

IW Number 006 Clydach Ironworks (02476g and 03647g; SAM BR161) SO 2290 1325

General Description

The Clydach Ironworks (PRNs: 02476g and 03647g; NPRNs: 34,030 and 306,268; SAM BR161) is a nationally important ironworks of great historic interest and retaining impressive standing remains. The first furnace at the site was constructed in 1793 and the works started well producing 1,660 tons of iron in 1796, and after an initial drop output rose steadily: 2,658 tons in 1816; 6,771 tons in 1830; and 10,038 tons in 1840. Edward Frere and Thomas Cooke with a nominal association with the Kendall family of ironmasters, who lent their name to the undertaking, operated the works, leased from the Duke of Beaufort. The blast furnaces at the site remained in production for over 65 years during which time the works were a focal point for much activity in the valley. In 1813 the site at Clydach boasted two furnaces, by 1833 this had increased to three with the blast supplied by a Boulton & Watt engine and a 42ft. wheel, while four furnaces were recorded for the first time in 1844. The business, however, was never really successful, the works being up for sale in 1813 and again in 1833. Between 1841 and 1845 difficulties continued and the works continued to suffer financial losses, by the 1850s the works was in decline and the furnaces ceased production in 1861. Despite being sold as a 'going concern' in 1864 and again in 1878, the works never returned to production.

The identified core ironworks area mainly comprises the impressive 18th century site of Clydach Ironworks, now a scheduled ancient monument (SAM: BR161(MON)), dominated by the archway of a charging house. An etching of 1811 shows the earliest two furnaces, with a large waterwheel to drive the blowing engines and indicates the original arrangement of a raised wooden 'launder', which formerly supplied water from a pond near the rolling mills. Clydach Ironworks (SO 229132), excavated and partly restored during the 1980s, is currently the property of the Borough Council. The site originally had two blast furnaces (of 1793 and 1797); a third was added c. 1826 (unexcavated), and a fourth 1842-4. Excavation revealed that the circular refractory brick linings survived up to the 'boshes' of the furnace stacks, while the dressed stone casings had been extensively robbed. Other remains on the site include a cast-house, charging-houses, including the high gable wall of one belonging to the 1793 furnace, and the wheel pit for a massive cast-iron water wheel 42 ft (12.8m) in diameter, which drove the blowing-cylinders. Associated remains visible in the area include the formation of a counter-balanced railway inclined plane (built before 1811), which enabled pig iron to be lifted to the higher-level rolling mills. During 1813 the rolling mills were producing approximately 60 tons of rough bars and 80 tons of finished iron per week.

Though little now survives of the furnaces themselves, apart from their bases, enough remains of the site in general to convey the significance of iron production at Clydach. Beyond the surviving charging house was the coke yard where coal was burnt in heaps or ovens to produce the coke used in the furnaces.

The area includes the less obvious site of the later Clydach ironworks site and mills located at Dan-y-coed (PRN: 03647g; NPRN: 306,268); this part of the area is depicted intact on the 1st edition 1:2500 OS map, with its feeder canal forming the southern boundary of the then works. By 1905 the site had been cleared and redeveloped as a Woollen Factory. Subsequently this area was entirely reclaimed and has now lost to housing. Adjacent to the site of the rolling mills is a massive dump of slag from Clydach Ironworks 'the flat', which crosses the valley, the river culverted underneath.

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A branch of the Llam-March Tramroad (05985.0g), noted at SO22891305, passes through the area. The Brecon & Abergavenny Canal Company constructed this line following a request by the proprietors of the Clydach Ironworks for a tramroad to transport raw materials to the Clydach Ironworks from the collieries and ironstone mines along the south of the gorge.

A number of bridges also link the ironworks to mineral grounds and supply routes; of considerable interest is Smart's Bridge, dated 1824 and constructed of cast iron with simple lancet tracery in the spandrels of the arch. (PRN: 03204g; NPRN: 34,633; SAM: BR161(MON); Listed Grade II* Cadw Rec. No. 23,813), which is located at SO 2287 1327 and is thought to have carried a tramroad linking the ironworks with the Clydach Railroad to the north. Further north at SO 2292 1330, also on the boundary of the area, is the Grade II listed Pantglas Road bridge (Cadw Rec. No. 23,812). Whilst the RCAHMW also note a service bridge (NPRN: 43,067) for the Clydach Ironworks, much further to the south at SO 226 128.

Historical Background

The Clydach Ironworks was built in c. 1794 by Edward Frere and Thomas Cooke. The narrow valley site was chosen because of the abundant supply of water and waterpower although, with the later development of the works, this situation proved to be a costly disadvantage. Cooke and Frere had both been managers at Crawshay's Cyfarthfa Ironworks. A single coke furnace was put into blast at Clydach during 1794-95 and in the following year it produced 1,625 tons of iron. There was some expansion in the concern during the late eighteenth century when the partners took over the neighbouring Llanelly Ironworks. This provided the Clydach furnaces with a forge to transform the pig iron into wrought iron. A second furnace was built in the early 1800s and in 1805 the two furnaces made 2,802 tons of iron. The Llanelly Forge was also modernised at this time.

An unsuccessful attempt was made to sell the works in 1813 when the property was described as containing two well constructed furnaces each capable of making seventy tons of iron per week and blown by two capital machines worked by water. The company at this time also owned a rolling mill and forge with a mineral ground of 600 acres. The forge at this time was held from Capel Hanbury Leigh and contained a Trevithick engine for occasional blowing. The forge possessed two hammer wheels, a blowing machine, two fineries, three hollow fires, an air chafery, three puddling and balling furnaces, a charcoal house, a smiths' shop, a warehouse, an agent's house and twenty houses for workmen.

The two furnaces produced 5,200 tons of iron in 1823 and a third furnace was built in 1826 and in 1830, when the works was being managed by John Scale, the output of the furnaces was 10,190 tons. When Powell & Co. attempted to sell the works in 1833, the site comprised three blast furnaces, 44ft. high and 14 ft. across the boshes, capable of making 240 tons of iron each week. A Boulton & Watt type engine and a 42ft. high waterwheel supplied the blast. The site also included twenty-six coking ovens, three running out fineries, a foundry air furnace and two cupolas. Included in the sale was the forge for the manufacture of charcoal blooms and puddled bars and a rolling mill, worked by a 42ft high waterwheel, capable of making 120 tons of finished bars each week. No sale was concluded but in 1834 John Powell and John Jones managed to obtain a mortgage and the works continued in operation with Launcelot Powell as the resident managing partner.

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In 1839 four furnaces existed at the Clydach Ironworks and a year later the works were further modernised by the addition of a second steam blowing engine. This was a 52½in. beam blowing engine purchased from the Neath Abbey Iron Company. During the 1850s three out of the four furnaces remained in blast but the general depression in the iron trade forced a complete closure in 1861. The result of this was that the Clydach Ironworks was again put up for auction. At this time the works was described as consisting of four blast furnaces capable of turning out 400 tons of pig iron each week, spacious bridge houses, cast houses, mine kilns, coke yards, seventy three coke ovens, a foundry cupola, an air furnace, two stoves, a crane, a carpenters' shop and a smiths' and fitting shop with slide lathe, drilling and boring machines. The blast was supplied by two beam blowing engines, one was a 52½in. x 8ft. engine with a 104 in. blowing cylinder while the second was a 40in. x 8ft. engine with an 80in. blowing cylinder. Additional blast was obtained from a blowing machine worked by a 42ft. high waterwheel. The works also contained a forge worked by a 42ft. waterwheel with puddling furnaces attached. Also included in the sale were valuable mines and collieries worked by levels, two counting houses, an agent's house, spacious shops and warehouses, a shopkeeper's house, stables, forty eight houses for workmen and a 12in. steam engine to wind materials and iron along an inclined plane between the furnaces and rolling mill. The steam engines at the collieries and mines consisted of two 20in. high pressure winding engines, a 12½in winding engine and a 15in. high pressure pumping engine. No bids were forthcoming, and the Clydach Ironworks was one of the first casualties in the decline of the South Wales iron industry.

In 1863 Jayne and Meadhouse leased part of the Llanelly works to manufacture tinsplate and a company called the New Clydach Sheet & Bar Iron Company (Limited) was formed in 1865 to take over the Clydach Ironworks. No furnaces were put into blast and the operations of the company were suspended in 1866 and the works was again up for sale in 1867. Isaac Lewis of Clydach House bought the works and later disposed of the works to John Jayne but no operations were commenced on the site. The Llanelly Forge was sold out of Chancery in 1870 and in 1872 it was owned by the Llanelly Charcoal Iron company but its ten puddling furnaces and single rolling mill were lying idle. The works was finally dismantled in 1881, when under the ownership of the Brynmawr Coal and Iron Company Limited (Ince 1993, pp 133-135).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on plans held at the Gwent Record Office and the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data. The core area excludes the Llanelly Forge site, located to the north on the opposite side of Cwm Clydach.

Identified Threats

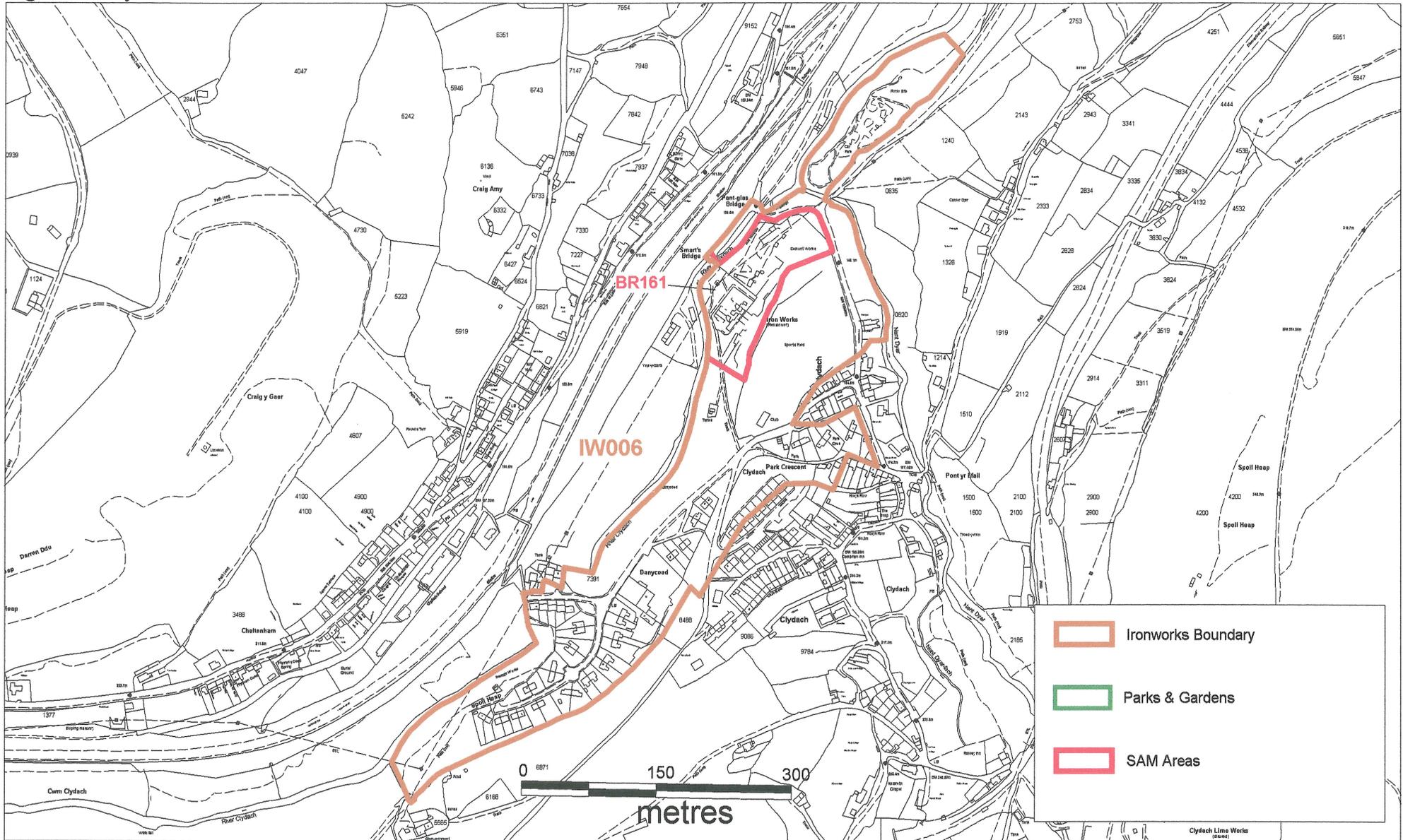
There are no identified threats to the area as identified from the UDP. However, despite excavation and subsequent conservation work, the site is now in danger from general dereliction, and would benefit from a management agreement.

Plate 003 Clydach Ironworks IW006



Plate 003: General view of the Clydach Ironworks (PRNs: 02476g and 03647g; NPRNs: 34,030 and 306,268; SAM BR161), view to the southwest.

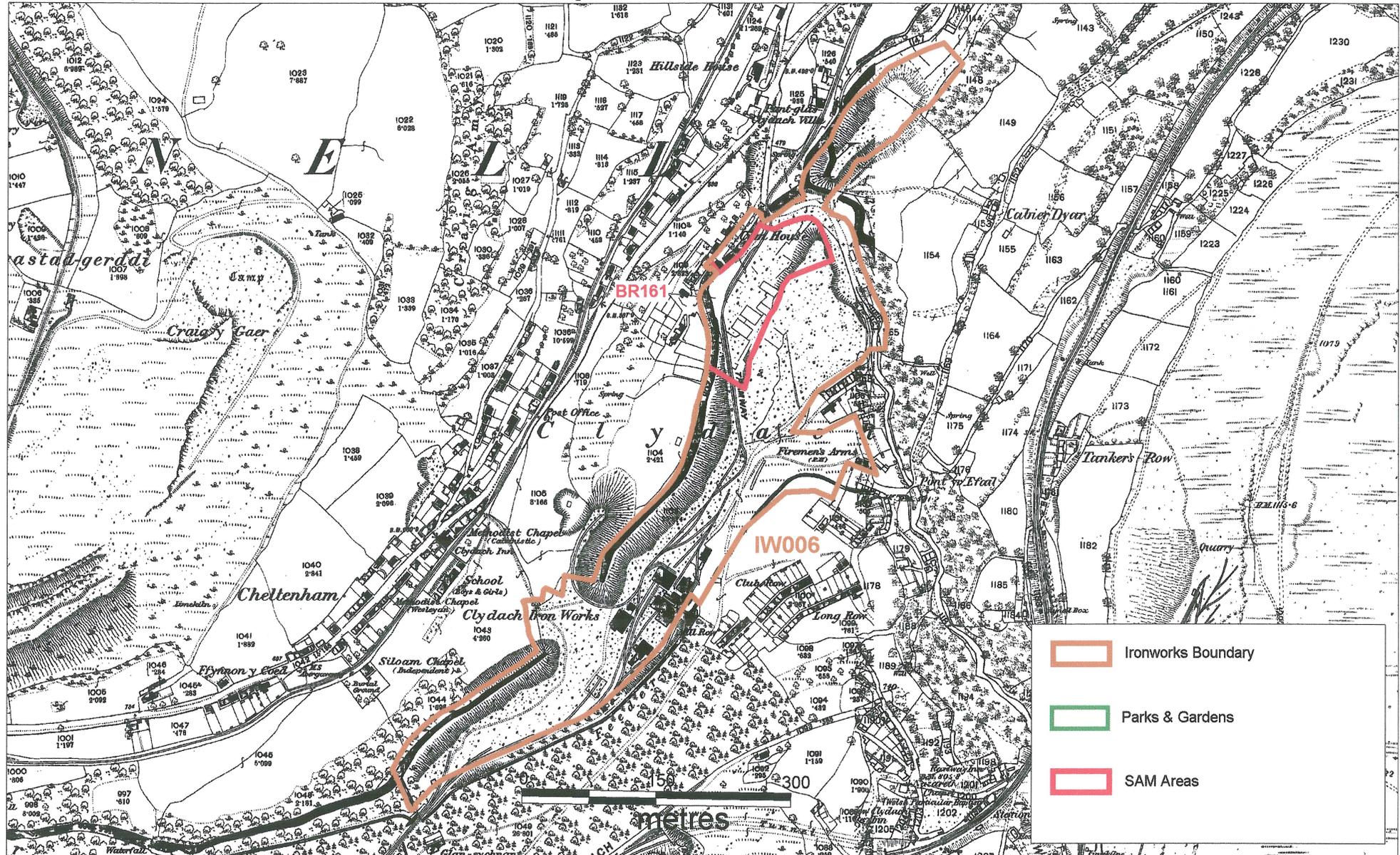
Figure 9a Clydach Ironworks IW006



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Figure 9b Clydach Ironworks IW006 on 1st edition OS map base



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IW Number 007 Blaina (including Cwmcelyn) Ironworks SO 19862 08334

General Description

The Blaina Ironworks, together with the neighbouring Cwmcelyn Ironworks formed an impressive sprawling area of ironworks of early to mid-19th century date. The site has been comprehensively cleared, reclaimed and redeveloped for housing during the 20th century; however, it is unknown whether the more massively constructed features such as the blast furnaces survive as buried remains.

The works are depicted on a number of plans of the period, giving particular detail were plans of 1880 and 1881, which detailed the blast furnaces, engines, coal washing machine, adjoining coke ovens, mills and forge. The 1st edition shows the full extent of the site and its extensive tramroad network. Also detailed were the following features: blast furnaces (two rectangular and one circular) charging ramp and adjacent limekilns at SO 19849 08404; adjacent to the south a mill with possible blast stoves at SO 19958 08244, and an extensive coke yard upslope and east of the blast furnaces, with coke ovens at SO 19887 08410, SO 19949 08493, SO 20016 08492. To the north of the coke yard at SO 19763 08601 stood a brick works with associated limekilns (SO 19795 08603) and adjacent old coal shaft (SO 19863 08607).

The Cwmcelyn Ironworks site located in the area immediately to the north of the main Blaina Ironworks, appears to have become a foundry (SO 19742 08833) with associated limekilns (SO 19789 08849) by the survey of the 1st edition 1:2500 OS map; this area has been subsequently redeveloped as the Rising Sun Industrial Estate.

Historical Background

The Blaina Ironworks dates from 1823 when George Jones, an ironmaster from South Staffordshire, leased land for the works. The works was completed in 1824 and two furnaces were put into blast. These furnaces produced 4,905 tons of iron during 1830. By 1831 the Blaina Ironworks was under the control of Russell & Co. with John Russell and Thomas Brown being the main partners.

A merger took place in 1839 between the Blaina Ironworks and the newly constructed Cwm Celyn Ironworks with its four furnaces. A new company named the Cwm Celyn and Blaina Iron Company was formed to operate both works. There appears to have been an early involvement in this company by the Stothert family who were engineers in Bath (Stothert & Pitt). Thomas Macauley Cruttwell, a Bath solicitor, also took an important role within the company in its early years.

In 1844 the Cwm Celyn and Blaina Iron Company was bought by a new grouping of nine partners who included John and Henry Stothert and Frederick Levick was employed to manage the ironworks. At the Great Exhibition of 1851, the then owners Cruttwell, Allies & Co. displayed pieces of iron forge and refined metal, puddled, merchant and beat bar iron plus a finished rail. By 1855 the company was operating three furnaces of the Coalbrookvale Ironworks. Frederick Levick became the sole owner of the three ironworks in 1858 when each site possessed two furnaces capable of operation. In 1849, Levick was one of the first managers to successfully utilise waste gases from blast furnaces. At about the same time he increased his iron make to two hundred and seventy tons per week from each furnace.

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In 1867, when the three ironworks were put up for sale the Blaina concern had a single furnace in blast blown by a 45in. x 7ft. 6in. beam engine with a 94in. blowing cylinder. The ironworks also possessed hot blast stoves, calcining kilns and sixty open coke ovens.

The sale was unsuccessful and during 1868 the works were idle. During 1869 the Blaina Iron and Coal Company was formed to resuscitate the Blaina Ironworks and two furnaces and four puddling furnaces were put into production. In 1871 the company purchased the Nantyglo and Beaufort Ironworks and was renamed the Nantyglo and Blaina Iron Works Company (Limited) with John Richardson as managing director. However, the worsening conditions saw all the assets of the company sold off in 1878. The Blaina Ironworks was purchased by Spence and Company of Liverpool who put a furnace into blast in 1880 (Ince 1993, pp 131-133).

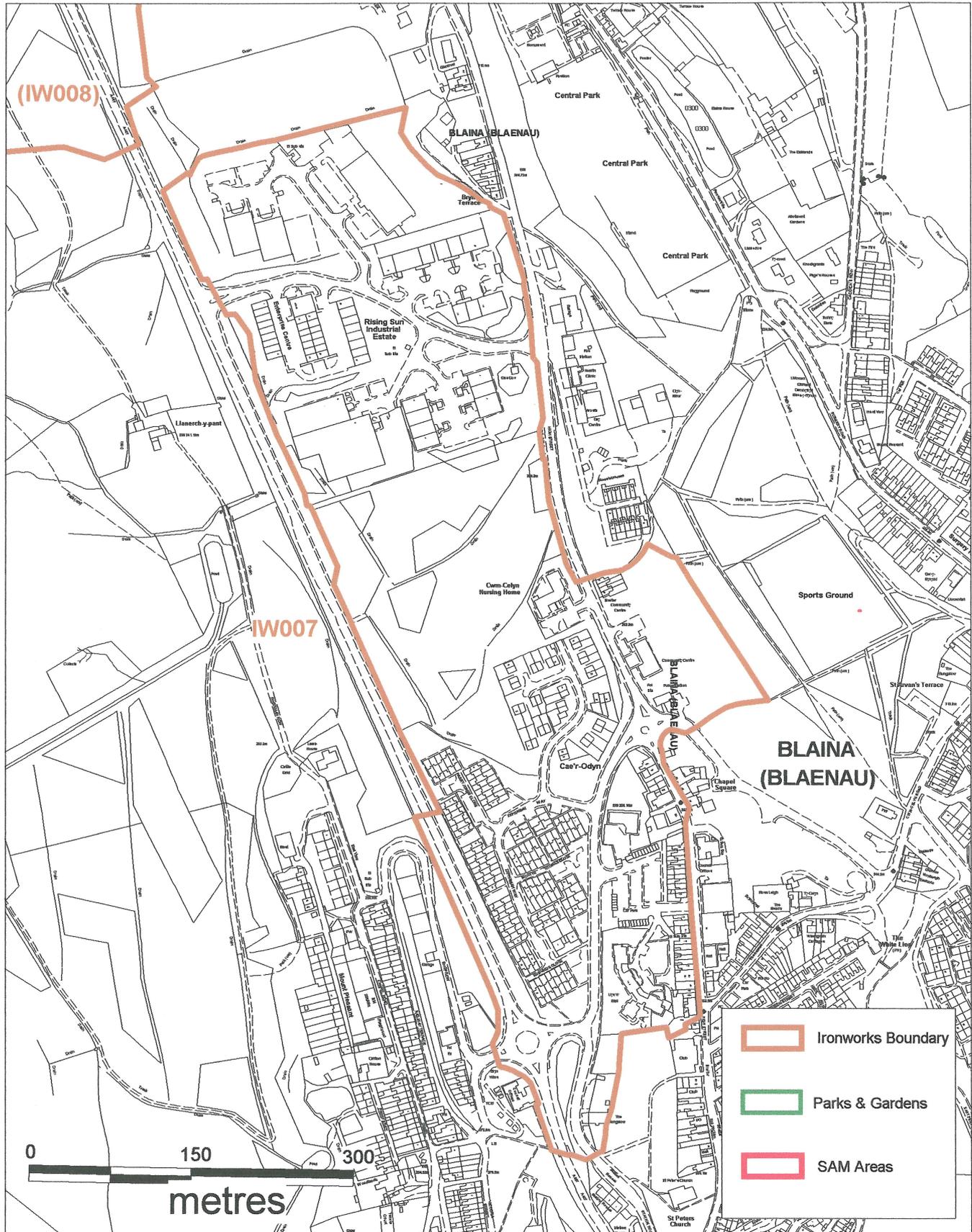
Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on industrial plans held at the Gwent Record Office and the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

No threats to the area have been identified from the UDP. The area has previously been redeveloped for housing and industrial estates. Any future proposed development should allow for the evaluation of buried remains, such as furnace bases.

Figure 10a Blaina (including Cwmcelyn) Ironworks IW007



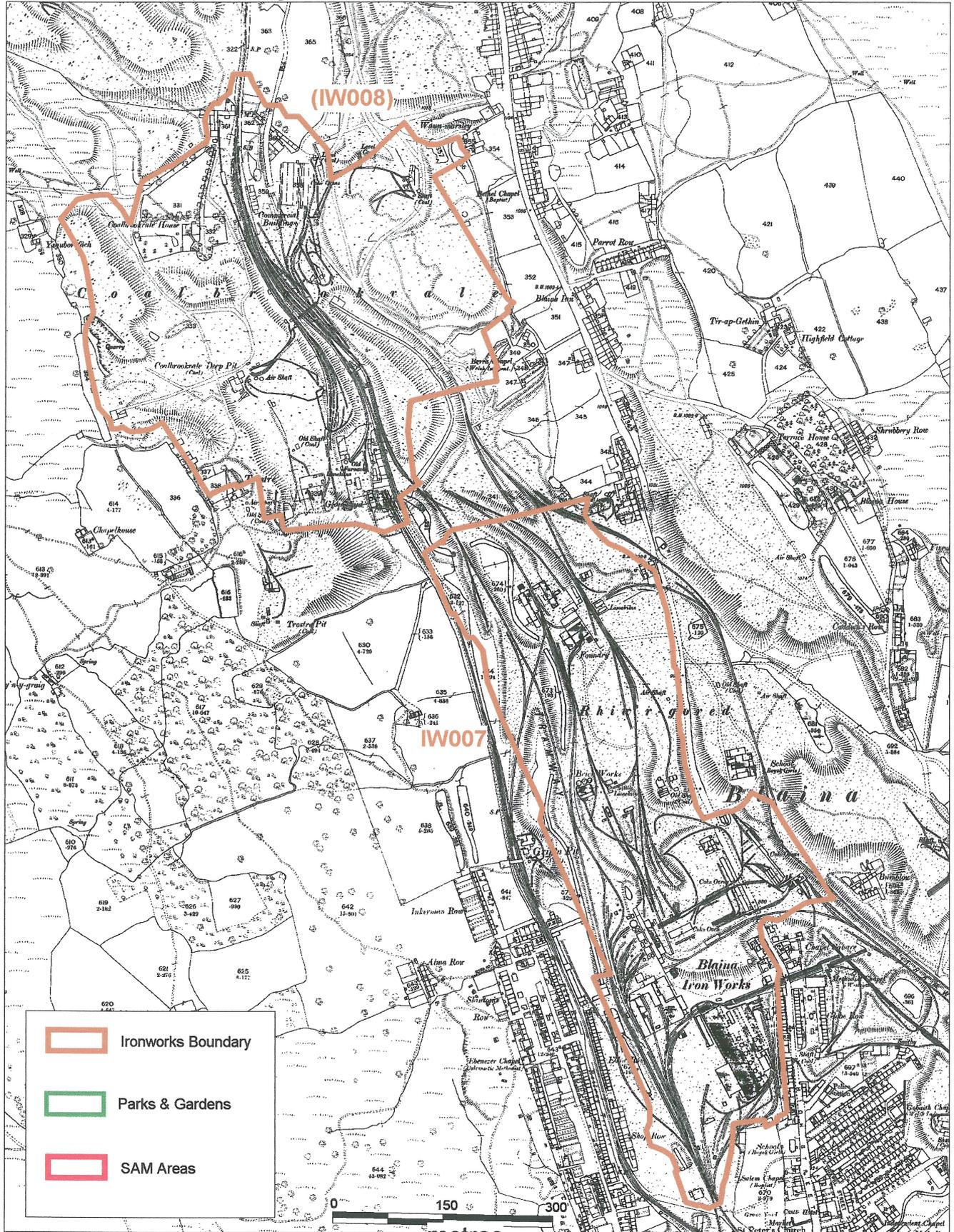
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Figure 10b Blaina (including Cwmcelyn) Ironworks IW007 on 1st edition OS map base



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IW Number 008 Coalbrookvale Ironworks (including Trostre Ironworks) SO 19384 09449

General Description

The Coalbrookvale Ironworks, established on the eastern bank of Ebwy Fechan about half a mile to the south of Nantyglo in 1819 by Messrs. Brewer and Co., appears to have been small-scale at first, with a single furnace and blast-engine. In 1824, an additional furnace was added together with casting houses and refineries and other buildings. The Trostre Works (NPRNs 40,482), located on the western bank of Ebwy Fechan, a little below the Coalbrookvale Works, was constructed from 1836 and belonged to the same company; the site had a single cold blast furnace, and blast-engine house, two refineries and other buildings. (Hanes Aberystroth 1835).

The Coalbrookvale site appears to have been an extensive area, east of Coalbrookvale House centred on a group of buildings named as 'Commercial Buildings' (SO 19312 09433) and adjacent ranks of coke ovens (SO 19384 09449). Whilst the Trostre site to the south, is detailed on the 1st edition 1:2500 OS map in its recently dis-used state; shown are the Old Furnaces at SO 19426 09082, adjacent limekilns (SO 19380 09052), possible engine house (SO 19449 09027) and an old coal shaft (SO 19365 09100).

Both ironworks were located in areas subjected to reclamation and redevelopment by the 1980s; nothing now remains above ground at either site, however, buried remains may survive.

Historical Background

The works at Coalbrookvale were founded in 1819-1820 with one furnace being completed in 1821. The Coalbrookvale Ironworks produced 2,704 tons of iron in 1823 and in the following year a second furnace was put into blast. The works was owned from the 1820s to the 1840s by Brewer & Co. and in 1849 there were three furnaces present on the site. By 1850s the three furnaces of the Coalbrookvale Ironworks Coalbrookvale works was being operated by the Cwm Celyn and Blaina Iron Company then under the ownership of Cruttwell, Allies & Co.

The Coalbrookvale Ironworks was associated with Frederick Levick, who became the sole owner of the three ironworks in 1858 when each site possessed two furnaces capable of operation. In 1849, Levick was one of the first managers to carry out successfully the utilisation of waste gases from blast furnaces, and the first to roll Barlow rails. He also increased production to two hundred and seventy tons per week from each furnace.

The furnaces continued in operation until 1867, when the three ironworks were put on the market due to financial problems. Sales documents record the details of the Coalbrookvale Ironworks, which had a hot blast furnace blown by a 36in. x 6ft. 6in. beam blowing engine with a 69in. blowing cylinder. At nearby Trostre was a cold blast furnace blown by a 38in. x 8ft. beam blowing engine with a 76in. blowing cylinder. The boilers for these engines were fired by waste heat. The forges and mills at Coalbrookvale were served by fifty two puddling furnaces, two trains of puddling rolls, two squeezers and two shears capable of turning out 900 tons of puddled iron each week. No.1 mill possessed a pair of slabbing rolls with reversing gear, a pair of roughing rolls with reversing gear, a pair of finishing rolls and two pairs of shears all worked by a 40in. x 6ft. beam engine and an auxiliary 26in. x 6ft. horizontal engine. Nine balling furnaces and three heating furnaces served the mill. No.2 mill contained a pair of slabbing rolls with reversing gear, a pair of roughing rolls, a pair of finishing rolls, eight balling furnaces and three second heating furnaces. No.3 mill had a pair of roughing rolls, a pair of finishing rolls, two pairs of shears, four balling furnaces, a guide mill and two heating furnaces for the guide mill. The

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rolls in No.2 and No.3 mill were driven by a 36in. x 6ft. high-pressure beam engine. Also present were two circular saws for cutting iron with their own steam engines, a range of five straightening and four punching benches for No.1 mill with a separate steam engine and a second range of fourteen benches for straightening, punching, shearing and pressing driven by a separate steam engine. This department also contained a large blacksmith's shop. Attached to the Coalbrookvale Ironworks was a large engineering works whose machinery was powered by a horizontal engine, a repair shop with a horizontal high pressure engine and a factory for making coal cutting machines. The three works in the six years ending 30th September 1865 had produced on average 39,000 tons of iron per year.

No bid for the works was received at the sale and during 1868 the works were idle. During 1869 the Blaina Iron and Coal Company was formed to resuscitate the Blaina Ironworks and two furnaces and four puddling furnaces were put into production. In 1871 the company purchased the Nantyglo and Beaufort Ironworks and was renamed the Nantyglo and Blaina Iron Works Company (Limited) with John Richardson as managing director. However, the worsening conditions saw all the assets of the company sold off in 1878 (Ince 1993, pp 131-133).

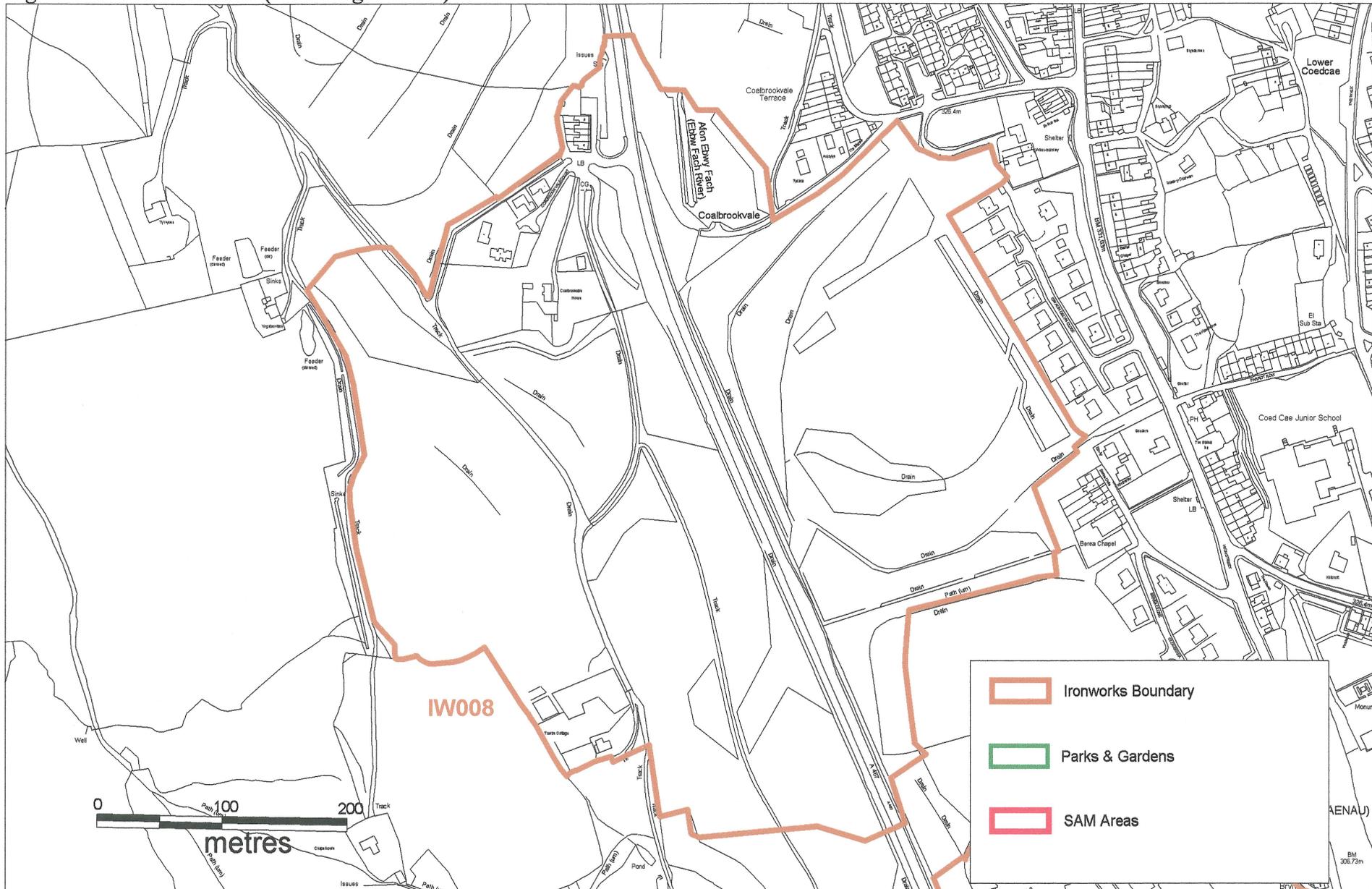
Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on plans held at the Gwent Record Office and the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

Threats to the area as identified from the UDP are in the form of Industrial development: J1 (41) Industrial site north of Rising Sun. While the area has been previously reclaimed, the potential for buried remains should be considered in any future development proposals.

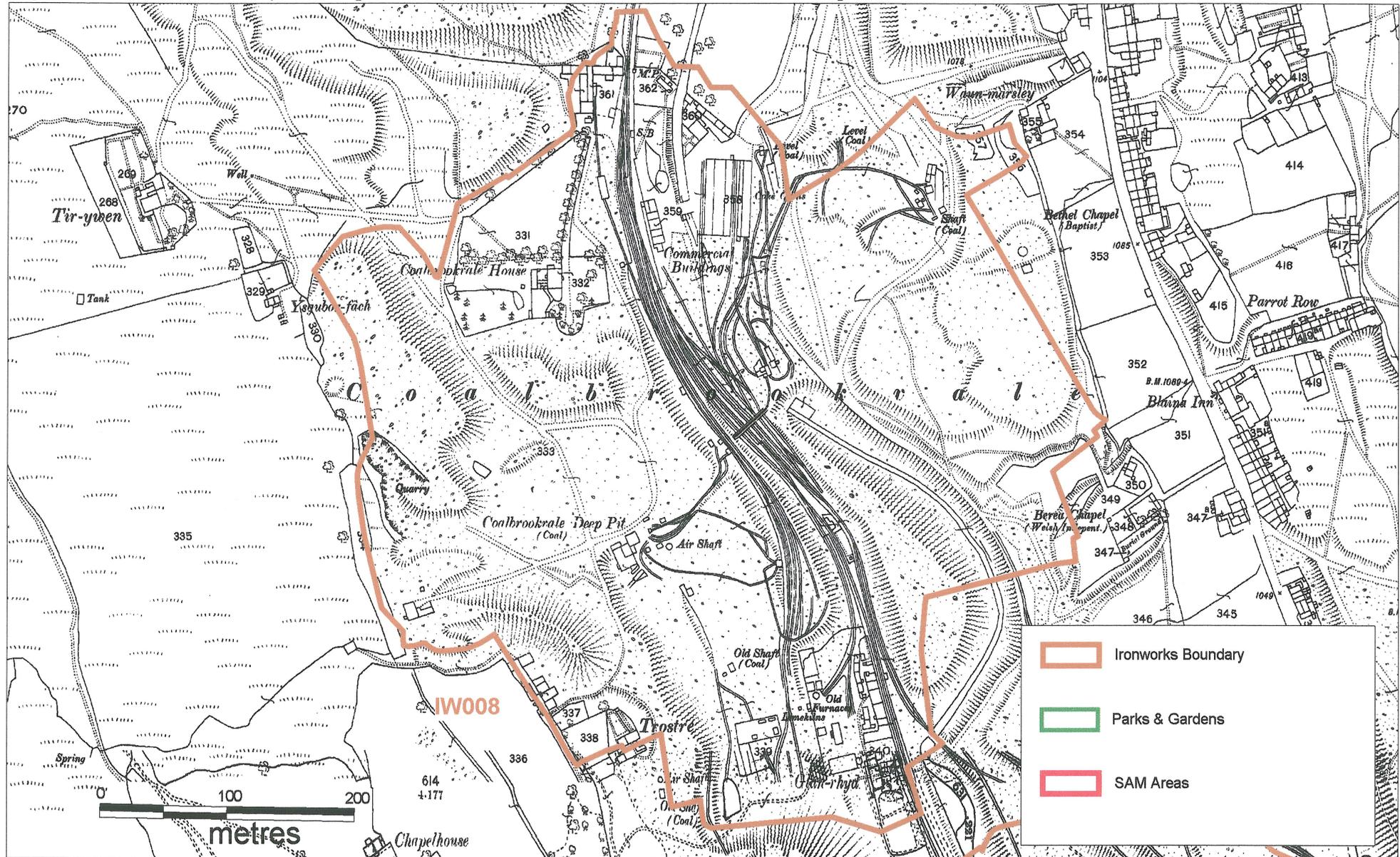
Figure 11a Coalbrookvale (including Trostre) Ironworks IW008



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Figure 11b Coalbrookvale (including Trostre) Ironworks IW008 on 1st edition OS map base



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IW Number 009 Nant-y-glo Ironworks SO 19060 10737

General Description

The Nantyglo Ironworks, important historically for its association with early iron entrepreneurs including Crawshay Bailey, Thomas Hill, and Samuel Hopkins, among others, was also associated with innovations in iron production technology; such as the replacement of the solid sand bottom of the puddling furnace with a bottom composed of cast iron plates cooled from below by the circulation of air instigated by Samuel Rodgers of Nant-y-glo in 1818 (Ince 1993). The site comprises two adjacent areas: 009a the core ironworks area itself, and 009b Nant-y-glo Roundhouses and Ty-mawr, an area containing the ironmaster's residence and fortified farm, included here because of its close association with the ironworks itself.

The best preserved and most visible features lie within area 009b; these are the Nant-y-glo Round Houses, a Grade II* Listed structure (Cadw Ref.: 17086; NPRN: 54623; PRN: 02142g, 07861g-07864g and 08863g; NGR: SO 1902 1027), which comprises the standing remains of two fortified round blockhouses with surviving cast-iron fittings and a U-shaped agricultural range of two storeys with the main range aligned north to south and two wings on the eastern side; this range is considered to date in part to c. 1795, and formed part of the Nantyglo Ironworks in before the works were purchased by Joseph Bailey and Matthew Wayne; the whole complex is surrounded by a defensive wall. The demolished remains of the former ironmaster's residence, Ty-mawr (NPRN: 20452 (House), 265932 (Gardens); PRN: 02348g; 08862g; NGR: SO 1907 1025), created in 1816 by Crawshay and Joseph Bailey, were the subject of an archaeological excavation during the 1980s; the site has been sadly neglected since and is in need of a programme of consolidation, conservation and interpretation.

Unfortunately most of the core area, 009a, has been radically altered by infrastructure and housing development during the 20th century. The site of the early furnaces, shown disused on the 1st edition OS map, was located in the area between Market and New Roads, just north of the Hall; the 1821 Abergavenny Survey depicts two furnaces at this site, while three are in place on the 1st edition OS map. This area was partly redeveloped from the early 20th century for housing; however, there is a possibility that buried remains associated with the furnace bank may survive on the site. The works, with its furnaces, mills, stacks, engine house(s) and high level launder are depicted on an engraving of 1810 (S Lacey) and a watercolour of 1830 (Lord 1998, p 136).

To the north of the early furnace site is a block of buildings set at a tangent to Market Road (Nos 27-30), these surviving buildings, are named on a map of 1841 as a shop (possibly also offices), and are those depicted on the 1st edition OS map to the south end of Office Row (PRN 02938g). Office Row itself, and other buildings in place before the publication of the 1st edition OS map, including the nearby Bush Hotel and the housing at Forge Rise have all subsequently been demolished. Immediately upslope and east of the Old Furnaces a terraced row of worker's cottages known as Smoky Row is depicted on several maps including the 1821 Abergavenny Survey and the 1st edition OS; subsequent editions indicate the cottages were later demolished and the site redeveloped. The area to the north, now largely a recreation ground, formed an extensive coke yard with associated coke ovens and coal shaft (1st edition OS map). The area was later the site of the Cokeyard Colliery (2nd edition OS map), which is shown disused by the publication of the 3rd edition.

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The 1821 Abergavenny Survey indicates additional structures opposite the Old Furnaces on the west side of the Afon Ebbw Fach; the 1st edition OS map shows this area contained further furnaces, limekilns and coke ovens, as well as possible mills/casting houses. This part of the site has been largely destroyed by the creation of the route of the A467, though the slight possibility of remains surviving in a buried state on the western road embankment should be borne in mind. The site of the coke ovens associated with this part of the ironworks now lie beneath housing at the Round House Close, the condition of the buried remains are unknown.

The northern part of the site comprised a later area of Rail Mills associated with the upsurge in rail manufacture during the 1840s-60s (1st edition OS map); it is this area that was redeveloped in 1879 as the Lion Tin Plate Works, depicted on the 2nd and 3rd edition OS maps. This part of the site has been extensively reclaimed and landscaped in recent years and little of interest relating to the earlier phases is considered likely to survive, even in a buried state.

Historical Background

The early history of the Nantyglo Ironworks began in 1791 when the partners of the Blaenavon Iron Company decided to exploit its mineral grounds and in 1793 a partnership was set up between Hill & Co. of Blaenavon and Harford, Partridge & Co. to erect an ironworks on the Nantyglo portion of the mineral ground with Richard Summers Harford as manager. The Nantyglo Ironworks was completed in 1794 and the furnaces were put into blast in 1795, but there after the works were plagued by disputes and contractual problems and remained idle until 1802 and again between 1808 and 1811. The operating company of the time, the Nantyglo Iron Company sold the works in 1811 to Joseph Bailey and Matthew Wayne. This new partnership immediately invested money in modernising the Nantyglo machinery. There is a possibility that a Neath Abbey engine was installed at Nantyglo in 1811 and certainly a Boulton & Watt engine was purchased in 1812.

Crawshay Bailey replaced Matthew Wayne in 1820 and under the Baileys' management the Nantyglo Ironworks thrived. Five furnaces were in operation by 1823, and additional were added in 1826 and 1827 with 23,883 tons of iron produced in 1830. The success of the works lead to the purchase of the Beaufort Ironworks in 1833 to increase the supply of pig iron to the Nantyglo forges and mills and thereafter the works were run as one concern, iron smelted at Beaufort being conveyed to Nantyglo to be processed at the large foundry they established there (Rattenbury 1980, 47-8). The Baileys exploited fully the demand for wrought iron rails during the 1830s and 1840s with the firm of Bailey Brothers becoming one of the largest suppliers of rails to the home market.

To aid a period of expansion at the two works a 60in. beam blowing engine was purchased from the Neath Abbey Iron Company in 1836 and in 1843 a 45in. rotative beam engine was supplied from the same source. During 1839 Bailey Brothers operated eight furnaces at Nantyglo and six at Beaufort while during the 1850s and 1860s there were seven furnaces capable of production at each site. By this time, the Nantyglo Ironworks had a formidable reputation and was one of the most important iron-making sites in the world - supplying railway lines for the British Empire and American markets. The manufacture of rails continued at Nantyglo but during the late 1860s it became clear that the Bailey family wished to retire from the iron trade. A sale was agreed and in 1871 the Beaufort and Nantyglo Ironworks were transferred to the ownership of the Blaina Iron & Coal Co. This transaction took place at an ideal time for the Bailey family for the early 1870s saw a boom in iron production in South Wales. This increased demand for iron allowed

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the Bailey family to sell Beaufort and Nantyglo for a reported sum of no less than £4,000,000. For this money the Blaina Iron & Coal Co. received fourteen furnaces, sixty seven puddling furnaces and four rolling mills.

Poor conditions in the iron trade, coupled with labour problems during the early 1870s heralded the end and in February 1874 the Nantyglo Ironworks was closed and with continued losses it was decided to sell off the assets of the company in 1878. In the following year the ironworks were leased by Spence & Co. of Liverpool who then began the conversion of Nantyglo into a tinsplate works (Ince 1993, pp 129-131).

Ironworks Boundary

The ironworks boundary, as defined for the purpose of this report, is essentially based on the core area of activity shown on the Survey of the Barony of Abergavenny, 1821 (among other estate plans) and the 1st edition 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

There are no identified threats to the site of the Nant-y-glo Roundhouses and the adjacent Ty-mawr site (009b), beyond continuing neglect. The former is currently protected through listing, and both this and the nearby site of Ty-mawr are currently the subject of a HLF based conservation programme commissioned by Blaenau Gwent CBC. This forms the basis for a proposed alternative use as heritage centre for the Nant-y-glo Roundhouses site.

Additional housing development (HB8 housing site N of Roundhouse Close) has been identified from the UDP as a threat to the central area of the ironworks area 009a, however this is relatively minor.

Plate 004 Nant-y-glo Ironworks IW009a



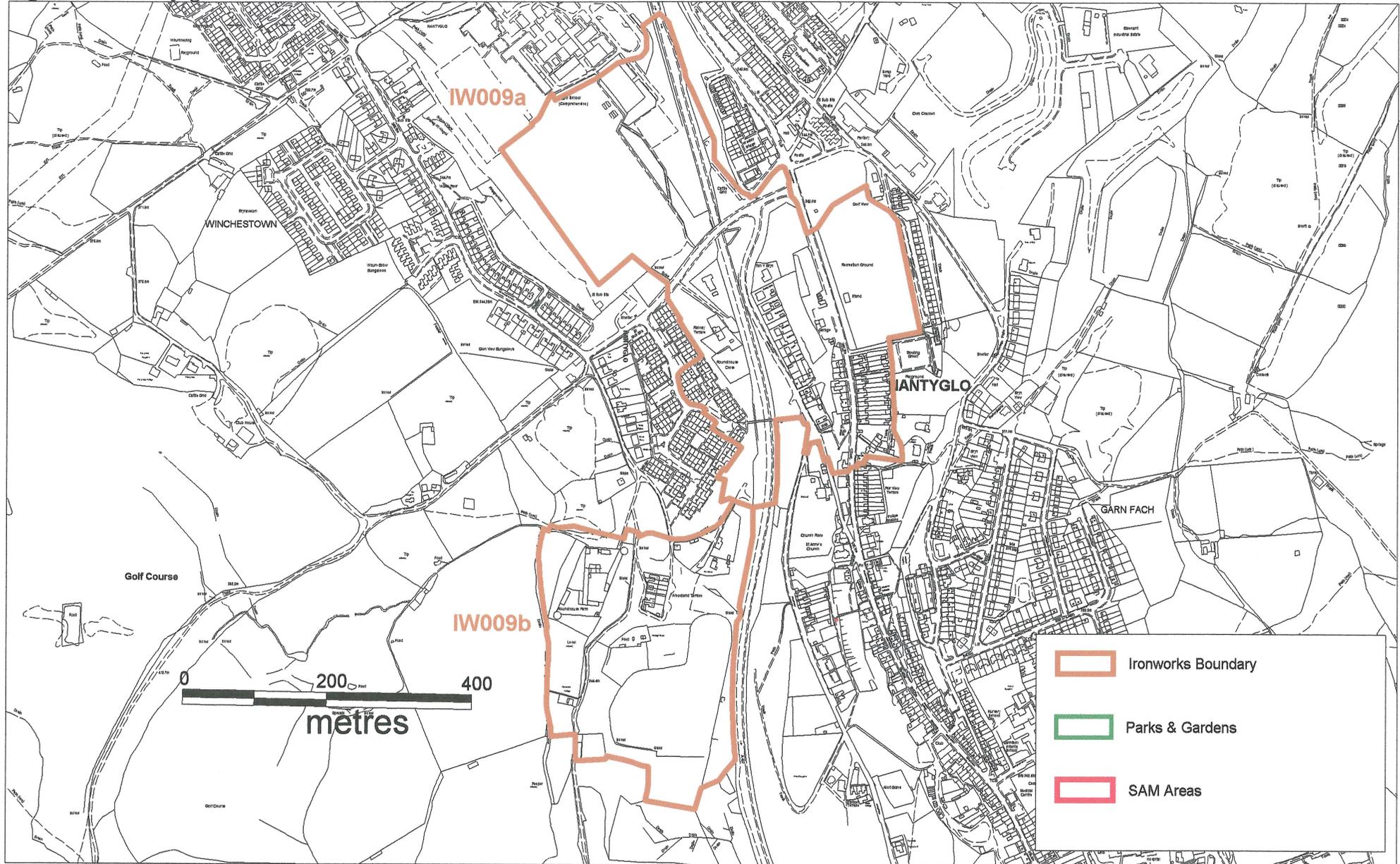
Plate 004: The shop site to the south of the now demolished Office Row (PRN 02938g); the site of the Old Furnaces of the Nant-y-glo Ironworks lie beyond, view to the southeast.

Plate 005 Nant-y-glo Ironworks IW009b



Plate 005: View towards the NE Roundhouse, Nant-y-glo Ironworks (IW009b) view to northwest.

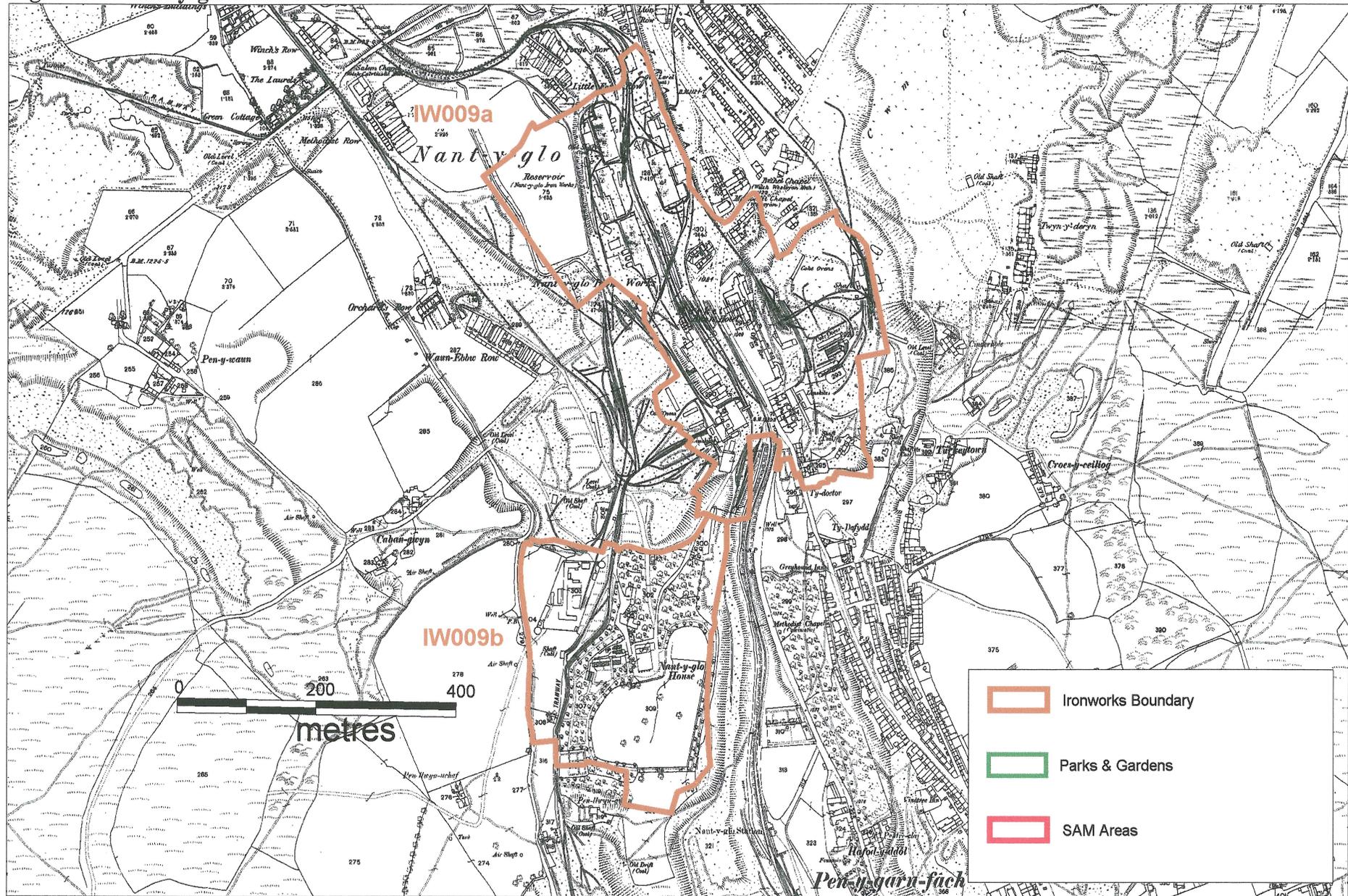
Figure 12a Nant-y-glo Ironworks IW009 a and b



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Figure 12b Nant-y-glo Ironworks IW009 a and b on 1st edition OS map base



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IW Number 010 Ebbw Vale Ironworks SO 17222 09636

General Description

The Ebbw Vale Ironworks was the last upland works to operate in South Wales, due in part to the sheer size and inertia of the Ebbw Vale undertakings. The Ebbw Vale Ironworks is important nationally and internationally for the remains of its furnace bank (PRN 08639g). A Grade II* Listed structure (Cadw ref: 22531) representing an extremely scarce survival of an extensive furnace bank dating in part to the late 18th century; the furnace bank has been preserved largely intact due to its reuse in the later 19th century as a charging bank (within area IW010a). The only the surviving contemporary furnace bank of similar scale is that at Cyfarthfa, which is slightly larger.

Most of the associated features contemporary to the furnace bank were demolished and replaced in c. 1866. The site had two large engine houses erected by Darby, one of 1865 on the south side of the furnaces with a beam of 36ft. and 30ft. 4in. diameter flywheel, the other of 1879 on the north side of the blast furnaces, which contained two 45 inch x 6 foot condensing engines (Ince 1993, 108); these stood until the 1980s.

Apart from the furnace bank, which appears to be in need of further remedial conservation work, little survives above ground in the surrounding area. Despite demolition and subsequent landscaping and development, much of the northernmost part of the Ebbw Vale Ironworks area, IW010a (NGR: SO 17222 09636) retains significant archaeological potential with good survival of the below ground remains of the nineteenth and twentieth century works as it appears to have had relatively light use since the furnaces were cleared. Ground investigations conducted in the area in 2004 (Scott 2004) has indicated a high potential for the survival of buried industrial archaeological features, such as building foundations and other remains associated with industrial processes carried out on the site; much of the area appears to be beneath upwards of 1.3m of made ground. The best preservation of the pre-1866 works appears to lie in the area east of the furnace bank wall, while elsewhere within 010a, buried remains dating from the mid-nineteenth century and later activities are more likely to survive as the operational core of the works remained at the same location until production ceased.

Ebbw Vale House (NPRN 265931; NGR SO 1710 0960) with its ornamental gardens (shown on various maps from 1816), thought to have been built by Jeremiah Homfray c. 1790 (Thomas 2000, 146), is located across the Afon Ebbw from the core area of the Ironworks. Ebbw Vale House, now the Ebbw Vale Works Museum, has been included within area 010a as an important and increasingly rare survival of an ironmaster's residence.

The area 010b (NGR SO 1712 0910) to the west of the British (English) Steel Tinplate General Office (PRN 08867g), Listed Building Grade II* Cadw ref: 22530), contained features relating to the 1860s remodelling of the Ironworks, specifically the site of the Upper Mills, and the adjoining Shaft and Engine House of No. 15 Coal Pit (disused by the publication of the third edition), together with an Engine Shed and Gas Works (1st edition OS map). The detached area 010c (NGR SO 1737 0800), contained the Ebbw Vale Steelworks (NPRN 34135), the Bessemer Steelworks on the 1st edition Os map alludes to the Bessemer Converters constructed during the 1860s. Both these areas, 010b and 010c lie within the footprint of the 20th century British Steel Tinplate works; this area is likely to have been heavily disturbed by the construction of the British Steel works and as a result little of interest is thought to survive in these areas.

Historical Background

An important role was played in the Welsh iron industry during the nineteenth century by the Ebbw Vale Iron Company. The Ebbw Vale Ironworks was a fairly large concern in itself but several other ironworks were taken over by the company as it expanded its interests in Monmouthshire. Much of the capital for this expansion was generated through the joint stock company system and it is a fairly easy task to discern similarities between the operation of the Aberdare Iron Company in Glamorgan and the Ebbw Vale Iron Company in Monmouthshire.

The first furnace at Ebbw Vale was built in 1790 with the partners in this venture being Charles Cracroft, Walter Watkins and Jeremiah Homfray. In 1791 the partnership was dissolved with Homfray becoming sole owner and in the following year Harford, Partridge and Company were admitted as partners. More land was leased, and in 1794-5, a tramroad built to the limestone quarries at Trefil. In 1796 the Ebbw Vale Ironworks was able to produce 397 tons of iron in the year and at this time Homfray was bought out of the partnership. The partners in the company at the end of the eighteenth century were John Partridge of Monmouth, Philip Crocker, Samuel Harford, James Harford and John Tomlinson.

A second furnace was built at Ebbw Vale by 1805 although only one of the furnaces was in blast during the year producing 3,664 tons of iron. In 1818 the company took control of the Sirhowy ironworks and by 1823 the combined works each possessed three furnaces, which produced 20,425 tons of iron during the year. Output rose to 26,020 tons in 1830, of which 18,133 tons (18,424 tonnes) of pig and finished iron was produced at Ebbw Vale, by which time the works were being operated by Harfords, Davies and Company. In 1829, rails were being made for the Stockton and Darlington Railway.

In 1844 the Ebbw Vale and Sirhowy Ironworks were purchased by a partnership consisting of Abraham Darby, Alfred Darby, Henry Dickenson, Francis Tothill, Thomas Brown and Joseph Robinson. At the time the Ebbw Vale Ironworks comprised four blast furnaces of which three were at work each producing 90 to 100 tons of iron per week. The fourth furnace was new and was ready to be put into blast. The furnaces were furnished with hot blast apparatus, cast houses, bridge houses and six mine kilns. Two beam blowing engines provided the blast. Also situated close to the furnaces were various yards, a clay mill with engine, a brick yard, a limekiln, four fineries, a boring mill, fitting up shops, lathes, a smith's shop (23 fires), a carpenters' shop and a pattern makers' shop. The rolling mill yard consisted of twenty-eight puddling furnaces with mills for making rough bars. Reheating was carried out in twenty-eight balling furnaces, which served rolling mills for finishing bars worked by two high-pressure engines. Also present on the site were five annealing and other furnaces, saws and engines for cutting rails, punching engines, a 30ft. waterwheel erected two years previously with lathes for turning rolls, a mill for manufacturing small iron, a 26in. engine with hammer and plating rolls and a sand mill. The Ebbw Vale Ironworks, at this time, produced 26,000 tons of bar and railway iron yearly.

The new partnership was prepared to expand their iron making empire not only by building at Ebbw Vale but also by purchasing other ironworks. In 1849 the neighbouring Victoria Ironworks was bought and three years later the Abersychan Ironworks was taken over. The Pentwyn Ironworks was acquired in 1857 and by the end of the decade the Ebbw Vale Company had eighteen furnaces at their disposal and employed a work force of 12,000.

By 1863, the company had 19 blast furnaces, 192 puddling furnaces, 1200 workmen's cottages,

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and 7500 acres (3035 hectares). The amount of investment injected into the Ebbw Vale is reflected in a detailed description of the plant at the forges and mills made in 1863-1864.

In 1864 the Ebbw Vale Iron Company Limited, with Abraham Darby as chairman, was formed with a nominal capital of £4,000,000. The Bessemer process for making steel was introduced in the 1860s by the chief engineer, Edward Windsor Richards, and Ebbw Vale became a noted producer of steel, the works being extensively modernised. A new rail mill was completed in 1865 for the manufacture of Bessemer rails and in 1867 a steel rail works was completed with engines built by Galloway and Sons of Manchester. At this time the Ebbw Vale Iron Company was operating two 5 ton Bessemer converters and a 1½ ton converter. A further pair of converters was installed in 1869 and in the following year the company was operating seven 6-ton converters. The iron-producing department also experienced some investment at the same time for in 1865 the massive Darby blowing engine was constructed at the Ebbw Vale Ironworks. Such was the growth of the company that in 1870 it had sixteen furnaces in blast and in 1872 it was operating 161 puddling furnaces and 12 mills.

In 1873 Darby retired and a new company, the Ebbw Vale Steel, Iron and Coal Company (Ltd.) was constituted. The Ebbw Vale Ironworks was turning out weekly 1,200 tons of steel rails during 1878 with much of the original iron being made from Bilbao haematite. Steel was then being made in four 6-ton converters and two 8-ton converters. A profit in excess of £34,406 was made in the year ending March 31st 1881 and during this year the company kept from thirteen to fourteen furnaces in blast. A detailed description of the Ebbw Vale Ironworks was written in 1884 by which time iron making had ceased at Sirhowy, Pentwyn and Abersychan. The Ebbw Vale Ironworks then possessed four furnaces, which were 60ft. high and topped with iron bands. There were three beam blowing engines at the works, namely the Darby engine and two 45in. x 6ft. condensing beam engines with 90in. blowing cylinders erected in about 1880 by the Coalbrookdale Iron Company. The Bessemer department was situated halfway between the Ebbw Vale and Victoria Ironworks. Two pairs of blowing engines provided the blast for the converters. One pair were vertical 40in. x 5ft. engines with 54 inch blowing cylinders manufactured by Daniel Adamson and Company while the second pair were horizontal 36in. x 5ft. engines with 48in. blowing cylinders manufactured by Galloway and Sons. Situated close to the blowing engines were three pairs of 18in. x 2ft. horizontal hydraulic pumping engines for working the Bessemer converters and rail mills. A pair of 36in. x 4½ft. horizontal blooming engines by Galloway and Sons drove two trains of 36in. rolls. This mill and engine had only recently been completed and were capable of reducing steel ingots from 14½in. square to 6in. square. The feeding rollers were powered by a pair of 10in. x 1ft. 2in. vertical engines and the blooms were transported from the rolls to the shears by a train of live rollers driven by a pair of 6½in. x 10in vertical engines. The shears operating with this mill were powered by a 12in. x 1ft. 4in vertical engine. Two engines provided the works with pumped water, namely 60in. x 6½ft. Cornish beam engine and a 40in x 4ft. engine.

The decline of the early 20th century was arrested when in 1935, Richard Thomas & Co bought the site and built a new steelworks, which by the 1960s, was the most advanced in Britain. The original small site became abandoned. In the later 20th century, the site was much redeveloped as a tinplate works, the majority of the older buildings demolished in favour of a vast complex of metal-sheeted buildings. Until about 1980, two engine houses stood at each end of the furnace bank, since demolished (Ince 1993, pp 105-108).

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Ironworks Boundary

The ironworks boundary for area IW010a, is essentially based on the core area of activity shown on various maps dating from 1816 to 1920; including the 1st, 2nd and 3rd editions of the 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Areas IW010b and c relate exclusively to developments of the 1860s and are based on the 1st, 2nd and 3rd editions of the 1:2500 OS map, though tied into current boundaries as depicted on landline mapping data.

Identified Threats

Threats identified from the UDP are limited to the proposed Industrial Site: J1 (8), on Steelworks Rd, within IW010a. This would impact on the general area of the demolished Darby Engine House site (NPRN 40,477; PRN 03221g) as identified in the NMR and SMR. Buried remains associated with this site are known to survive in an area now under between 1.3 and 2.3m of colliery spoil (Wessex Archaeology, 2004).

In addition with the recent closure of the British Steel site, the redevelopment of areas IW010b and c is also proposed.

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Plate 006 Ebbw Vale Ironworks IW010



Plate 006: The Grade II* listed furnace bank site (Cadw ref: 22531) at Ebbw Vale Ironworks (IW010a) view to east.

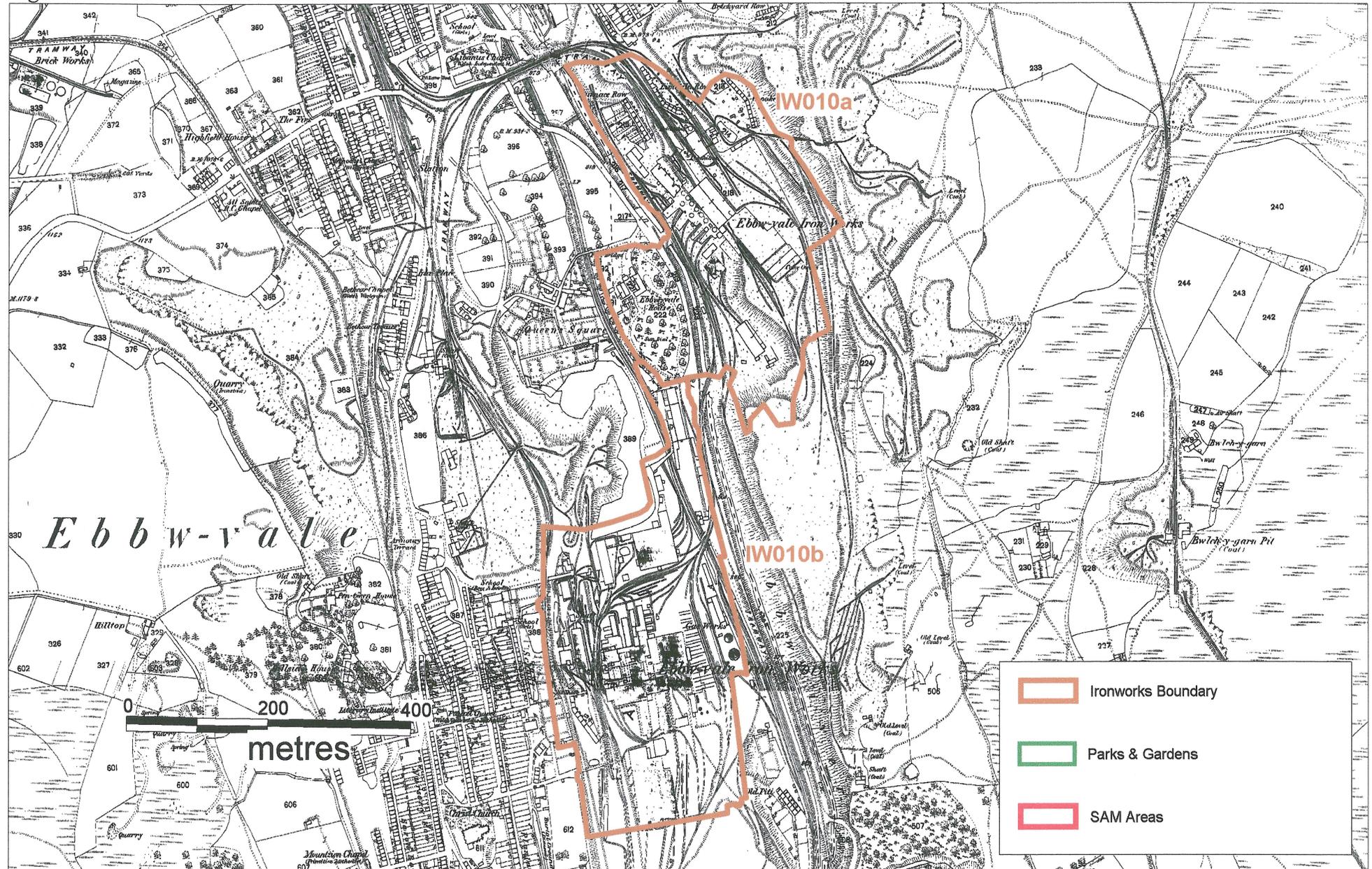
Figure 13a Ebbw Vale Ironworks IW010 a and b



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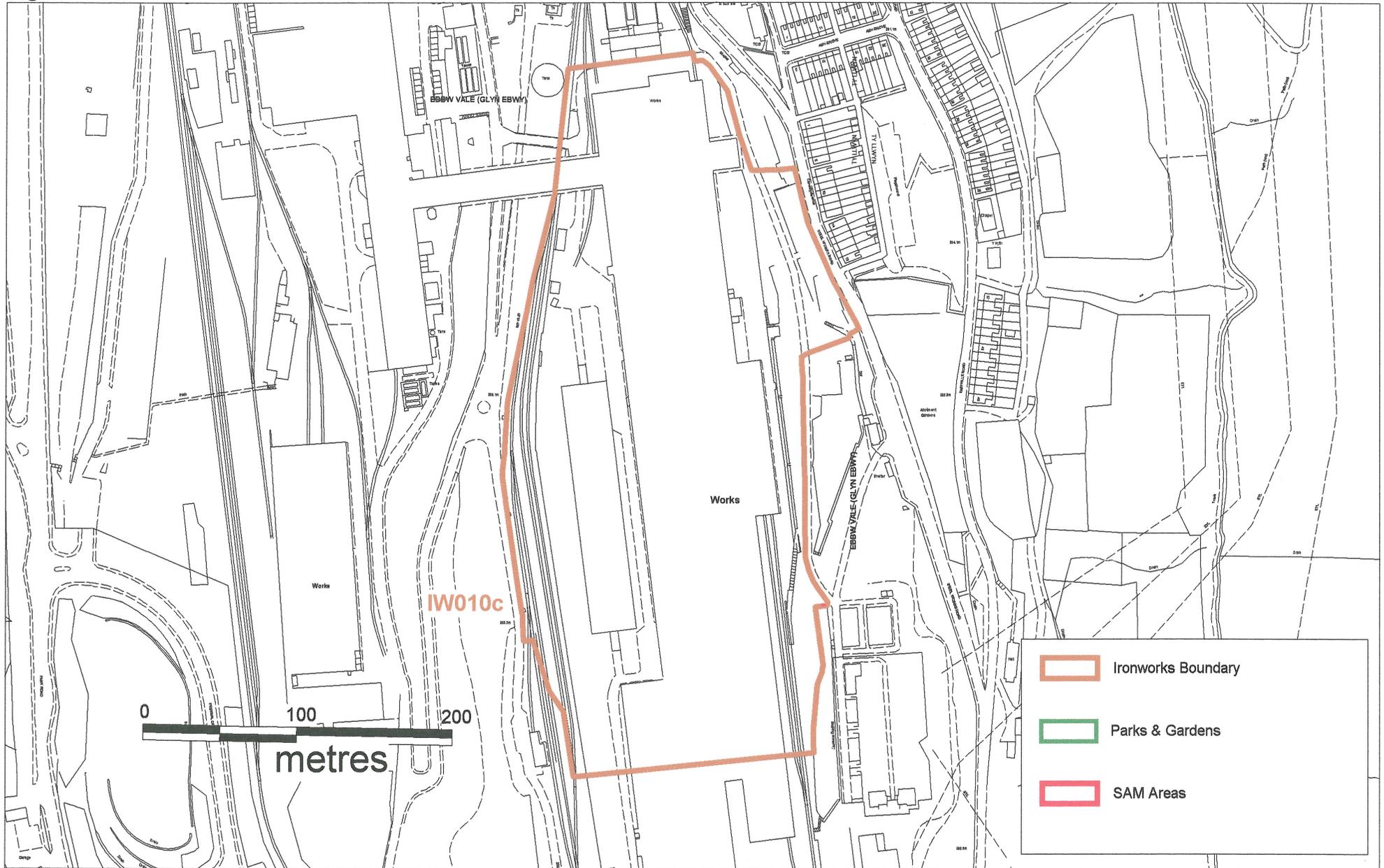
Figure 13b Ebbw Vale Ironworks IW010 a and b on 1st edition OS map base



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Figure 14a Ebbw Vale Ironworks IW010c

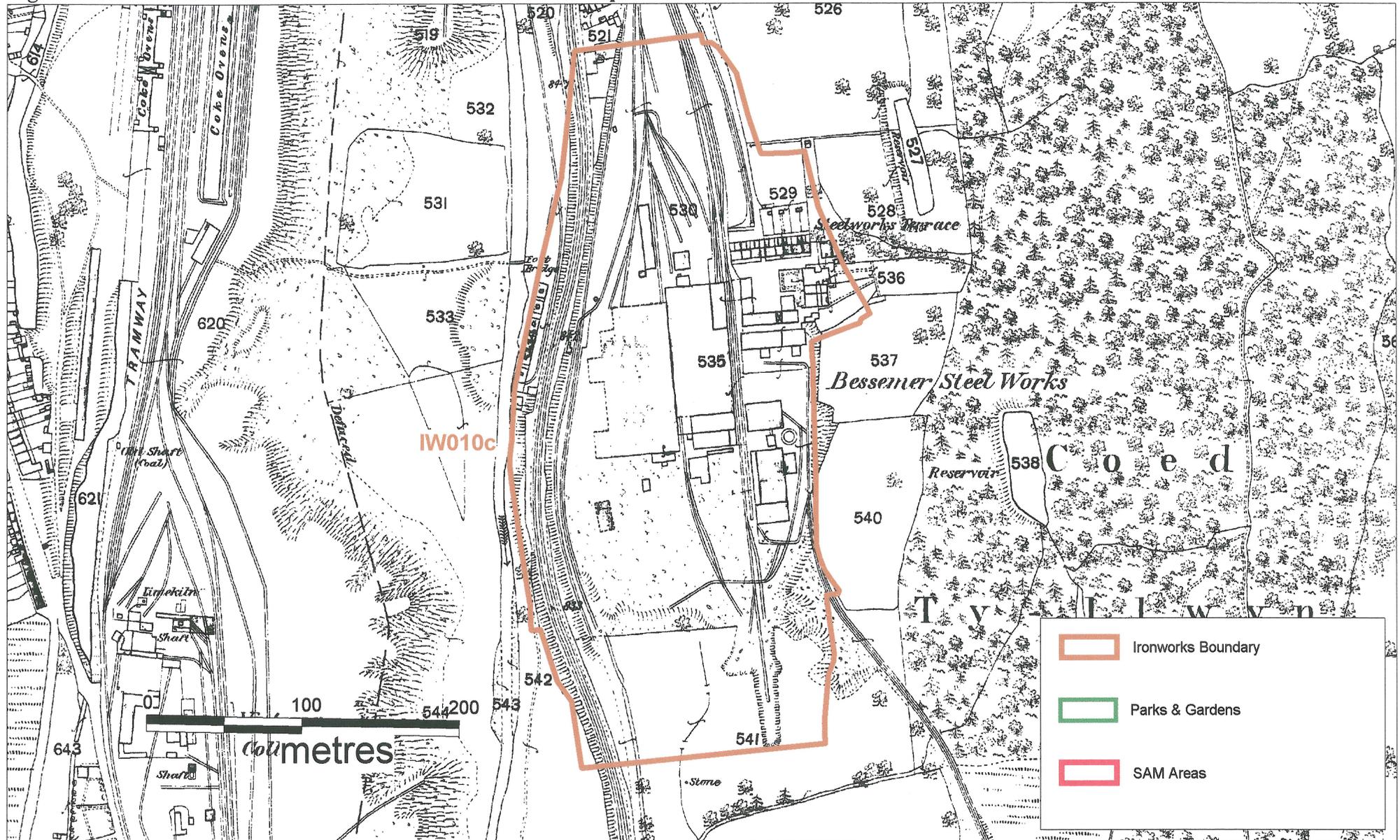


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Figure 14b Ebbw Vale Ironworks IW010c on 1st edition OS map base



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