Cut by [211].		
211	2	Group	Group number given to modern service pipes. Cuts structure 210.	-	-

Context	Area	Identifier	Description	Depth (m)	Date
300	3 A-D	Deposit	Modern ground surface. Formed of concrete and building gravels. Mainly gravel to the W, more intense concrete slabs to the E. Machine excavated. Encases the whole site. Includes some steel reinforcement rods in places. Same as (200, 100, 400). Covered by 309 = 144 in Area 3A,B,C,D. Approx. 0.10m in depth.	0.10m	Modern
301	3 A-D	Deposit	Moderately compact yellow sandy clay with some light brown mottled building sand. Appears in crops across the excavation e.g. See (202 etc.) encountered at approx. 0.50m below modern ground surface (144) (309).	0.10m	Modern
302	3 A-D	Deposit	Slightly compact black silty coal dust deposit with a grey hue in places. Frequent building debris noted. Machine excavated. Found across the entirety of the site. Same as (201, 101,401). Encountered at approx. 0.50m below modern ground surface (144) (309).		Industrial
303	3C		VOID		Industrial
304	3C	Structure	Brick surface		Industrial
305	3A	Cut	Linear cut with vertical sides orientated N-S. Based not observed. Approx. 2m in length. Continues into the N and S sections. Contains a continuation of [120] from Area 1A. In Area 1A this cuts (123).		Industrial
306	3A	Structure	Continuation of platform 120. Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.75m below (300). Continues below LOE at 0.80m. Continues into N and S sections. Bricks measured approx. 0.10x0.12.5x0.20m. Similar to [124] [128] [131] [139].		Industrial
307	3A	Cut	Linear Cut with vertical sides to an unobserved base. Orientated N-S. Infilled by (308). Cuts (123) (103). In area 1A this cuts the Western most area of (123) .		Industrial
308	3A	Structure	Continuation of [124]. Brick faced stone rubble structure. Large degree of heat exposure noted. Possible furnace platform. Encountered at approx. 0.60m below (309). Continues below LOE at 1.20m below (309) and into the N and S sections. Bricks measured approx. 0.10x0.12.5x0.20m. Same as [124] etc.		Industrial
309	3A-D	Deposit	Modern concrete pad input by Raymond Brown over previous excavation area Approx. 30x30m		Modern

Context	Area	Identified	Description	Depth (M)	Date
400	4	Deposit	Modern ground surface. Formed of concrete and building gravels. Mainly gravel to the W, more intense concrete slabs to the E. Machine excavated. Encases the whole site. Includes some steel reinforcement rods in places. Same as (200, 300, 100)	0.15m	Modern
401	4	Deposit	Moderately compact yellow sandy clay with some light brown mottled building sand. Appears in crops across the excavation e.g. See (202 etc.) encountered at approx. 0.40m below modern ground surface (410).	0.10m	Modern
402	4	Deposit	Loose black coal dust deposit. Contained building debris. Machine excavated. Result of industrial activity within the area. Features cut through this dep but also are encase by it providing stratigraphic relationships. Encountered at approx. 0.60m below modern ground level (410). Same as (101 etc)	0.60m (max)	Modern-Industrial
403	4		VOID		
404	4	Structure	Structure constructed from concrete and fragments of bricks. Appears modern in nature. Encountered at approx. 0.40m below (410).	0.25m	Modern.
405	4	Cut	Linear cut of [406]. Orientated E-W. Vertical sides to an unobserved base. Cuts (402). Heavily disturbed feature. Continues into the E to W sections and below the LOE in this area at approx. 1.20m.	0.40m	Modern- Industrial
406	4	Structure	Large stone structure infilling [405]. Comprised of dressed stones measuring approx. 20x20x15cm. No mortar was witnessed. Encountered at approx. 0.60m below modern ground surface (410).	0.40m	Modern- Industrial
407	4	Group	Group number given to modern service pipes	-	Modern
408	4	Cut	Linear cut of red brick wall. Infilled by (409). Diffuse cut vertical sides to unobserved base. Continues below LOE at approx. 1.20m	0.25m	Modern-Industrial
409	4	Structure	Red brick wall encountered at approx. 1m below (410). Continues below LOE at approx. 1.20m and into the W and E sections. Orange sandy mortar noted with some fragments of lime noted. Unknown date, unknown function- likely to be related to the industrial activity in this area.	0.20m	Modern-Industrial
410	4	Deposit	Loose black brown humic silty soil. Modern rubbish, building debris and rooting noted within this deposit. Encases (400) in area 4. Same as (133). Accumulation of modern ground surface.	0.40m	Modern

Context	Area	Identified	Description	Depth (M)	Date
501	5	Deposit	Stone deposit	0-0.3m	Modern
502	5	Deposit	Brick rubble and stone levelling layer	0.3-0.4m	Modern
503	5	Cut	V shaped cut to contain 504	0.3-0.65m	Modern
504	5	Deposit	Loose gravel contained by cut 503	0.3-0.65m	Modern
505	5	Structure	Reinforced concrete block (2m x 0.2m x 0.35m)	0.4 – 0.75m	Modern
506	5	Deposit	Coal dust deposit	0.75m	Post-medieval /Modern
507	5	Structure	Metal pipe 0.05m diameter, 2m length	0.65m	Modern
508	5	Structure	Metal pipe 0.3m diameter. 2m length	0.85m	Modern
509	5	Deposit	Fill of 510	0.3-0.85m	Modern
510	5	Cut	Cut of trench to hold pipes 507 and 508 and contains fill 509	0.3-0.85m	Modern
511	5	Cut	Cut for pipe 512	0.3 – 1m	Post- medieval/Modern
512	5	Structure	Metal pipe 6m in length. Fittings for 5 smaller diameter pipes to attach to this.	0.5m	Post- medieval/Modern
513	5	Deposit	Brick rubble	0.3-0.4m	Modern
514	5	Deposit	Gravel deposit	0.3-0.25m	Modern
515	5	Deposit	Coal dust deposit surrounding and overlying 512	0.5-1.2m	Post- medieval/Modern
516	5	Deposit	Orange-brown silty-clay	0.3 – 1.2m	Modern
517	5	Structure	Concrete lintel	0.4 – 1m	Modern
518	5	Cut	Cut holding 517	0.4-1m	Modern
519	5	Deposit	Orange-brown silty-clay with brick rubble	0.3-1.2m	Modern
520	5	Structure	Concrete plinth	0.45 – 1.25m	Modern
521	5	Structure	Concrete surface associated with 520	0.45-0.55	Modern
522	5	Cut	Cut for 521/520	0.45-1.25m	Modern
523	5	Deposit	Grey/black silt with rubble	0.2-1m	Modern
524	5	Deposit	Yellow brown clay. Natural deposit	-	Natural

**SPECIFICATION FOR AN
ARCHAEOLOGICAL WATCHING BRIEF**

AT

**Llwynypia Road, Tonypandy
Rhondda Cynon Taf**

Prepared for:

Raymond Brown Construction Ltd

February 2016

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Summary

This Specification details the methodology for an archaeological watching brief to be undertaken during work at the Gas Holder Site, East of Llwynypia Road, Tonypandy, Rhondda Cynon Taf. The site is centred on SS 99395 93184. The associated Planning Application is 15/0593/10.

The objective of the watching brief is to safeguard the potential archaeological resource through observation and recording during the course of the intrusive ground works associated with the scheme. The site is located immediately to the south of the Llwynypia Colliery and its Grade II Listed Engine House (13125).

This Specification document has been prepared by Rowena Hart (Project Manager) of Archaeology Wales Limited for Neath Port Talbot County Borough Council.

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists.

Specification

1. Planning background

This Specification details the methodology for an archaeological watching brief to be undertaken during the work at the Gas Holder Site, East of Llwynypia Road, Tonypandy, Rhondda Cynon Taf. The site is centred on SS 99395 93184 (Figure 1). The Planning Application Number is P2015/0965. A condition (5) was placed on the planning consent stating that the ground work associated with the scheme should be subject to an archaeological watching brief:

The developer shall ensure that a suitably qualified archaeologist is present during the undertaking of any ground disturbing works in the development area, so that an archaeological watching brief can be conducted. The archaeological watching brief shall be undertaken to the standards of the Institute for Archaeologists. The Local Planning Authority shall be informed, in writing, at least two weeks prior to the commencement of the development of the name of the said archaeologist and no work shall begin until the Local Planning Authority has confirmed, in writing, that the proposed archaeologist is suitable. A copy of the watching brief report shall be submitted to the Local Planning Authority within two months of the fieldwork being completed by the archaeologist.

Reason: To identify and record any features of archaeological interest discovered during the works, in order to mitigate the impact of the works on the archaeological resource in accordance with Policy AW7 of the Rhondda Cynon Taf Local Development Plan.

The location of the development lies between Llwynypia Road and Afon Rhondda (Figure 1).

All work will be undertaken to the standards and guidance set by the Chartered Institute for Archaeologists.

2. Archaeological background

The northern extent of the development area borders the southern edge of the Llwynypia Colliery site (01457m). The grade II Listed Engine House (13125) associated with the colliery still stands; located some 20m to the north of the site. The first two pits at Llwynypia Colliery (also known as Glamorgan Colliery and The Scotch) were sunk in 1861 and 1862 under the direction of Mr Begg. These pits reached the Bituminous coal seams. A third pit was sunk in the 1870's and reached to the steam coal seams. The colliery site also held brickworks, coke ovens, small lime kilns, a saw mill and gravel pits.

The area around Tonypany was the focus of the industrial development in the mid-Rhondda region. The development was driven by Sir Archibold Hood, a statue of whom stands on Institute Terrace some 200m to the south-west of the development area.

3. Specification objectives

This specification document sets out a program of works to ensure that the archaeological watching brief will meet the standard required by *The Chartered Institute for Archaeologist's Standard and Guidance For Archaeological Watching Briefs*.

The objective of the watching brief is to safeguard the potential archaeological resource through observation and recording during the course of the intrusive ground works associated with the ground investigation scheme.

A written report will be compiled following the fieldwork and an archive of all collected data will be produced and deposited with an appropriate receiving institution.

4. Timetable of works

4.1. Fieldwork

The fieldwork will be undertaken at the convenience of the client and to coincide with the main site contractor's programme. No date has been set although it is likely to commence within the first two weeks of March 2016. Archaeology Wales will update Glamorgan-Gwent Archaeological Trust - Curatorial Division (GGAT-CD) once a start date is known.

4.2. Report delivery

The watching brief report will be submitted to Raymond Brown Construction Ltd and to Glamorgan Gwent Archaeological Trust Curatorial Division (advisors to the Local Planning Authority, henceforth GGAT-CD) within three months of the completion of the fieldwork. A copy of the report will also be sent to the regional HER.

5. Fieldwork

5.1. Scope of development

An archaeological watching brief will be undertaken during all intrusive ground works associated with the scheme. The specific tasks include, but are not limited to:

- Establish site compound
- Trial Holes
- Piling mat
- Piling
- Site Access
- Excavation for gas supply
- Excavation for generator slab
- Drainage
- Fencing

5.2. Methodology and contingency

All intrusive groundwork will be subject to an archaeological watching brief conducted to meet the Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Watching Briefs* (4th ed. 2008).

The site archaeologist undertaking the watching brief must be afforded the required access by the main contractor in order to observe and where necessary to record any archaeological remains revealed. Groundwork shall not be undertaken without the presence of the site archaeologist. The site archaeologist will record finds and less significant archaeological deposits and features without significant delay to the work program.

Where significant or complex archaeological deposits or features are encountered there will be a requirement for those areas to be fenced off and highlighted to all contractors employed on the site. Machines or contractors shall not enter this area until archaeological recording has been completed. If significant archaeological features are revealed during the work a meeting between the client, their agent, main contractor, GGAT-CD and Archaeology Wales should be called at the earliest convenience.

To comply with professional guidelines, a contingency for a maximum of three days' uninterrupted access to each such area and for a team of up to two further archaeologists to be employed should be provided. Contingency costs will be agreed in advance before any extension to the programme commences and will follow a site meeting between Archaeology Wales, the client (of their agent) and GGAT Curatorial Division.

5.3. Recording

Archaeological recording will be undertaken to best current professional practice. Archaeological deposits, features and structures will be recorded by means of a continuous context numbering system. Where necessary site drawings will be made at a suitable scale usually 1:20 in plan, and 1:10 in section. All significant contexts will be photographed in digital at a minimum of 12mp.

5.4. Finds

The professional standards set in the Chartered Institute for Archaeologists' *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2001) will form the basis of finds collection, processing and recording.

All manner of finds regardless of category and date will be retained.

Finds recovered that are regarded as Treasure under *The Treasure Act 1996* will be reported to HM Coroner for the local area.

5.5. Environmental sampling strategy

Deposits with a significant potential for the preservation of palaeoenvironmental material will be sampled, by means of the most appropriate method (bulk, column etc). Where sampling will provide a significant contribution to the understanding of the site AW will draw up a site-specific sampling strategy alongside a specialist environmental archaeologist. All environmental sampling and recording will follow English Heritage's *Guidelines for Environmental Archaeology* (2002).

5.6. Human remains

In the event that human remains are encountered, their nature and extent will be established and the coroner informed. All human remains will be left *in situ* and protected during backfilling. Where preservation *in situ* is not possible the human remains will be fully recorded and removed under conditions that comply with all current legislation and include acquisition of licenses and provision for reburial following all analytical work. Human remains will be excavated in accordance with the Chartered Institute for Archaeologist's *Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains: Technical Paper Number 13* (1993).

A meeting with GGAT Curatorial, the client (or their agent) and AW will be called if the human remains uncovered are of such complexity or significance that the contingency arrangement (3.1 above) would not be of sufficient scope.

5.7. Specialist advisers

In the event of certain finds, features or sites being discovered, AW will seek specialist opinion and advice. A list of specialists is given in the table below although this list is not exhaustive.

Artefact type	Specialist
Flint	Kate Pitt (Archaeology Wales)
Animal bone	Richard Madgwick (Cardiff University)
CBM, heat affected clay, Daub etc.	Rachael Hall (APS)
Clay pipe	Hilary Major (Freelance)
Glass	Rowena Hart (Archaeology Wales)
Cremated and non-cremated human bone	Malin Holst (University of York)/Richard Madgwick (Cardiff University)
Metalwork	Kevin Leahy (University of Leicester)/ Quita Mold (Freelance)
Metal work and metallurgical residues	Dr Tim Young (GeoArch)
Neo/BA pottery	Dr Alex Gibson (Bradford University)
IA/Roman pottery	Jane Timby (Freelance)
Roman Pottery	Rowena Hart (Archaeology Wales)/ Peter Webster (Freelance)
Post Roman pottery	Stephen Clarke (Monmouthshire Archaeology)
Charcoal (wood ID)	John Carrot (Freelance)
Waterlogged wood	Nigel Nayling (University of Wales – Lampeter)
Molluscs and pollen	Dr James Rackham
Charred and waterlogged plant remains	Wendy Carruthers (Freelance)

5.7.1. Specialist reports

Specialist finds and palaeoenvironmental reports will be written by AW specialists, or sub-contracted to external specialists when required.

6. Monitoring

AW will make its fieldwork available for monitoring by the client (and their appointed agents) and the Local Planning Authority. In both instances advance notice should

be given. All site attendants should follow Health and Safety requirements. If site visit reports are made AW would be grateful to receive copies.

7. Post-fieldwork programme

7.1. Archive assessment

7.1.1. Site archive

An archive of archaeological site records will be prepared in accordance with *Management of Archaeological Projects* (English Heritage, 1991) Appendix 3.

The site archive (including artefacts and samples) will be deposited with an appropriate receiving organisation, in compliance with the ICON and IFA Guidelines (*Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (2007)). The legal landowners consent will be gained for deposition of finds. Copies of the report and archive index will be deposited with the *National Monuments Record*, RCAHMW, Aberystwyth and the *Regional HER*.

In addition, an archive of records made during the post-fieldwork phase will be prepared to the specifications in *Management of Archaeological Projects*, (English Heritage, 1991) Appendix 6.

7.1.2. Analysis

Following a rapid review of the potential of the site archive, a programme of analysis and reporting will be undertaken. This will result in the following inclusions in the final report:

- Non-technical summary
- Location plan showing the area/s covered by the watching brief, all artefacts, structures and features found
- Plan and section drawings (if features are encountered) with ground level, ordnance datum and vertical and horizontal scales.
- Written description and interpretation of all deposits identified, including their character, function, potential dating and relationship to adjacent features. Specialist descriptions and illustrations of all artefacts and soil samples will be included as appropriate.
- An indication of the potential of archaeological deposits which have not been disturbed by the development
- A statement of the local, regional and national context of the remains
- A detailed archive list at the rear listing all contexts recorded, all samples finds and find types, drawings and photographs taken. This will include a statement of the intent to deposit, and location of deposition, of the archive.

7.2. Reports and archive deposition

7.2.1. Report to client

A report, comprising a synthesis of data gathered, will be submitted within three months of completion of the watching brief, together with inclusion of supporting evidence in appendices as appropriate, together with photographs and illustrations.

7.2.2. Additional reports

After an appropriate period has elapsed, copies of the report will be deposited with the relevant county Historical Environment Record, the National Monuments Record and, if appropriate, Cadw, Historic England or Historic Scotland.

7.2.3. Summary reports for publication

Short archaeological reports will be submitted for publication in relevant journals; as a minimum, a report will be submitted to the annual publication of the regional CBA group or equivalent journal.

7.2.4. Notification of important remains

Where it is considered that remains have been revealed that may satisfy the criteria for statutory protection, AW will submit preliminary notification of the remains to the relevant national archaeological agency (Cadw, Historic England or Historic Scotland).

7.2.5. Archive deposition

The research archive will, whenever appropriate, be deposited with a suitable receiving institution, usually the relevant Local Authority museums service. The site archive will be deposited with an appropriate institution.

7.2.6. Finds deposition

The finds, including artefacts and ecofacts, excepting those which may be subject to the Treasure Act, will be deposited with the same institution, subject to the agreement of the legal land owners.

A copy of the archive index will be deposited with the National Monuments Record, RCAHMW, Aberystwyth.

8. Staff

The project will be managed by Rowena Hart (AW Project Manager) and the fieldwork undertaken by Louis Stafford (Archaeology Wales). Any alteration to staffing before or during the work will be brought to the attention of GGAT Curatorial and Raymond Brown Construction Ltd.

Additional Considerations

9. Health and Safety

9.1. Risk assessment

Prior to the commencement of work AW will carry out and produce a formal Health and Safety Risk Assessment in accordance with *The Management of Health and Safety Regulations* 1992. A copy of the risk assessment will be kept on site and be available for inspection on request. A copy will be sent to the client (or their agent as necessary) for their information. All members of AW staff will adhere to the content of this document.

9.2. Other guidelines

AW will adhere to best practice with regard to Health and Safety in Archaeology as set out in the FAME (Federation of Archaeological Managers and Employers) health and safety manual *Health and Safety in Field Archaeology* (2002).

10. Insurance

AW is fully insured for this type of work, and holds Insurance with Aviva Insurance Ltd and Hiscox Insurance Company Limited through Towergate Insurance. Full details of these and other relevant policies can be supplied on request.

11. Quality Control

11.1. Professional standards

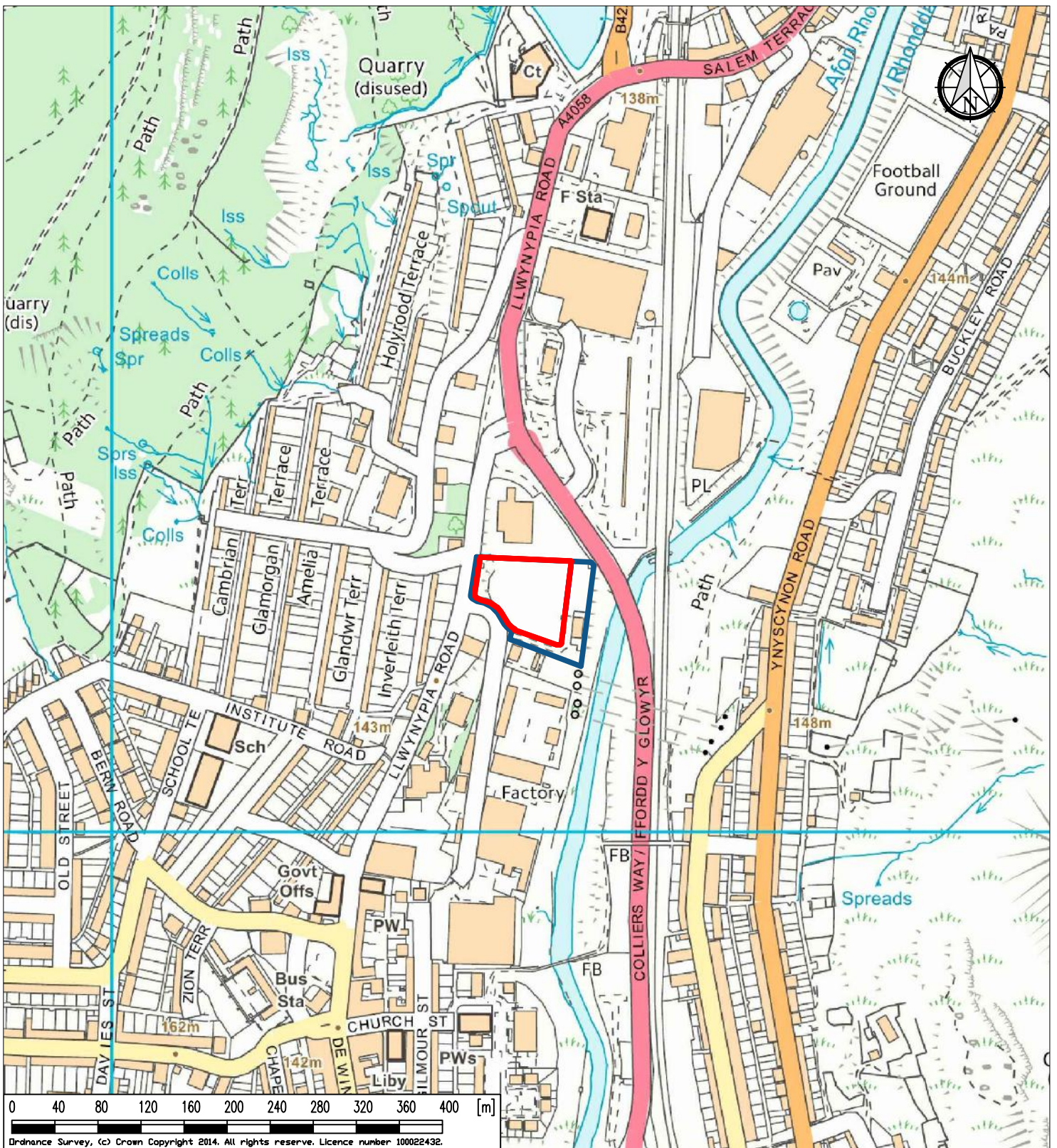
AW works to the standards and guidance provided by the *Chartered Institute for Archaeologists*. AW fully recognise and endorse the Chartered Institute for Archaeologists' *Code of Conduct*, *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* and the *Standard and Guidance for archaeological watching briefs* currently in force. All employees of AW, whether corporate members of the Chartered Institute for Archaeologists or not, are expected to adhere to these Codes and Standards during their employment.

11.2. Project tracking




The designated AW manager will monitor all projects in order to ensure that agreed targets are met without reduction in quality of service.

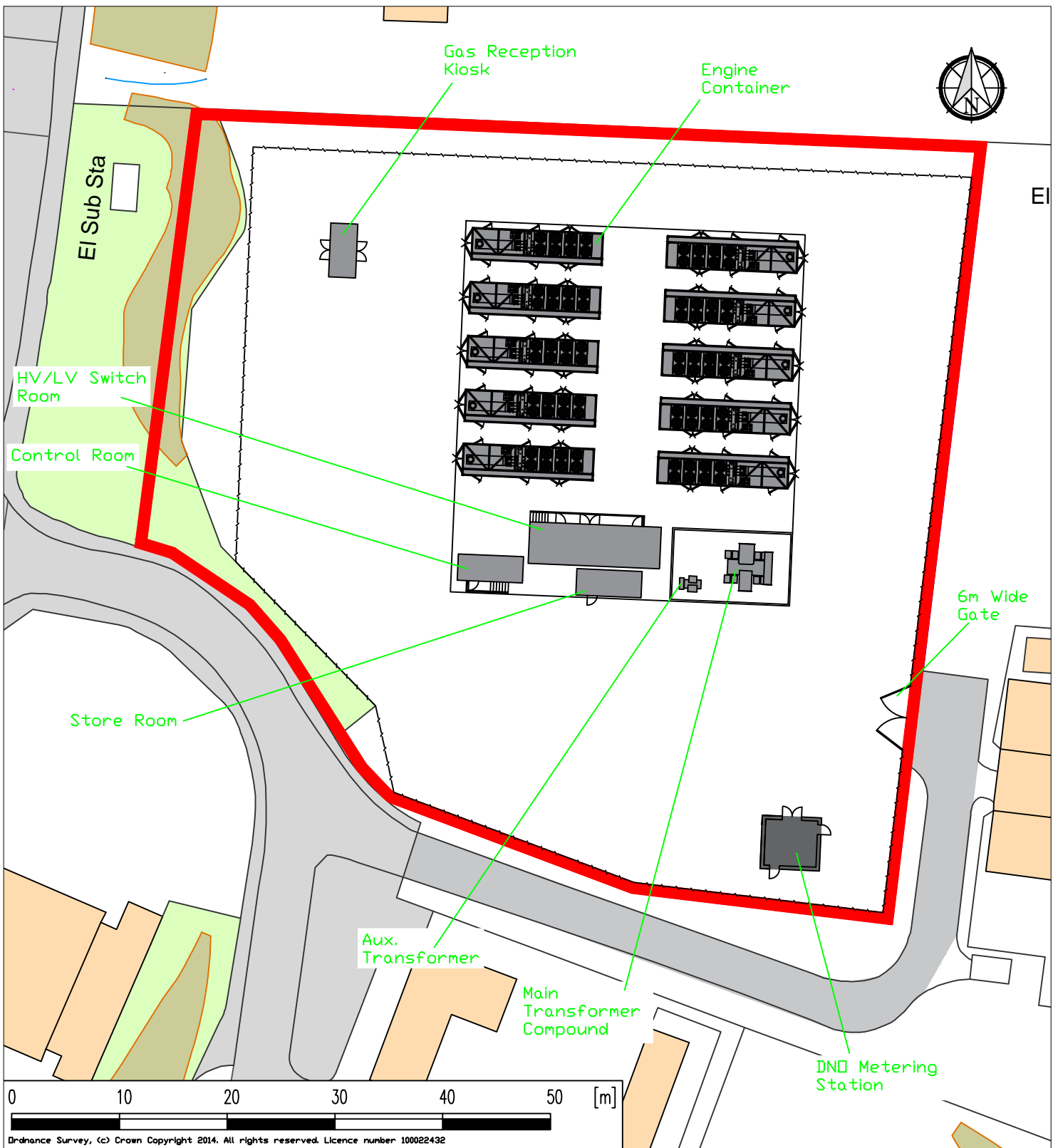
12. Arbitration

Disputes or differences arising in relation to this work shall be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Institute for Archaeologists* applying at the date of the agreement.



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<p>Ex-Gas Holder, Llwynypia Road, Tonymandy, CF40 2ET</p>	<p>Key: Development Area (0.44Ha):  Land Owner Boundary: </p>	<p>Scale: 1:5000 at A4</p>	
<p>Description: Proposed Location Plan</p>		<p>Drawing: [15020] (Tonymandy) Location Plan (Gas Container) (Rev. 1)</p>	<p>6th Floor, Radcliffe House, Blenheim Court, Solihull, West Midlands, B91 2AA</p>
		<p>Date: 28/04/2015</p>	<p>Drawn By: MD</p>
		<p>Revisions: -Rev. 1 Amendments: -Amend. 1 Property Line Included -Amend. 2 General Corrections</p>	<p>Reviewed By: CDF</p> <p>Plan not to be used for construction</p>



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<p>Ex-Gas Holder, Llwynypia Road, Tonypany, CF40 2ET</p>	<p>Key:</p> <p>Development (0.44Ha):</p> <p>2.4m High Security Fence:</p>	<p>Scale:</p> <p>1: 500 at A4</p>	<p>ukpowerreserve SUPPORTING A RENEWABLE FUTURE</p> <p>6th Floor, Radcliffe House, Blenheim Court, Solihull, West Midlands, B91 2AA</p>
		<p>Date:</p> <p>05/11/2015</p>	
<p>Description:</p> <p>Proposed Site Plan</p>		<p>Drawn By:</p> <p>ND</p>	<p>Reviewed By:</p> <p>CDF</p>
		<p>Revision 2</p>	