

Phase 1 Site Investigation
& Preliminary Risk
Assessment

Client: Lidl Great Britain
Ltd

Stagecoach Depot,
Penmaen Road, Blackwood

Report No: 1271.01.01

June 2024





Executive Summary

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Phase 1 Geoenvironmental Site Investigation for a proposed store at Penmaen Road, Pontllanfraith, Blackwood, NP12 2DY. The objectives of this assessment were to present a preliminary conceptual site model to identify plausible pollutant linkages as a preliminary risk assessment and to provide recommendations for subsequent investigation work.

Site Setting

The site occupies an approximately rectangular plot in the north-eastern area of the Penmaen Industrial Estate, situated to the west of Penmaen Road and south of the B4254 road. At the time of writing, the site comprises a Stagecoach bus depot, with associated bus stabling and servicing facilities.

The site is formed of two distinct areas. The northern half of the site is dominated by the main bus depot building, featuring a tri-pitched roof with associated flat roofed offices along the northern and western fringes. A separate, pitched roof building is present adjacent to the western boundary, whilst a flat-roofed electricity sub-station of brick construction is present in the north-western corner. The majority of the southern half of the site is asphalt-surfaced and used for the stabling of Stagecoach's local bus fleet. A small, rectangular patch of concrete is present adjacent to the southern boundary of the site although this appears to be flush with the surrounding surfacing.

Site History

The earliest available historical mapping of 1879 shows the site to be divided into two fields, which extend off-site to the north, south and west. Except for the removal of one of two footpaths bisecting the site, the site remains unchanged until after the mapping of 1938. By 1953, the northern and central areas of the site have been redeveloped, with a large 'Furniture Factory' occupying these areas. By 1971, the present-day electricity sub-station had been installed in the north-western corner of the site. Between 1975 and 1986, the site became occupied by a 'Council Depot', with the southern area of the site being redeveloped from a heathland to hardstanding around this time.

Geology / Hydrogeology

Published geological maps record that the site is underlain by superficial Devensian Till, designated as a Secondary Undifferentiated Aquifer, and bedrock of the Grovesend Formation, designated as a Secondary (A) Aquifer. The site is not located within a groundwater Source Protection Zone (SPZ).

Mining

The Coal Authority Consultants Mining Report identifies the Mynyddislwyn Top Leaf coal seam being present 49m deep to the north-east of the site and 90m deep beneath the site, with an extraction thickness of 0.76m and last worked between 1873 and 1876. The Report states that probable unrecorded shallow mining is 'none' and there are no mine entries within 100m of the site. However, there are five claims for coal mining subsidence within 50m of the site boundary.

Radon

The site is located in both a Lower Probability Radon Area (less than 1% of homes are estimated to be at or above the action level) and an Intermediate Probability Radon Area (5 to 10% of homes are estimated to be at or above the action level). Consequently, basic radon protective measures are considered necessary within the structural design of the proposed development.

Unexploded Ordnance (UXO) Risk

Freely available Zetica Unexploded Ordnance (UXO) risk mapping indicates the site to be located within an area where the bomb risk is 'Low'. Therefore, no UXO precaution measures are considered necessary for any subsequent intrusive investigation, based on the information available for the site to date.



Recommendations

Environmental

The desk study has identified a number of on-site and off-site potential sources of contamination that would require further investigation. The following is recommended:

- Investigation of the lateral and vertical extent of made ground/fill beneath the proposed store footprint;
- Collection of soil and groundwater samples from the areas identified above for contaminants of concern; and
- Ground gas monitoring.

Geotechnical

It is recommended that a ground investigation is undertaken to enable preliminary foundation design.




Given the records in the Coal Authority Consultant's Mining Report it is recommended that a Coal Mining Risk Assessment is also prepared to determine the requirements for investigation and subsequent work relating to coal mining at and beneath the site.



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Issue No	Date	Prepared By	Technical Review	Authorised
01	11.06.2024	J Ramos 	P Dickinson 	G Jones 



1. INTRODUCTION

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Phase 1 Preliminary Risk Assessment for a proposed store at Penmaen Road, Blackwood, South Wales NP12 2DY, at the location indicated in **Figure 1**.

1.1. Objectives

The objectives of this assessment are as follows:

- to develop a preliminary conceptual model of the site to identify plausible pollutant linkages; and
- to provide recommendations for subsequent investigation work.

1.2. Scope of Work

The scope of work comprised:

- A review of local geological, hydrogeological, ground stability, and environmental data and historical mapping pertaining to the site and surrounding area; and
- Identification of potential sources, pathways, and receptors, and development of a preliminary conceptual site model.
- Obtaining a petroleum licensing search to determine the layout, number and decommissioning status of any underground storage tank systems (USTs) on-site.

The scope of work did not include a site reconnaissance visit.

Due to the study site's positioning within Wales, the scope was also designed in line with the Welsh Land Contamination Working Group's Development of Land Affected by Contamination: A Guide for Developers version 3: May 2017. This guidance represents the culmination of a co-operative effort involving the Welsh Local Government Association (WLGA) and Natural Resources Wales (NRW). For the purpose of this report, any references to the Environment Agency (EA) should be seen as interchangeable with NRW.

1.3. Previous Reports

It is not known if historic reports are available for review.

1.4. Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.



2. DESK STUDY

2.1. Description of Site

Site Description The site occupies an approximately rectangular plot in the north-eastern area of the Penmaen Industrial Estate, situated to the west of Penmaen Road and south of the B4254 road, as indicated in **Figure 2**. At the time of writing, the site comprises a Stagecoach bus depot, with associated bus stabling and servicing facilities.

The site is formed of two distinct areas. The northern half of the site is dominated by the main bus depot building, featuring a tri-pitched roof with associated flat roofed offices along the northern and western fringes. A separate, pitched roof building is present adjacent to the western boundary, whilst a flat-roofed electricity sub-station of brick construction is present in the north-western corner. The majority of the southern half of the site is asphalt-surfaced and used for the stabling of Stagecoach's local bus fleet. A small, rectangular patch of concrete is present adjacent to the southern boundary of the site although this appears to be flush with the surrounding surfacing.

The site boundary to the north is marked by the B4252 roadway, whilst vegetation marks most of the eastern and south-eastern boundaries. Palisade fencing appears to form the south-western boundary, although the site is open to south.

The client-supplied Topographic & Buried Utilities Survey records several utility services present on-site including surface water drainage along the southern margins, electricity cables in the south-west and interceptors on the southern boundary.

Area of Site Circa 8600m².

Site Elevation The site gently slopes downwards from north to south, with the topographic elevation varying between approximately 144m AOD (metres above ordnance datum) on the northern boundary and 140m AOD in the south-western corner.

National Grid Co-ordinates 318080, (E), 196440 (N)

2.2. Site Setting

The site is situated in a mixed commercial and residential area.

North: The B4254 roadway forms the northern boundary, with predominantly residential properties beyond.

East: Penmaen Road to the east, beyond which are a pond and B4251.

South: Residential properties bound the site to the south-east, fronting onto Penmaen Road.



West: Several industrial units associated with Penmaen Industrial Estate, with the Sirhowy River beyond.

2.3. Site History

A summary of the historical land use of the site and surrounding area follows.

Map Date	Description of on-site activities
1879	The earliest available mapping of 1879 shows the site to be divided into two fields, which extend off-site towards the north, south and west. Two footpaths / tracks bisect the central area of the site. No structures are shown to be present.
1886	Similar to above.
1901	The more northerly of the two footpaths bisecting the site is no longer shown.
1902	Similar to above.
1920	Similar to above.
1922	Similar to above.
1938	Similar to above.
1953	The northern and central areas of the site have been redeveloped, with a large 'Furniture Factory' occupying these areas. The southern area of the site remains undeveloped.
1962	Minor earthworks are shown to have been constructed within the central area of the site to accommodate the construction of the factory building. An access road has been constructed along the north-eastern margin of the site.
1965	Similar to above.
1971	An electricity sub-station has been installed in the north-western corner of the site. The southern area of the site is now shown as heathland.
1975	Similar to above.
1986	The site is now occupied by a 'Council Depot', although the buildings match the footprints of the former factory buildings, and the electricity sub-station still remains. The southern area appears to have been covered in hardstanding and a weighbridge / gatehouse installed in the south-western corner of the site.
1989	Similar to above.
1993	Similar to above.
1995	Similar to above, although the site is simply labelled as 'Depot'
1999	Similar to above.



Map Date	Description of off-site activities
1879	The earliest available mapping of 1879 shows the surrounding areas to be predominantly undeveloped and occupied by either fields or woodland. A railway is indicated to be present 100m north-east of the site at its nearest point, whilst a road following a similar alignment to the present-day Penmaen Road is present adjacent to the eastern boundary. An elongated embankment / mound feature is indicated to be present from circa 70m west at its nearest point and is indicated to be formed of 'shingle'. An 'air shaft' is located within this feature, located circa 150m north-west of the site. A well is located circa 30m west of the site boundary.
1886	Similar to above.
1901	A row of residential properties, labelled as 'Rockleigh Terrace' have been constructed immediately to the south of the site. An 'old quarry' is also recorded from 110m south at its nearest point.
1902	Similar to above.
1920	Similar to above, although the 'Air Shaft' and an adjacent 'shaft' located from circa 150m north-west are no longer shown on subsequent mapping.
1922	Similar to above.
1938	Similar to above.
1953	A 'Clothing Factory' has been established on the land immediately north of the study site.
1962	A series of earthworks / mounds are now present from 50m west of the site, incorporating part of the area formerly marked as 'shingle'.
1965	A factory has been constructed from circa 75m south-east of the site, fronting onto Penmaen Road.
1971	Similar to above.
1975	The former railway line from 100m east has been removed.
1986-87	The area immediately to the west of the site has been developed as a Scrap Yard, with the various small factories and units associated with the newly developed Penmaen Industrial Estate from 90m west. This estate occupies the footprint of the former earthworks / mounds identified on the 1962 mapping. Electricity sub-stations have been installed from 95m north-west and 90m south-west.
1989	Similar to above.
1993	Similar to above.
1995	Similar to above.
1999	Similar to above.
2024	Similar to above.



2.4. Proposed Site Use

It is understood that the proposed site use for the majority of the site will be a Lidl retail store with associated car park and soft landscaping. A proposed indicative site layout plan is presented as **Figure 3**, with the site being accessed from a new entrance off B4254 to the north. The proposed store footprint is indicated to be in the western and south-western areas of the site, with the remaining areas being a combination of car parking, HGV access and soft landscaping. The electricity sub-station remains present in the north-western corner of the site.

2.5. Environmental Setting

2.5.1. Made Ground and Superficial Geology

Information from the environmental report and the British Geological Survey (BGS) 1:50,000 scale map Sheet 249 (Newport) does not indicate any artificial ground either on, or in the immediate vicinity of, the study site. Artificial Ground is a term used by the BGS for those areas where the ground surface has been significantly modified by human activity, and includes made ground, worked ground, infilled ground, landscaped ground and disturbed ground. It is not expected to be encountered according to the mapping; however, taking consideration of the site's historic use and satellite imagery it is likely that made ground will be encountered underlying the site.

The superficial deposits underlying the site are indicated to comprise Devensian Till (Diamiction) Deposits. The BGS describe these as typically comprising '*sand and gravel with rare clay interbeds; often cross-bedded; of glacial origin*'.

The superficial deposits are designated as Secondary Undifferentiated Aquifer (ref Envirocheck **Appendix B**), which are defined by the Environment Agency as '*aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type*' (ref Envirocheck **Appendix B**).

2.5.2. Bedrock Geology

The bedrock directly underlying the site is formed of the Grovesend Formation. The BGS describes the stratum as typically comprising '*predominantly argillaceous, comprising mudstones and siltstones, with well-developed coals; minor lithic ("Pennant") sandstones; locally developed red mudstones in the type area*'.

The bedrock is designated as a Secondary A Aquifer (ref Envirocheck **Appendix B**), which the EA describes as comprising '*permeable layers that can support local water supplies, and may form an important source of base flow to rivers*'.

2.5.3. Historic BGS Borehole Records

There are no historic BGS borehole records within a relevant distance to the study site (ref Envirocheck **Appendix B**).

2.5.4. Groundwater Abstractions

There are no groundwater abstractions recorded within 1km of the study site (ref Envirocheck **Appendix B**).

2.5.5. Source Protection Zones

The site is not located within a groundwater Source Protection Zone (ref Envirocheck **Appendix B**).



2.5.6. Surface Water Features and Abstractions

The nearest surface water feature is recorded 36m east of the study site. The Envirocheck supplied mapping indicates this feature to be a pond. The nearest named watercourse is the Sirhowy River, located 154m to the west at its nearest point, which flows in a generally southerly direction (ref Envirocheck **Appendix B**).

There are five (5 No.) surface water abstractions recorded within 1km of the study site. The nearest four records are located 680 – 685m south of the site at Gelligroes Mill and pertain to the abstraction from River Sirhowy for the "production of energy" by Natural Resources Wales (ref Envirocheck **Appendix B**).

2.5.7. Flooding Vulnerability

The site is indicated to be located within an area that has the potential for groundwater flooding of property situated below ground level and groundwater flooding to occur at the surface. The site is not located within a recorded surface water flood zone, although Zone 2 and 3 flooding areas are located from 16 – 23m south-west at their nearest points (ref Envirocheck **Appendix B**).

2.5.8. Ground Stability

The Envirocheck Report (**Appendix B**) provides the following information regarding ground stability.

Shrinking / Swelling of Clay	The site is within an area of 'very low' hazard from shrinking or swelling of clays.
Ground Dissolution	There is a 'no hazard' rating from ground dissolution stability at the site.
Compressible Ground	There is a 'no hazard' rating from compressible ground, although an area of 'moderate' rating is located 29m south-west.
Collapsible Deposits	There is a 'very low' hazard rating from collapsible ground on-site.
Running Sand	There is a 'very low' hazard rating for running sands.
Landslides	There is a 'very low' hazard rating from landslides.

2.5.9. Radon

The site is located in both a Lower Probability Radon Area (less than 1% of homes are estimated to be at or above the action level) and an Intermediate Probability Radon Area (5 to 10% of homes are estimated to be at or above the action level). Consequently, basic radon protective measures are considered necessary within the structural design of the proposed development (ref Envirocheck **Appendix B**).

2.5.10. Environmentally Sensitive Site Designations

There are three (3 No.) ancient woodlands, one (1 No.) local nature reserve and one (1 No.) site of special scientific interest (SSSI) within 250m of the study site. The nearest is an area of ancient and semi-natural woodland located 62m to the east (ref Envirocheck **Appendix B**).

2.6. Industrial Land Use

There are thirty-six (36 No.) contemporary trade directory entries locations within 250m of the site. The nearest of these include packaging suppliers (36m N – inactive), car breakers & dismantlers (101m SE – inactive), builders' merchants (from 101m south) and cabinet makers (119m S – inactive) (ref Envirocheck **Appendix B**).



There are two (2 No.) fuel station entries within 500m of the study site. The nearest is located 384m south at Pontllanfraith Service Station (Texaco) and is recorded as being open (ref Envirocheck **Appendix B**).

2.7. Environmental Permits, Incidents & Registers

There are two (2 No.) permitted process entries within 500m of the study site. Both are Local Authority Pollution Prevention and Controls (LAPPC) permits for petrol filling stations, located 398m south and 441m north-west of the site (ref Envirocheck **Appendix B**).

There is one (1 No.) recorded discharge consent within 250m of the study site. This is located 217m to the west and pertains to the discharge of site drainage into the Sirhowy River between July 2005 and September 2006 by Costain Ltd. The consent is recorded as 'revoked' (ref Envirocheck **Appendix B**).

There are nine (9 No.) recorded pollution incident entries within 250m of the site. The nearest was located 40m to the south-west and pertains to diesel (oils) bypassing the treatment facilities and discharging into an unspecified receiving water on 20th November 1994. The incident was recorded as being a Category 1 (Major Incident) (ref Envirocheck **Appendix B**).

2.8. Landfill & Waste Sites

There is one (1 No.) BGS recorded and historical landfill site located within 500m of the study site. This is located 265 – 273m to the north-east, with deposited waste including inert, industrial, commercial, household and special waste types. The first input date was in September 1971, although the last input date is not supplied (ref Envirocheck **Appendix B**).

There is one (1 No.) licensed waste management facility located within 500m of the site. This is a household waste amenity site located 224m to the south and appears to still be operational (ref Envirocheck **Appendix B**).

2.9. Mining & Mineral Sites

There is one (1 No.) BGS recorded mineral site within 500m of the study site. This is located 120m south and pertains to the opencast extraction of Grovesend Formation sandstone, although the operation is recorded as having ceased (ref Envirocheck **Appendix B**).

The site is located within an area which may be affected by coal mining activity (ref Envirocheck **Appendix C**). Consequently, a Consultants Coal Mining Report (ref: 51003430039001) has been obtained from the Coal Authority and is included as **Appendix D**. The pertinent findings of this Report are reproduced overleaf:



Past Underground Mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	MYNYDDISL WYN TOP LEAF	Coal	446D	49	North-East	4.8	North	76	1876
unnamed	MYNYDDISL WYN TOP LEAF	Coal	446E	90	Beneath Property	4.8	North	76	1873
OAKDALE	UPPER SIX FEET	Coal	54	624	North-East			199	1985
OAKDALE	UPPER SIX FEET	Coal	52	626	North-East			221	1983
BRITAINNIA	LOWER 7FT BOTTOM LEAF	Coal	45AP	630	West	5.4	North	150	1980
unnamed	LOWER NINE FOOT	Coal	45SZ	643	North-East	2.6	North-West	152	1976
unnamed	LOWER NINE FOOT	Coal	45T0	643	East	2.4	North-East	152	1973
OAKDALE	FIVE FOOT GELLIDEG	Coal	420J	661	West	3.2	North	210	1988
OAKDALE	FIVE FOOT GELLIDEG	Coal	420W	678	Beneath Property	3.3	North-East	248	1989
unnamed	LOWER 7FT BOTTOM LEAF	Coal	45A0	683	North	3.5	East	150	1970

Probable Unrecorded Shallow Mining

None

Spine Roadways at Shallow Depth

No spine roadway recorded at shallow depth.

Mine Entries (refer to plan within Coal Authority Report)

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

SWR3072	SWR1820	SW1761
SWR1755	SWA3786	SWR1838
PO0	SWR1825	SW1757

In addition, the Coal Authority Consultants Coal Mining Report states that their records show more plans that could affect the enquiry boundary.



Outcrops

No outcrops recorded

Geological faults, fissures and breaklines

Fault under or close to the property recorded.

Opencast Mines

None recorded within 500m of the enquiry boundary.

Coal Authority Managed Tips

None recorded within 500m of the enquiry boundary.

Mine Gas

None recorded within 500 metres of the enquiry boundary.

Coal Mining Subsidence

A damage notice or claim for alleged subsidence damage was made in June 1995 for GOSSARD INTERNATIONAL BUILDING PENMAEN ROAD, PONTLLANFRAITH, BLACKWOOD, GWENT, NP12 2DX. The claim was settled by repairs to the value of £13,426.58.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

There are a further 4 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

2.10. Unexploded Ordnance (UXO) Risk

A non-specialist UXO screening exercise was initially carried out for the site by considering (a) any evidence of UK defence activities on or near the site evident from the gathered desk study information and (b) the unexploded aerial-delivered ordnance (UXO) regional risk mapping produced by Zetica.

There is no indication of former military use from the desk study.

Furthermore, the freely available Zetica UXO risk mapping (presented in **Appendix E**) indicates the site to be located within an area where the bomb risk is 'Low'. This is defined by Zetica as an area having an indicated bombing density of 15 bombs per 1000 acres or less.

2.11. Petroleum Officer's Search

Due to the use of the site as a bus garage, Remada has formally requested a Petroleum Officer's search for this facility from Caerphilly Council. At the time of writing, no plans or tank information have been forthcoming from the Council. All pertinent correspondence is presented in **Appendix F**.



3. PRELIMINARY RISK ASSESSMENT

3.1. Introduction

A Preliminary Risk Assessment (PRA) has been completed for the site. This PRA identifies the potential sources, pathways, and receptors for the site, in order to assess the potential risks posed by identified potential sources to human health and / or controlled waters receptors. When required, the viability of the Source-Pathway-Receptor pollutant linkage must be evaluated further to determine whether an actual risk is present.

3.2. Potential Sources

On-site Historical

- General Made Ground associated with historic redevelopment.
- Furniture Factory.
- Council Depot

On-site Current

- Operational Stagecoach bus depot, with associated stabling and servicing facilities.
- Electricity Sub-station

Off-site Historical

- General Made Ground associated with historic redevelopment / earthworks.
- Various factories identified in the surrounding area.
- Scrap Yard
- Car breakers & dismantlers.
- 'Old Quarry' feature
- Railway line.
- Electricity Sub-Station

Off-site Current

- Residential properties.
- Penmaen Industrial Estate
- Builders' Merchants

3.3. Potential Contaminants of Concern (PCOCs)

- Metals
- Asbestos (associated with demolition and redevelopment of the existing site).
- Total petroleum hydrocarbons (TPH)
- Polycyclic aromatic hydrocarbons (PAH).
- Ground gases (carbon dioxide and methane)
- Polychlorinated Biphenyls (PCBs)

3.4. Potential Receptors

Human Health

- On-site Lidl store staff.
- Construction workers.



- On-site general public and visiting staff (such as contractors, including those conducting excavation works).
- Neighbouring residents

Controlled Waters

- Secondary (Undifferentiated) Aquifer in Superficial Deposits
- Secondary (A) Aquifer in bedrock;
- Sirhowy River

3.5. Preliminary Conceptual Model

The Preliminary Conceptual Site Model of the site has been prepared and illustrates the potentially active pollutant linkages. A pollutant linkage is present only when a source, pathway and receptor exist together.

- A **source** is a substance that has potential to cause harm or adversely affect human health, water resources or the wider environment.
- A **pathway** is the route or means by which a source of contamination can migrate resulting in exposure to a receptor.
- A **receptor** is something that could be adversely affected by a contaminant such as human health, an ecological system, animals or crops, buildings or controlled waters.

The Preliminary Conceptual Site Model is presented in **Table 1**.



Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Unmitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation	
On-site Sources	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, PCBs	Disturbance due to construction plant causing direct contact, dusts, vapours.	Occupants of the development / building fabric	• Direct Soil Ingestion	• Yes	To be assessed (TBA)	Potential risk	(To be assessed (TBA)	(To be assessed (TBA)	
General Made Ground Furniture Factory Council Depot Bus Depot Electricity sub-station				• Indoor Dust ingestion	• Yes	As above	Potential risk	TBA	TBA	
				• Skin Contact with Soils	• Yes	As above	Potential risk	TBA	TBA	
Off-site Sources		Direct Contact with occupants of the proposed development	Inhalation of fibres / vapours / gases by occupants of proposed development	Adjacent residents during construction	• Skin Contact with Dust	• Yes	As above	Potential risk	TBA	TBA
General Made Ground Electricity sub-stations Residential properties Various factories and industrial units, including Penmaen Industrial Estate. Scrap Yard & Car Breakers / Dismantlers Former railway line Old Quarry					• Inhalation of Outdoor Dust	• Yes	As above	Potential risk	TBA	TBA
					• Inhalation of Outdoor Vapours	• Yes	As above	Potential risk	TBA	TBA
			• Inhalation of Indoor Vapours	• Yes	As above	Potential risk	TBA	TBA		
			• Inhalation of ground gas	• Yes	As above	Potential risk	TBA	TBA		
			• Inhalation of radon gas	• No	Lower & Intermediate Probability Area	Moderate risk	Basic Radon Protection Measures	Low		
			• Ingestion via permeated water supply pipework	• Yes	As above	Potential risk	TBA	TBA		
			• Direct contact with Secondary (Undifferentiated) Aquifer in Superficial Deposits	• Yes	As above	Potential risk	TBA	TBA		
			• In-direct contact with Secondary (A) Aquifer in bedrock	• Yes	As above	Potential risk	TBA	TBA		
			Permeation of water supply pipework	Secondary Aquifers	Sirhowy River					
	Leachate									

Table 1: Preliminary Conceptual Site Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.



4. CONCLUSIONS & RECOMMENDATIONS

4.1. Conclusions

The site occupies an approximately rectangular plot in the north-eastern area of the Penmaen Industrial Estate, situated to the west of Penmaen Road and south of the B4254 road. At the time of writing, the site comprises a Stagecoach bus depot, with associated bus stabling and servicing facilities.

The site is formed of two distinct areas. The northern half of the site is dominated by the main bus depot building, featuring a tri-pitched roof with associated flat roofed offices along the northern and western fringes. A separate, pitched roof building is present adjacent to the western boundary, whilst a flat-roofed electricity sub-station of brick construction is present in the north-western corner. The majority of the southern half of the site is asphalt-surfaced and used for the stabling of Stagecoach's local bus fleet. A small, rectangular patch of concrete is present adjacent to the southern boundary of the site although this appears to be flush with the surrounding surfacing.

The earliest available historical mapping of 1879 shows the site to be divided into two fields, which extend off-site to the north, south and west. Except for the removal of one of two footpaths bisecting the site, the site remains unchanged until after the mapping of 1938. By 1953, the northern and central areas of the site have been redeveloped, with a large 'Furniture Factory' occupying these areas. By 1971, the present-day electricity sub-station had been installed in the north-western corner of the site. Between 1975 and 1986, the site became occupied by a 'Council Depot', with the southern area of the site being redeveloped from a heathland to hardstanding around this time.

Published geological maps record that the site is underlain by superficial Devensian Till, designated as a Secondary Undifferentiated Aquifer, and bedrock of the Grovesend Formation, designated as a Secondary (A) Aquifer. The site is not located within a groundwater Source Protection Zone (SPZ).

The Coal Authority Consultants Mining Report identifies the Mynyddislwyn Top Leaf coal seam being present 49m deep to the north-east of the site and 90m deep beneath the site, with an extraction thickness of 0.76m and last worked between 1873 and 1876. The Report states that probable unrecorded shallow mining is 'none' and there are no mine entries within 100m of the site. However, there are five claims for coal mining subsidence within 50m of the site boundary.

The site is located in both a Lower Probability Radon Area (less than 1% of homes are estimated to be at or above the action level) and an Intermediate Probability Radon Area (5 to 10% of homes are estimated to be at or above the action level). Consequently, basic radon protective measures are considered necessary within the structural design of the proposed development.

Freely available Zetica Unexploded Ordnance (UXO) risk mapping indicates the site to be located within an area where the bomb risk is 'Low'. Therefore, no UXO precaution measures are considered necessary for any subsequent intrusive investigation, based on the information available for the site to date.

4.2. Recommendations

Environmental

The desk study has identified a number of on-site and off-site potential sources of contamination that would require further investigation. The following is recommended:

- Investigation of the lateral and vertical extent of made ground/fill beneath the proposed store footprint.



- Collection of soil and groundwater samples from the areas identified above for contaminants of concern; and
- Ground gas monitoring.

In accordance with CIRIA C665 the monitoring period should comprise not less than four visits for a proposed commercial development and should cover the "worst case" scenario which would occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall and frost.

Geotechnical

It is recommended that a ground investigation is undertaken to enable preliminary foundation design.

Given the records in the Coal Authority Consultant's Mining Report it is recommended that a Coal Mining Risk Assessment is also prepared to determine the requirements for investigation and subsequent work relating to coal mining at and beneath the site.



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STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received.

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

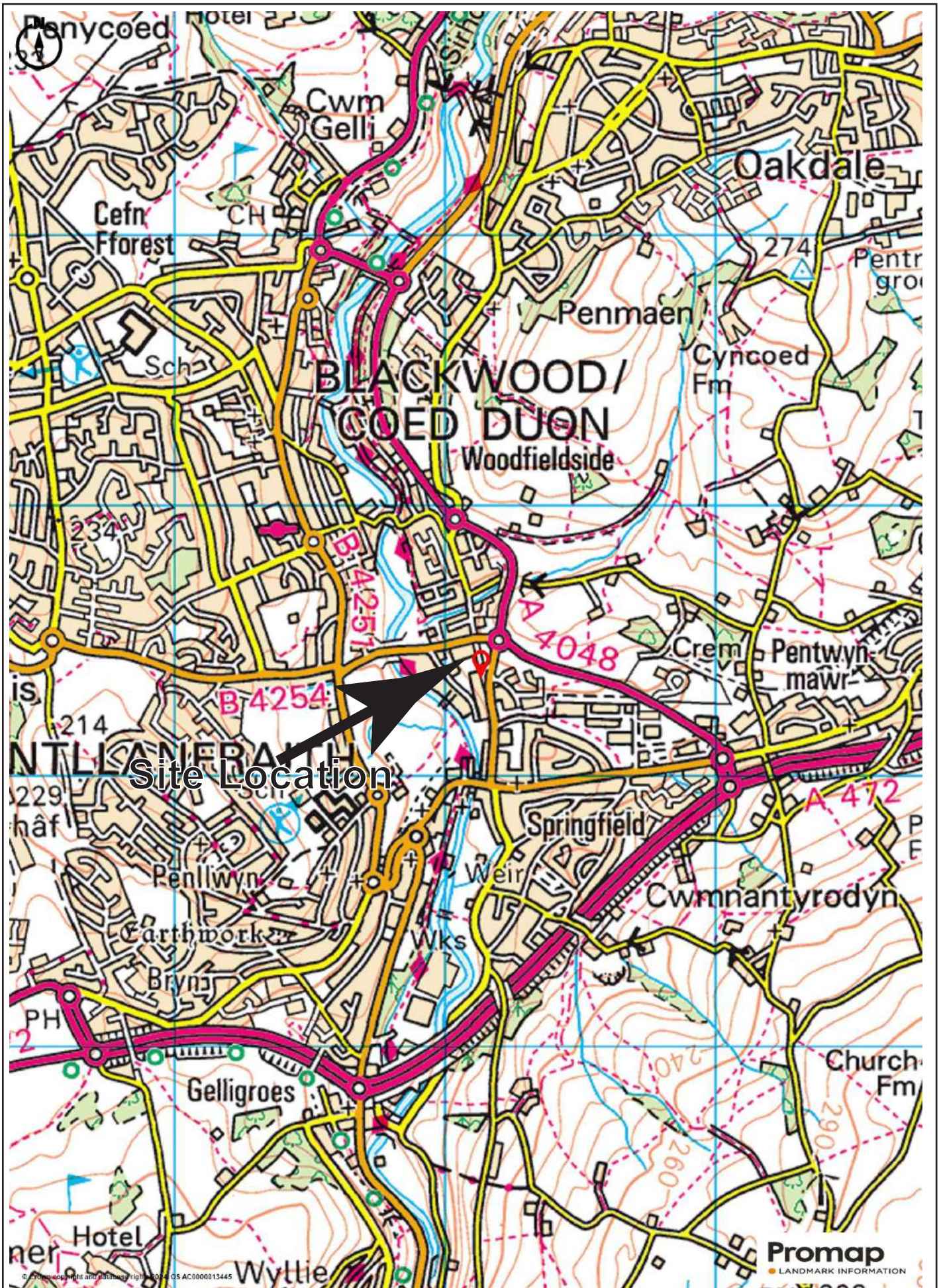
12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.





FIGURES

- Figure 1 Site Location Plan
- Figure 2 Existing Site Layout
- Figure 3 Proposed Indicative Site Layout



Site Location

Notes	Revision	Approved	Date	Project Title	Scale	Drawn	Size
				Stagecoach Depot, Penmaen Road, Blackwood	as shown	JR	A4
				Drawing Title	Date	Job No.	Figure No.
				Figure 1: Site Location Plan	06.06.24	1271.01	01
			Client	 			
			Lidl Great Britain Ltd				



Getmapping plc 2017.



Legend

Notes

Revision	Approved	Date

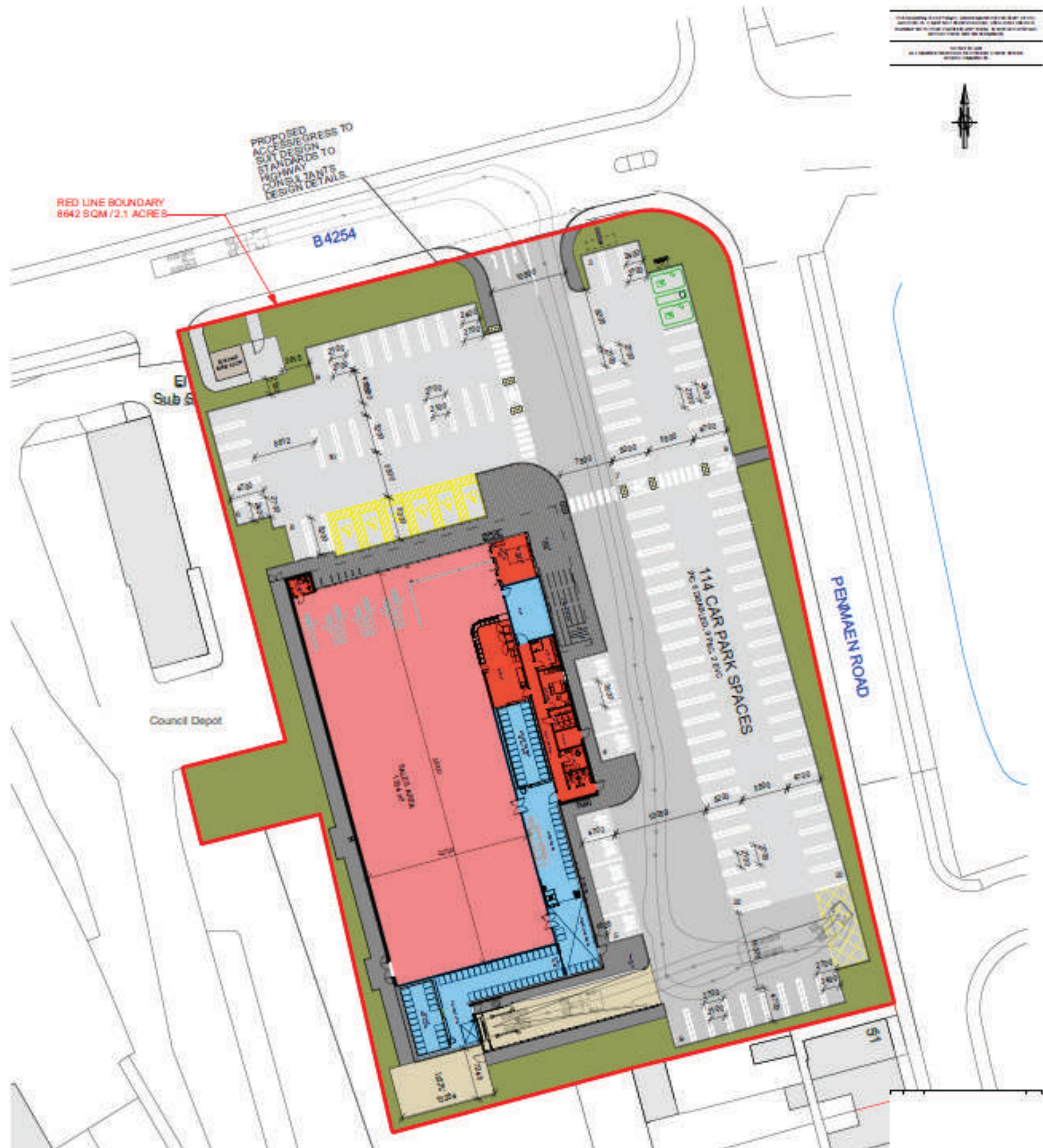
Project Title
Stagecoach Depot, Penmaen Road, Blackwood

Drawing Title
Figure 2: Site Plan as Existing

Client
Lidl Great Britain Ltd 

Scale	Drawn	Size
as shown	JR	A4
Date	Job No.	Figure No.
06.06.24	1271.01	02





THIS DRAWING IS A PRELIMINARY DESIGN AND SHOULD NOT BE USED FOR CONSTRUCTION OR AS A BASIS FOR ANY OTHER DESIGN OR CONTRACT. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE WITHOUT NOTICE. THE CLIENT ACCEPTS RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION PROVIDED AND THE DESIGNER ACCEPTS RESPONSIBILITY FOR THE DESIGN.



Legend

Notes
 Proposed site layout plan reproduced from HTC Architects Ltd 'Proposed Site Plan - Option 11', drawing ref: F422, Revision A dated February 2024.

The proposed site layout plan presented here is indicative only and may be subject to change following publication of Remada's Phase 1 report.

Revision	Approved	Date

Project Title
 Stagecoach Depot, Penmaen Road, Blackwood

Drawing Title
 Figure 3: Proposed Indicative Site Layout

Client
 Lidl Great Britain Ltd 

Scale as shown	Drawn	Size
	JR	A4
Date	Job No.	Figure No.
06.06.24	1271.01	03





APPENDIX A

1:2500 & 1:10000 Scale Historical Mapping



Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry **Gravel Pit** **Sand Pit**
Clay Pit **Shingle** **Refuse Heap**
Sloping Masonry **Flat Rock**
Marsh **Reeds** **Osiers**
Rough Pasture **Furze** **Wood**
Mixed Wood **Brushwood** **Orchard**
Fir **Ford** **Stepping Stones**
Ferry **Waterfall** **Lock**
Trig. Station **Altitude at Trig. Station**
B.M. 325.9 **Bench Mark** **Surface Level**
Arrow denotes flow of water **Antiquities (site of)**
Cutting **Embankment**
Railway crossing Road **Level Crossing** **Road crossing Railway**
Railway crossing River or Canal **Road over single stream** **Road over River or Canal**
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
County Burgh Boundary (Scotland)
Co. Boro. Bdy.
Co. Burgh Bdy.
BP BS Boundary Post or Stone **P.C.B** Police Call Box
B.R. Bridle Road **P** Pump
E.P Electricity Pylon **S.P** Signal Post
F.B. Foot Bridge **Sl** Sluice
F.P. Foot Path **Sp.** Spring
G.P Guide Post or Board **T.C.B** Telephone Call Box
M.S Mile Stone **Tr.** Trough
M.P M.R Mooring Post or Ring **W** Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit **Active Quarry, Chalk Pit or Clay Pit**
Rock **Boulders**
Cliff **Slopes** **Top**
Roofed Building **Glazed Roof Building**
Sloping Masonry **Archway**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Bench Mark** **Antiquity (site of)**
Cave Entrance **Triangulation Station** **Electricity Pylon**
Electricity Transmission Line
County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
London Borough Boundary
Symbol marking point where boundary mereing changes
BH Beer House **P** Pillar, Pole or Post
BP, BS Boundary Post or Stone **PO** Post Office
Cn, C Capstan, Crane **PC** Public Convenience
Chy Chimney **PH** Public House
D Fn Drinking Fountain **Pp** Pump
EI P Electricity Pillar or Post **SB, S Br** Signal Box or Bridge
FAP Fire Alarm Pillar **SP, SL** Signal Post or Light
FB Foot Bridge **Spr** Spring
GP Guide Post **Tk** Tank or Track
H Hydrant or Hydraulic **TCB** Telephone Call Box
LC Level Crossing **TCP** Telephone Call Post
MH Manhole **Tr** Trough
MP Mile Post or Mooring Post **Wr Pt, Wr T** Water Point, Water Tap
MS Mile Stone **W** Well
NTL Normal Tidal Limit **Wd Pp** Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m Bench Mark **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks Barracks **P** Pillar, Pole or Post
Bty Battery **PO** Post Office
Cemy Cemetery **PC** Public Convenience
Chy Chimney **Pp** Pump
Cis Cistern **Ppg Sta** Pumping Station
Dismtd Rly Dismantled Railway **PW** Place of Worship
EI Gen Sta Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station
EI P Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge
EI Sub Sta Electricity Sub Station **SP, SL** Signal Post or Light
FB Filter Bed **Spr** Spring
Fn / D Fn Fountain / Drinking Ftn. **Tk** Tank or Track
Gas Gov Gas Valve Compound **Tr** Trough
GVC Gas Governor **Wd Pp** Wind Pump
GP Guide Post **Wr Pt, Wr T** Water Point, Water Tap
MH Manhole **Wks** Works (building or area)
MP, MS Mile Post or Mile Stone **W** Well

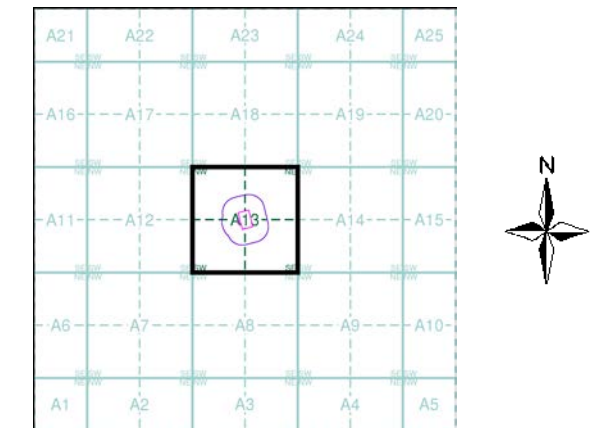
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Historical Mapping & Photography included:

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Glamorganshire	1:2,500	1880	3
Monmouthshire	1:2,500	1901	4
Glamorganshire	1:2,500	1901	5
Monmouthshire	1:2,500	1920	6
Glamorganshire	1:2,500	1920	7
Ordnance Survey Plan	1:1,250	1960 - 1980	8
Ordnance Survey Plan	1:2,500	1961 - 1962	9
Ordnance Survey Plan	1:2,500	1971	10
Ordnance Survey Plan	1:1,250	1973	11
Additional SIMs	1:1,250	1986 - 1989	12
Additional SIMs	1:1,250	1989 - 1992	13
Large-Scale National Grid Data	1:1,250	1993	14

Historical Map - Segment A13



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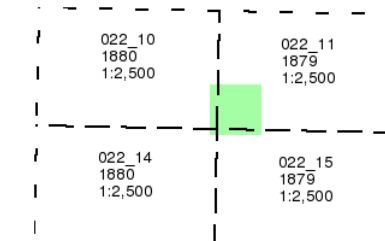
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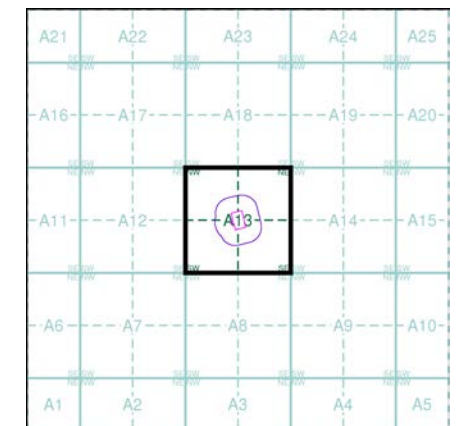
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Map Name(s) and Date(s)



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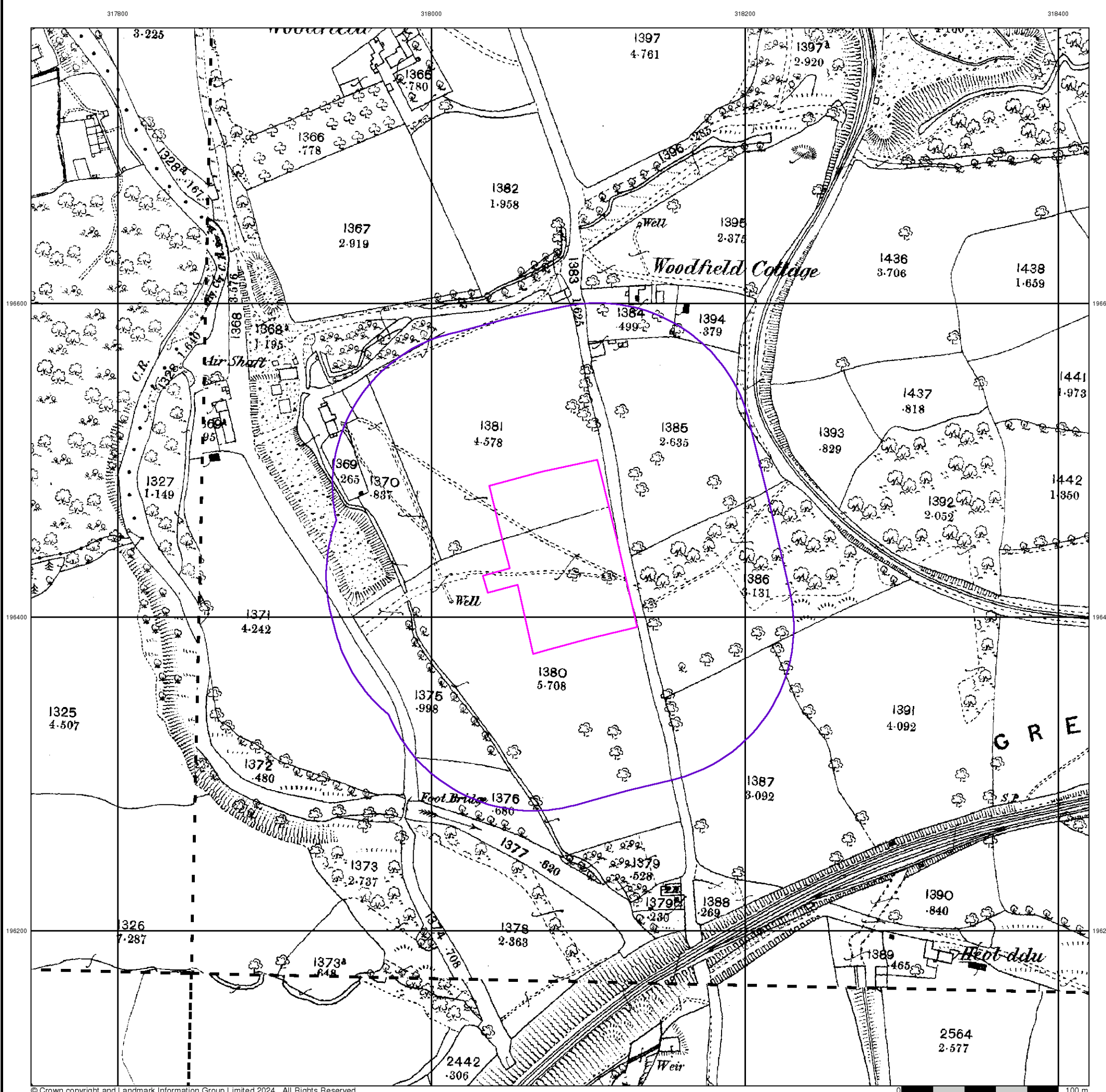


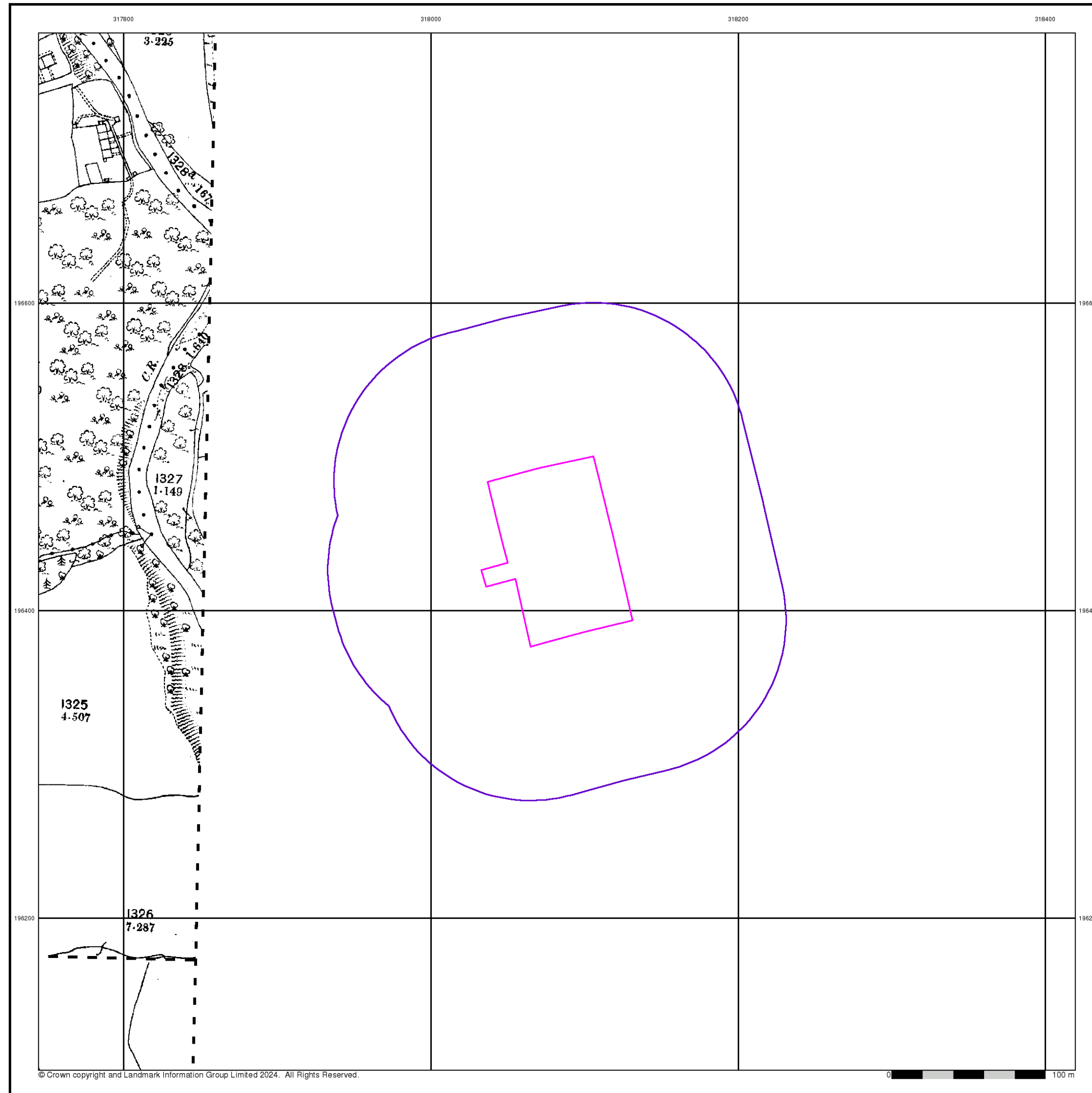
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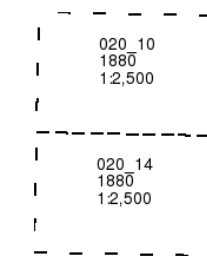
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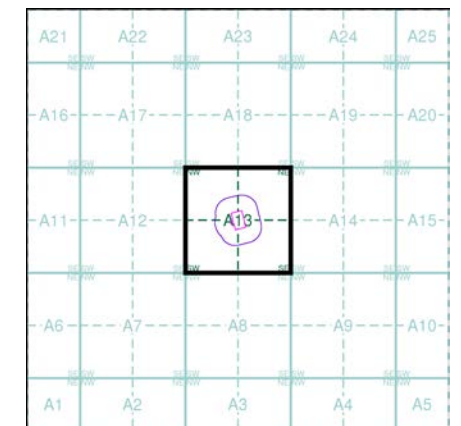
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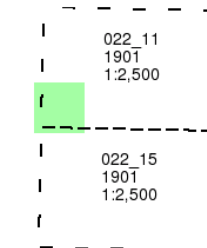
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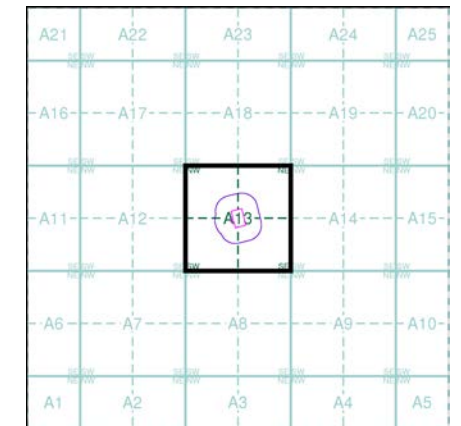
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Map Name(s) and Date(s)



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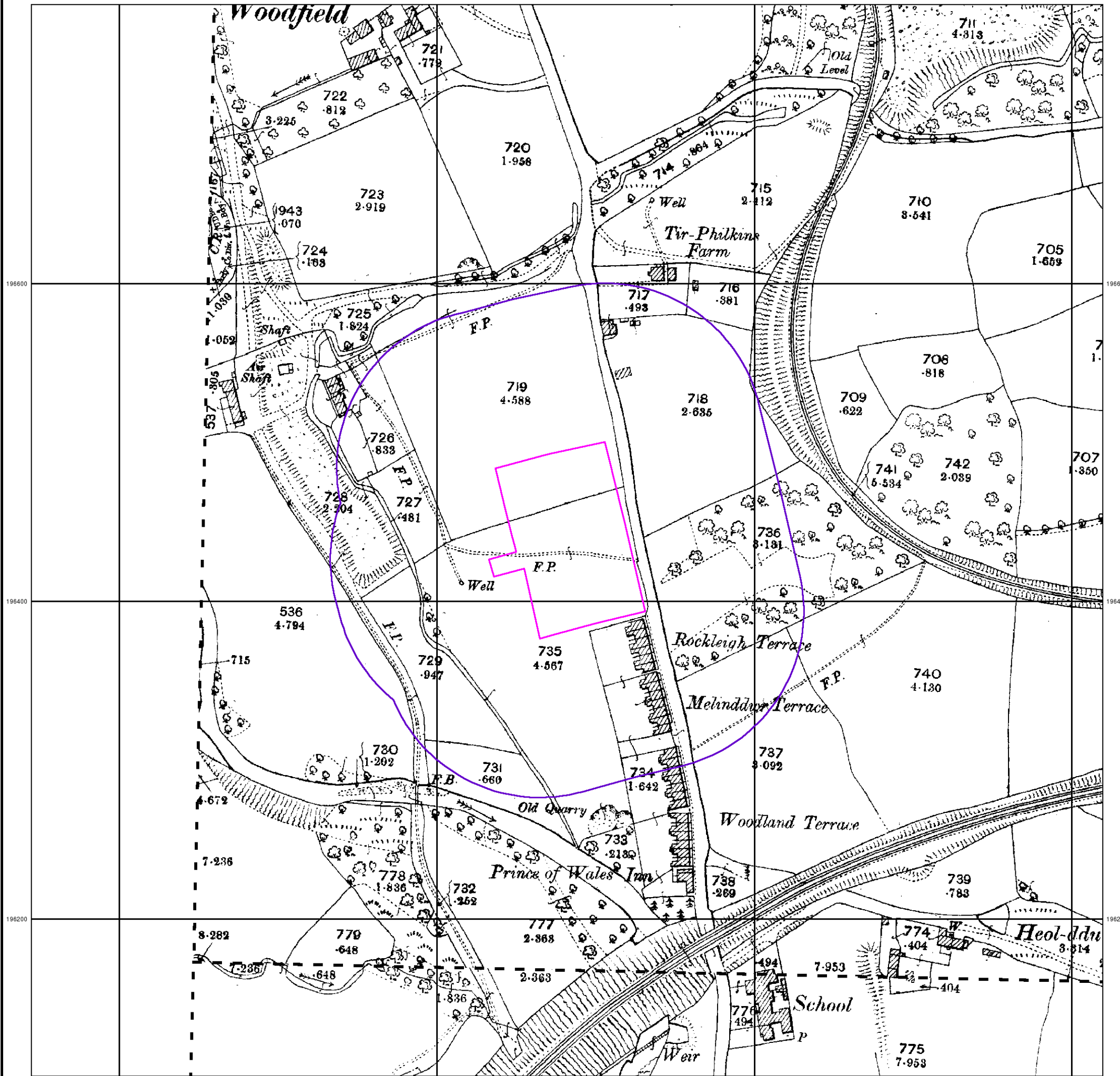


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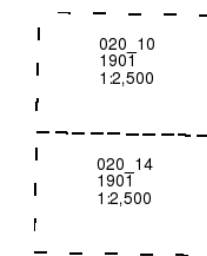
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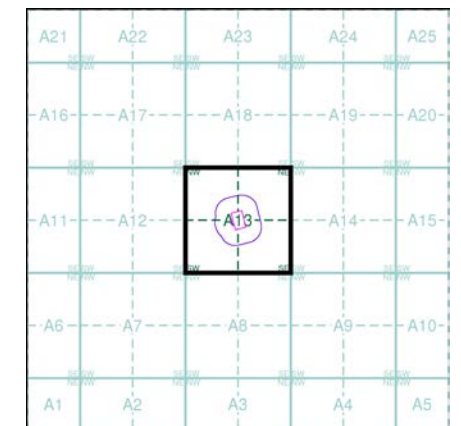
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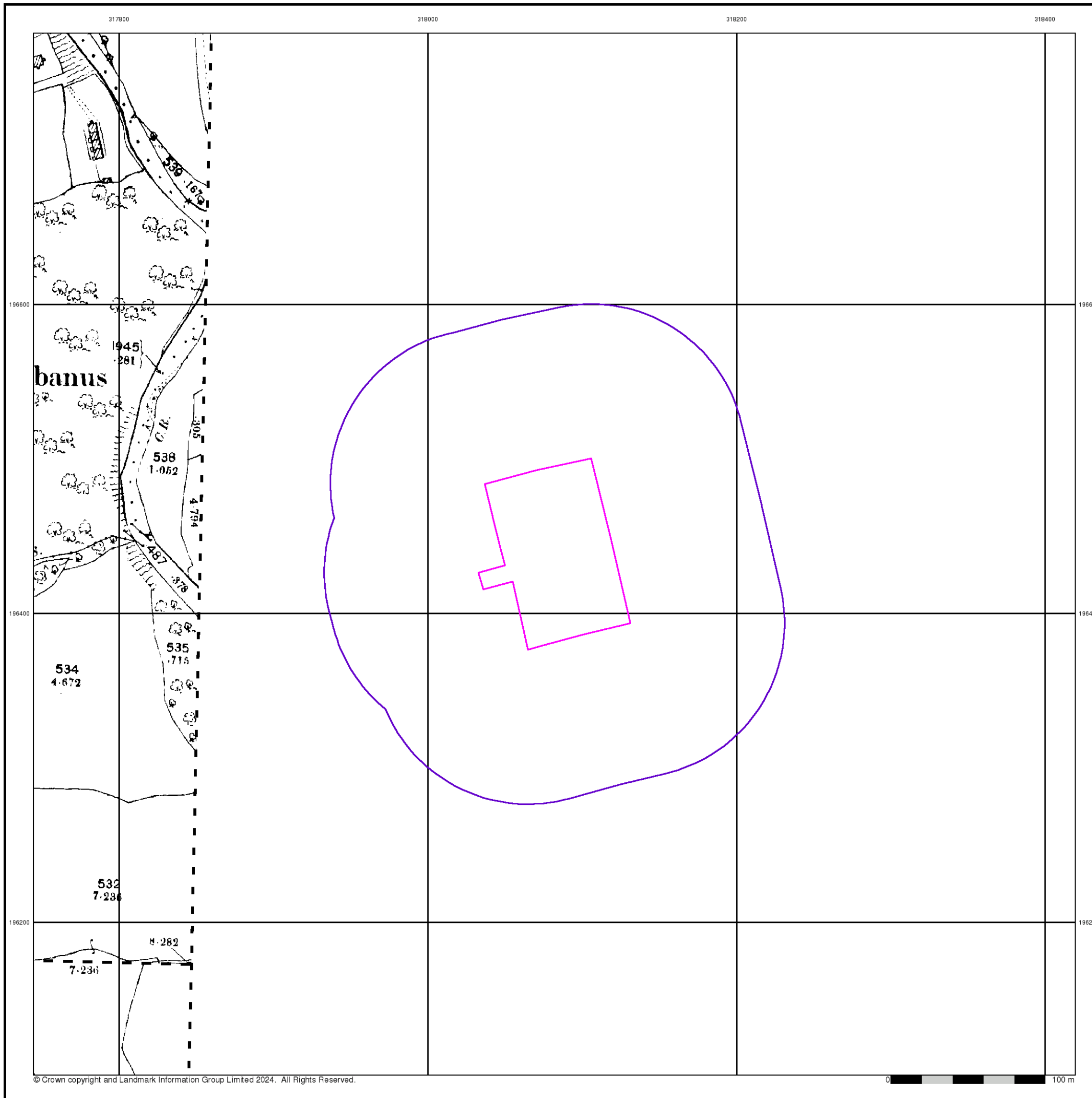


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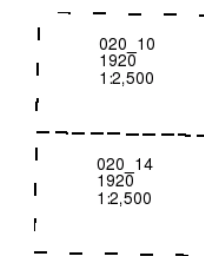
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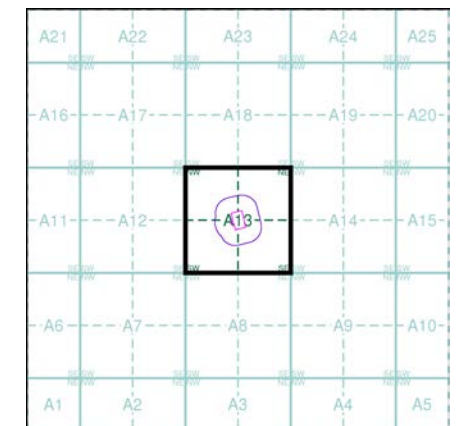
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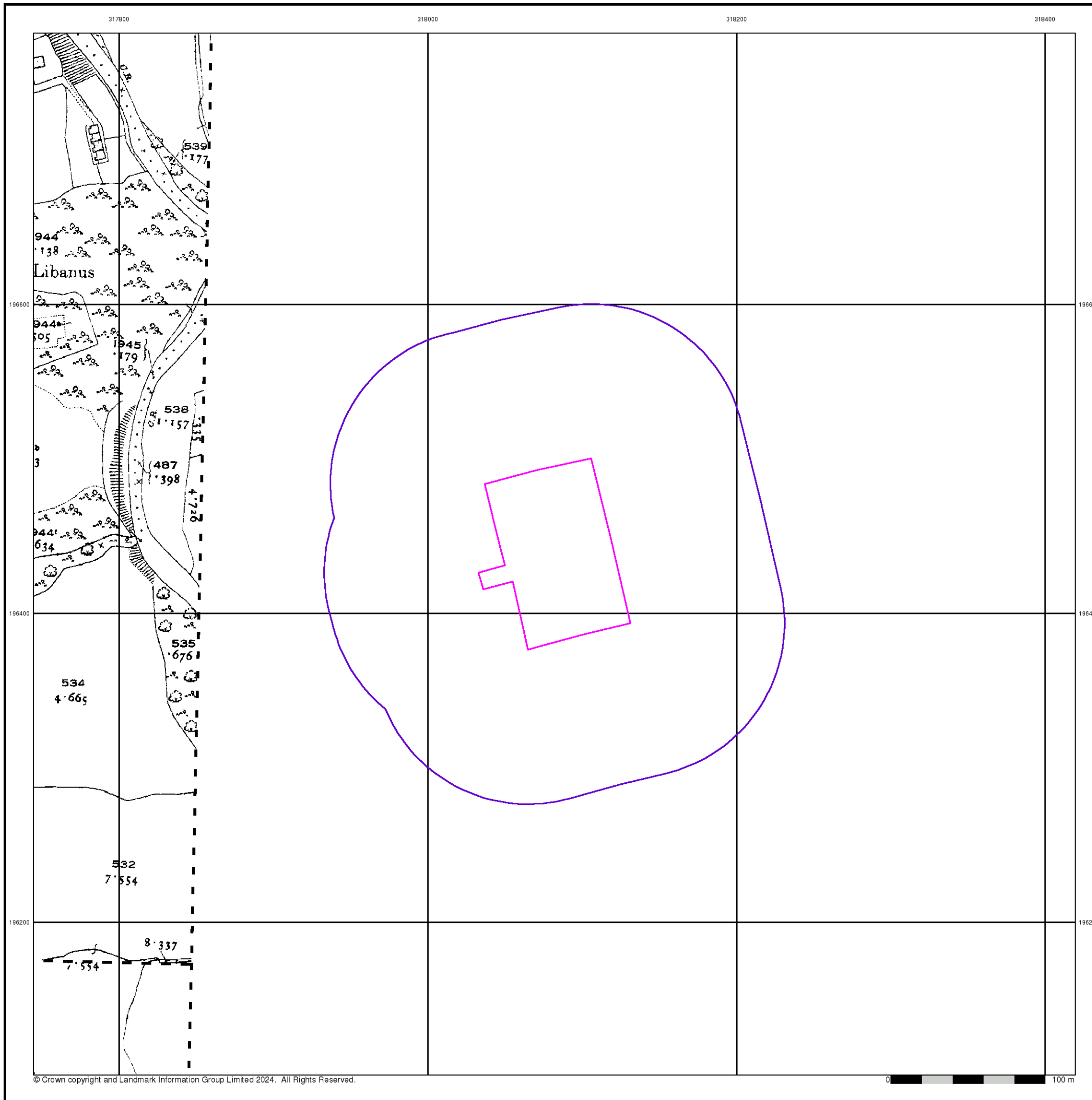


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Site Details

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Ordnance Survey Plan

Published 1960 - 1980

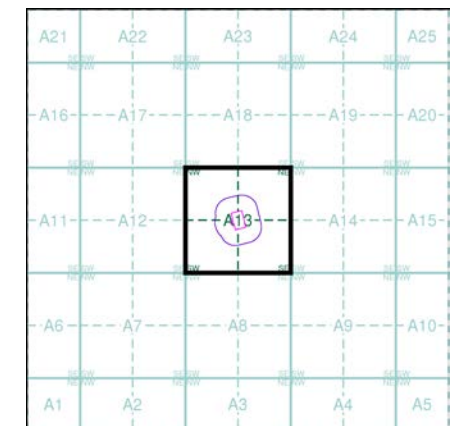
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Map Name(s) and Date(s)

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Historical Map - Segment A13

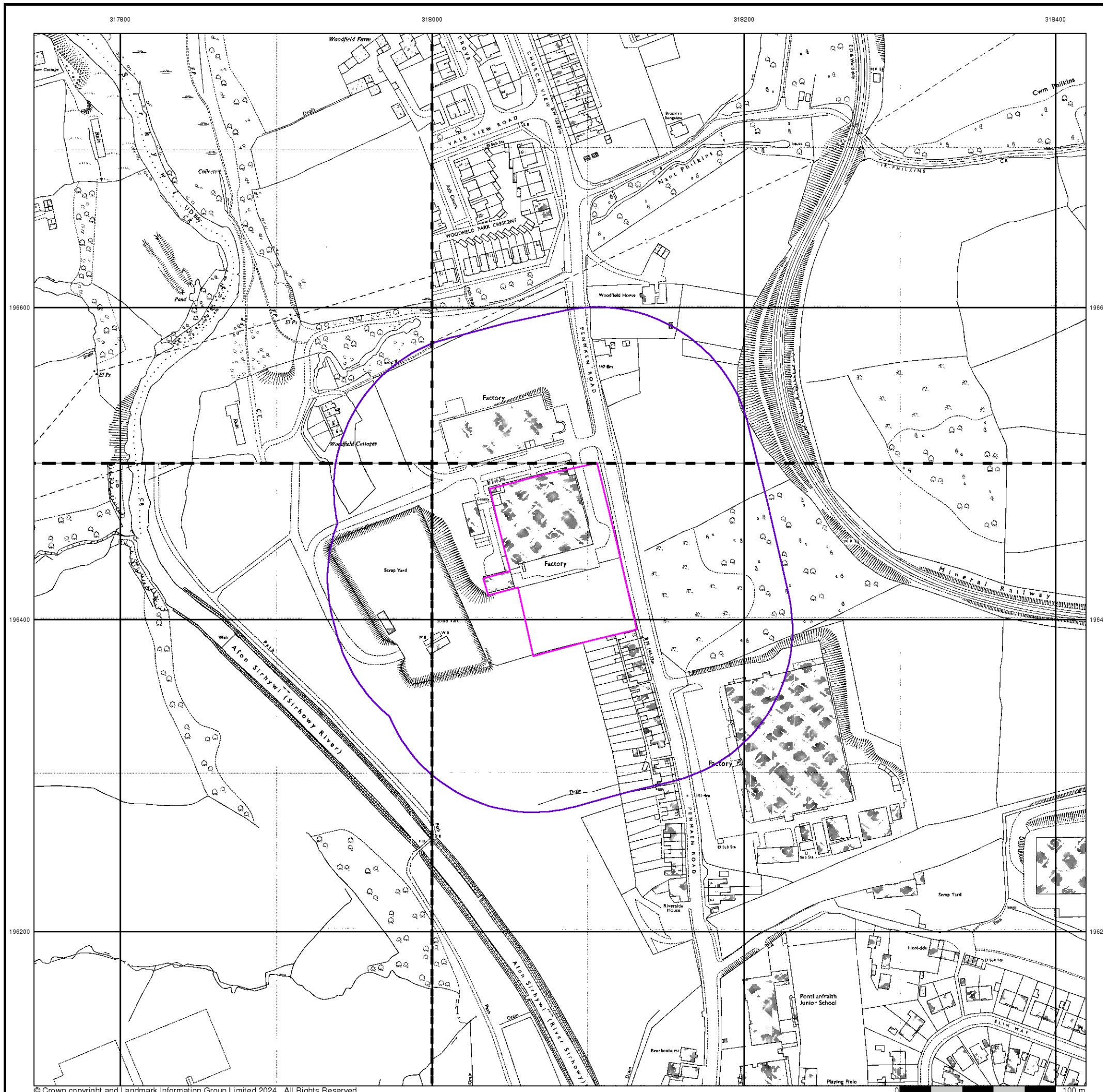


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Site Details

41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL



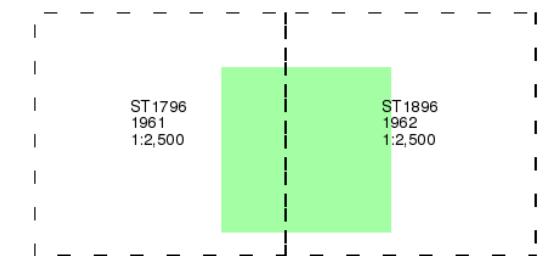
Ordnance Survey Plan

Published 1961 - 1962

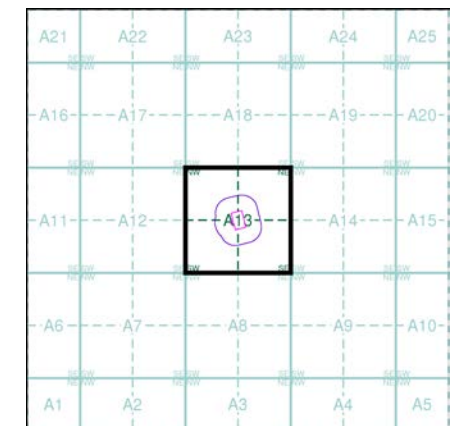
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

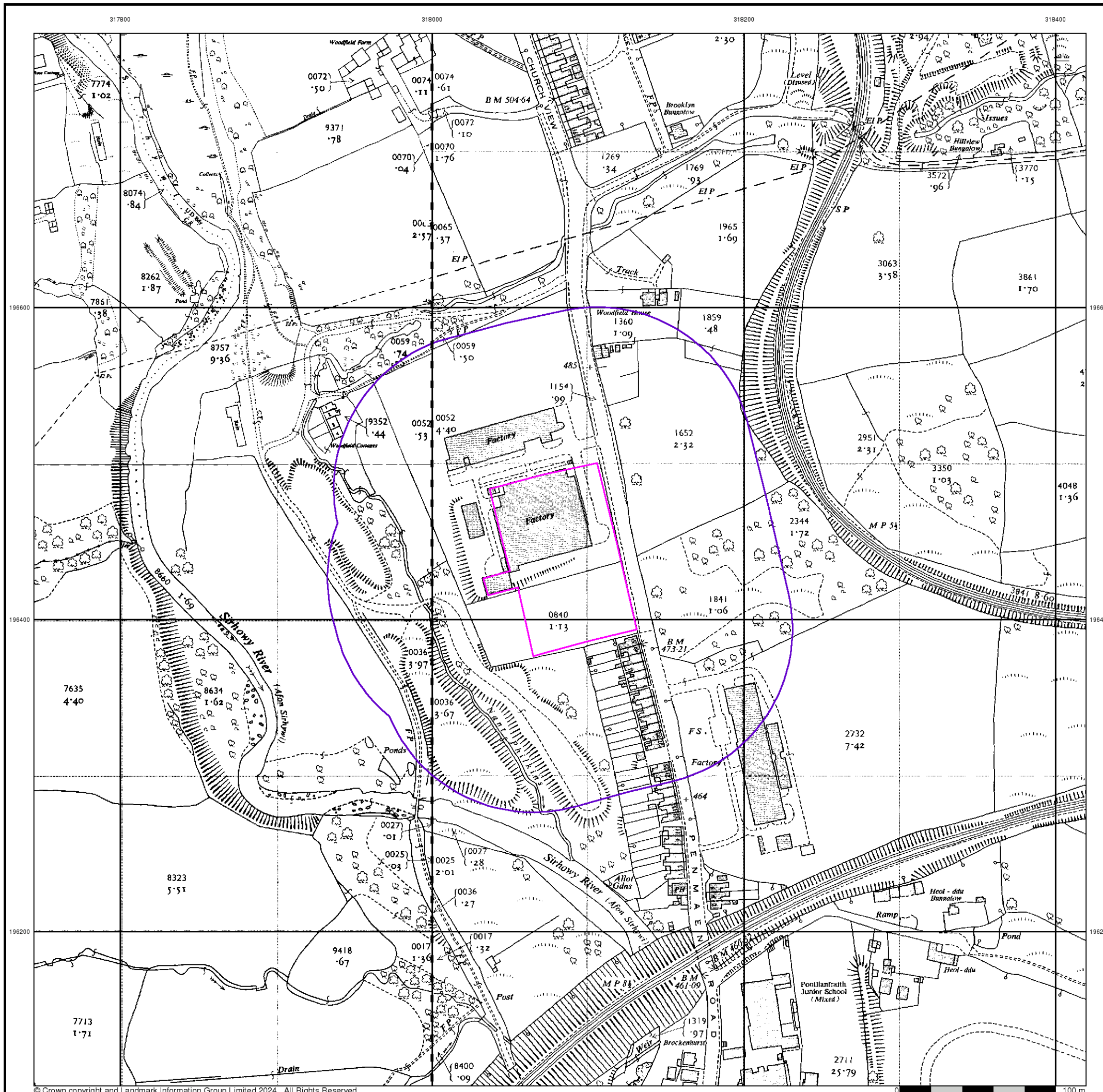


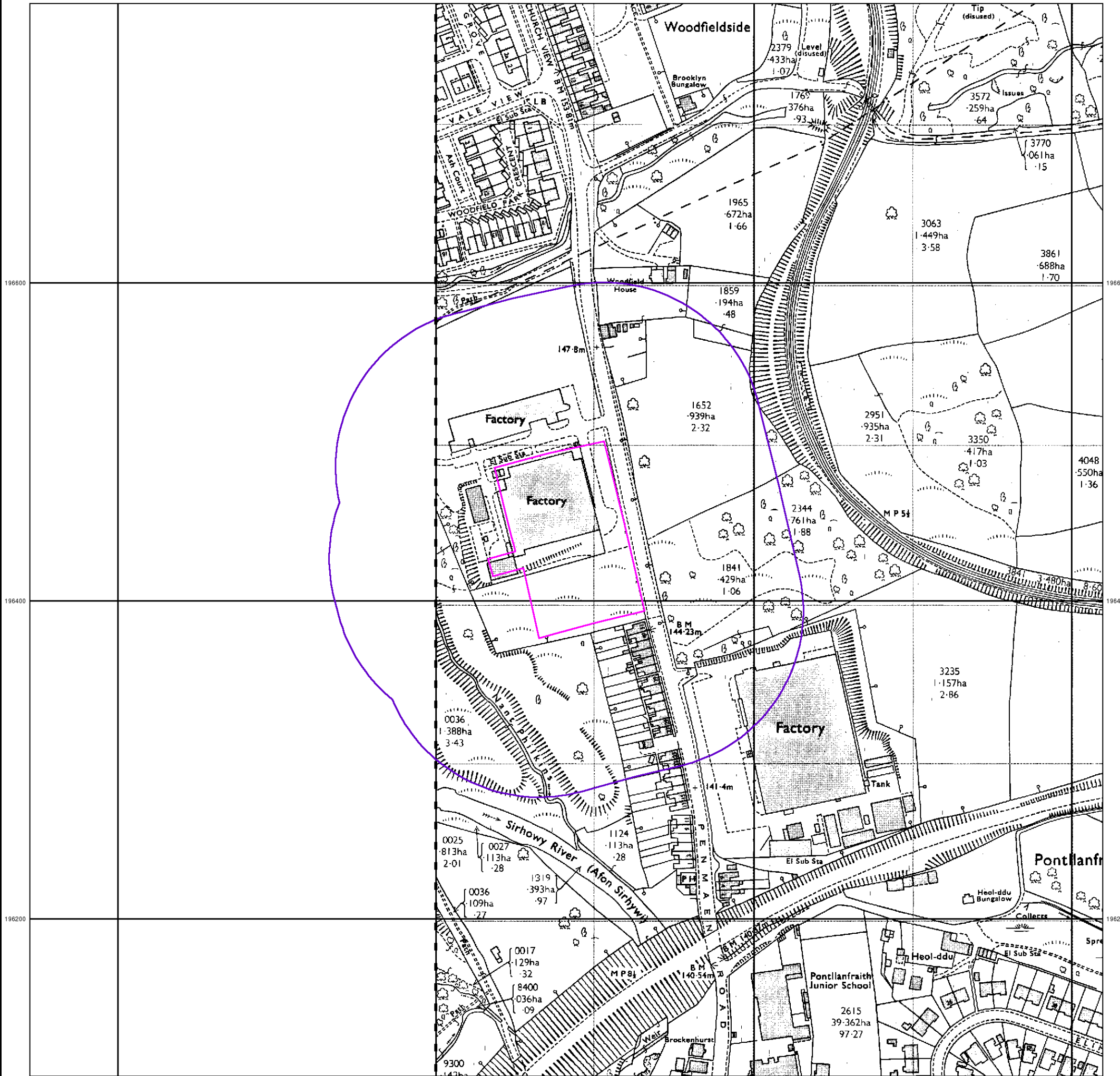
Order Details

Order Number: 349428225_1_1
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 National Grid Reference: 318080, 196440
 Slice: A
 Site Area (Ha): 0.8
 Search Buffer (m): 100

Site Details

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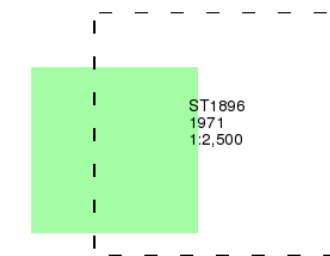
Ordnance Survey Plan

Published 1971

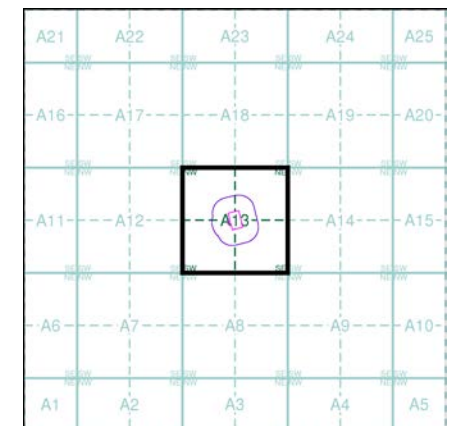
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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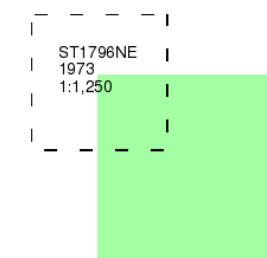
Ordnance Survey Plan

Published 1973

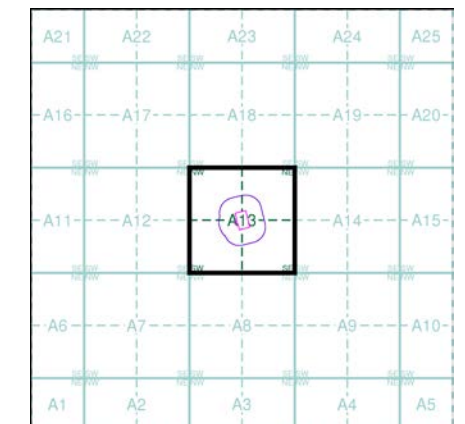
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

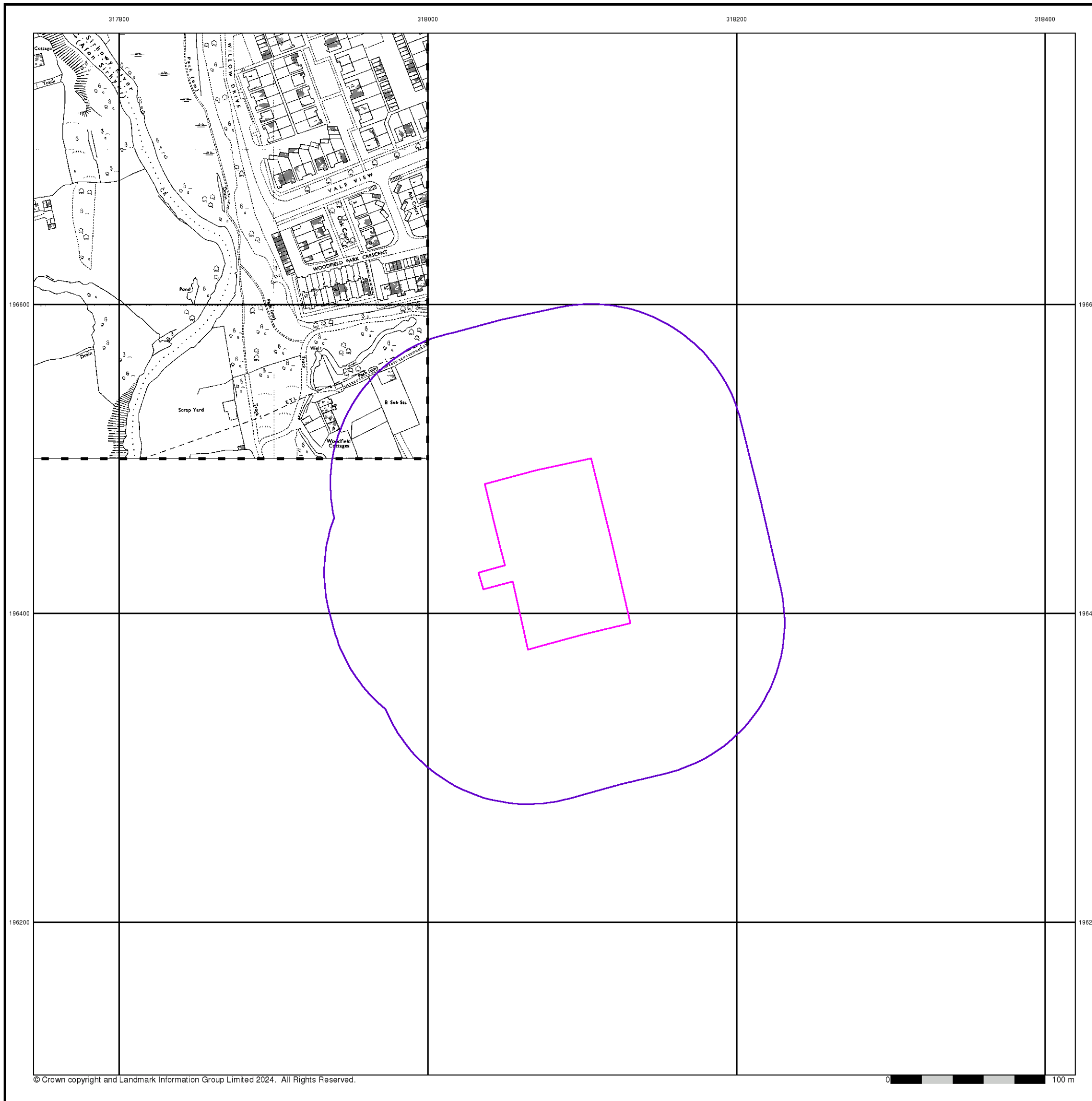


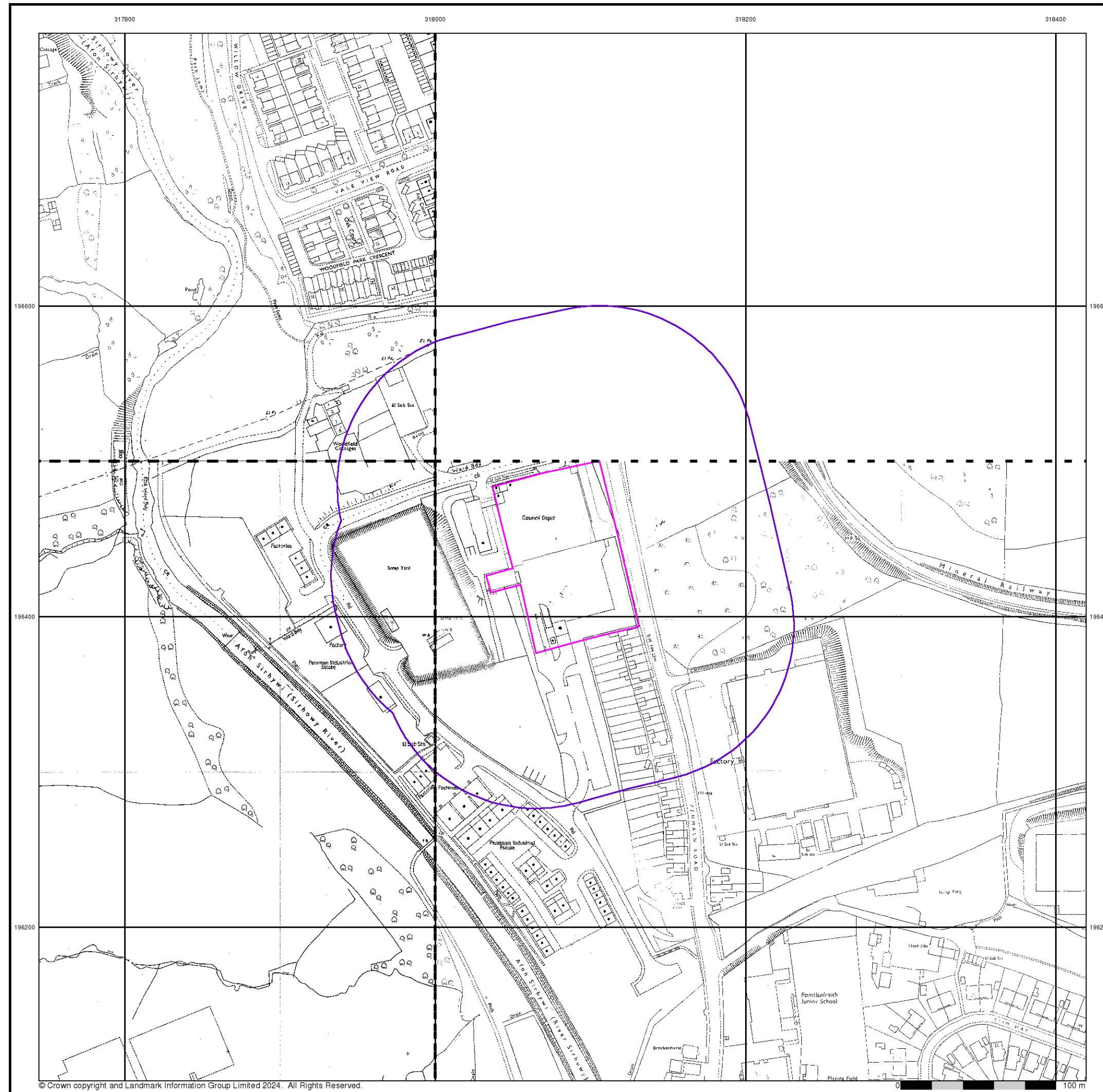
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Site Details

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Additional SIMs

Published 1986 - 1989

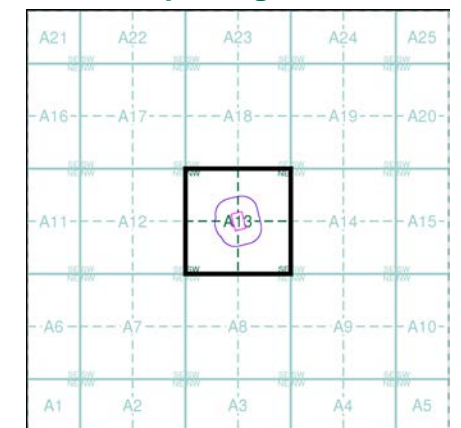
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST1796NE	1989	1:1,250
ST1796SE	1987	1:1,250
ST1896SW	1986	1:1,250

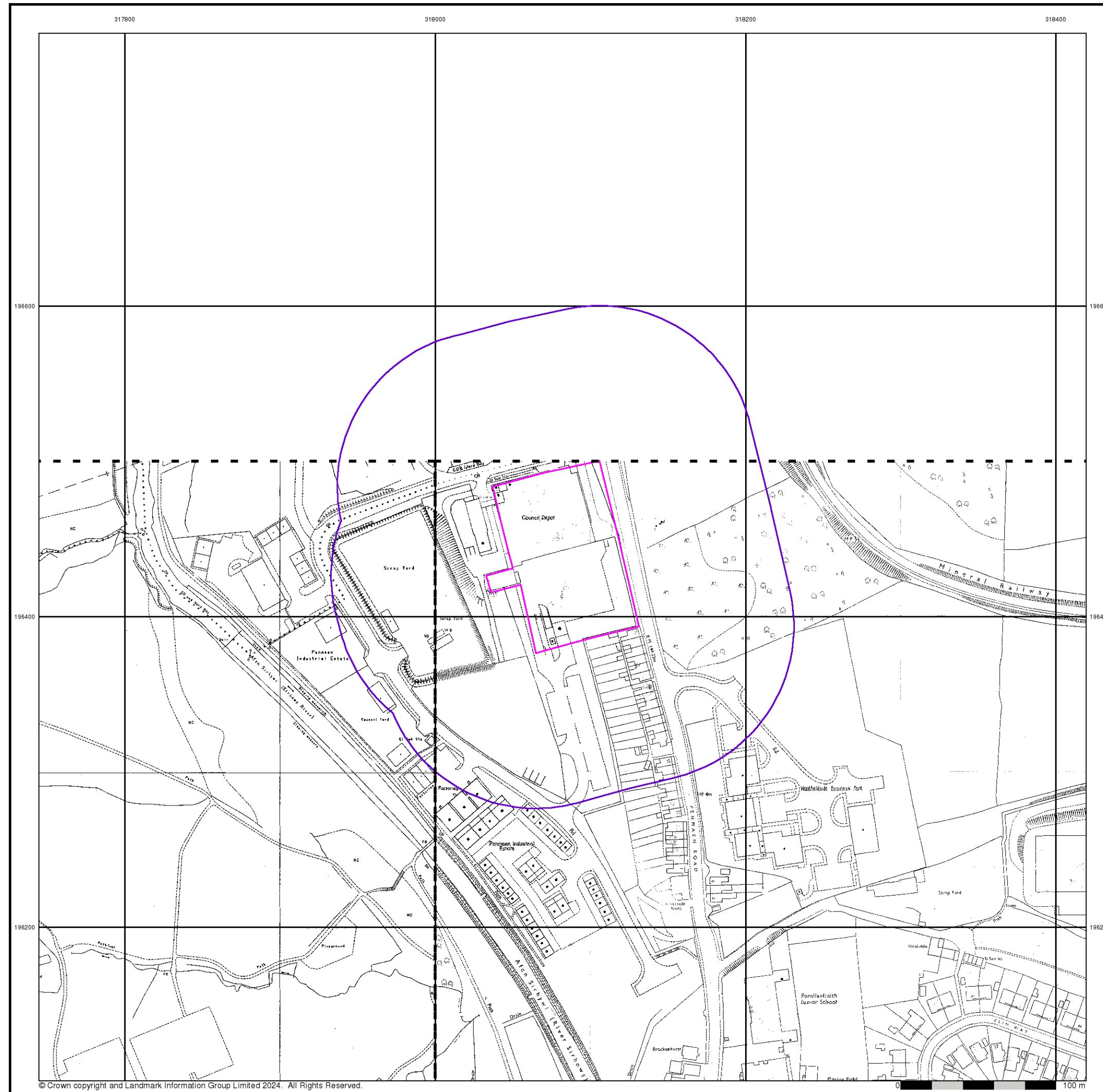
Historical Map - Segment A13



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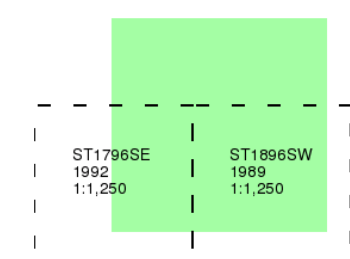
Site Details
 41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL



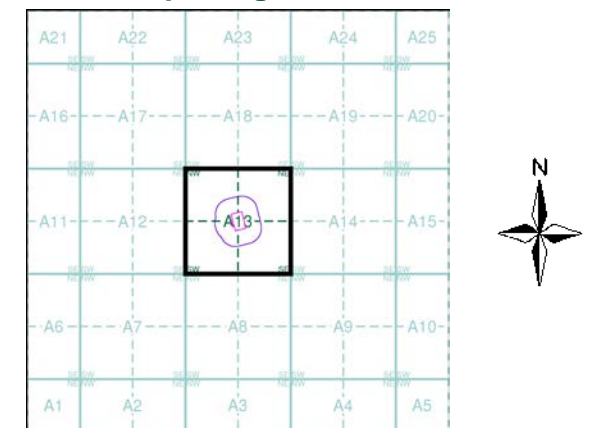
Additional SIMs
Published 1989 - 1992
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

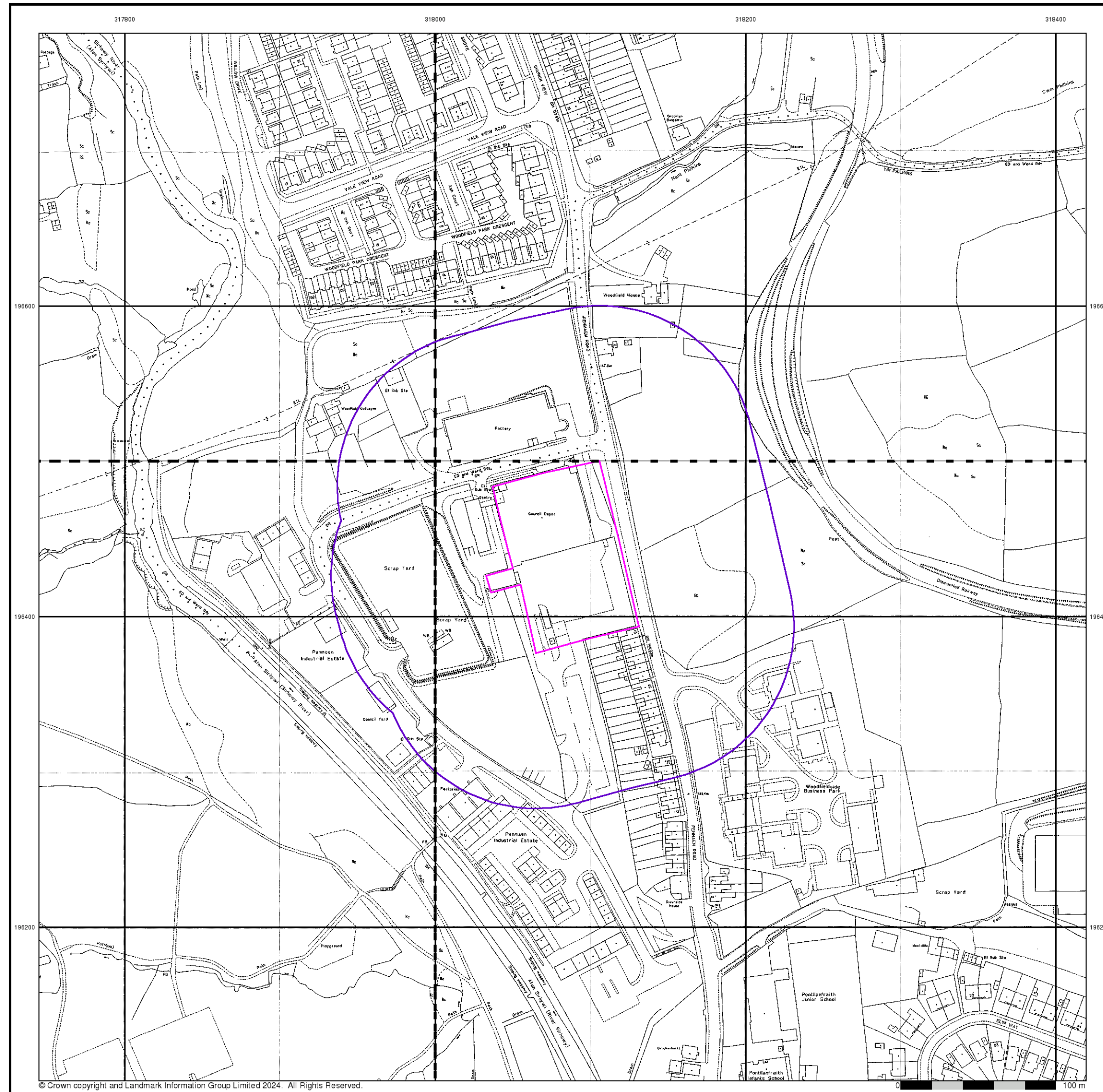


Historical Map - Segment A13



Order Details
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Site Details
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Large-Scale National Grid Data Published 1993

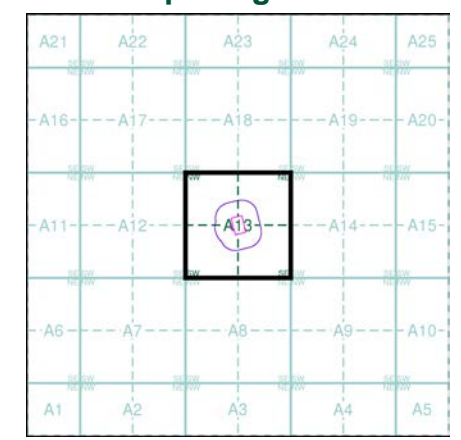
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

ST1796NE 1993 1:1,250	ST1896NW 1993 1:1,250
ST1796SE 1993 1:1,250	ST1896SW 1993 1:1,250

Historical Map - Segment A13



Order Details

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	-285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Bracken
	Heath		Rough Grassland
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

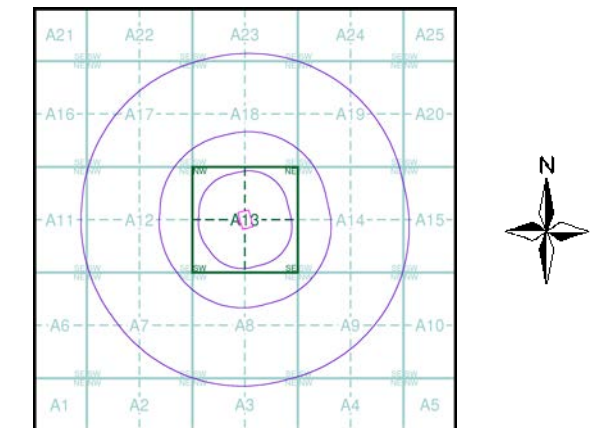
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Monmouthshire	1:10,560	1886	2
Glamorganshire	1:10,560	1901	3
Monmouthshire	1:10,560	1902	4
Monmouthshire	1:10,560	1922	5
Glamorganshire	1:10,560	1922	6
Glamorganshire	1:10,560	1938 - 1945	7
Monmouthshire	1:10,560	1938	8
Monmouthshire	1:10,560	1938	9
Glamorganshire	1:10,560	1953	10
Monmouthshire	1:10,560	1953	11
Ordnance Survey Plan	1:10,000	1965	12
Ordnance Survey Plan	1:10,000	1975	13
Ordnance Survey Plan	1:10,000	1995	14
10K Raster Mapping	1:10,000	1999	15
Street View	Variable		16

Historical Map - Slice A



Order Details

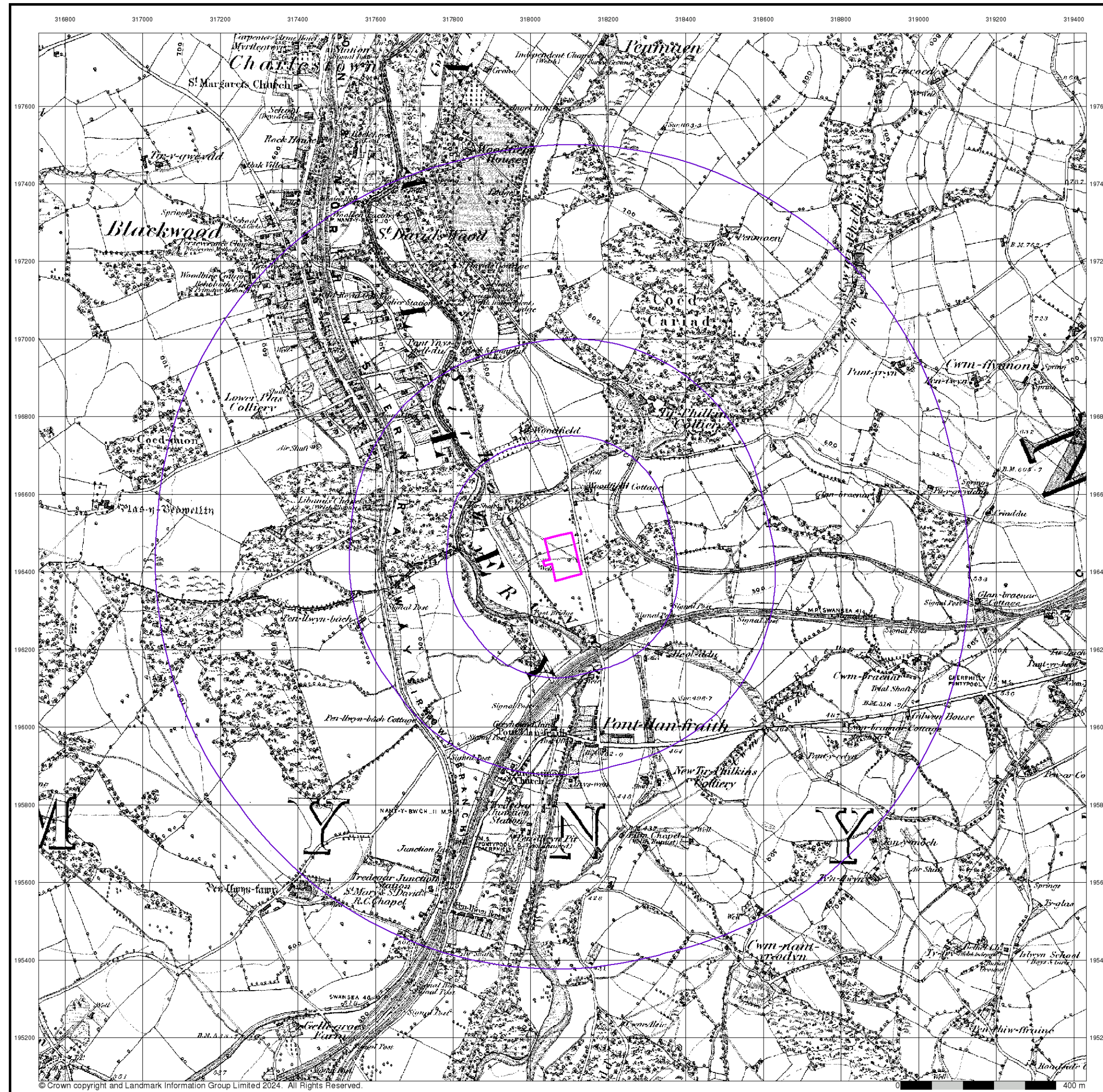
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Site Details

41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL

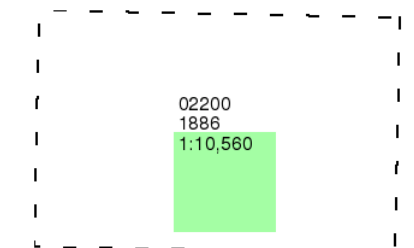
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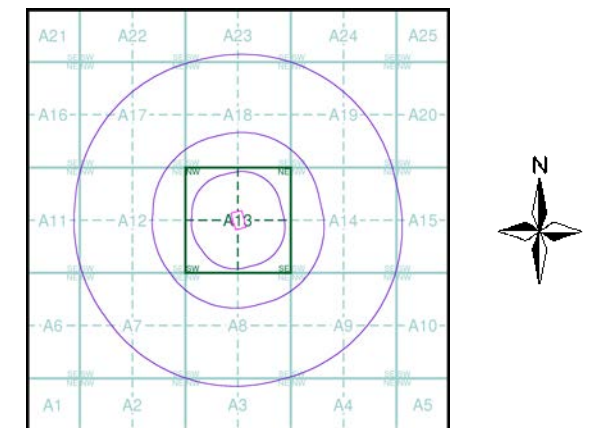


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

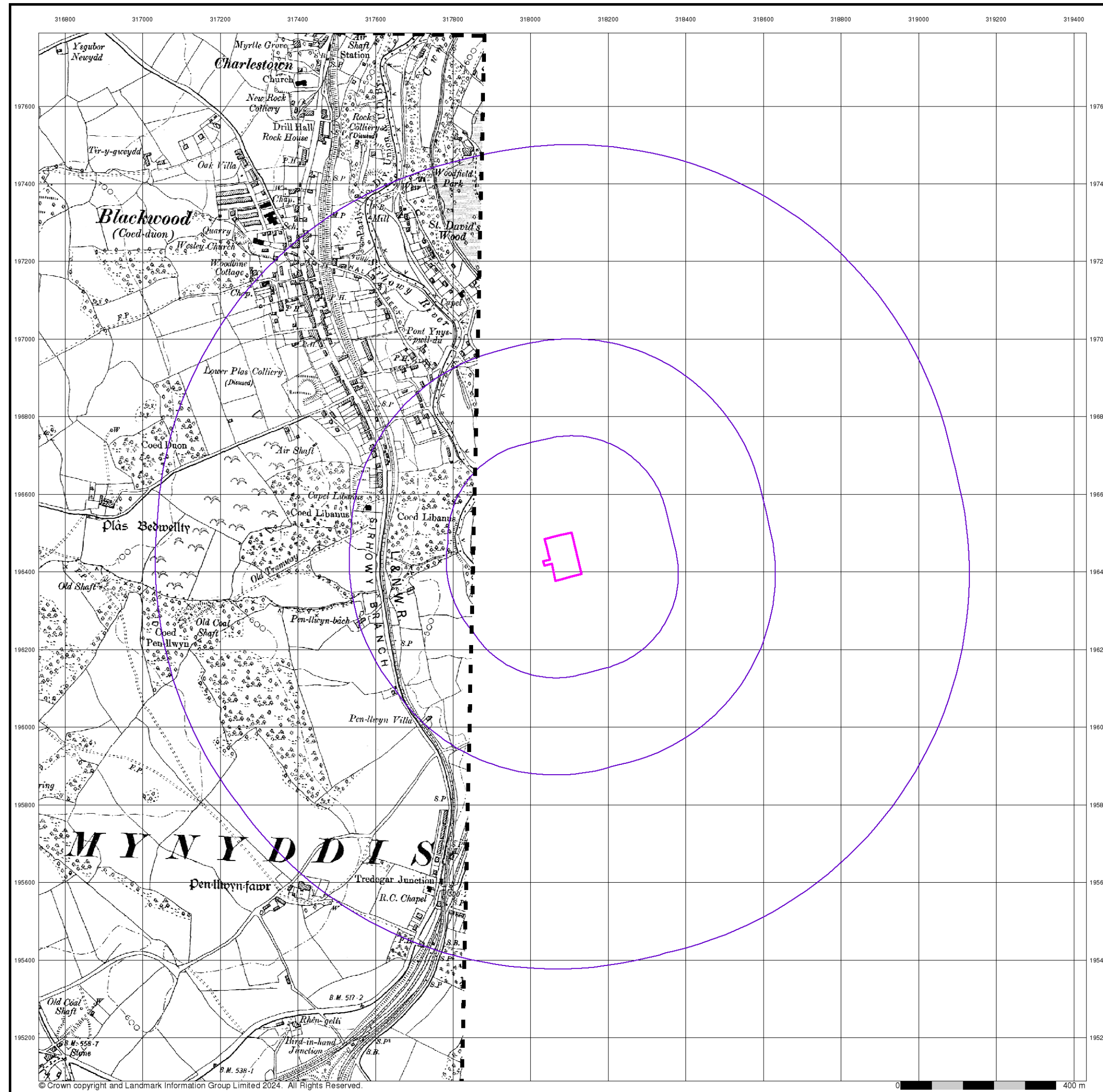


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Site Details

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Glamorganshire

Published 1901

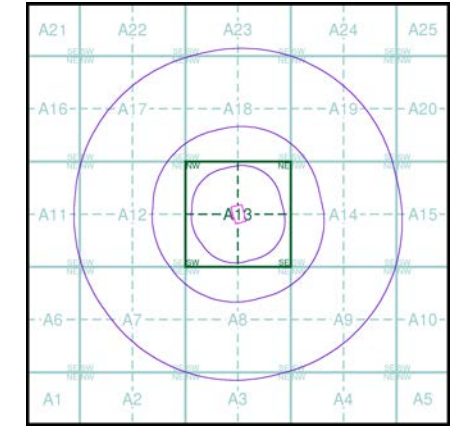
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

020NW	1901	1:10,560
020SW	1901	1:10,560

Historical Map - Slice A

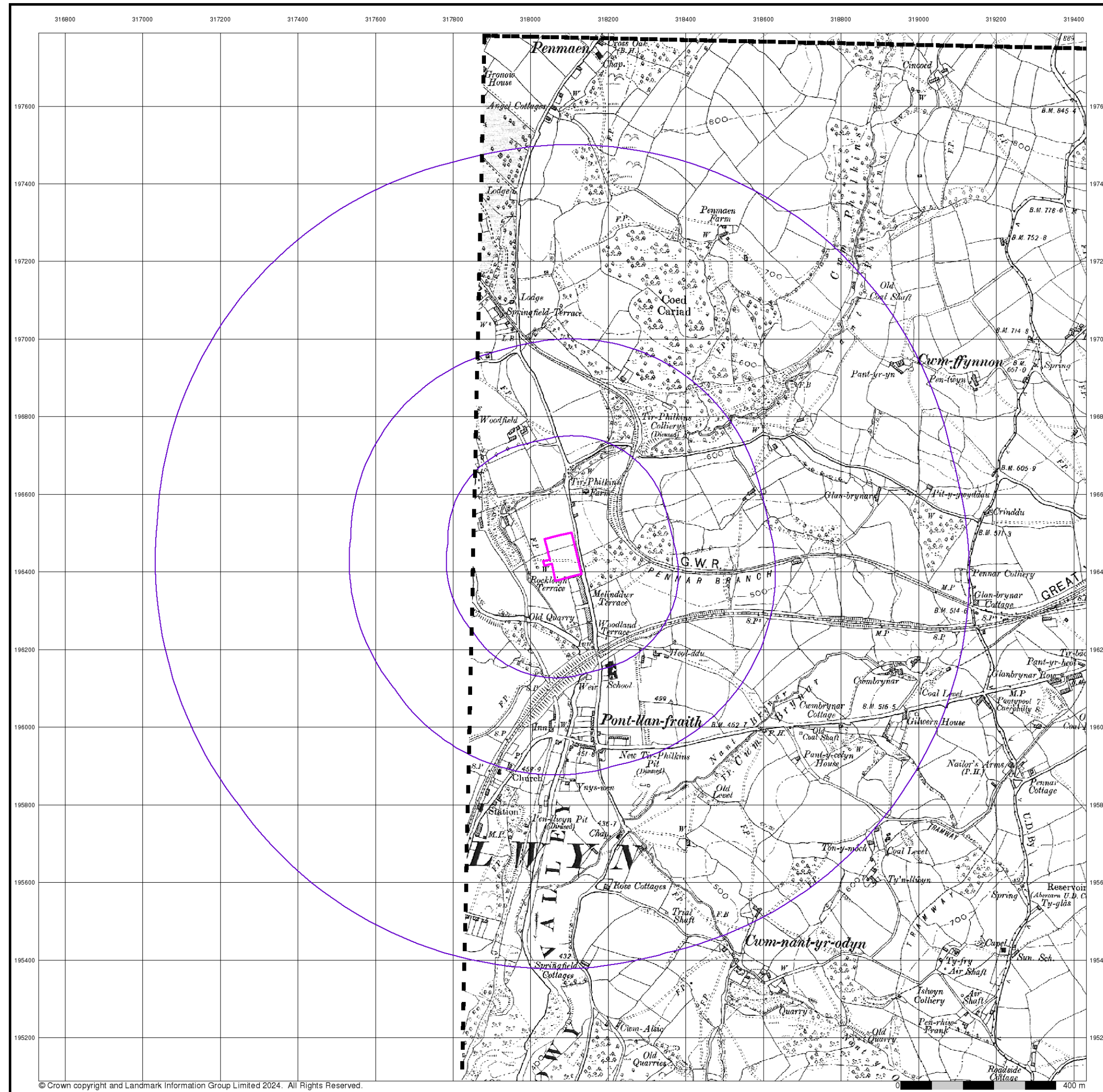


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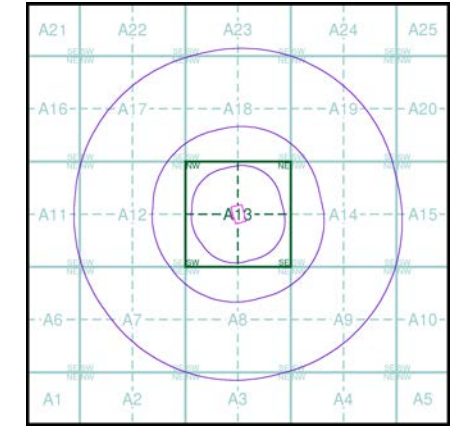
Monmouthshire
Published 1902
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

022NE	1902	1:10,560
022SE	1902	1:10,560

Historical Map - Slice A



Order Details

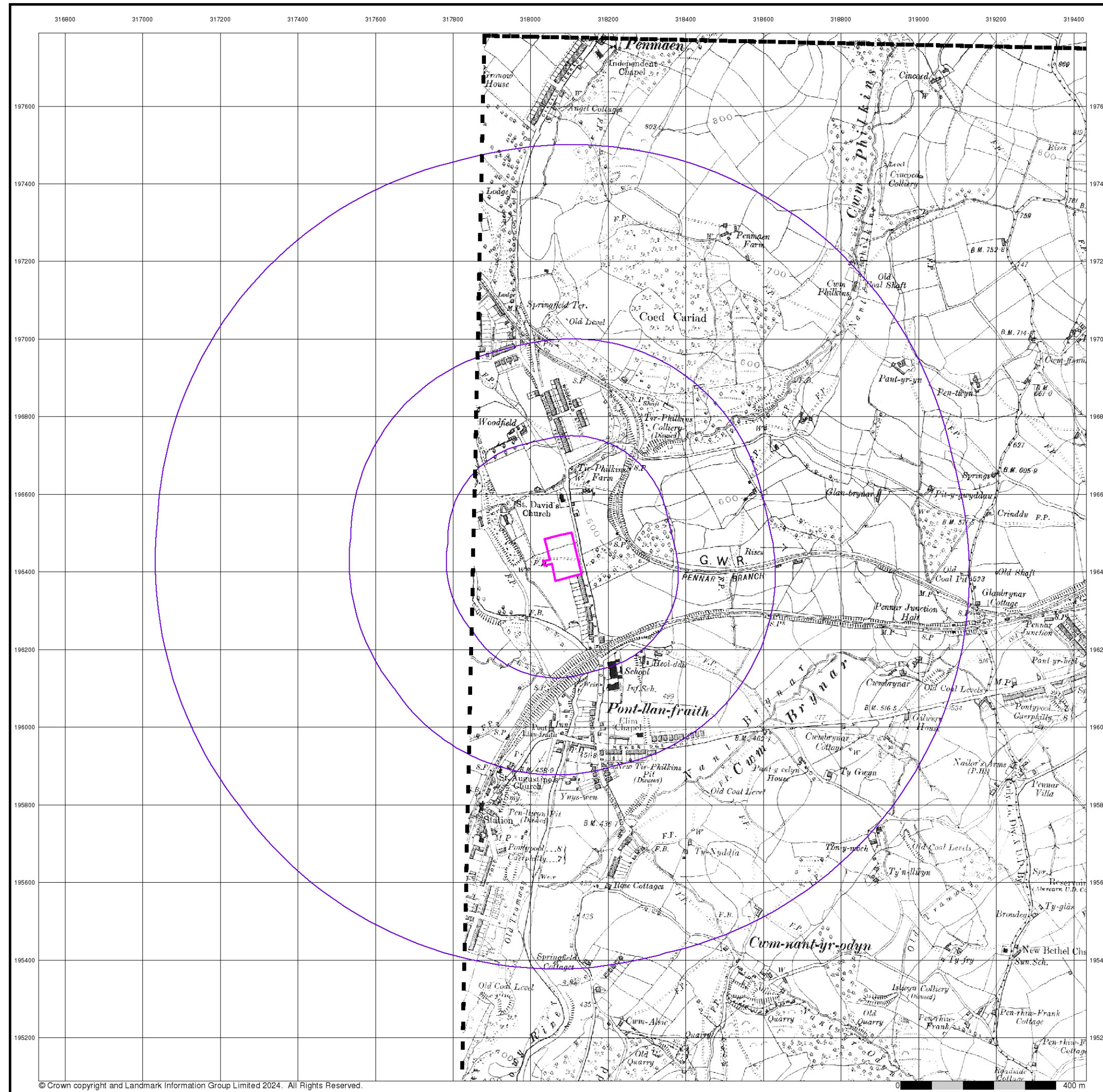
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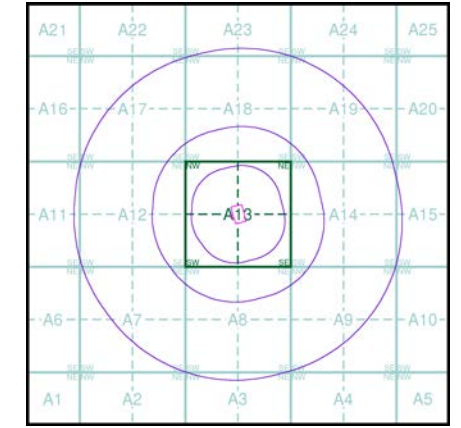
Monmouthshire
Published 1922
Source map scale - 1:10,560

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Map Name(s) and Date(s)

022NE	1922	1:10,560
022SE	1922	1:10,560

Historical Map - Slice A

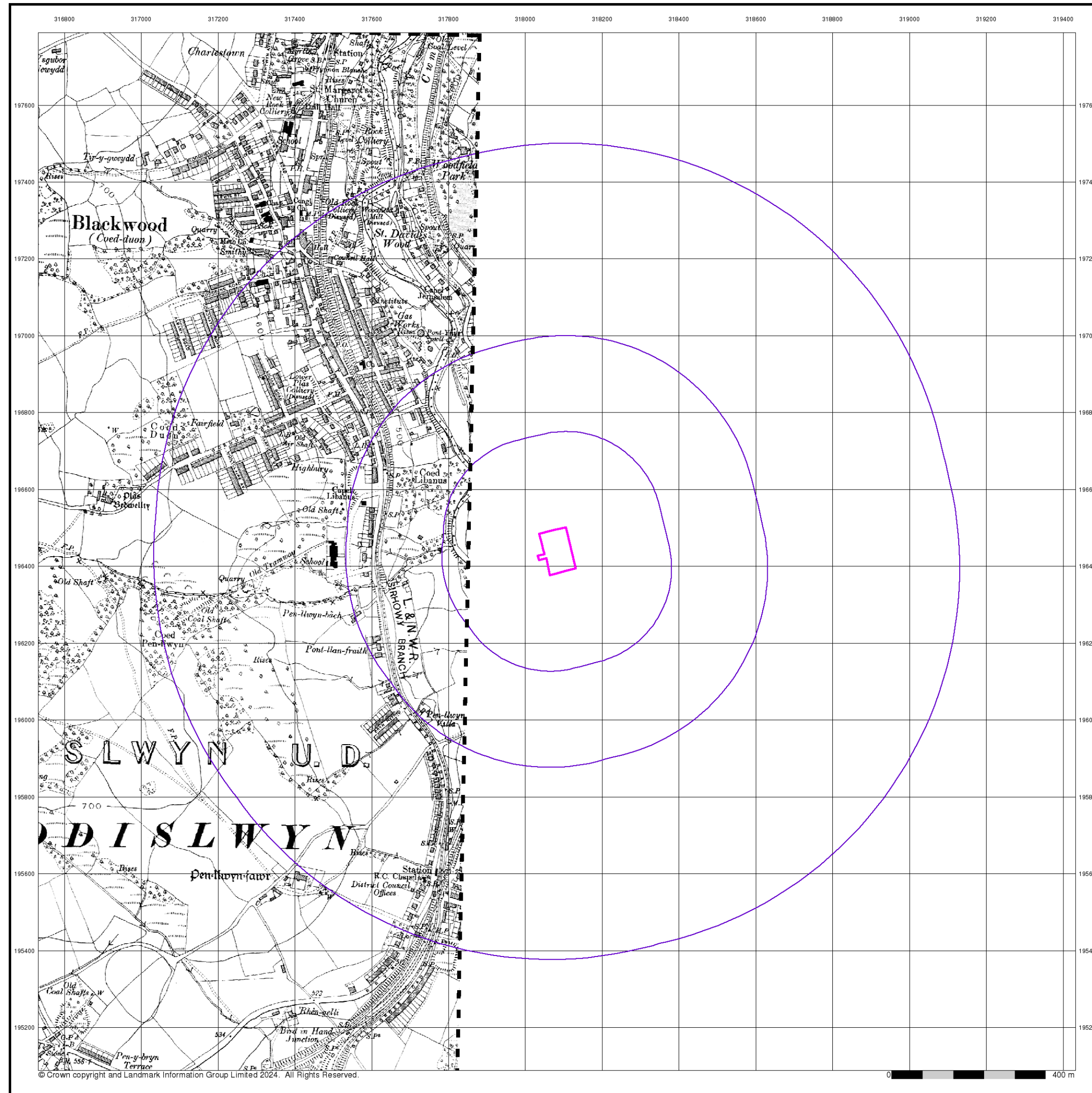


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Glamorganshire

Published 1922

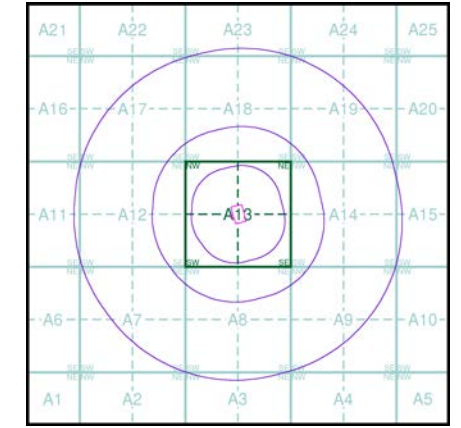
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Map Name(s) and Date(s)

020NW	1922	1:10,560
020SW	1922	1:10,560

Historical Map - Slice A

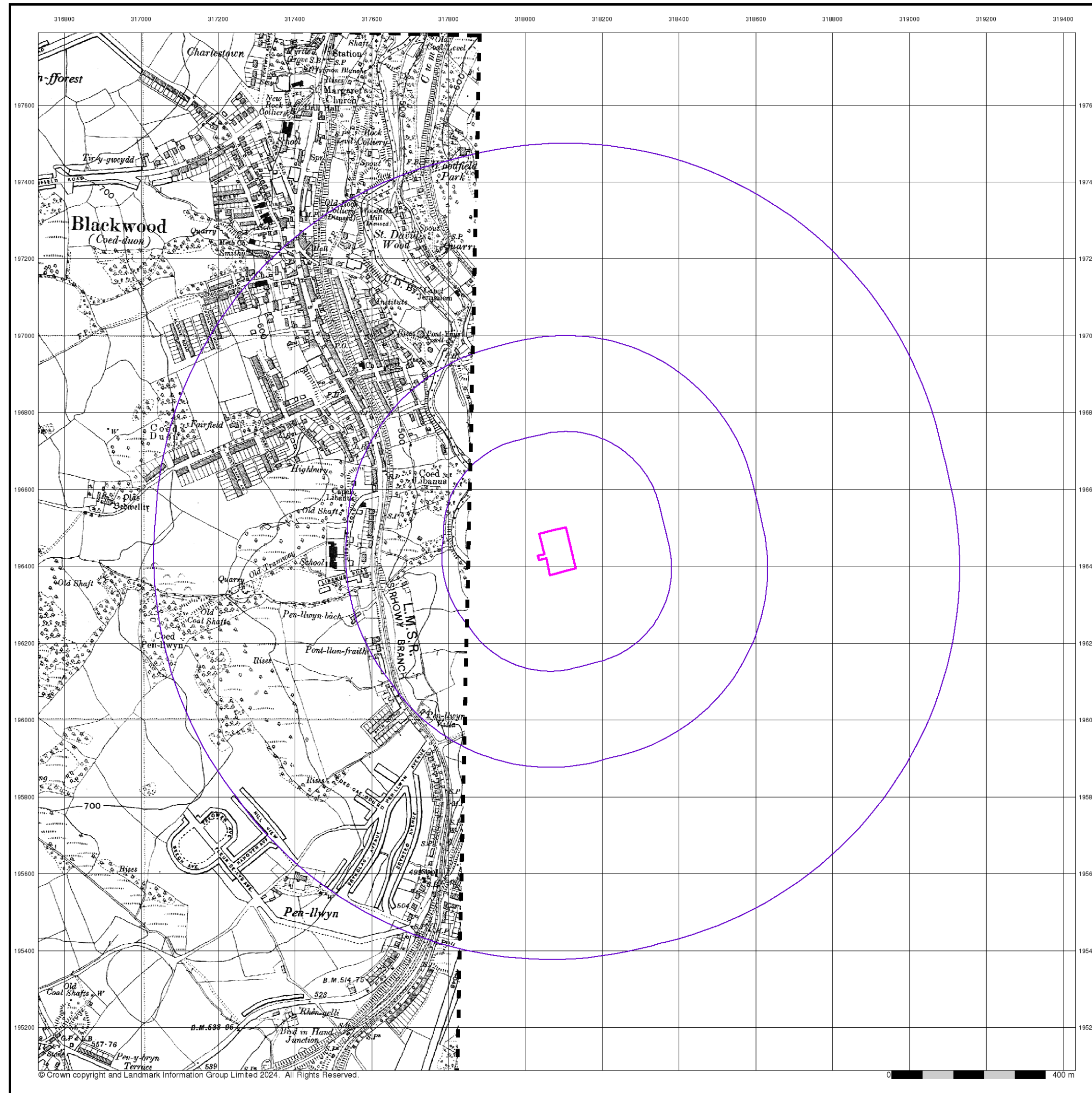


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Glamorganshire

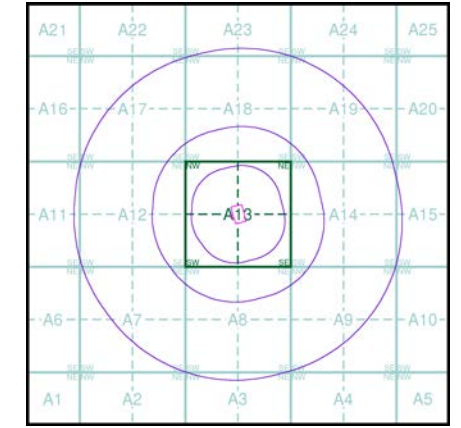
Published 1938 - 1945
Source map scale - 1:10,560

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Map Name(s) and Date(s)

020NW	1945	1:10,560
020SW	1938	1:10,560

Historical Map - Slice A

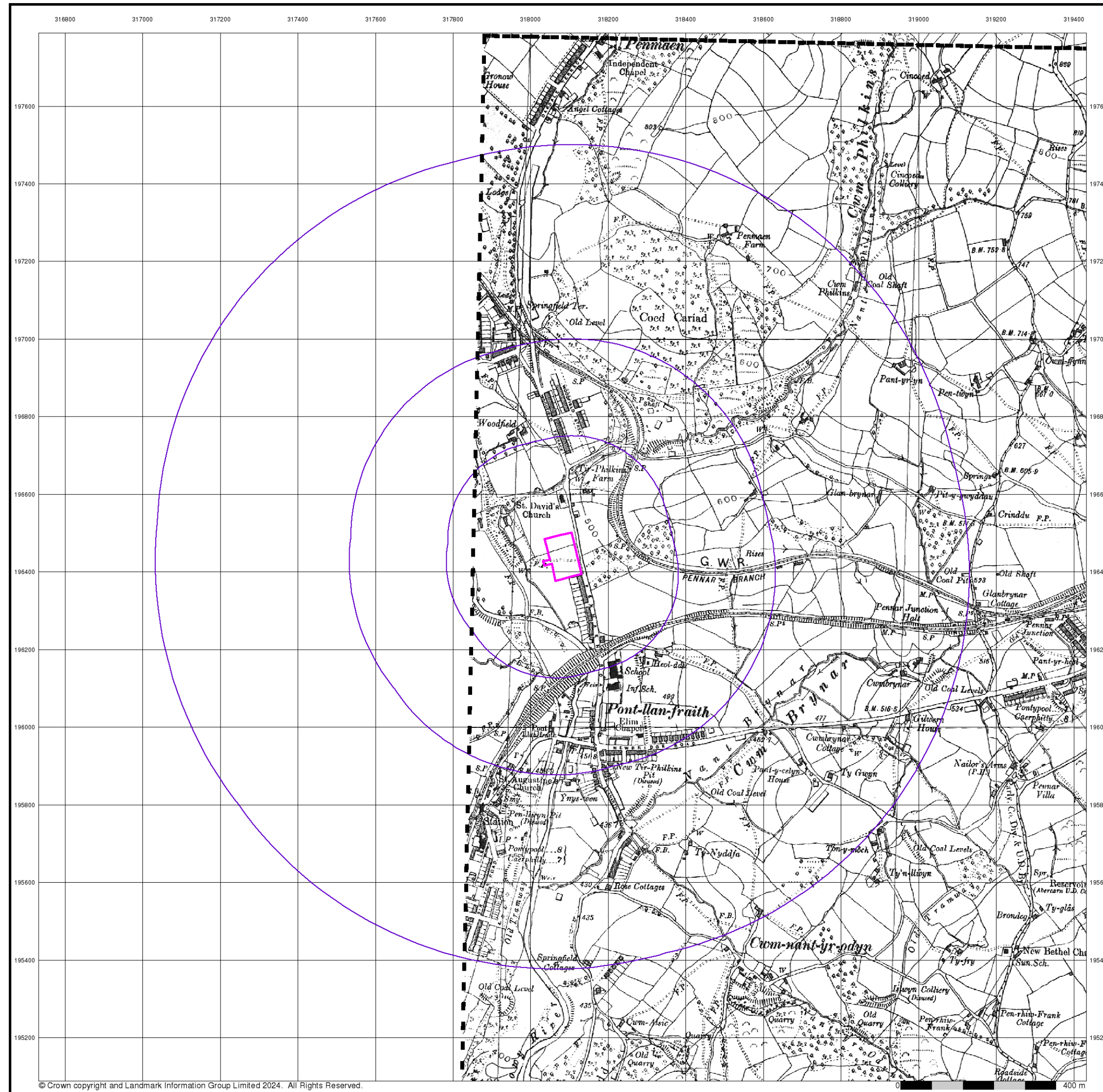


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Site Details

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LANDMARK INFORMATION GROUP

Monmouthshire

Published 1938

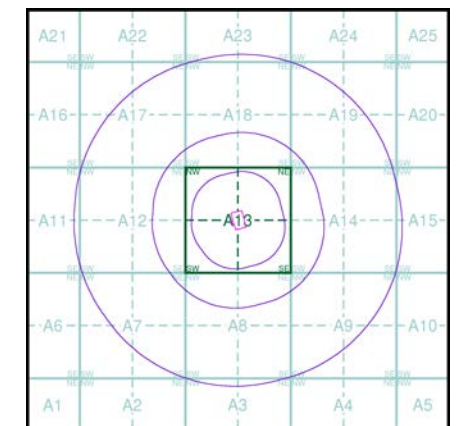
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

022NE	1938	1:10,560
022SE	1938	1:10,560

Historical Map - Slice A



Order Details

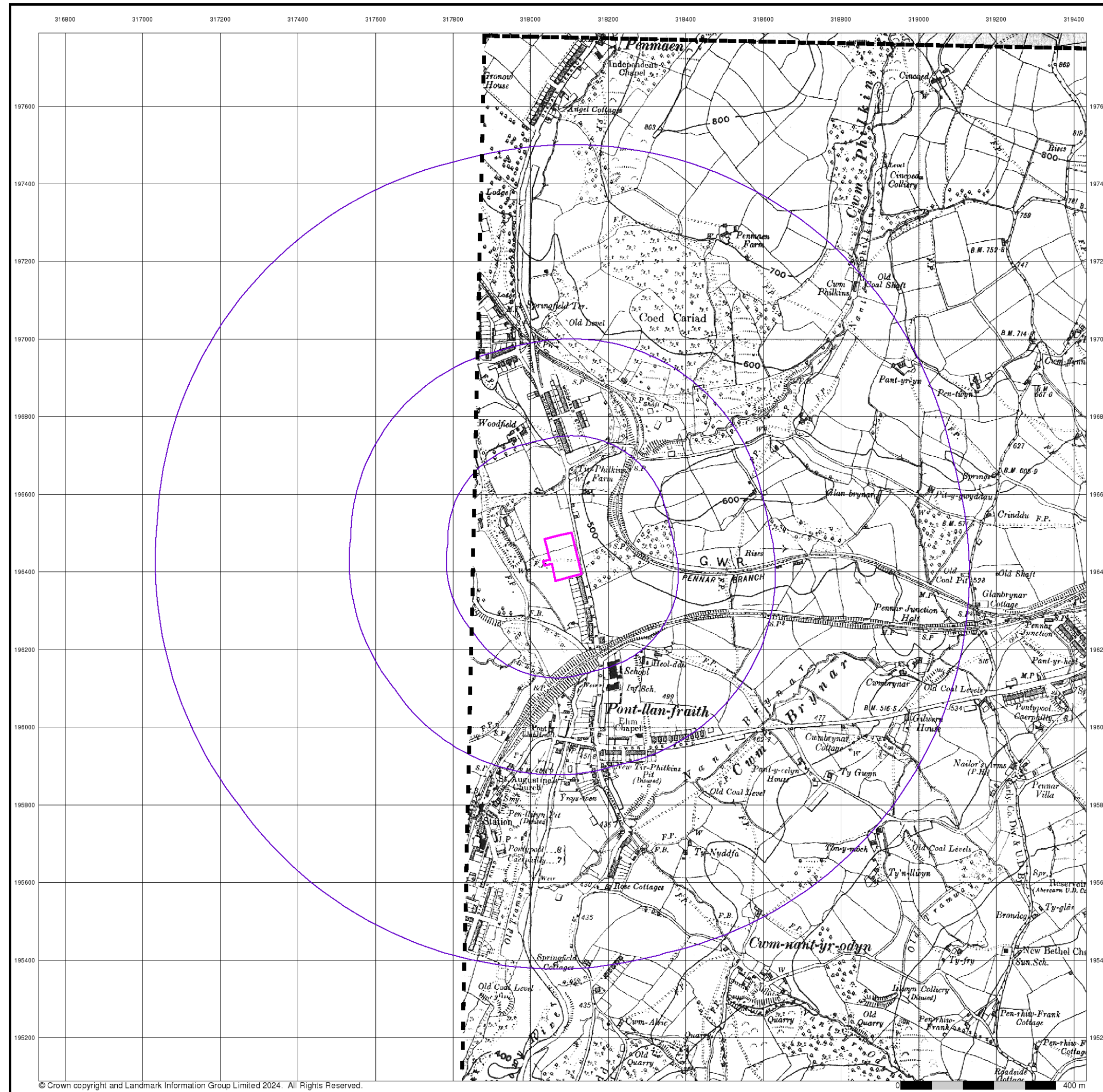
Order Number: 349428225_1_1
 Customer Ref: 1271.01
 National Grid Reference: 318080, 196440
 Slice: A
 Site Area (Ha): 0.8
 Search Buffer (m): 1000

Site Details

41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



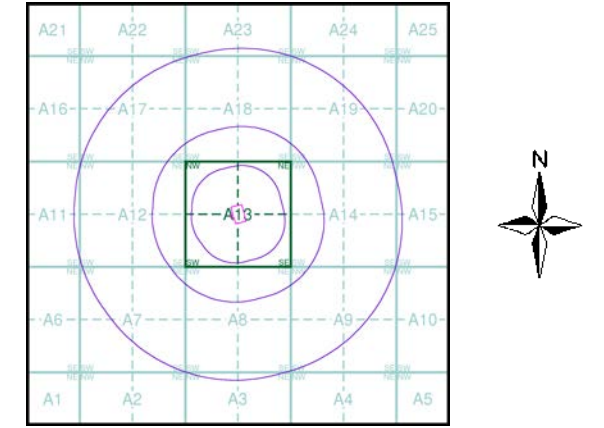
Monmouthshire
Published 1938
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

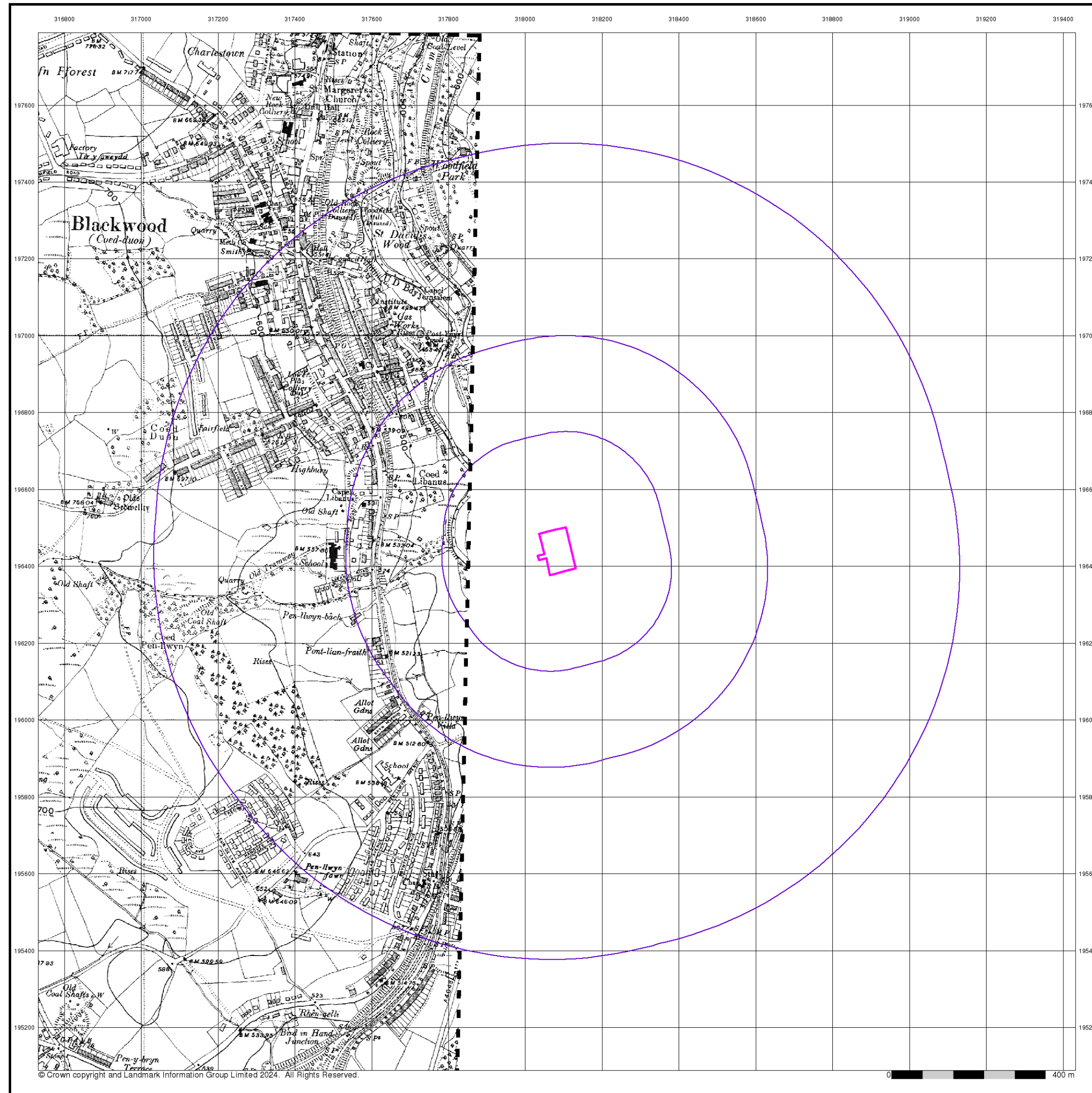
022NE	1938	1:10,560
022SE	1938	1:10,560

Historical Map - Slice A



Order Details
 Order Number: 349428225_1_1
 Customer Ref: 1271.01
 National Grid Reference: 318080, 196440
 Slice: A
 Site Area (Ha): 0.8
 Search Buffer (m): 1000

Site Details
 41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL



Glamorganshire

Published 1953

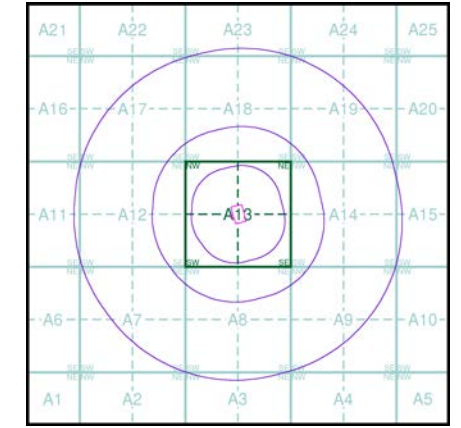
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

020NW	1953	1:10,560
020SW	1953	1:10,560

Historical Map - Slice A



Order Details

Order Number: 349428225_1_1
 Customer Ref: 1271.01
 National Grid Reference: 318080, 196440
 Slice: A
 Site Area (Ha): 0.8
 Search Buffer (m): 1000

Site Details

41, Penmaen Road, Pontllanfraith, BLACKWOOD, NP12 2DL