

**Former Gas Works
Mount Street
Bala
Gwynedd**

Archaeological Watching Brief



for
WSP Environmental UK

CA Project: 3640
CA Report: 12043

February 2015

Former Gas Works Mount Street Bala Gwynedd

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SUMMARY

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| Project Name: | Former Gas Works, Mount Street |
| Location: | Bala, Gwynedd |
| NGR: | SH 9284 3608 |
| Type: | Watching Brief |
| Date: | 9-31 January 2012 |
| Planning Reference: | NP5/53/511 |
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| Site Code: | TBG 12 |

An archaeological watching brief was undertaken by Cotswold Archaeology during groundworks associated with environmental improvement works (remediation) at the Former Gas Works, Mount Street, Bala, Gwynedd.

The watching brief identified a number of brick walls, tar tanks and other industrial features which relate to the former gas works. These features correspond closely to the cartographic evidence showing the former gas works structures, including the retort and tar pits. Structures were first illustrated on the 1888 Ordnance Survey (OS) imprint, and were shown to be enlarged by the completion of the 1901 and also by 1953/4 OS mapping.

The assistance and contribution of Mr John G. Roberts, Archaeologist, Snowdonia National Park Authority, to the compilation of this report is gratefully acknowledged.



1. INTRODUCTION

- 1.1 In January 2012 Cotswold Archaeology (CA) carried out an archaeological watching brief at the request of WSP Environmental UK at the Former Gas Works, Mount Street, Bala, Gwynedd (centred on NGR: SH 9284 3608; Fig. 1). The watching brief was undertaken to fulfil a condition attached to planning permission for environmental improvement works (remediation) granted by Snowdonia National Park Authority (SNPA; Planning ref: NP5/53/511, Condition 10). The objective of the watching brief was to preserve by record all archaeological remains exposed during the development.
- 1.2 The watching brief was carried out in accordance with a recommendation by Mr John G. Roberts, Archaeologist, SNPA. A subsequent detailed *Written Scheme of Investigation* (WSI) was produced by CA (2011a: see Appendix E). The fieldwork also followed the *Standard and guidance for an archaeological watching brief* (IfA 2008), the *Management of Archaeological Projects 2* (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (English Heritage 2006). It was monitored by Mr Roberts, including a site visit on 16 January 2012.

The site

- 1.3 The site lies within the town of Bala and is bordered to the north-east by properties along the B4391, to the north and west by the mound of the Norman motte known as Tomen y Bala (Scheduled Monument, ME016/NPRN 303419), to the south west by properties along Lon y Domen and to the south by a car park (Figs 1, 2a and 2b). The site lies at approximately 165m AOD.
- 1.4 The site is c. 0.2ha in size, and is currently predominantly covered in shale, with some hard-standing in the north-eastern corner of the site. The far eastern part of the site is currently being used as an informal garden area and vegetable plot by the adjacent property.
- 1.5 The underlying solid geology of the area is mapped as Moelfryn Mudstone formation of the Ordovician period, with superficial deposits of Alluvium: clay, silt, sand and gravel, of the Quaternary period (BGS 2014). An alluvial clay was observed over

most of the site. Below this, in a few places as detailed within paragraph 2.1, alluvial sand and gravel deposits were observed.

Archaeological and historical background

- 1.8 This section provides an overview of the archaeological and historical background of the site. This serves to provide context to the cultural heritage resources that may be affected by development. The data has been sourced from the CADW, Gwynedd Archaeological Trust Historic Environment Record (HER), Gwynedd Archives, Royal Commission for Ancient Historic Monuments of Wales (RCAHMW) and various documentary sources. A nominal study area of c.400m surrounding the site was applied when gathering data (as illustrated on Figs 2a and 2b), though this was exceeded where historic assets were known to be present which had a bearing on historic context of the site.

Internationally designated assets

- 1.6 No World Heritage Sites or sites included on the Tentative List of Future Nominations for World Heritage Sites (last revised in January 2012) are situated within the site, or within an approximate radius of 500m.

Nationally designated assets

- 1.7 No Scheduled Monuments or Listed Buildings are located within the site. A Scheduled Monument (the motte at Tomen y Bala - SAM ME016/ PRN 3202) lies directly to the north of the site with no further Scheduled Monuments within a radius of 500m. The Scheduled Monuments of the Pen-Ucha'r-Llan ringworks (SAM ME042, PRN 3201) and the Llanfor Roman fort and camps lie beyond the study area to the east. The Registered Park and Garden at Rhiwlas (Cadw ref PGW(Gd)25(GWY)) lies c. 200m to the north of the site (Cadw and ICOMOS UK 1998; Fig. 2a). A total of 68 Listed Buildings are known within an approximate 400m radius of the site. These comprise a range of Grade II* and Grade II structures, some of which were built around the period when the gas works was active. Their relevance to the gasworks (or earlier use of the site) is discussed further below.

Prehistoric

- 1.9 The HER search indicated no evidence of activity dating to earlier prehistory (Palaeolithic to Neolithic periods) within the site or study area.

- 1.10 The upland archaeological landscape has been noted to contain low concentrations of funerary remains (OA 2009), however the lowland landscape may not be similarly characterised. Investigations at Llanfor have alluded to the presence of a destroyed stone circle (Bowen and Gresham 1967) and geophysical anomalies of putative Bronze Age burial and ritual sites (Cadw *et al* 1998). More specific interpretations of pit alignments and possible small barrow or roundhouses have also been proposed at Llanfor (Crew and Crew 1997).

Roman

- 1.11 The HER search indicated no evidence of activity dating to the Roman period within the site.
- 1.12 Roman evidence for the study area, as recorded on the HER, was focused around the military complex at Llanfor (Figs 1 and 2a). The Roman military complex, protected as a Scheduled Monument (SAM ME092/PRN3211), lies c.600m to the east of the current site. The fort has been subject to recent archaeological investigation which supplemented the pre-existing information derived from cropmarks (Hopewell and Hodgson 2012). These investigations (through comparison to other large forts across Wales, northern England and Scotland) suggest the fort was probably in use by cavalry given its internal structure. There are indications that the site had been in use between the mid-1st to mid-2nd century, hosting two temporary camps as well as the fort. The Roman road between Caer Gai fort (Llanuwchllyn) and Deva (Chester) is noted to run in close proximity to Llanfor; based on current evidence the road alignment is considered to follow the north side of Bala lake through to Llanfor (Road RR66a; GAT 2005) indicating an alignment to the north of the present site. The Roman road is discussed further below.
- 1.13 Additionally, remains of an auxiliary fort are known at Caer Gai (PRN 1569). With respect to infrastructure, a series of Roman roads led away from the fort at Caer Gai, linking it to Chester, Caersws, Tomen y Mur and Brithdir (Burnham and Davies 2010); the connection to Caer Gai and Brithdir is considered likely to have passed through the modern extent of Bala (GAT 2006).
- 1.14 Typical illustrations of Roman Road RR66a (i.e. Map 66; GAT 2005) proposed an alignment which has been replicated by the modern A494. Evidence of this road is

noted c. 4km to the northeast, and the proposed alignment through modern Bala lies c.50m to the north of the gasworks site.

Medieval

- 1.15 The HER search indicated no evidence of activity dating to the medieval period within the site.
- 1.16 The site lies directly to the south-east of the Scheduled Monument of the motte at Tomen y Bala (SAM ME016/ PRN 3202). The Schedule description reports that the motte was first mentioned in 1202 “when the Brut y Tywysogion records its destruction by Llewellyn ap Iorweth” (RCAHM 1921); the motte at Bala may have been in use in the late 13th century when Llywelyn ap Gruffydd corresponded with Edward I from Bala (Edwards 1935). The construction of the castle, as part of a wider network of medieval and earlier fortifications, indicates its part in strategic control of the Dee and Wnion valleys. The monument today has been altered: the ditch is filled, the bailey is no longer visible and the slopes of the motte itself have been truncated. The site boundary lies directly against the slope of the motte, but no part of it is included within the Scheduled Monument boundary. The castle itself is described further below in its historic context
- 1.17 It is possible that the motte at Bala had origins in the 11th century, and was associated with Norman activity (as is the case at Degannwy and Caernarfon; Johnstone 1997); the layout of the motte was considered to be on the Norman model (RCAHM 1921). However, other mottes in the region seem to be divorced from Norman activity (such as those at Dolbenmaen and Nefyn) which would indicate that they are Welsh (Johnstone 1997), as well as the potential presence of the administrative centre of the Tryweryn commote in Bala. It is likely that Bala succeeded Llanfor as the commote centre, and the Scheduled Monument at Pen-Ucha'r-Llan (Fig. 2a) could be the remains of this (NPRN 303428). Documentary sources indicate that the motte was captured by Llywelyn ap Iorweth in 1202 and likely retained in use beyond this date (*ibid* 1997). Following the Edwardian conquest of 1283, the motte represented an attractive location for one of a series of castles around which early settlements could be developed in north Wales (GAT 2006). The town at Bala was established at some point prior to 1311 when the first documentary evidence of the borough is noted; the charter of Edward II being issued on the 18th February 1311 (Lewis 1849).

Post-medieval and Early Modern

- 1.18 A recent review of the development of post-medieval Bala has been undertaken as part of *Bala: Urban Characterisation* (BAC; GAT/Govannon Consultancy *Forthcoming*). Between the 14th and 17th centuries, Bala experienced a contraction (by the 16th century observers considered the town comparatively small and poor) followed by an expansion in the late 17th century. The BAC identified a number of strands of the socio-economic life of 18th century Bala, into which the gasworks development was both introduced and contributed to. These included the decline of traditional industry (i.e. cloth manufacture and cattle rearing) alongside both increasing ecclesiastical presence and recreational focus. All these strands, as well as the gasworks, were influenced by the establishment and expansion of the branch railway.
- 1.19 During the second half of the 18th century, Bala became an important centre in the development of the Methodist movement: two of its residents, Simon Lloyd (1756-1836) and Thomas Charles (1755-1814), played leading roles. Many of Bala's chapels have their origin in this period, including Capel Tegid and Bala Welsh Calvinistic Methodist Chapel (built 1757, NPRN 8320/Fig. 2b reference 18375), Bala Independent Chapel (built 1779, NPRN 8318/Fig. 2b reference 26003), and the English Presbyterian Chapel (built 1810, NPRN 11653/Fig. 2b reference 4910). By the end of the 19th century Bala had become an acknowledged centre of Calvinism, with a Presbyterian college completed in 1867, which became Coleg y Bala (a theological college) in 1891 (BAC *Forthcoming*).
- 1.20 The Registered Park and Garden at Rhiwlas (Cadw ref PGW(Gd)25(GWY)) lies c. 200m to the north of the site (Cadw and ICOMOS UK 1998; Fig. 2a). The area is noted to have been initially laid out by William Emes in the late 18th and 19th centuries.
- 1.21 A large number of Listed Buildings are noted within the wider urban area of Bala, including Bala Bridge (Fig. 2b ref 4653; to the east of the site) and a range of commercial buildings along the High Street (Fig. 2b). The majority are Grade II Listed and those within a 400m radius of the site are presented within a gazetteer (Appendix C). In summary, the residential properties amongst the Listed Buildings in the search area represent a range of 19th century properties, with the majority reflecting terraced properties. Those built towards the end of the 19th century (i.e. Bronallt (Fig. 2b reference 25988), Ariunfa (Fig. 2b reference 25987) and Glasfryn

(Fig. 2b reference 25986)) reflect the increased prosperity of Bala (the progression of which is discussed below). Commercial properties are also common, and again typically date to the 19th century (i.e. R.H. Roberts (Fig. 2b reference 25992), Cwpwrdd Cornel Cafe (Fig. 2b reference 26002)).

- 1.22 During the early 19th century, the cattle trade and cloth industry were the employment foci of Bala; the town became a recognised market for the sale of cloth goods by the mid 18th century. By 1830 the cloth trade was in severe decline, and by 1860 merchants engaged in the trade were noticeably withdrawing from the town. Concurrently, as noted on the Tithe map of c. 1838, a large number of hotels and taverns were located on the High Street suggesting that the town was becoming a centre for recreation rather than entirely focused on industry or production (BAC *Forthcoming*).
- 1.23 In 1864 a railway was built close to town to which a station was added in 1881-2. This facilitated the introduction of new building materials and styles, including the range of red-brick shops in Station Road. This, combined with the other factors outlined above, meant Bala's economy shifted away from traditional industries to service industries. It is the supposition of this presented research that there were demands for the technologies found in a modern Victorian town, including establishing gas lighting in December 1863, which was only practical following the construction of the gas works.

The Bala Gas Works

Background

- 1.24 The gas works were established at some stage around 1863 when the first correspondence relating to exchange of land between a Mr Lloyd to The Bala Gas Co. Ltd (Gwynedd Archives Document Reference Z/DP/4/74) is noted. The earliest illustration noted for the gas works was an architect's ink and water colour plan and elevation dated to c.1863 (Gwynedd Archives Archive Ref. Z/DP/4/72 [not available for reproduction]) which is likely to represent the first gas works building erected in that year. There is no statement on the illustration as to the function of individual rooms, nor evidence for other structures on site or how the works may have functioned. Early agreements appeared to be in place for the supply of gas to the Bala Local Government Board (Gwynedd Archives Document Reference Z/DP/4/77) by December of 1863.

1.25 References for the period following demonstrate that the local council and residential neighbours of the gas works were equally unhappy with the performance of the company through reference to the “smoke and stench” caused by the works (The Cambrian News 11 August 1871) and later, the overall poor gas supply which concerned the councillors because of worries that the supply level was the cause of amusement to visitors (The Cambrian News and Welsh Farmers Gazette 12 January 1906). The reports within the London Gazetteer, for example in 1920 (Anon 16 July 1920), indicating that the Bala Gas Company was to be wound up are an indication of continuing poor performance. The absence of visible increase in gas storage capacity in the site from the 1920s until the 1950s may well be attributable to these difficulties.

1.26 The gas works was operational until 1963 when the site was used as a gasholder station.

Ordnance Survey Cartographic sources

1.27 The earliest Ordnance Survey (OS) source reviewed was the 1888 (1:2,500) imprint of Merionethshire (Figure 14). This imprint shows that by this time the gas works was established with a number of structures and a single gasholder in operation (see Fig. 3). This is consistent with records (see above) of the establishment of the works prior to this.

1.28 The subsequent imprint (1891 at 1:10,560) shows limited definitive changes in the site, but by the 1901 (1:2,500) imprint it is clear that a new gas holder is present (see Fig. 3 and Fig. 16). The associated structures depicted on this imprint do not appear to have changed appreciably.

1.29 The 1953-4 imprint (1:10,560) indicates the construction of additional structures in the north of the site but no changes to the gas holders themselves (see Fig. 3 and Fig 17). The 1978 imprint (1:2,500) shows no definitive changes, but by the 1981 imprint (1:10,000) the site has been cleared (Fig. 18).

Previous archaeological work

1.30 An archaeological watching brief was carried out in 2011 during geotechnical works within the current site. The watching brief identified a number of modern brick walls and an undated silt layer containing charcoal. The brick walls were thought to relate to the former gas works, including tar pits (CA 2011b).

- 1.31 No record of investigation within Tomen Y Bala Scheduled Monument was identified by the HER search. However, archaeological work was completed by Gwynedd Archaeological Trust (GAT) within the Scheduled Monument during the early 1990s (as noted within an archive Snowdonia National Park Authority planning file dated 4 January 1991). These works identified a substantial ditch, presumed to be a ditch at the base of the motte (John G. Roberts, *pers comm*).

Methodology

- 1.32 The fieldwork followed the methodology set out within the WSI (CA 2011a). An archaeologist was present during intrusive groundworks comprising the excavation of a series of test pits. These were referred to as REM 1-3 and 7 and this nomenclature will be maintained within this report. Originally the southern circular gas tank was to be removed; however this has remained *in situ* (Fig. 2). The heavily contaminated nature of the site precluded close inspection of the structures and deposits encountered; all recording was undertaken from outside the excavations. The precise source of the contamination is explored further in the WSP validation report (WSP 2012). In summary, the primary objective of the remediation strategy was the removal of primary sources of contamination, tars and free phase hydrocarbons, associated with historic structures including the retort house and below ground tar tanks.
- 1.33 Where archaeological deposits were encountered written, graphic and photographic records (Appendix D) were compiled in accordance with CA Technical Manual 1: *Fieldwork Recording Manual* (2007). Low-level aerial photographs were taken of the site in a number of locations determined by health and safety constraints. A digital camera was fixed to a 5m staff; this was raised and held steadily over the desired area. Three successive shots were taken to acquire the best possible image. Figures 5, 7, 8 and 12 were taken in this fashion. The photographic images cannot be accurately rectified because of the constraints of the site activity, however the plan presented on Fig. 4 is included within the archive as a shape file for these purposes.
- 1.34 The archive from the watching brief is currently held by CA at their offices in Kemble. It will be deposited with Gwynedd Museum, Bangor (artefacts and ecofacts) and RCAHMW, Aberystwyth (written, drawn and photographic record). Copies of the

report, photographs and digital archive will be provided on optical media disc to the HER, SNPA and RCAHMW.

2. RESULTS (FIGS 3-14)

2.1 The natural geological substrate, [210] and [308], consisting of sand and gravel, was revealed within the internal excavation around sump 106 of REM 1, the south-western end of REM 2, the southern end of REM 3 and within test pits 208, 217 and 218 at an average depth of 1.64m below present ground level (bpgl); areas where the natural substrate were exposed are shown on Fig. 4. This was overlain by an alluvial clay ([102], [209], [301], [20501], [20803], [21701], [21801] and [22102]), which was first observed 0.74m below present ground level (bpgl). This alluvial clay was cut by the construction cuts ([106], [211]-[215], [304], [305], [315], [316], [319] and [323]-[325]) for the various brick and stone structures of the former gas works. The clay was sealed by an average of 0.55m of demolition deposits ([101], [200], [300], [20500], [20800], [21900], [22000] and [22100]) which formed the current ground surface. The foundations of the circular gas holders, [401], were still partially visible above these deposits (Figs 3, 4 & 14). Appendix B illustrates the typical depth of survival of the gas works remains. On average 0.27m below present ground level or 164.5m AOD.

REM 1 (Figs 3-6)

2.2 REM 1 contained an ashy bedding layer [105] for brick surface [104], constructed from reused bricks, which covered demolition deposit [101] and in turn was sealed by 0.1m of a further demolition deposit [100] similar to [101]. Tar and hydrocarbon contamination was noted in this area (WSP 2012).

REM 2 (Figs 3, 4 and 7-9)

2.3 REM 2 comprised three tar tanks that had been backfilled with a mixture of tar and demolition deposit [202], [204] and [206], and two concrete pillars [207] and [208]. Tar tank [201] was constructed from brick and stone with three internal brick divides and lined with a concrete skim. Within the three internal divides, four small holes were located at the base of each divide to allow the tar to flow. Tar tank [203] was also constructed out of brick with an internal skim of concrete. It had one internal divide in the centre and a partial concrete roof with a brick inspection chamber. Tar tank [205] was a large rectangular tank with a concrete base and brick walls with an

internal concrete skim. Tar and hydrocarbon contamination was noted in this area (WSP 2012).

REM 3 (Figs 3, 4 and 10-13)

- 2.4 REM 3 contained a number of stone foundations, [313], [314], [321] and [20801], and stone walls [303] and [306], along with a series of concrete slabs, [311], [312] and [317], and brick structures, [302], [318], [320], [322] and [20801]. A further demolition deposit [307] was identified butting concrete slab [312] and covering stone foundation [314]. This was far stonier than the other demolition deposits and was most likely demolition from the wall that would have at one time been erected on top of foundations [314]. Tar contamination was noted in this area (WSP 2013).

Test Pits (Fig 3 and 4)

- 2.5 Within test pits 217-220 inclusive a brown clayey silt make-up deposit was identified overlaying the alluvium which could not be chronologically defined given the lack of stratigraphic relationships with datable deposits. These test pits were located in areas where there was potentially no evidence of structural remains for the former gas works. It could not be determined if this make-up deposit was formed prior to the gas works being constructed.

3. DISCUSSION

- 3.1 Archaeological observations were maintained during the course of the remediation works in accordance with the WSI (CA 2011a). While the historic and archaeological background (as above) demonstrated that the wider study area did have a depth of historic and archaeological interest, observations reported herein were restricted to areas of remediation work within which no evidence of pre 19th-century archaeological remains was identified. Because in some cases the remediation works did not necessitate the removal of structural features (including gas holder bases which constitute the focus of archaeological remains identified), there was no opportunity to examine whether earlier remains survived beneath or were truncated by such structures. Only limited areas of natural substrate were identified both during the observations herein (Fig. 4) and earlier observations (CA 2011b). The results of this watching brief (whilst apparently negative in respect of pre 19th-century remains) therefore cannot conclusively rule out the potential survival of earlier remains - for example the course of the Roman road between Caer Gai fort

(Llanuwchllyn) and Deva (Chester) or remains associated with the Medieval motte – at the former gasworks site, although no such remains survived within the areas of natural substrate exposed and mapped on Fig. 4.

- 3.2 The Bala gasworks represented a relatively typical plant of its era, though the responses to the product sold in its earliest phase suggests that the process may have been poorly governed, or perhaps the plant itself was initially of poor quality. For the purposes of this report, the process as outlined by Meade in 1921 is considered to be a reasonable model for the gasworks. Furthermore, the process for making gas remained essentially unchanged until the late 20th century. The coal was placed in a sealed tube called a retort, and then heated in a furnace. The gasses released (predominantly hydrogen and carbon monoxide) were directed through a water trap (termed a hydraulic main) after which they were cooled in a condenser; at this stage by-products (for example liquids and tar) were removed. The gas then passed through a purifier to remove impurities before being used or stored in a gas holder. Structures relating to the heating, purification and storage processes were identified during the watching brief.
- 3.3 The features exposed during the watching brief correspond with the buildings and structures associated with the former gasworks on Mount Street in Bala depicted on the historic mapping. The walls and other structures identified within REM 3 are depicted on the 1888 Ordnance Survey map (Fig. 15) which relate to the main part of the gasworks which comprised the retort house, purifier and condenser buildings (Figs 3 and 4). The stone walls and foundations seem to relate to the main external structural walls of the buildings, with the brick and concrete structures relating to the internal structures of the gasworks. Tanks 1 and 2 within structure [302] (Fig. 4) correspond to the retort house and would relate to the furnaces used in the heating of coal to create gas. This gas would have later been purified and condensed and the structures to the south of tanks 1 and 2 corresponded to the buildings that housed the purifiers and condensers. Tar tank [318] would have held the tar by-product of this process with the gas filtering into the circular gas holder to the west of REM 3 (WSP 2010).
- 3.4 As the gasworks expanded, extra buildings were constructed which included an additional circular gas holder, structure [401] (Fig. 4), first appearing on the 1901 OS map (Fig. 16). Additional underground tar storage tanks ([201], [203] and [205]; Fig. 4) and sump [106] date to 1953. Sump [106] identified within REM 1 was potentially

part of the condensing process as pipes carrying gas would have passed over sumps of water in order to remove the tar by-product which would have been stored within the underground tar storage tanks such as [201], [203] and [205].

3.5 By the compilation of the 1978 Ordnance Survey map (1:2500) the main structures of the gasworks had been demolished with only the circular gas holders and ancillary building remaining. By the 1981 Ordnance Survey map (1:10,000) these had also been removed. The brick surface [104] within REM 1, constructed out of reused bricks, was most likely constructed as an area of hardstanding during the demolition process.

3.6 The structures revealed during the watching brief were retained *in situ* following the completion of the remediation works.

4. CA PROJECT TEAM

4.1 Fieldwork was undertaken by Sian Reynish. The report was written by Sian Reynish. The illustrations were prepared by Lorna Gray and Aleksandra Osinska. The archive has been compiled by Sian Reynish, and prepared for deposition by Hazel O'Neill. The project was managed for CA by Richard Young and Ian Barnes.



5. REFERENCES

Anon 1871 'Correspondence: Bala', *The Cambrian News*, 11 August, 4

Anon 1906 'Correspondence: Bala', *The Cambrian News and Welsh Farmers Gazette*, 12 January, 7

Anon 1920 'Notes', *The London Gazette*, 16 July, 7610

BGS (British Geological Survey) 2010 *Geology of Britain Viewer* 1:50,000
http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html accessed 25 October 2010

Bowen, EG, and Gresham, CA (eds) 1967 *History of Merioneth, Volume I: From the Earliest Times to the Age of the Native Princes*

Burnham, BC and Davies, JL (eds) 2010 *Roman Frontiers in Wales and the Marches*

CA (Cotswold Archaeology) 2011a *Former Gas Works, Mount Street, Bala, Gwynedd: Written Scheme of Investigation for an Archaeological Watching Brief*

CA (Cotswold Archaeology) 2011b *Former Gas Works, Mount Street, Bala, Gwynedd: Archaeological Watching Brief Report Reference 3249*

Cadw, CCW and ICOMOS 1998 *Register of Landscapes of Special Historic Interest in Wales : HLW (GW) 16 Bala*

Crew, P and Crew, S *Geophysical survey at Llanfor, Merioneth, 1997*, *Archaeology in Wales* 37 (1997), 13–20

Edwards, J.G. 1935 *Calendar of Ancient Correspondence Concerning Wales*

GAT and Govannon Consultancy, unpublished *Bala: Urban Characterisation*

GAT 2005 *Roman Roads in North-West Wales* GAT Report 572

GAT 2006 *Historic Landscape Characterisation – Bala, Llyn Tegid*
(<http://www.heneb.co.uk/balaandlakeside/balachactermap.html>) website accessed
16/07/2013

GAT/Govannon Consultancy Forthcoming *Bala – Urban Characterisation*

Hopewell, D and Hodgson, N. *Further Work at Llanfor Roman Military Complex*. *Britannia* 43
(2012): 29-44.

Johnson, N. 1997 An Investigation into the Locations of the Royal Courts of Thirteenth-
Century Gwynedd. In: Edwards, N. *Landscape and Settlement in Medieval Wales*.

Lewis, S 1849 *A Topographical Dictionary of Wales*

Meade, A 1921 *Modern Gasworks Practice* Benn Brothers Ltd, London

Royal Commission on Ancient and Historic Monuments (RCAHM) 1921 *Inventory of Ancient
Monuments of Merioneth*

Oxford Archaeology 2009 *Uplands Initiative Field Projects 2008-9: Llyn Celyn Survey Area*

WSP Environmental UK 2010a *Health, Safety and Environment Plan, Former Gas Works,
Mount Street Bala*

WSP Environmental UK 2010b *Factual Site Investigation Report Mount Street Bala*

WSP Environmental UK 2012 *Remediation Verification Report: Mount Street Bala*



Gwynedd Archives, Meirionnydd Record Office, Dolgellau

Z/DP/4/72. Plan of new Bala Gas Works 1863

Z/DP/4/74. BILL of Morris and Williams to The Bala Gas Co. Ltd. re their part in purchase of land from Mr. Lloyd. 1863

Z/DP/4/77. 1. Bala Local Government Board.
2. Bala Gas Company Ltd.
MEMORANDUM OF AGREEMENT for payment of ten shillings per one thousand cubic feet of Gas. 1863 Dec. 1



APPENDIX A: CONTEXT DESCRIPTIONS

REM 1

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-----|---------|-----------------------------|------------|-----------|-----------|-----------|
| 100 | Layer | Demolition deposit | | | 0.1 | |
| 101 | Layer | Demolition deposit | | | 0.9 | |
| 102 | Layer | Alluvium | | | 0.81 | |
| 103 | Layer | Natural substrate: gravel | | | | |
| 104 | Masonry | Brick surface | 3.86 | 1.82 | 0.08 | |
| 105 | Layer | Ash bedding for surface 104 | 3.86 | 1.82 | 0.11 | |
| 106 | Cut | Rectangular cut of sump | 2.07 | 1.77 | 0.86 | |
| 107 | Fill | Backfill of sump 106 | 2.07 | 1.77 | 0.86 | |

REM 2

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-----|---------|-----------------------------------|------------|-----------|-----------|-----------|
| 200 | Layer | Demolition deposit | | | 1.2 | |
| 201 | Masonry | Brick and stone tar tank | 2.85 | 2.07 | 1.74 | |
| 202 | Fill | Backfill of tar tank 201 | 2.26 | 1.42 | 1.65 | |
| 203 | Masonry | Brick tar tank | 3.78 | 1.66 | 1.74 | |
| 204 | Fill | Backfill of tar tank 203 | 3.36 | 1.23 | 1.65 | |
| 205 | Masonry | Brick tar tank | 4.66 | 3.05 | 1.45 | |
| 206 | Fill | Backfill of tar tank 205 | 4.16 | 2.55 | 1.34 | |
| 207 | Masonry | Concrete pillar | 1.06 | 0.7 | 0.7 | |
| 208 | Masonry | Concrete pillar | 0.6 | 0.6 | 0.71 | |
| 209 | Layer | Alluvium | | | 0.75 | |
| 210 | Layer | Natural substrate: gravel | | | | |
| 211 | Cut | Construction cut for tar tank 201 | 2.85 | 2.07 | 1.74 | |
| 212 | Cut | Construction cut for tar tank 203 | 3.78 | 1.66 | 1.74 | |
| 213 | Cut | Construction cut for tar tank 205 | 4.66 | 3.05 | 1.45 | |
| 214 | Cut | Construction cut for pillar 207 | 1.06 | 0.7 | 0.7 | |
| 215 | Cut | Construction cut for pillar 208 | 0.6 | 0.6 | 0.71 | |

REM 3

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-----|---------|--|------------|-----------|-----------|-----------|
| 300 | Layer | Demolition deposit | | | 0.5 | |
| 301 | Layer | Alluvium | | | 0.83 | |
| 302 | Masonry | Brick surface and brick tanks 1 and 2 | >5.59 | >5.67 | 1 | |
| 303 | Masonry | Northwest-southeast stone wall | >5.20 | 0.46 | 0.89 | |
| 304 | Cut | Construction cut for northwest-southeast stone wall 303 | >5.20 | 0.46 | 0.89 | |
| 305 | Cut | Robber cut for southeastern half of stone wall 303 | >5.13 | 0.82 | 0.95 | |
| 306 | Masonry | Short length of northeast-southwest brick and stone wall | >0.63 | | 0.37 | |
| 307 | Layer | Loose stone deposit | 1.64 | 1.82 | 0.63 | |
| 308 | Layer | Natural substrate: gravel | | | | |
| 309 | Masonry | Concrete base for tank 1 | 1.75 | 1.75 | | |

| | | | | | | |
|-----|---------|---|-------|------|------|--|
| 310 | Masonry | Concrete base for tank 2 | 1.75 | 1.5 | | |
| 311 | Masonry | Concrete slab | 1.45 | 1.22 | 0.53 | |
| 312 | Masonry | Concrete slab | 1.94 | 1.78 | 0.63 | |
| 313 | Masonry | Southern northeast-southwest stone foundation | >4.96 | 0.94 | 0.9 | |
| 314 | Masonry | Northern northeast-southwest stone foundation | >5.67 | 0.62 | 0.85 | |
| 315 | Cut | Construction cut for northeast-southwest stone foundation 313 | >4.96 | 0.94 | 0.9 | |
| 316 | Cut | Construction cut for northeast-southwest stone foundation 314 | >5.67 | 0.62 | 0.85 | |
| 317 | Masonry | Concrete slab | 1.11 | 1.04 | 0.27 | |
| 318 | Masonry | Circular brick tar tank | | 2 | 1.7 | |
| 319 | Cut | Construction cut for circular brick tar tank 318 | | 2 | 1.7 | |
| 320 | Masonry | Tar pipe manhole | 1.60 | 1.57 | 0.9 | |
| 321 | Masonry | Stone foundation same as 20802 | >1.88 | 0.48 | 0.86 | |
| 322 | Masonry | Brick wall same as 20801 | >0.85 | 0.33 | 1.1 | |
| 323 | Cut | Construction cut for tar pipe manhole 320 | 1.60 | 1.57 | 0.9 | |
| 324 | Cut | Construction cut for stone foundation 321 | >1.88 | 0.48 | 0.86 | |
| 325 | Cut | Construction cut for brick wall 322 | >0.85 | 0.33 | 1.1 | |

Area 4

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-----|---------|---------------------------------------|------------|-----------|-----------|-----------|
| 400 | Fill | Shale backfill of circular gas holder | | 11.4 | >0.6 | |
| 401 | Masonry | Circular brick gas holder | | 11.4 | >0.6 | |

TP205

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|--|------------|-----------|-----------|-----------|
| 20500 | Layer | Demolition deposit | | | 0.54 | |
| 20501 | Layer | Alluvium: mid greyish brown silty clay | | | | |

TP208

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|---------|--------------------------------|------------|-----------|-----------|-----------|
| 20800 | Layer | Demolition deposit | | | 0.4 | |
| 20801 | Masonry | Northwest-southeast brick wall | >3.12 | >0.18 | 0.77 | |
| 20802 | Masonry | Northwest-southeast stone wall | >3.12 | >0.45 | >0.8 | |
| 20803 | Layer | Alluvium | | | 0.83 | |
| 20804 | Layer | Natural substrate: gravel | | | | |

TP217

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|---------------------------|------------|-----------|-----------|-----------|
| 21700 | Layer | Make-up deposit | | | 0.58 | |
| 21701 | Layer | Alluvium | | | 1.19 | |
| 21702 | Layer | Natural substrate: gravel | | | 0.13 | |
| 21703 | Layer | Natural substrate: sand | | | | |

TP218

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|-------------------------|------------|-----------|-----------|-----------|
| 21800 | Layer | Make-up deposit | | | 0.73 | |
| 21801 | Layer | Alluvium | | | 0.92 | |
| 21802 | Layer | Natural substrate: sand | | | 0.13 | |

TP219

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|--------------------|------------|-----------|-----------|-----------|
| 21900 | Layer | Demolition deposit | | | 0.12 | |
| 21901 | Layer | Make-up deposit | | | | |

TP220

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|--------------------|------------|-----------|-----------|-----------|
| 22000 | Layer | Demolition deposit | | | 0.46 | |
| 22001 | Layer | Make-up deposit | | | | |

TP221

| No. | Type | Description | Length (m) | Width (m) | Depth (m) | Spot-date |
|-------|-------|-----------------------------------|------------|-----------|-----------|-----------|
| 22100 | Layer | Modern gravel (backfill of REM 3) | | | 0.3 | |
| 22101 | Layer | Demolition deposit | | | 0.73 | |
| 22102 | Layer | Alluvium | | | | |

APPENDIX B: LEVELS OF PRINCIPAL DEPOSITS AND STRUCTURES

Levels are expressed as metres below current ground level and as metres Above Ordnance Datum (AOD), calculated using a GPS Rover Station.

| | REM 1 | REM 2 | REM 3 |
|-----------------------------|--------------------|--------------------|--------------------|
| Current ground level | 0.00m (164.53m) | 0.00m (164.87m) | 0.00m (164.91m) |
| Top of Gas works structures | 0.26m (164.27m) | 0.28m (164.59m) | 0.28m (164.63m) |
| Top of alluvium | 1.19m (163.34m) | 1.2m (163.67m) | 0.5m (164.41m) |
| Limit of excavation | 2.00m (162.53m) | 2.50m (162.37m) | 3.17m (161.74m) |

Upper figures are depth below modern ground level; lower figures in parentheses are metres AOD.

APPENDIX C: LISTED BUILDING GAZETTER

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|--|-------|--|
| 18375 | SH 92714 35911 | Capel Tegid, Including Forecourt Railings, Gates & Gatepiers. | II | NPRN 8320: The first Capel Tegid, also known as Capel Coffa Thomas Charles, was built in 1757. This was rebuilt or modified in 1809 and again in 1867. The present chapel, dated 1867, is built in the Gothic style with a gable-entry plan, tower and spire, to the design of architect W.H. Spaul of Oswestry. The spire was removed in 2000. Capel Tegid is now Grade 2 Listed as an ambitious Gothic chapel. |
| 18376 | SH 92696 35891 | Statue of Rev Thomas Charles (including its railings), in front of Capel Tegid | II | NPRN 413311: Life-sized statue of Thomas Charles in clerical dress, erected in 1875. |
| 24597 | SH 92953 36297 | Gateway and Screen Walls to Rhiwlas | II | Gothic gateway designed by Thomas Rickman for R W Price and erected in 1813. The gateway headed the former main drive to Rhiwlas Hall, which itself was remodelled in Gothic style c1809. |
| 25964 | SH 92696 36210 | Christ Church | II | NPRN: 43832. Christ Church is situated within a rectilinear churchyard some 200m south-west of the River Tryweryn. The first church built on the site was a chapel of ease, erected in 1811. The present church is a Grade II listed building and was built in the 1850s to the design of architect Benjamin Ferrey. In March 2007 the church underwent extensive renovation, as part of a plan to merge four parish churches and sell some of the buildings to raise funds. Its roof was completely renovated, with slates and lead being re-laid and rotten wood replaced. The font was restored, and a new meeting room was added to the west end of the nave, with a spiral staircase leading to a gallery above. The floor was replaced with limestone tiles and underfloor heating. A screed and damp proof membrane were placed underneath. |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|--|-------|---|
| 25965 | SH 92736 36082 | Nos 24 &26 High Street. | II | Early C19 town house, one of a pair. An external modern slate plaque records the stationing of American soldiers in Bala during World War II. |
| 25966 and 25967 | SH 92705 35982 | Nos.48,50 & 52 Mount Street | II | Listed as a terrace of three second- quarter C19 cottages retaining good external vernacular Gothic character. |
| 25968 | SH 92693 36167 | Rosedale, Including Forecourt Walls & Railings | II* | NPRN: 416736. Part of an exceptionally well-composed and finely-detailed Edwardian terrace of considerable refinement, retaining unaltered original character. |
| 25969 | SH 92688 36162 | Derlwyn | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25970 | SH 92685 36157 | Islwyn | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25971 | SH 92680 36154 | Ronville | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25972 | SH 92675 36149 | Dolydd | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25973 | SH 92671 36144 | Fedw Arian | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25974 | SH 92667 36140 | Isfryn, 15-25 High St | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |
| 25975 | SH 92661 36136 | Awelfryn, 14 High St | II* | Listed Grade II* for its special interest as part of an exceptionally well- composed and finely-detailed Edwardian terrace retaining unaltered original character |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|---|-------|--|
| 25976 | SH 92770 36154 | Glanrhyd, SE end of B4391 | II | Listed as part of an imposing late Victorian terrace retaining well preserved original character; a good example of a type of speculative development made possible by the arrival of the railway. |
| 25977 | SH 92766 36160 | 6 Ffrydan Road | II | |
| 25978 | SH 92763 36163 | 8 Ffrydan Road | II | |
| 25979 | SH 92760 36167 | 10 Ffrydan Road | II | |
| 25980 | SH 92756 36172 | 12 Ffrydan Road | II | |
| 25981 | SH 92753 36177 | 14 Ffrydan Road | II | |
| 25982 | SH 92749 36181 | 16 Ffrydan Road | II | |
| 25983 | SH 92746 36185 | 18 Ffrydan Road | II | |
| 25984 | SH 92742 36190 | 20 Ffrydan Road | II | |
| 25985 | SH 92815 36189 | Trem-y-fron, Including Forecourt Walls & Railings | II | Listed as a well-preserved later C19 terrace of distinctive character. It illustrates the importance of the railway in the growth of the town, both in terms of renewed prosperity and of the introduction of new building materials and styles. |
| 25986 | SH 92808 36185 | Glasfryn | II | Listed as a well-preserved later C19 terrace of distinctive character. It illustrates the importance of the railway in the growth of the town, both in terms of renewed prosperity and of the introduction of new building materials and styles. |
| 25987 | SH 92805 36184 | Ariunfa | II | Listed as a well-preserved later C19 terrace of distinctive character. It illustrates the importance of the railway in the growth of the town, both in terms of renewed prosperity and of the introduction of new building materials and styles. |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|--|-------|--|
| 25988 | SH 92803 36174 | Bronallt | II | Listed as a well-preserved later C19 terrace of distinctive character. It illustrates the importance of the railway in the growth of the town, both in terms of renewed prosperity and of the introduction of new building materials and styles. |
| 25991 | SH 92746 36137 | Ty GM, 5 Mount St | II | Listed as an early C19 domestic building retaining good late Georgian character in the town centre |
| 25992 | SH 92739 36129 | R.H. Roberts, 5 Mount St | II | Listed as an early C19 house and shop retaining good early and late C19 character in the town centre. |
| 25993 | SH 92684 36084 | Plas-yn-Dre, Including Railings to Forecourt | II | Plas-yn-Dre was the home of Simon Lloyd (1756-1836), Methodist Cleric. Subsequently in use by the Congregationalist Bala and (between 1870-1886) the College. |
| 25994 | SH 92659 36067 | Heulfryn, Including Forecourt Walls and Railings, 5 Mount St | II | Listed as a second-quarter C19 house retaining good C19 character in the town centre |
| 25995 | SH 92679 36058 | Statue Of T.E. Ellis | II | Statue |
| 25996 | SH 92651 36062 | Siop DE | II | Listed as part of an early C19 house and shop building retaining good mainly early C19 urban vernacular, with late C19 shop fronts; one of a pair with no.33 adjoining |
| 25997 | SH 92651 36053 | Yr Eryr | II | Listed as part of an early C19 house and shop building retaining good mainly early C19 urban vernacular, with late C19 shop fronts; one of a pair with no.31 adjoining |
| 25998 | SH 92643 36043 | Tenovus | II | Listed as a large late Georgian pair of former townhouses retaining good early C19 character to the upper floors |
| 25999 | SH 92628 36045 | Spar | II | Listed as a large late Georgian pair of former townhouses retaining good early C19 character to the upper floors |
| 26000 | SH 92684 36021 | Ken Davies Newsagent, 46 Yr Hafan, | II | Listed as an early C19 house and shop retaining good later C19 character. |
| 26001 | SH 92664 36005 | Caffi'r Cyfnod46 Yr Hafan | II | Listed as an early C19 house and shop retaining good early C19 character to the upper floors and later C19 character to the shop front. |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|---|-------|---|
| 26002 | SH 92590 35951 | Cwpwrdd Cornel Cafe | II | Listed as an early C19 house and shop retaining good early C19 character to the upper floor |
| 26003 | SH 92738 35994 | Congregational Chapel, Including Forecourt Walls, Piers and Railings | II | Listed as a mid Victorian town chapel retaining good unaltered external character and original interior and with associations with the C19 non-conformist ministers Michael D Jones and John Peters |
| 26004 | SH 92827 36131 | Neuadd-y-Cyfnod (Old Grammar School), Including Forecourt Walls, Piers & Railings | II | Listed as a well-composed Victorian former school in accomplished Tudor Gothic style, in a prominent location at the NE end of the town. |
| 26005 | SH 92595 35955 | Siop Bapur Newydd, High Street | II | Listed as an early C19 house and shop on a prominent corner site retaining good original character, particularly its marginally-glazed sashes and ashlar heads. |
| 26006 | SH 92601 35955 | China Treasure Takeaway | II | Listed as a first third C19 house and shop retaining good later C19 character to the shop front. |
| 26007 | SH 92600 35950 | E.J. Theodore, Ironmonger | II | Listed as an early C19 house and shop retaining good original character and detail to the upper floors and exceptionally fine and complete C19 shop front |
| 26008 | SH 92609 35943 | Y Siop Fach | II | Listed as an early C19 house and shop retaining exceptionally good original character; a rare survival of its type |
| 26009 | SH 92615 35937 | H Rowlands | II | Listed as an early C19 house and shop retaining good C19 character, in particular the well-preserved shop fronts; rare surviving examples of their type |
| 26010 | SH 92660 35881 | Plas Deon | II | Listed as a second-quarter C19 detached village house retaining good character within its original setting. |
| 26011 | SH 92661 35871 | 37 Tegid Street, Including Forecourt Walls & Railings | II | Listed as part of a fine early C19 terrace of 4 houses retaining good original character |
| 26012 | SH 92663 35866 | 39 Tegid Street | II | Listed as part of a fine early C19 terrace of 4 houses retaining good original character |
| 26013 | SH 92665 35861 | 41 Tegid Street | II | Listed as part of a fine early C19 terrace of 4 houses retaining good original character |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|---|-------|--|
| 26014 | SH 92668 35855 | 43 Tegid Street | II | Listed as part of a fine early C19 terrace of 4 houses retaining good original character |
| 26015 | SH 92682 35898 | 34 Llain Deg | II | One of a terrace enclosing the square in front of Tegid Chapel on the NW side. |
| 26016 | SH 92685 35902 | 36 Llain Deg | II | One of a terrace enclosing the square in front of Tegid Chapel on the NW side. |
| 26017 | SH 92687 35906 | 38 Llain Deg | II | One of a terrace enclosing the square in front of Tegid Chapel on the NW side. |
| 26018 | SH 92690 35910 | 40 Llain Deg | II | One of a terrace enclosing the square in front of Tegid Chapel on the NW side. |
| 26019 | SH 92688 35871 | Y Gelli | II | Listed as a late Georgian town house retaining good original external character |
| 26020 | SH 92585 35927 | High Street | II | |
| 26022 | SH 92653 35817 | Plas Teg | II | Listed as part of a former Georgian townhouse of distinctive design retaining good C19 external character |
| 26023 | SH 92662 35812 | Plas-yn-Acre | II | Listed as part of a former Georgian townhouse of distinctive design. |
| 4653 | SH 92958 36283 | Pont y Bala (partly in Bala community) | II | Bala Bridge is mentioned in the 15th century. The present bridge, of four segmental arches with triangular cutwaters, is thought to be that depicted in a sketch of 1684. It was doubled in width on the south side in the later twentieth century. It has plain parapets. The bridge stands at the end of Bala High Street, under the shadow of the Castle Mount |
| 4908 | SH 92908 36242 | Pont-y-Bala | II | As above |
| 4909 | SH 92741 36086 | Town Council Offices, Including Associated Street Railings | II | Listed as one of a pair of particularly well-composed early C19 town houses retaining good original late Georgian external character |
| 4910 | SH 92740 36054 | Presbyterian Chapel, Including Forecourt Walls and Railings | II | Listed as a distinctive late Georgian chapel retaining good original external character; the oldest surviving place of worship in the town |
| 4911 | SH 92579 35938 | Barclays Bank | II | Later 18th century stone, 3 storey, plaques in English and Welsh - home of Thomas Charles of Bala |

| Cadw ID/ Fig 2b ref | Grid Reference | Name | Grade | Description (from RCAHMW listing description) |
|------------------------|-------------------|---|-------|--|
| 4912 | SH 92557 35903 | Ye Olde Bulls Head PH, Including Outbuildings Adjoining to the Rear | II | Circa 1800 and earlier, rubblestone to rear. 2 storey, attics, dormers tablet, slates. Square headed passageway to left, front modern roughcast |
| 4913 | SH 92521 35857 | Aykroyd & Sons, Clothing Factory (Former Workhouse) | II* | Listed Grade II* for its special interest as an unusual former workhouse complex retaining very good original character |
| 4914 | SH 92576 35989 | White Lion Royal Hotel, Including Former Stable Range and Associated Wall Adjoining to the Rear | II | Listed as a famous coaching inn with c.1700 origins retaining C18 and late C19 external character in the centre of the town |
| 4916 | SH 92613 35974 | Town Hall | II | 18th century, 2 storey, stone |

APPENDIX D: PHOTOGRAPHIC REGISTER

PHOTOGRAPHIC REGISTER

Site Code: TBG 12

Project No: 3640

Film Type: Digital

Film No:1

| Frame No: | Archive Frame No: | Description: | Direction of View: | Scales: | Name: | Date: |
|-----------|-------------------|-------------------------------------|--------------------|--------------|-------|------------|
| 1 | P1090782 | Section of Wall 303 | SW | N/A | SR | 20/12/201 |
| 2 | P1090783 | Wall 303 | NE | N/A | SR | 09/01/201 |
| 3 | P1090786 | Wall 303 | E | N/A | SR | 09/01/201 |
| 4 | P1100790 | Wall 303 | NE | 1x2m, 1x0.5m | SR | 10/01/2012 |
| 5 | P1100795 | Spur off Wall 303 | NW | 1m | SR | 10/01/2012 |
| 6 | P1100798 | Wall 303 | SE | 2x1m | SR | 10/01/2012 |
| 7 | P1100804 | Brick surface 302 and tanks 1 and 2 | NE | 2x1m | SR | 10/01/2012 |
| 8 | P1100806 | Brick surface 302 | NE | 2x1m | SR | 10/01/2012 |
| 9 | P1100809 | Tank 2 and 302 | NE | 2x1m | SR | 10/01/2012 |
| 10 | P1100812 | Tank 2 and 302 | N | 2x1m | SR | 10/01/2012 |
| 11 | P1100846 | Tank 2 and 302 | N | 1m | SR | 10/01/2012 |
| 12 | P1100850 | Concrete slab 311 | NE | 2x1m | SR | 10/01/2012 |
| 13 | P1100857 | Brick surface 302 | NE | - | SR | 10/01/2012 |
| 14 | P1100858 | Removal of Wall 303 | E | - | SR | 10/01/2012 |
| 15 | P1100896 | Concrete slab 312 and Tank 318 | W | 2x1m | SR | 10/01/2012 |
| 16 | P1100908 | Tank 318 | W | - | SR | 10/01/2012 |
| 17 | P1100914 | Tank 318 | E | 1m | SR | 10/01/2012 |
| 18 | P1100915 | Brick surface 104 | W | 2x1m | SR | 10/01/2012 |
| 19 | P1100916 | Brick surface 104 | S | 1m | SR | 10/01/2012 |
| 20 | P1100917 | Brick surface 104 | SW | 1m | SR | 10/01/2012 |
| 21 | P1100918 | Close up of Brick surface 104 | N | 2x1m | SR | 10/01/2012 |
| 22 | P1100919 | Tank 318 partially removed | N | 2x1m | SR | 10/01/2012 |
| 23 | P1100920 | Gas tank holder 401 | N | 2x1m | SR | 10/01/2012 |
| 24 | P1100921 | Gas tank holder 401 | N | 2x1m | SR | 10/01/2012 |
| 25 | P1100922 | Gas tank holder 401 | E | 2x1m | SR | 10/01/2012 |
| 26 | P1100923 | Gas tank holder 401 | E | 2x1m | SR | 10/01/2012 |
| 27 | P1100924 | Brickwork of Gas tank holder 401 | S | 0.5m | SR | 10/01/2012 |
| 28 | P1100925 | Brick tar tank 203 | NW | 0.5m | SR | 10/01/2012 |
| 29 | P1100926 | Brick tar tank 205 | NE | - | SR | 10/01/2012 |
| 30 | P1100927 | Brick tar tank 205 | NE | 0.5m | SR | 10/01/2012 |
| 31 | P1100928 | Brick tar tank 205 | N | 0.5m | SR | 10/01/2012 |
| 32 | P1100929 | Brick tar tank 205 | E | 0.5m | SR | 10/01/2012 |
| 33 | P1100930 | Brick tar tank 203 | S | 0.5m | SR | 10/01/2012 |
| 34 | P1100931 | Outside of brick tar tank 203 | E | - | SR | 10/01/2012 |
| 35 | P1100932 | Aerial view of tar tank 318 | - | 2x0.5m | SR | 10/01/2012 |



Sheet of

Acc No:

APPENDIX E: WRITTEN SCHEME OF INVESTIGATION

**Former Gas Works
Mount Street
Bala
Gwynedd**

Written Scheme of Investigation for an
Archaeological Watching Brief



for
WSP Environmental UK

CA Project: 3640

November 2011

**Former Gas Works
Mount Street
Bala
Gwynedd**

**Written Scheme of Investigation for an
Archaeological Watching Brief**

CA Project: 3640

| | |
|-------------|--------------------------------|
| prepared by | Richard Young, Project Manager |
| date | 20 December 2011 |
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| signed | |
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| issue | 02 |

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1. INTRODUCTION

- 1.1 This document sets out details of a written scheme of investigation (WSI) by Cotswold Archaeology (CA) for an archaeological watching brief at the Former Gas Works, Mount Street, Bala, Gwynedd (centred on NGR: SH 9284 3608) at the request of WSP Environmental UK.
- 1.2 An application (ref. NP5/53/511) for planning permission for environmental improvement works (remediation) has been submitted to the Snowdonia National Park Authority (SNPA). Mr John G Roberts, Archaeologist, SNPA has recommended that a condition requiring archaeological mitigation be placed on any consent granted. In correspondence with WSP Environmental UK Mr Roberts has indicated that the mitigation should be carried out via a staged approach. This WSI covers only archaeological watching brief during remedial works, i.e. REM 1 to 2 and all other areas where intrusive work will take place.
- 1.3 This WSI has been guided in its composition by the *Standard and Guidance for an archaeological watching brief* (IfA 2008), the *Management of Archaeological Projects 2* (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (English Heritage 2006) and any other relevant standards or guidance contained within Appendix B.

2. BACKGROUND

- 2.1 The site lies within the town of Bala and is bordered to the north-east by properties along the B4391, to the north and west by the mound of the Norman motte known as Tomen Y Bala, to the south west by properties along Lon Y Domen and to the south by a car park. The site lies at approximately 165m AOD.
- 2.2 The site is c. 0.2ha in size, and is currently predominantly covered in shale, with some hard-standing in the north-eastern corner of the site. The far eastern part of the site is currently being used as an informal garden area and vegetable plot by the adjacent property.

- 2.3 The underlying solid geology of the area is mapped as Moelfryn Mudstone formation of the Ashgill Era, with superficial deposits of Alluvium: clay, silt, sand and gravel, of the Flandrian Era (BGS 2010).

Archaeological background

- 2.4 The name 'Y Bala' probably signifies an outlet, a name given due to the fact that the town is situated where the River Dee flows out of the lake. Bala lies along the course of the main road from Shrewsbury to Dolgellau and the town is situated at the northern end of Bala Lake (LlynTegid), where the rivers Dee and Tryweryn meet. It represents the finest example of a planned English borough in Meirionnydd. The Roman road from Chester to CaerGai and Brithdir must have passed through the area of modern Bala, and presumably close to Llanfor. It is thought then to run along the north-western shore of LlynTegid.
- 2.5 The presence of a Norman motte at Bala is a fairly certain indication of the existence of a Welsh lordship, perhaps the maerdref of Uwch Tryweryn in the cantref of Penllyn. The timber buildings of a royal llys and possibly the nucleated structures of a dependent bond township might be expected in the immediate vicinity of the motte. Once again the identification and elucidation of the character of a Welsh administrative focus and its relationship to a Norman earthwork castle and (in this case 14th century) planted borough become the key archaeological questions. Tomen y Bala appears briefly in Welsh history; it was held by Elise apMadog, Lord of Penllyn, who refused to back Llywelynablorwerth in his struggle against his kinsman Gwenwynwyn. His reward for this disloyalty was that in 1202 Llywelyn drove him from the site and destroyed the castle. It does not appear to have been re-fortified. When Roger Mortimer laid out the borough it was undoubtedly his intention to defend it with a wall and ditch incorporating this existing fortification. Indeed, the 1324 charter makes special provision for such work, but there is nothing to suggest that his instructions were ever carried out. An earthen bank may have been thrown up at the top of the town, however, parallel to the Afon Tryweryn, but the area has recently been developed and no sections are visible.
- 2.6 The town of Bala consists of a long principal High Street, with parallel back streets running the full length of Arenig Street on the north-west and Plasey Street/Mount Street to the south-east. The High Street is orientated south-west to north-east, and is crossed in the middle of the town by Castle Street and Tegid Street. The three

parallel streets form a simple rectangle, the north-east corner of which is occupied by the motte. The motte is sited close to the Afon Tryweryn, and perhaps alongside an early ford. The rectangle occupied by the original town therefore measures 450m by 120m. The location of the motte in the north-west corner would suggest this was deliberately incorporated. It is assumed that the motte had a ditch around it but there is today no trace of either this or an associated bailey. In the early 1990s Gwynedd Archaeological Trust carried out some work on the site. In the west half of the site this work identified what was interpreted as the remains of a substantial ditch at the base of the motte (J.G. Roberts, pers. comm.).

- 2.7 The site itself lies immediately to the south-west of the motte mound of Tomen Y Bala (a Scheduled Monument; CADW ref. Me016). It comprises the location of a former gas works which was operational from at least 1888 until 1963 when the site was used as a gasholder station. The gasholders were subsequently removed between 1978 and 1981.
- 2.8 An archaeological watching brief was carried out in 2010 during geotechnical works (CA 2010). The watching brief identified a number of modern brick walls and an undated silt layer containing charcoal. The brick walls were thought to relate to the former gas works, including tar pits (*ibid.*, 2).

3. OBJECTIVES

- 3.1 The objectives of the watching brief are, with the resources available, to preserve by record all archaeological deposits, the presence of which are attested to in section 2 above, within excavations associated with the new development.

4. FIELD METHODOLOGY

- 4.1 The watching brief comprises the observation by a competent archaeologist of all intrusive groundworks associated with the remedial works in REM 1 to 2 and all other areas where intrusive work will take place. Non-archaeologically significant deposits will be removed by the contractors under archaeological supervision. Where mechanical excavators are used, these will be equipped with a toothless bucket.

- 4.2 If archaeological deposits are encountered they will be planned and recorded in accordance with Technical Manual 1 *Fieldwork Recording Manual* (CA 2007). Each context will be recorded on a pro-forma context sheet by written and measured description; principal deposits will be recorded by drawn plans (scale 1:20 or 1:50, or electronically using Leica 1200 series GPS as appropriate) and drawn sections (scale 1:10 or 1:20 as appropriate). Should detailed feature planning be undertaken using GPS this will be carried out in accordance with Technical Manual 4 *Survey Manual* (CA 2009). Photographs (monochrome print and digital colour) will be taken as appropriate. All finds and samples will be bagged separately and related to the context record. All artefacts will be recovered and retained for processing and analysis in accordance with Technical Manual 3 *Treatment of Finds Immediately after Excavation* (CA 2010).
- 4.3 Due care will be taken to identify deposits which may have environmental potential, and where appropriate, a programme of environmental sampling will be initiated. Samples will be taken, processed and assessed for potential in accordance with Technical Manual 2 *The Taking and Processing of Environmental and Other Samples from Archaeological Sites* (CA 2003).
- 4.4 In the event of archaeological deposits being found for which the resources allocated are not sufficient to support treatment to a satisfactory and proper standard or which are of sufficient significance to merit an alternative approach such as contingency excavation or physical preservation, the client and Mr John G Roberts, Archaeologist, SNPA will be contacted immediately. Destructive work in that area will cease until agreement has been reached on an appropriate archaeological response. Where excavation of human remains is required, this will be conducted following the provisions of the Coroners Unit in the Ministry of Justice.
- 4.5 CA will comply fully with the provisions of the Treasure Act 1996 and the Code of Practice referred to therein.

5. STAFF AND TIMETABLE

- 5.1 This project will be under the management of Richard Young MIfA, Project Manager, CA.

- 5.2 The staffing structure will be organised thus: the Project Manager will direct the overall conduct of the watching brief as required during the period of fieldwork. Day to day responsibility however will rest with the Project Leader who will be on-site throughout the project.
- 5.3 The field team will consist of a Project Leader, supplemented by additional Archaeologists as required.
- 5.4 The duration of the fieldwork will be dependent upon the contractor's programme.
- 5.5 Specialists who will be invited to advise and report on specific aspects of the project as necessary are:

| | |
|-----------------------|--------------------------------|
| Ceramics | Ed McSloy (CA) |
| Metalwork | Ed McSloy (CA) |
| Flint | Ed McSloy (CA) |
| Animal Bone | Jonny Geber (CA) |
| Human Bone | Jonny Geber (CA) |
| Environmental Remains | Sarah Cobain (CA) |
| Conservation | Wiltshire Conservation Service |
| Geoarchaeology | Dr Keith Wilkinson (ARCA) |
| Building Recording | Peter Davenport (CA) |

- 5.6 Depending upon the nature of the deposits and artefacts encountered it may be necessary to consult other specialists not listed here. A full list of specialists currently used by Cotswold Archaeology is contained within Appendix A.

6. POST-EXCAVATION, ARCHIVING AND REPORTING

- 6.1 Following completion of fieldwork, all artefacts and environmental samples will be processed, assessed, conserved and packaged in accordance with CA Technical Manuals and Gwynedd Museum guidelines.
- 6.2 An illustrated report will be compiled on the results of the fieldwork and assessment of the artefacts, palaeoenvironmental samples etc. Copies of the report will be



distributed to the client, Mr John G Roberts, Archaeologist, SNPA and the SNPA HER.

- 6.3 Should no further work be required, an ordered, indexed, and internally consistent site archive will be prepared and deposited in accordance with *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation* (Archaeological Archives Forum 2007).
- 6.4 As the limited scope of this work is likely to restrict its publication value, it is anticipated that a short publication note only will be produced, suitable for inclusion within an appropriate local archaeological journal. A summary of information from the project will also be entered onto the OASIS online database of archaeological projects in Britain.
- 6.5 CA will make arrangements with Gwynedd Museum for the deposition of the site archive and, subject to agreement with the legal landowner(s), the artefact collection.

7. HEALTH AND SAFETY

- 7.1 CA will conduct all works in accordance with the Health and Safety at Work Act 1974 and all subsequent Health and Safety legislation, CA Health, Safety and Welfare Policy (2010) and procedures, and any Principal Contractor's policies or procedures. A risk assessment will be undertaken prior to commencement of fieldwork.

8. INSURANCES

- 8.1 CA holds Public Liability Insurance to a limit of £10,000,000 and Professional Indemnity Insurance to a limit of £5,000,000. No claims have been made or are pending against these policies in the last three years.

9. MONITORING

- 9.1 Notification of the start of site works will be made to Mr John G Roberts, Archaeologist, SNPA so that there will be opportunities to visit the site and check on the quality and progress of the work.

10. QUALITY ASSURANCE

- 10.1 CA is a Registered Organisation (RO) with the Institute for Archaeologists (RO Ref. No. 8). As a RO, CA endorses the *Code of Conduct* (IfA 2010) and the *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (IfA 2008). All CA Project Managers and Project Officers hold either full Member or Associate status within the IfA.
- 10.2 CA operates an internal quality assurance system in the following manner. Projects are overseen by a Project Manager who is responsible for the quality of the project. The Project Manager reports to the Chief Executive who bears ultimate responsibility for the conduct of all CA operations. Matters of policy and corporate strategy are determined by the Board of Directors, and in cases of dispute recourse may be made to the Chairman of the Board.

11. REFERENCES

- BGS (British Geological Survey) 2010 *Geology of Britain Viewer* 1:50,000
http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html accessed 25
October 2010
- CA (Cotswold Archaeology) 2010 *Former Gas Works, Mount Street, Bala, Gwynedd: Archaeological Watching Brief*. CA typescript report **11086**
- WSP Environmental UK 2010 *Health, Safety and Environment Plan, Former Gas Works, Mount Street Bala*

APPENDIX A: COTSWOLD ARCHAEOLOGY SPECIALISTS***Ceramics***

| | |
|---|---|
| Neolithic/Bronze Age | Ed McSloy (CA) Dr Elaine Morris (University of Southampton) Ros Cleal (freelance) |
| Iron Age/Roman (Samian) (Amphorae stamps) | Ed McSloy (CA) Peter Webster (freelance) David Williams (freelance) |
| Anglo-Saxon | Paul Blinkhorn (freelance) Jane Timby (freelance) |
| Medieval/post-medieval (Clay pipe) | Ed McSloy (CA) Duncan Brown (freelance) Reg Jackson (freelance) |
| Ceramic Building Material | Ed McSloy (CA) Phil Mills (freelance) Sandra Garside-Neville (freelance) |

Other Finds

| | |
|----------------------------------|--|
| Small Finds | Ed McSloy (CA) |
| Lithics (Palaeolithic) | Ed McSloy (CA) Phil Harding, Wessex Archaeology |
| Worked Stone | Fiona Roe (freelance) |
| Inscriptions | Roger Tomlin (Oxford) |
| Glass | Ed McSloy (CA) Hilary Cool (freelance) David Dungworth (English Heritage) |
| Coins | Ed McSloy (CA) Dr Peter Guest (Cardiff University) Richard Reece (freelance) |
| Leather | Quita Mould (freelance) |
| Textiles | Penelope Walton Rogers (freelance) |
| Iron slag/metal technology | Dr Tim Young (Cardiff University) Dr David Dungworth (English Heritage) |
| <i>Biological Remains</i> | |
| Animal bone | Jonny Geber (CA) |
| Human Bone (Cremations) | Jonny Geber (CA) Jackie McKinley (Wessex Archaeology) |
| Environmental sampling | Dr Sylvia Warman Dr Keith Wilkinson (ARCA) |
| Pollen | Nick Daffern (WHEAS) |
| Diatoms | Nigel Cameron (UCL) |
| Charred Plant Remains | Wendy Carruthers (freelance) Liz Pearson (WHEAS) |

| | |
|--------------------------|--|
| Wood/Charcoal | Dana Challinor (freelance) |
| Insects | David Smith (Birmingham University) QUEST (Reading University) |
| Mollusca | Dr Keith Wilkinson (ARCA) |
| Fish bones | Hannah Russ (freelance) Philip Armitage |
| Geoarchaeology | Dr Keith Wilkinson (ARCA) |
| Scientific Dating | |
| Dendrochronology | Cathy Groves (ARCUS) Robert Howard (NTRDL Nottingham) |
| Radiocarbon dating | University of Waikato (New Zealand) Beta Analytic (USA) Rafter (New Zealand) |
| Archaeomagnetic dating | Don Tarling (Plymouth) |
| TL/OSL Dating | Phil Toms (University of Gloucestershire) |
| Conservation | Wiltshire Conservation Services |



APPENDIX B: ARCHAEOLOGICAL STANDARDS AND GUIDELINES

- AAF 2007 *Archaeological Archives. A guide to best practice in creation, compilation, transfer and curation.* Archaeological Archives Forum
- AAI&S 1988 *The Illustration of Lithic Artifacts: A guide to drawing stone tools for specialist reports.* Association of Archaeological Illustrators and Surveyors Paper 9
- AAI&S 1994 *The Illustration of Wooden Artifacts: An Introduction and Guide to the Depiction of Wooden Objects.* Association of Archaeological Illustrators and Surveyors Paper 11
- AAI&S 1997. *Aspects of Illustration: Prehistoric pottery.* Association of Archaeological Illustrators and Surveyors Paper 13
- AAI&S nd *Introduction to Drawing Archaeological Pottery.* Association of Archaeological Illustrators and Surveyors, Graphic Archaeology Occasional Papers 1
- ACBMG 2004 *Draft Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material. (third edition)* Archaeological Ceramic Building Materials Group
- AEA 1995 *Environmental Archaeology and Archaeological Evaluations. Recommendations concerning the environmental archaeology component of archaeological evaluations in England.* Working Papers of the Association for Environmental Archaeology No. 2
- BABAO and IFA, 2004 *Guidelines to the Standards for Recording Human Remains.* British Association for Biological Anthropology and Osteoarchaeology and Institute of Field Archaeologists. Institute of Field Archaeologists Technical Paper 7 (Reading)
- Barber, B., Carver, J., Hinton, P. and Nixon, T. 2008 *Archaeology and development. A good practice guide to managing risk and maximising benefit.* Construction Industry Research and Information Association Report C672
- Bayley, J. (ed) 1998 *Science in Archaeology. An agenda for the future.* English Heritage (London)
- Bewley, R., Donoghue, D., Gaffney, V., Van Leusen, M., Wise, M., 1998 *Archiving Aerial Photography and Remote Sensing Data: A guide to good practice.* Archaeology Data Service
- Blake, H. and P. Davey (eds) 1983 *Guidelines for the processing and publication of Medieval pottery from excavations, report by a working party of the Medieval Pottery Research Group and the Department of the Environment.* Directorate of Ancient Monuments and Historic Buildings Occasional Paper 5, 23-34, DoE, London
- Brickley, M. and McKinley, J.I., 2004 *Guidelines to the Standards for Recording Human Remains.* IFA Paper No 7, Institute of Field Archaeologists (Reading)
- Brickstock, R.J. 2004 *The Production, Analysis and Standardisation of Romano-British Coin Reports.* English Heritage (Swindon)
- Brown, A. and Perrin, K. 2000 *A Model for the Description of Archaeological Archives.* English Heritage Centre for Archaeology/ Institute of Field Archaeologists (Reading)
- Brown, D.H. 2007 *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation.* IFA Archaeological Archives Forum (Reading)
- Buikstra, J.E. and Ubelaker D.H. (eds) 1994 *Standards for Data Collection from Human Skeletal Remains.* (Fayetteville, Arkansas)
- Clark, J., Darlington, J. and Fairclough, G. 2004 *Using Historic Landscape Characterisation.* English Heritage (London)
- Coles, J.M., 1990 *Waterlogged Wood: guidelines on the recording, sampling, conservation and curation of structural wood.* English Heritage (London)
- Cowton, J., 1997 *Spectrum. The UK Museums Documentation Standard.* Second edition. Museums Documentation Association
- Cox, M., 2002 *Crypt Archaeology: an approach.* Institute of Field Archaeologists Technical Paper 3 (Reading)
- Darvill, T. and Atkins, M., 1991 *Regulating Archaeological Works by Contract.* IFA Technical Paper No 8, Institute of Field Archaeologists (Reading)
- Davey P.J. 1981 *Guidelines for the processing and publication of clay pipes from excavations.* Medieval and Later Pottery in Wales, IV, 65-87
- Eiteljorg, H., Fernie, K., Huggett, J. and Robinson, D. 2002 *CAD: A guide to good practice.* Archaeology Data Service (York)
- EA 2005 *Guidance on Assessing the Risk Posed by Land Contamination and its Remediation on Archaeological Resource Management.* English Heritage/ Environment Agency Science Report P5-077/SR (Bristol)
- EH 1991 *The Management of Archaeological Projects.* Second Edition (MAP2) English Heritage (London)
- EH, 1995a, *Archaeometallurgy in Archaeological Projects.* English Heritage Scientific and Technical Guidelines No 2
- EH 1995b, *Guidelines for the Care of Waterlogged Archaeological Leather.* English Heritage Scientific and Technical Guidelines No 4
- EH 1995c, *A Strategy for the Care and Investigation of Finds.* English Heritage Ancient Monuments Laboratory (London)
- EH 1996 *Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of archaeological wood.* English Heritage (London)

- EH 1998a, *Dendrochronology. Guidelines on producing and interpreting dendrochronological dates*. English Heritage (London)
- EH 1998b, *Identifying and Protecting Palaeolithic Remains*. Archaeological guidance for planning authorities and developers. English Heritage (London)
- EH 1999, *Guidelines for the Conservation of Textiles*. English Heritage (London)
- EH 2000, *Managing Lithic Scatters. Archaeological guidance for planning authorities and developers*. English Heritage (London)
- EH 2002a *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*. English Heritage Centre for Archaeology Guidelines (London)
- EH, 2002b *Human Bones from Archaeological Sites*. Guidelines for producing assessment documents and analytical reports. English Heritage (London)
- EH 2002c *With Alidade and Tape: graphical and plane table survey of archaeological earthworks*. English Heritage (Swindon)
- EH 2003a *Where on Earth Are We? The Global Positioning System (GPS) in archaeological field survey*. English Heritage (London)
- EH, 2003b (revised 2008), *Metric Survey Specifications for English Heritage*. English Heritage (Swindon)
- EH 2003c *Twentieth-Century Military Sites. Current approaches to their recording and conservation* English Heritage (Swindon)
- EH 2003d *Archaeological Science at PPG16 interventions: Best Practice Guidance for Curators and Commissioning Archaeologists*. English Heritage (Swindon)
- EH 2004a *Dendrochronology. Guidelines on producing and interpreting dendrochronological dates*. English Heritage (Swindon)
- EH 2004b *Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical report*. English Heritage Centre for Archaeology Guidelines
- EH 2006a *Guidelines on the X-radiography of Archaeological Metalwork*. English Heritage (Swindon)
- EH 2006b *Archaeomagnetic Dating*. English Heritage (Swindon)
- EH 2006c *Science for Historic Industries: Guidelines for the investigation of 17th- to 19th-century industries*. English Heritage (Swindon)
- EH 2006d *Our Portable Past: a statement of English Heritage policy and good practice for portable antiquities/surface collected material in the context of field archaeology and survey programmes (including the use of metal detectors)*. English Heritage (Swindon)
- EH, 2006e, *Management of Research Projects in the Historic Environment. The MoRPHE Project Managers' Guide*. English Heritage (Swindon)
- EH 2007a *Understanding the Archaeology of Landscapes. A guide to good recording practice*. English Heritage (Swindon)
- EH 2007d *Geoarchaeology. Using earth sciences to understand the archaeological record*. (London)
- EH 2008a *Luminescence Dating. Guidelines on using luminescence dating in archaeology*. English Heritage (Swindon)
- EH 2008b *Geophysical Survey in Archaeological Field Evaluation. English Heritage Research and Professional Services Guidelines No 1* (second edition). English Heritage (Swindon)
- EH 2008c *Research and Conservation Framework for the British Palaeolithic*. English Heritage/Prehistoric Society (Swindon)
- EH 2008d *Investigative Conservation. Guidelines on how the detailed examination of artefacts from archaeological sites can shed light on their manufacture and use*. English Heritage (Swindon)
- EH and Church of England, 2005, *Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England*. English Heritage (London)
- Ferguson, L. and Murray, D., 1997, *Archaeological Documentary Archives*. IFA Paper 1, Institute of Field Archaeologists (Reading)
- Gaffney, C. and Gater, J., with Ovenden, S., 2002, *The Use of Geophysical Techniques in Archaeological Evaluations*. IFA Technical Paper 9, Institute of Field Archaeologists (Reading)
- Gillings, M. and Wise, A., 1999, *GIS: A guide to good practice*. Archaeology Data Service (York)
- Gurney, D.A., 1985, *Phosphate Analysis of Soils: A Guide for the Field Archaeologist*. IFA Technical Paper 3, Institute of Field Archaeologists (Reading)
- Handley, M., 1999, *Microfilming Archaeological Archives*. IFA Technical Paper 2, Institute of Field Archaeologists (Reading)
- IFA, 1992, *Guidelines for Finds Work*. Institute of Field Archaeologists (Reading)
- IFA, 2004, *Guidelines to the Standards for Recording Human Remains*. Institute of Field Archaeologists Paper No 7 (Reading)
- IfA, 2008, *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology*. Institute for Archaeologists (Reading)
- IfA, 2008, *Standard and Guidance for Archaeological Desk-based Assessment*. Institute for Archaeologists (Reading)
- IfA, 2008, *Standard and Guidance for Archaeological Watching Brief*. Institute for Archaeologists (Reading)
- IfA, 2008, *Standard and Guidance for Archaeological Field Evaluation*. Institute for Archaeologists (Reading)
- IfA, 2008, *Standard and Guidance for Archaeological Excavation*. Institute for Archaeologists (Reading)

- IfA, 2008, *Standard and Guidance for Archaeological Investigation and Recording of Standing Buildings or Structures*. Institute for Archaeologists (Reading)
- IfA, 2008, *Standard and Guidance for the Creation, Documentation, Conservation and Research of Archaeological Materials*. Institute for Archaeologists (Reading)
- IfA, 2008, *Draft Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*. Institute for Archaeologists (Reading)
- Mays, S., 1991, Recommendations for Processing Human Bone from Archaeological Sites. Ancient Monuments Lab Report 124/91 (London)
- Mays, S., Brickley, M. and Dodwell, N., 2002, *Human Bones from Archaeological Sites. Guidelines for Producing Assessment Documents and Analytical Reports*. Centre for Archaeology Guidelines, English Heritage (Portsmouth)
- McKinley, J.I. and Roberts, C., 1993, *Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains*. Institute of Field Archaeologists Technical Paper No. 13 (Reading)
- MGC, 1992, *Standards in the Museum Care of Archaeological Collections*. Museums and Galleries Commission
- Murphy, P.L. and Wiltshire, P.E.J. 1994, *A Guide to Sampling Archaeological Deposits for Environmental Analysis*. English Heritage (London)
- MPRG 2000, *A Guide to the Classification of Medieval Ceramics*. Medieval Pottery Research Group Occasional Papers No. 1.
- MPRG 2001, *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics*. Medieval Pottery Research Group
- Owen, J., 1995, *Towards an Accessible Archaeological Archive. The Transfer of archaeological archives to museums: guidelines for use in England, Northern Ireland, Scotland and Wales*. Society of Museum Archaeologists
- PCRG 1997, *The Study of Later Prehistoric Pottery: General policies and guidelines for analysis and publication*. Prehistoric Ceramics Research Group Occasional Paper 12
- Philo, C. and Swann, A., 1992, *Preparation of Artwork for Publication*. Institute of Field Archaeologists Technical Paper No. 10 (Reading)
- RCHME 1999, *Recording Archaeological Field Monuments: A descriptive specification*. RCHME (Swindon)
- RCHME 2007, *MIDAS: A manual and data standard for monuments inventories*. RCHME (Swindon)
- Schofield, A J, (ed) 1998, *Interpreting Artefact Scatters*. Oxbow Monograph 4 (Oxford)
- Richards, J. and Robinson, D. (eds), 2001, *Digital Archives From Excavation and Fieldwork: A guide to good practice*. Archaeology Data Service
- Robinson, W., 1998, *First Aid for Underwater Finds*. Archetype Books (London)
- RFG and FRG, 1993, *Guidelines for the Preparation of Site and Assessments for all Finds other than Fired Clay Vessels*. Roman Finds Group And Finds Research Group
- Schmidt, A., 2001, *Geophysical Data in Archaeology: A guide to good practice*. Archaeology Data Service
- SGRP, 1994, *Guidelines for the Archiving of Roman Pottery*. Study Group for Roman Pottery
- SMA, 1993, *Guidelines on the Selection, Retention and Dispersal of Archaeological Collections*. Society of Museum Archaeologists
- UKIC, 1983, *Packaging and Storage of Freshly Excavated Artefacts from Archaeological Sites*. (United Kingdom Institute for Conservation, Conservation Guidelines No 2)
- UKIC, 1984, *Environmental Standards for Permanent Storage of Excavated material from Archaeological Sites*. (United Kingdom Institute for Conservation, Conservation Guidelines No 3)
- UKIC, 1990, *Guidance for Conservation Practice*. United Kingdom Institute for Conservation
- UKIC, 1990, *Guidelines for the Preparation of Excavation Archives for Long-term Storage*. United Kingdom Institute for Conservation Archaeology Section
- UKIC, 2001, *Excavated Artefacts and Conservation*. (United Kingdom Institute for Conservation, Conservation Guidelines No 1, revised)
- Watkinson, D.E., and Neal, V., 1998, *First Aid for Finds*. (3rd edition) RESCUE/United Kingdom Institute for Conservation, Archaeology Section and Museum of London
- Willis, S., 1997, (ed) *Research Frameworks for the Study of Roman Pottery*. Study Group for Roman Pottery
- World Archaeology Congress 1989, *The Vermillion Accord – Human Remains*. Motion Approved at the First Inter-Congress on the Disposal of the Dead (Vermillion)
- Young C., 1980, *Guidelines for the Processing and Publication of Roman Pottery*. Department of the Environment



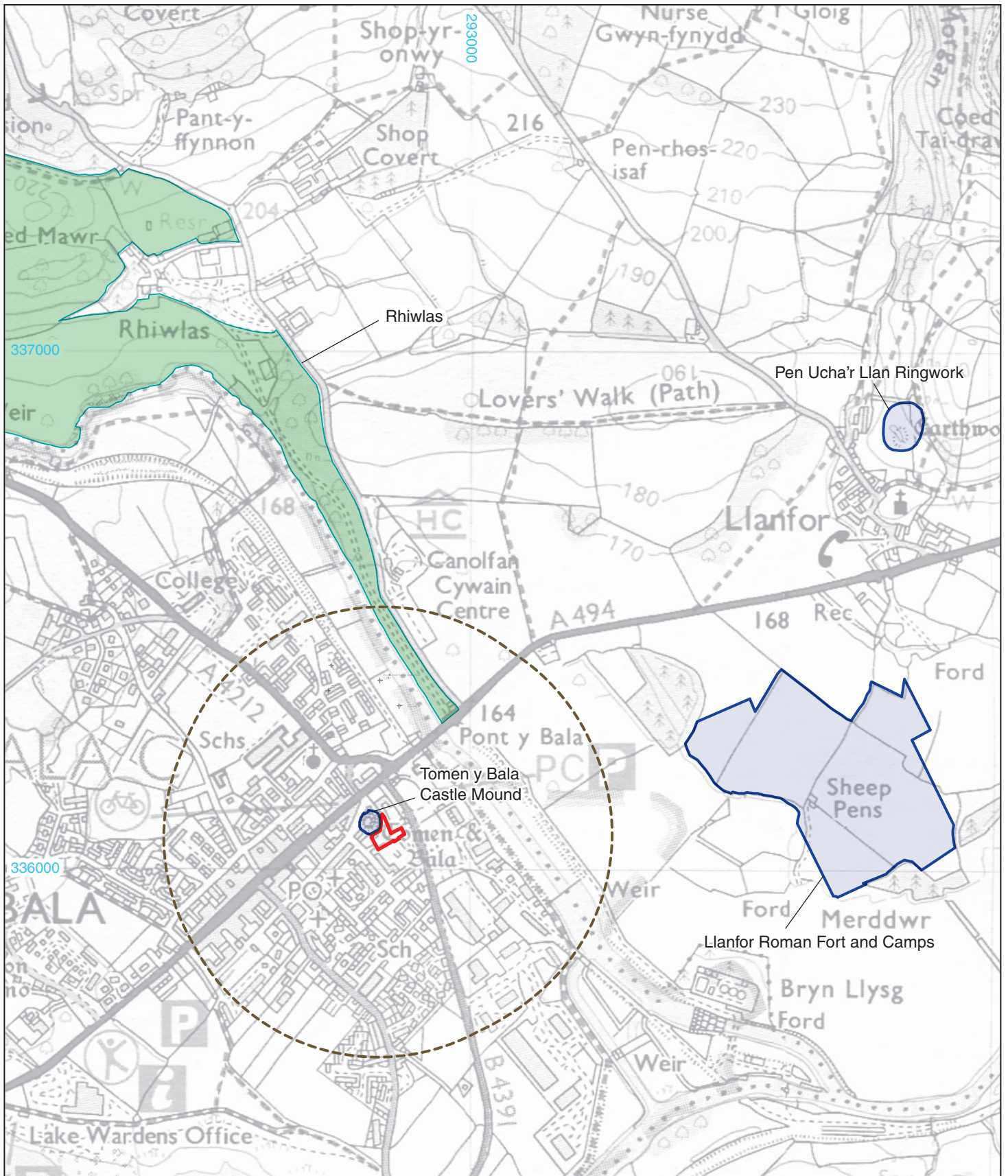
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PROJECT TITLE
 Former Gas Works, Mount Street
 Bala, Gwynedd

FIGURE TITLE
 Site location plan

| | | | | |
|-------------|------|----------|------------|------------|
| PROJECT NO. | 3640 | DATE | 16-03-2012 | FIGURE NO. |
| DRAWN BY | LG | REVISION | 00 | 1 |
| APPROVED BY | PJM | SCALE@A4 | 1:25,000 | |

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- site boundary
- Registered Park boundary
- Scheduled Monument
- 400m study area



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PROJECT TITLE

Former Gas Works, Mount Street
Bala, Gwynedd

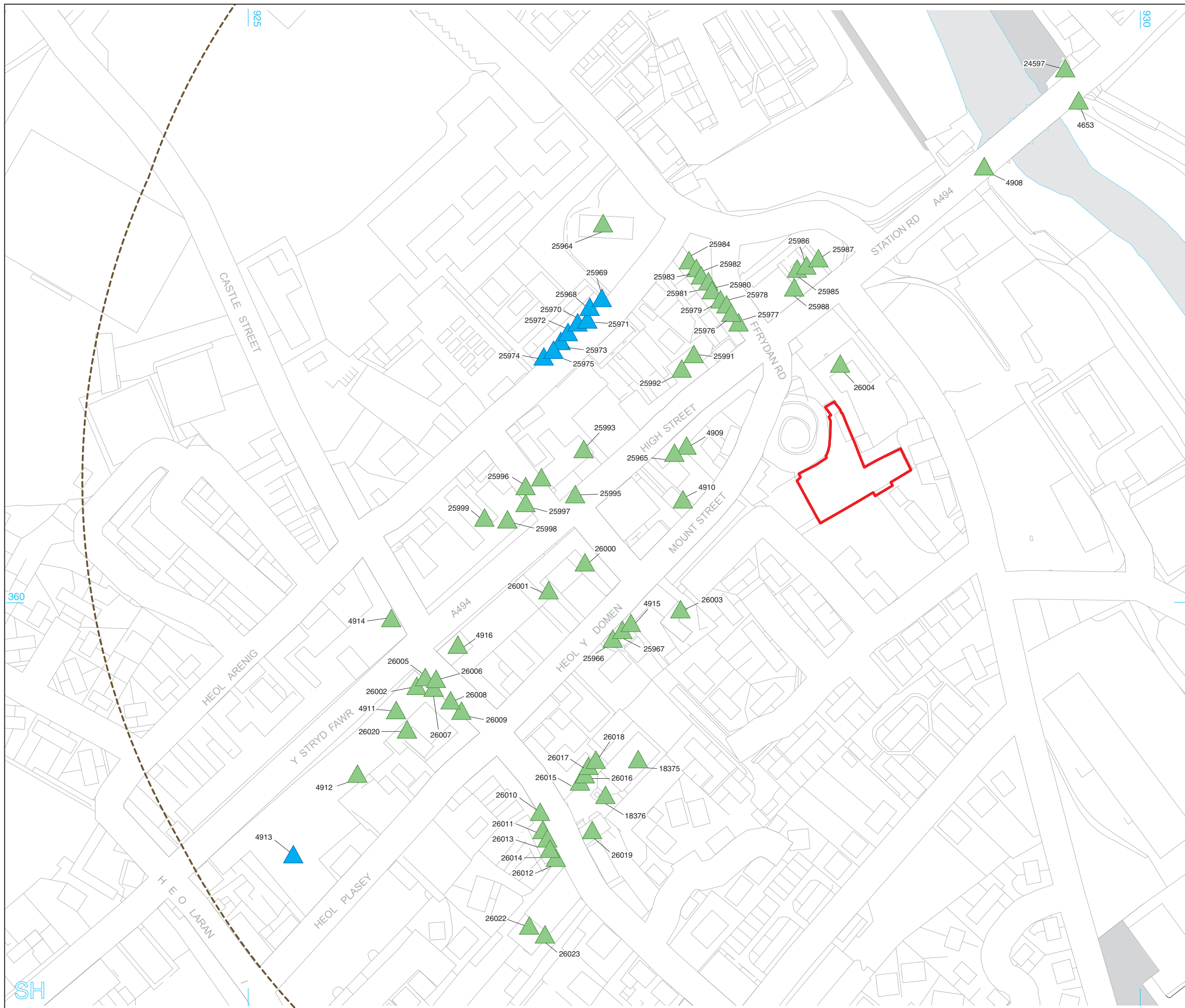
FIGURE TITLE

**Designated Heritage Assets (excluding
Listed Buildings)**

PROJECT NO. 3640 DATE 26.01.2015
 DRAWN BY AO/LJH REVISION 00
 APPROVED BY JB SCALE@A4 1:10,000

FIGURE NO.

2a



- site boundary
- ▲ Grade II Listed Building
- ▲ Grade II* Listed Building
- 400m study area

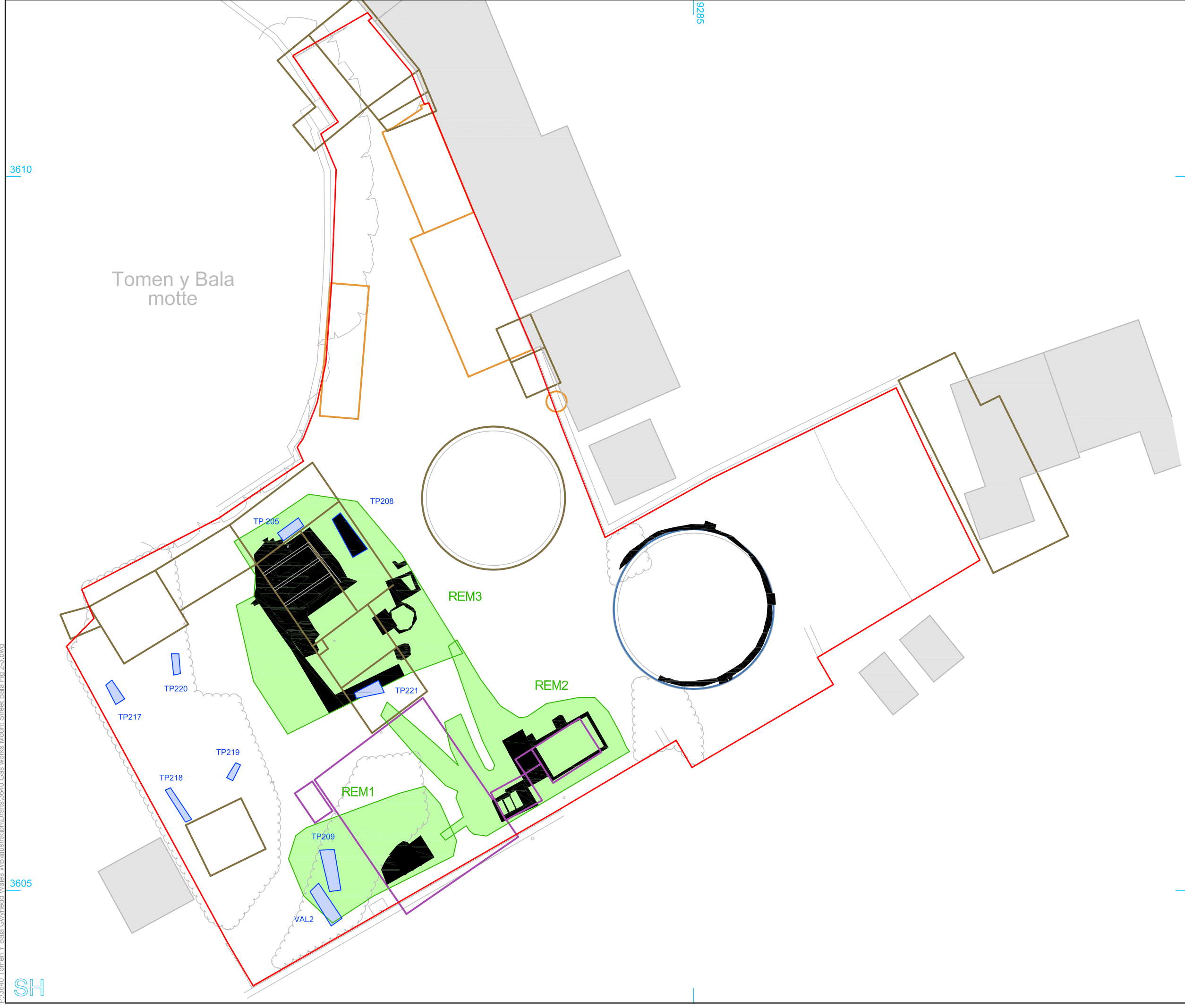
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PROJECT TITLE
 Former Gas Works, Mount Street
 Bala, Gwynedd

FIGURE TITLE
 Designated assets (Listed Buildings)

| | | |
|-------------------------|------------------------|-------------------|
| PROJECT NO. 3640 | DATE 26/01/2015 | FIGURE NO. |
| DRAWN BY LJH | REVISION 00 | 2b |
| APPROVED BY JB | SCALE@A3 1:2000 | |



Tomen y Bala
motte

- site
- area of observed groundworks
- evaluation trench
- archaeological feature
- existing building
- structure depicted on map of 1888 - demolished
- structure depicted on map of 1901 - demolished
- structure depicted on map of 1953-54 - demolished
- structure depicted on map of 1953-54 - demolished



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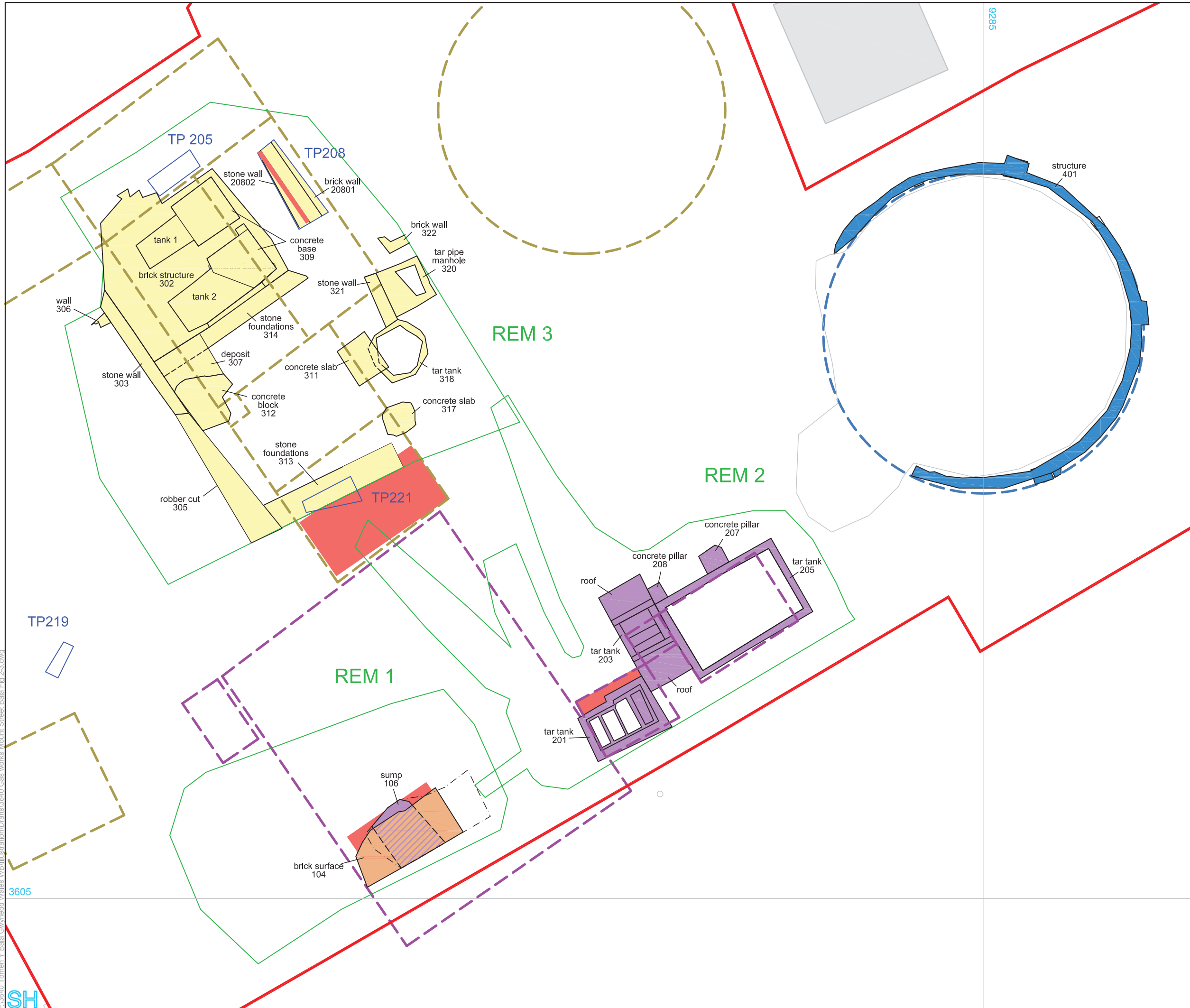
PROJECT TITLE
Former Gas Works, Mount Street Bala, Gwynedd

FIGURE TITLE
The site, showing location of former buildings, groundworks and recorded archaeological features

| | | | | | |
|-------------|------|----------|------------|------------|---|
| PROJECT NO. | 3640 | DATE | 16-03-2011 | FIGURE NO. | 3 |
| DRAWN BY | LG | REVISION | 00 | | |
| APPROVED BY | PJM | SCALE@A3 | 1:250 | | |

P:\3640_Tomen y Bala Gwynedd Wales\WB\Illustration\Drafts\3640 Gas works Mount Street Bala Flr 2-3.dwg





- site
- area of observed groundworks
- evaluation trench
- recorded feature dating from 1888
- recorded feature dating from 1901
- recorded feature dating from 1953-54
- recorded feature dating from 1978
- structure depicted on map of 1888 - demolished
- structure depicted on map of 1901 - demolished
- structure depicted on map of 1953-54 - demolished
- existing building
- areas of exposed natural substrate

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PROJECT TITLE
 Former Gas Works, Mount Street Bala, Gwynedd

FIGURE TITLE
 Area of groundworks, showing location of former buildings and recorded archaeological features

| | | |
|------------------|-----------------|--------------|
| PROJECT NO. 3640 | DATE 16-03-2011 | FIGURE NO. 4 |
| DRAWN BY LG | REVISION 00 | |
| APPROVED BY PJM | SCALE@A3 1:125 | |

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 SH



5



6



7



8

- 5 Brick surface 104, looking west. (Scales 1m)
- 6 Section of brick surface 104 and sump 106, looking south. (Scale 1m)
- 7 Tar tank 201, looking south-west. (Scale 1m)
- 8 Tar tank 203, with tar tank 206 to left and tar tank 201 to right.



9



10



11



12

- 9 Tar tank 206, looking south-west. (Scale 1m)
- 10 Brick structure 302 and tanks, looking north-east. (Scales 1m)
- 11 Stone wall 303, looking north-east. (Scales 1m)
- 12 Tar tank 318, looking north-east. (Scale 1m)


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PROJECT TITLE
**Former Gas Works, Mount Street
 Bala, Gwynedd**

FIGURE TITLE
Photographs

| | | | | |
|-------------|------|----------|------------|-------------|
| PROJECT NO. | 3640 | DATE | 16-03-2011 | FIGURE NO. |
| DRAWN BY | LG | REVISION | 00 | 9-12 |
| APPROVED BY | PJM | SCALE@A3 | N/A | |



13



14

13 Tar tank 318 and tar pipe manhole 320, looking south-east. (Scales 1m)

14 Structure 401, looking north. (Scales 1m)



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PROJECT TITLE

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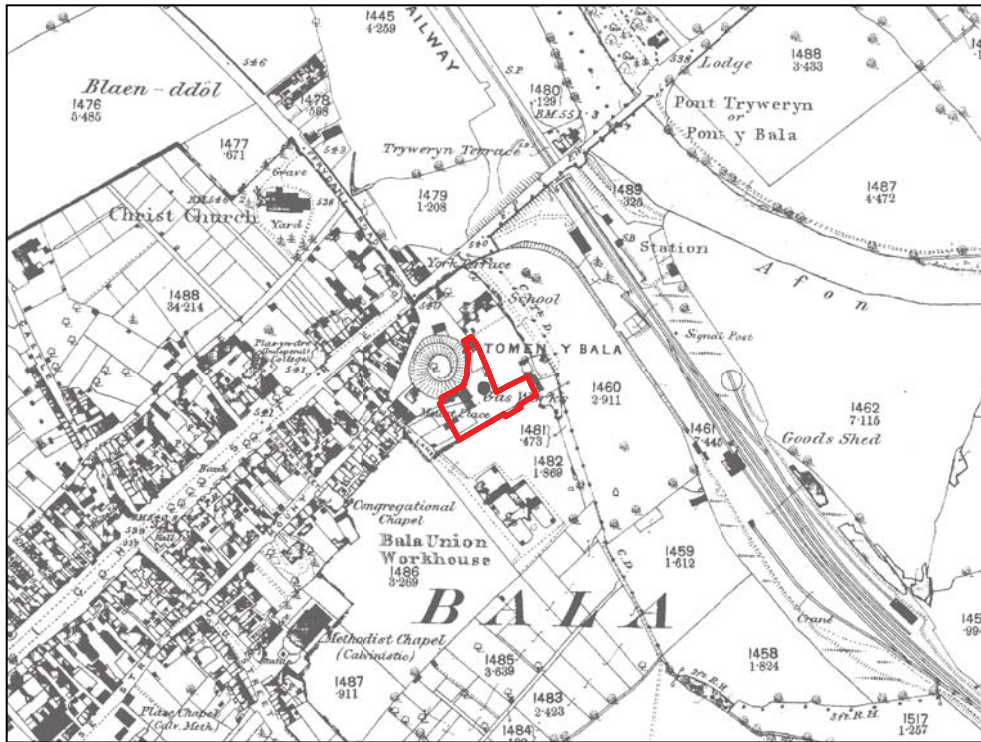
FIGURE TITLE

Photographs

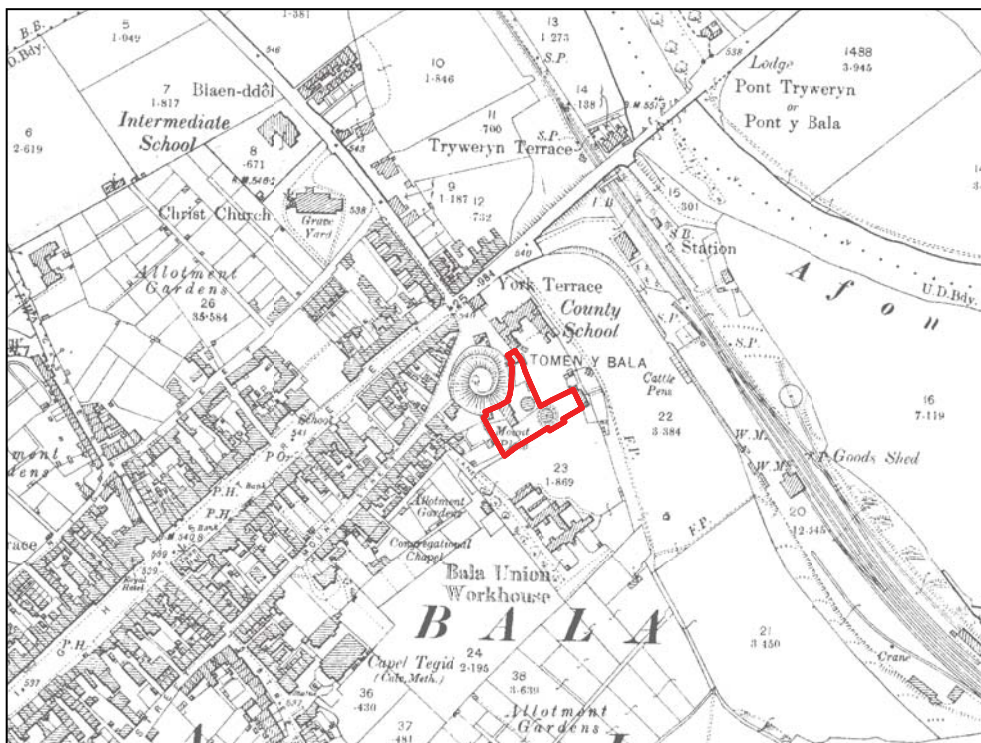
PROJECT NO. 3640 DATE 16-03-2012
 DRAWN BY LG REVISION 00
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FIGURE NO.

13 & 14



15



16

15 Extract from the First Edition Ordnance Survey map of 1888

16 Extract from the 1:2500 map of 1901



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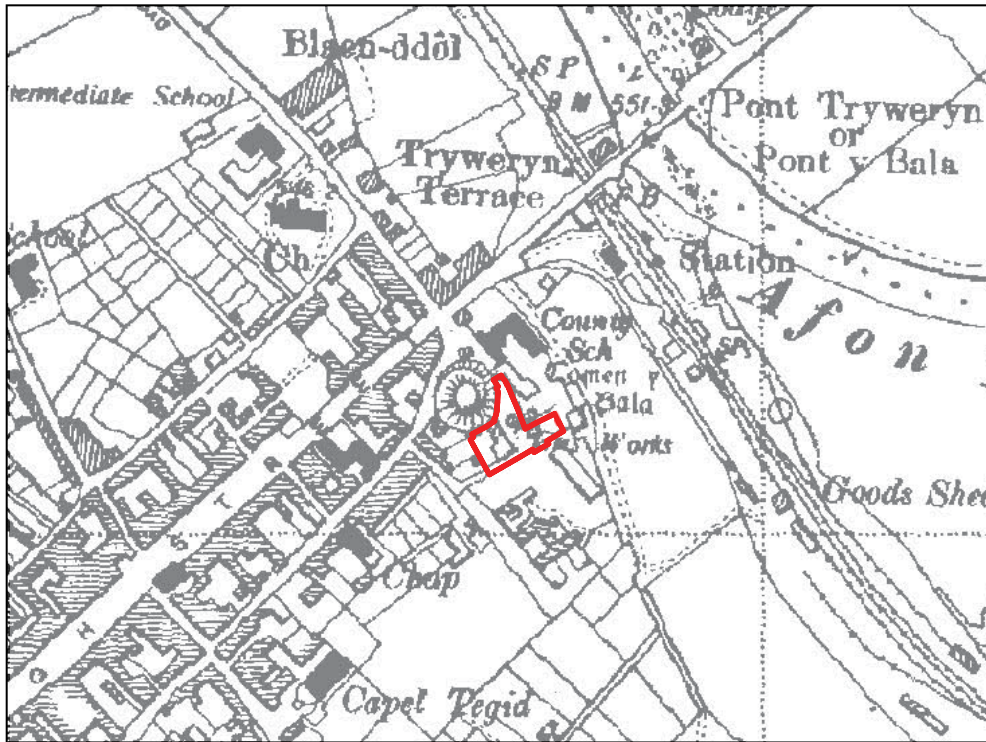
PROJECT TITLE

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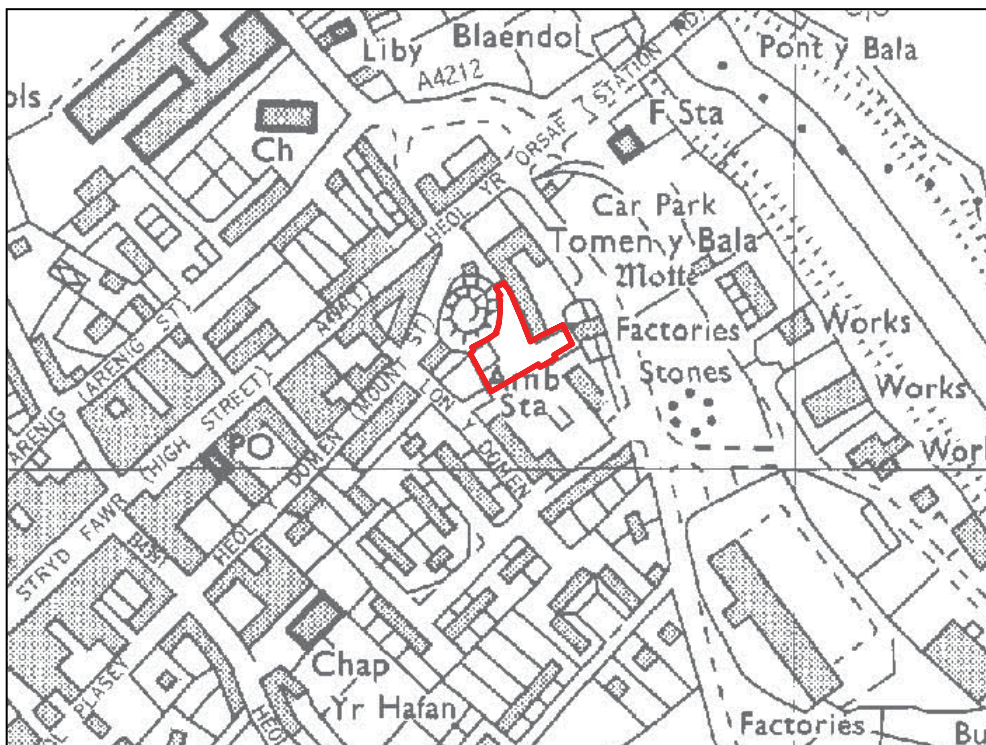
FIGURE TITLE

Historic mapping

| | | | | |
|-------------|------|----------|-------------------|--------------------|
| PROJECT NO. | 3640 | DATE | 16-12-2013 | FIGURE NO. |
| DRAWN BY | LG | REVISION | 00 | |
| APPROVED BY | PJM | SCALE@A4 | 1:5,000 (approx.) | 15 & 16 |



17



18

17 Extract from the 1953/54 Ordnance Survey map

18 Extract from the 1981 Ordnance Survey map



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PROJECT TITLE

Former Gas Works, Mount Street
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FIGURE TITLE

Historic maps

| | | | | |
|-------------|------|----------|------------------|--------------------|
| PROJECT NO. | 3640 | DATE | 1/04/2014 | FIGURE NO. |
| DRAWN BY | AO | REVISION | 00 | |
| APPROVED BY | LM | SCALE@A4 | 1:2500 (approx.) | 17 & 18 |