

PHASE 1 SITE INVESTIGATION & PRELIMINARY RISK ASSESSMENT

Lidl Great Britain Ltd
Gorseinon Rd, Gorseinon

Client: Lidl Great Britain Ltd

Remada

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Executive Summary

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Phase 1 Preliminary Risk Assessment for a proposed new retail store on the site of an existing Poundstretcher store at Gorseinon Road, Gorseinon, Penllergaer, Swansea SA4 9GE, at the location indicated in **Figure 1**. 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 to the south of the A4240 Gorseinon Road as indicated in **Figure 2**. The site is currently utilised by a Poundstretcher retail store of steel-framed construction, which occupies the central area of the site. A concrete surfaced service yard and greenhouse structure are noted alongside the eastern and south-eastern aspect of the building. The only other structures are a water tank and plant room that are present in the south-western corner of the site. The remainder of the site is occupied by asphalt-surfaced car parking surrounding the Poundstretcher retail store.

The site gently slopes towards the south-west, ranging from circa 52.7m AOD (metres above ordnance datum) in the north-eastern area to 49.8m AOD in the south-western area. The western site boundary is marked by a circa 1.5m tall grassed embankment leading down to the adjacent Lidl retail store. An embankment is also present along the northern boundary, with the adjacent A4240 roadway decreasing in height westwards; resulting in a 4m grassed slope in the north-western corner of the site. Mature shrubs and several semi-mature deciduous tree species are present around the margins of the site, including silver birch, rowan and ash varieties.

Site History

The earliest available historic mapping dated 1880 shows the site to undeveloped and occupied by an area of rough pasture and heathland. Between 1964 and 1968, the majority of the site was redeveloped as a yard area of an off-site depot facility. Further redevelopment took place between 1982 and 1988, when the site was reprofiled in order to construct the existing retail store. This work is likely to have created thick deposits (at least 4m) of made ground underlying the western area of the site.

Geology / Hydrogeology

Published geological maps record that the site is underlain by Devensian Till, a Secondary (Undifferentiated) Aquifer and the Grovesend Formation, designated as a Secondary (A) Aquifer.

Mining

The site is located within an area which may be affected by coal mining activity. The shaft and headgear of the historic Garn-Coch Colliery No. 2 was located circa 220m to the west of the site. A Consultants Coal Mining Report was subsequently obtained from the Coal Authority, which recorded the shallowest worked seam is an 'Unnamed' seam located 159m below the site and was last mined in 1900.

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 development;
- 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.



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| Issue No / | Date | Prepared By | Technical Review | Authorised |
|------------|------------|------------------------------|--------------------------------|------------------------|
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1. INTRODUCTION

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Phase 1 Preliminary Risk Assessment for a proposed new retail store on the site of an existing Poundstretcher store at Gorseinon Road, Gorseinon, Penllergaer, Swansea SA4 9GE, 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.

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

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 to the south of the A4240 Gorseinon Road as indicated in **Figure 2**. The site is currently utilised by a Poundstretcher retail store of steel-framed construction, which occupies the central area of the site. A concrete surfaced service yard and greenhouse structure are noted alongside the eastern and south-eastern aspect of the building. The only other structures are a water tank and plant room that are present in the south-western corner of the site. The remainder of the site is occupied by asphalt-surfaced car parking surrounding the Poundstretcher retail store.

The site gently slopes towards the south-west, ranging from circa 52.7m AOD (metres above ordnance datum) in the north-eastern area to 49.8m AOD in the south-western area. The western site boundary is marked by a circa 1.5m tall grassed embankment leading down to the adjacent Lidl retail store. An embankment is also present along the northern boundary, with the adjacent A4240 roadway decreasing in height westwards; resulting in a 4m grassed slope in the north-western corner of the site.

Mature shrubs and several semi-mature deciduous tree species are present around the margins of the site, including silver birch, rowan and ash varieties.

Area of Site 9973 m².

Site Elevation The topographic elevation of the site is generally between 49.8m and 52.7m AOD.

National Grid Co-ordinates 260722, (E), 198471 (N)

2.2. Site Setting

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

North: The A4240 Gorseinon Road forms the northern boundary of the site, with the grounds of Penllergaer Sports & Social Club beyond. Residential properties are present to the north-east, associated with the village of Penllergaer.

East: Commercial and light industrial premises are located east of the site boundary, including a vehicle repair shop and fencing supply shop.

South: Commercial and light industrial units are located to the south of the site, with the nearest being a bakery located adjacent to the southern boundary.

West: The western boundary of the site is formed by the car park of the adjacent Lidl retail store, with commercial and light industrial premises 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 |
|-----------------|--|
| 1880 | The site is indicated to be occupied by an area of rough pasture and heathland, with a track bisecting the site in a north-east to south-west orientation. |
| 1884 | Similar to above. |
| 1898 | Similar to above, although the bisecting track is no longer shown. |
| 1900 | Similar to above. |
| 1916 | Similar to above. |
| 1921 | Similar to above. |
| 1936 | Similar to above, although a footpath has been created bisecting the site in a north-west to south-east orientation. |
| 1938 | Similar to above. |
| 1951 | Similar to above. |
| 1959 | Similar to above. |
| 1964 | Similar to above. |
| 1968 | The majority of the site has been redeveloped and occupied by the yard of an adjacent (off-site) depot facility. No structures are indicated to be present on-site. The southern margin of the site remains undeveloped and occupied by rough pasture. |
| 1971 | Similar to above. |
| 1982 | Similar to above. |
| 1988 | The site has been redeveloped with a large rectangular structure occupying the central area of the site. A smaller ancillary structure has been constructed adjacent to the eastern aspect of this building. A circular access road has been constructed surrounding these buildings, with associated car parking areas. The entire development occupies the same footprint as the existing Poundstretcher store site. There are no significant further changes identified on the later mapping. |

| Map Date | Description of off-site activities |
|-----------------|--|
| 1880 | The surrounding area is predominantly occupied by rough pasture and heathland. An unnamed roadway (later labelled as the present-day Gorseinon Road) is present adjacent to the northern site boundary. |
| 1884 | Similar to above. |
| 1898 | There has been limited residential redevelopment from 20m north-east of the study site; with a row of terraced houses being constructed fronting onto Gorseinon Road. A railway, sidings and buildings associated with a colliery have been constructed from 90m west; the headgear of which are located circa 220m to the west. |



| | |
|---------|---|
| 1900 | Similar to above, although the colliery is now labelled 'Gorseinon Colliery'. |
| 1916 | There has been a significant expansion of the colliery complex with the installation of rail loading bunkers and associated sidings from 80m west of the study site. |
| 1921 | Similar to above, although the colliery is now labelled 'Garn-goch Colliery No. 2'. |
| 1936 | The Garn-goch colliery is recorded as being disused, with the associated removal of much of the railway infrastructure and headgear. The loading bunkers 80m to the west are still rail served and many of the colliery buildings are still extant. There has been significant residential redevelopment of the land to the north-east of the study site. |
| 1938 | Similar to above. |
| 1951 | Similar to above. |
| 1959 | A large 'U'-shaped factory has been constructed from circa 50m north-west of the study site . |
| 1964 | Similar to above. |
| 1968-69 | Several new 'depot' features have been constructed to the east and west of site running parallel to Gorseinon Road. |
| 1971 | A tank of unknown contents has been installed within the depot complex approximately 10m west of the study site. Additional tanks are labelled within the 'U'-shaped factory complex (now labelled as a Plastics Factory) from 50m north. Commercial garage premises have been installed from 70m west and east. All remnants of the disused Garn-goch Colliery No.2 have been removed (including the railway and associated earthworks) and the area now labelled as the Garngoch Industrial Estate. |
| 1978 | Further expansion of the Garngoch Industrial Estate has taken place from 100m west. The present-day Penllergaer Sports & Social Club has been constructed from 110m north of the site. |
| 1988 | The area to the south of the study site is in the process of being redeveloped, with new access roads having been constructed but no structures yet built. |
| 1992 | Light industrial / commercial units have been constructed on the land to the south of the study site; coming under the wider Garngoch Industrial Estate area. The unspecified tank from 10m west is no longer shown. |
| 1993 | Similar to above. |
| 1994 | Further expansion of the Garngoch Industrial Estate is recorded, with units now being present adjacent to the southern site boundary. |
| 1999 | Similar to above. |
| 2020 | Further expansion eastwards of the Garngoch Industrial Estate is noted. The existing Lidl retail store adjacent to the western site boundary is illustrated but unlabelled. |



2.4. Proposed Site Use

It is understood that the proposed site use for the site will be a Lidl retail store with associated car park and soft landscaping.

The proposed development layout is for a 2234m² retail store occupying the western area of the site, with the 120-space car park occupying the central and eastern areas, as shown in **Figure 3**. Access will be via a new spur from the A4240 Gorseinon Road in the north-eastern area 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 247 (Swansea) does not indicate made ground deposits to be present underlying the site. It is not expected to be encountered according to the mapping; however, taking consideration of the site's historic use, adjacent BGS historic borehole records (ref **Section 2.5.3**) 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. The BGS describes these deposits as typically comprising 'of a heterogenous mixture of clay, sand, gravel and boulders varying widely in size and shape'.

The superficial deposits are designated as a Secondary Aquifer - Undifferentiated (ref Envirocheck **Appendix B**).

2.5.2. Bedrock Geology

The bedrock underlying the site is formed of the Grovesend Formation, for which the parent unit is the Warwickshire Group. The BGS describes this Formation 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**).

2.5.3. Historic BGS Borehole Records

There are two historic BGS borehole records within a relevant distance of the site.

- Within **Morrison By-Pass Borehole No. T12** (BGS ID 369704) located 250m to the south-west in 1968, made ground deposits comprising ash, clinker, coal dust, burnt shale and clay were encountered to a depth of 7.92m bgl. This was underlain by a 0.31m thick bed of peat, which in turn was underlain by brown sandy clay to the base of the borehole at 9.14m.
- Within **Morrison By-Pass Borehole No. T9** (BGS ID: 369701) located 310m to the south-east in 1968, made ground deposits comprising 'grey black shaley mudstone, shale fragments and low quality coal' were encountered to 12.8m bgl. This made ground was then underlain by peat with grey sandy clay to 13.56m bgl, which in turn was underlain by brown and grey sandy clay 'with stones' to the base of the borehole at 14.32m bgl.

2.5.4. Groundwater Abstractions

There are no groundwater abstraction points within 2km of the search area (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 an unnamed inland river within the Loughor catchment area, located 185m to the south at its nearest point.

The nearest surface water abstraction point is located 1298m to the west and pertains to the abstraction of water from the River Lliw for 'general use' by British Steel PLC (ref Envirocheck **Appendix B**).

2.5.7. Flooding Vulnerability

The site is located in an area with the potential for groundwater flooding to occur at the surface. There are no recorded surface water flood zones within the search area (ref Envirocheck **Appendix B**).

2.5.8. Ground Stability

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

Shrinking / Swelling of Clay There is a very low hazard rating from shrinking or swelling of clays at the site.

Rock Solubility There is a no hazard rating from rock solubility at the site.

Compressible Ground There is a no hazard rating from compressible ground at the site.

Collapsible Deposits There is a very low hazard rating from collapsible rocks at the site

Running Sand There are 'very low' and 'no' hazard ratings for running sands at the site.

2.5.9. Radon

The site is located in Lower Probability Radon Area as less than 1% of properties are above the Action Level but no radon protective measures are necessary (ref Envirocheck **Appendix B**).

2.5.10. Environmentally Sensitive Site Designations

There is an ancient woodland located 565m south-west of site (ref Envirocheck **Appendix B**).

2.6. Industrial Lane Use

There are forty-eight (48 No.) contemporary trade directory entries locations within 250m of the site.

However, only thirteen (13 No.) of these entries are listed as being active and include paint manufacturers (from 68m S), builder's merchants (from 70m S), tyre dealers (from 70m E), window film manufacturers, MOT test centre (81m NE), used car dealers (81m SW) and garage services from 106m E. (ref Envirocheck **Appendix B**).

There are no fuel station entries located within 1km of the study site (ref Envirocheck **Appendix B**).

2.7. Environmental Permits, Incidents & Registers

There are no Local Authority Pollution Prevention and Controls (LAPPC) entries located within 250m of the study site. The nearest is located 279m to the west and pertains to the respraying of road vehicles at a commercial garage. No enforcements are recorded for this entry (ref Envirocheck **Appendix B**).

The nearest pollution incident to controlled waters is recorded 236m to the north-east and pertains to the discharge of diesel in August 1998. The incident was recorded as being a Category 3 (Minor) incident and no details of the received water are provided (ref Envirocheck **Appendix B**).

2.8. Landfill & Waste Sites

There are six (6 No) licensed waste facilities, two (2 No) waste transfer stations and one (1 No) waste treatment facility within the search area. The Local Authority have checked their landfill coverage records



and the study site is not recorded as being 'landfilled' (ref Envirocheck **Appendix B**).

2.9. Mining

The site is located within an area which may be affected by coal mining activity (ref Envirocheck **Appendix B**). The Coal Authority Consultants Coal Mine Report at **Appendix C** records the following:

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 | UNNAMED | Coal | 4BB9 | 159 | Beneath Property | 5.2 | South-West | 220 | 1900 |
| unnamed | SWANSEA 6FT | Coal | 4DBF | 205 | East | 3.3 | South-West | 182 | 1899 |
| unnamed | SWANSEA 6FT | Coal | 4DBE | 288 | Beneath Property | 5.8 | South-West | 210 | 1895 |

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

| | | |
|---------|--------|--------|
| 4483 | SW2239 | SW2204 |
| SWR2710 | SW2228 | SWA695 |
| 4706 | 7714 | PO0 |

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

No faults, fissures or breaklines 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

No information provided.



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 historical development and demolition;
- Depot yard.

On-site Current

- Operational Poundstretcher store and car parking.

Off-site Historical

- Garn-Coch No.2 Colliery including associated infrastructure, railways and headgear;
- Unspecified Tanks
- Various Garages and Depots

Off-site Current

- Residential Housing
- Garngoch Industrial Estate
- Paint Manufacturers/Suppliers;
- Builder's Merchants;
- MOT Test Centre and Automotive Businesses.

3.3. Potential Contaminants of Concern (PCOCs)

- Metals;
- Asbestos (associated with demolition and redevelopment of the site);
- Total petroleum hydrocarbons (TPH);
- Polycyclic aromatic hydrocarbons (PAHs);
- Ground gases (carbon dioxide and methane).

3.4. Potential Receptors

Human Health

- On-site 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;
- Unnamed surface water / inland river located 185m south.

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 (Un-mitigated) | 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. | 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 | | | | • Indoor Dust ingestion | • Yes | As above | Potential risk | TBA | TBA | |
| Historic Depot | | | | • Skin Contact with Soils | • Yes | As above | Potential risk | TBA | TBA | |
| Retail Store | | 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 |
| Off-site Sources | | | | | • Inhalation of Outdoor Dust | • Yes | As above | Potential risk | TBA | TBA |
| Residential housing | | | | | • Inhalation of Outdoor Vapours | • Yes | As above | Potential risk | TBA | TBA |
| Colliery and associated infrastructure | | Permeation of water supply pipework | Leachate | Secondary A and B Aquifers | • Inhalation of Indoor Vapours | • Yes | As above | Potential risk | TBA | TBA |
| Unspecified Tanks | | | | | • Inhalation of ground gas | • Yes | As above | Potential risk | TBA | TBA |
| Industrial estate including paint manufacturers, builders' merchants, MOT test centre and other automotive businesses. | | | | | • Inhalation of radon gas | • No | N/A | Negligible | Negligible | Negligible |
| | | | | | • Ingestion via permeated water supply pipework | • Yes | As above | Potential risk | TBA | TBA |
| | | | | | • Direct contact with Secondary (Undiff) 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 |

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 to the south of the A4240 Gorseinon Road and is currently utilised by a Poundstretcher retail store, with associated car park, service yard and soft landscaping. The site gently slopes towards the south-west, ranging from circa 52.7m AOD (metres above ordnance datum) in the north-eastern area to 49.8m AOD in the south-western area. The western site boundary is marked by a circa 1.5m tall grassed embankment leading down to the adjacent Lidl retail store. An embankment is also present along the northern boundary, with the adjacent A4240 roadway decreasing in height westwards; resulting in a 4m grassed slope in the north-western corner of the site.

It is understood that the proposed site use for the site will be a Lidl retail store with associated car park and soft landscaping.

The earliest available historic mapping dated 1880 shows the site to undeveloped and occupied by an area of rough pasture and heathland. Between 1964 and 1968, the majority of the site was redeveloped as a yard area of an off-site depot facility. Further redevelopment took place between 1982 and 1988, when the site was reprofiled in order to construct the existing retail store. This work is likely to have created thick deposits (at least 4m) of made ground underlying the western area of the site.

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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 development;
- 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.



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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.

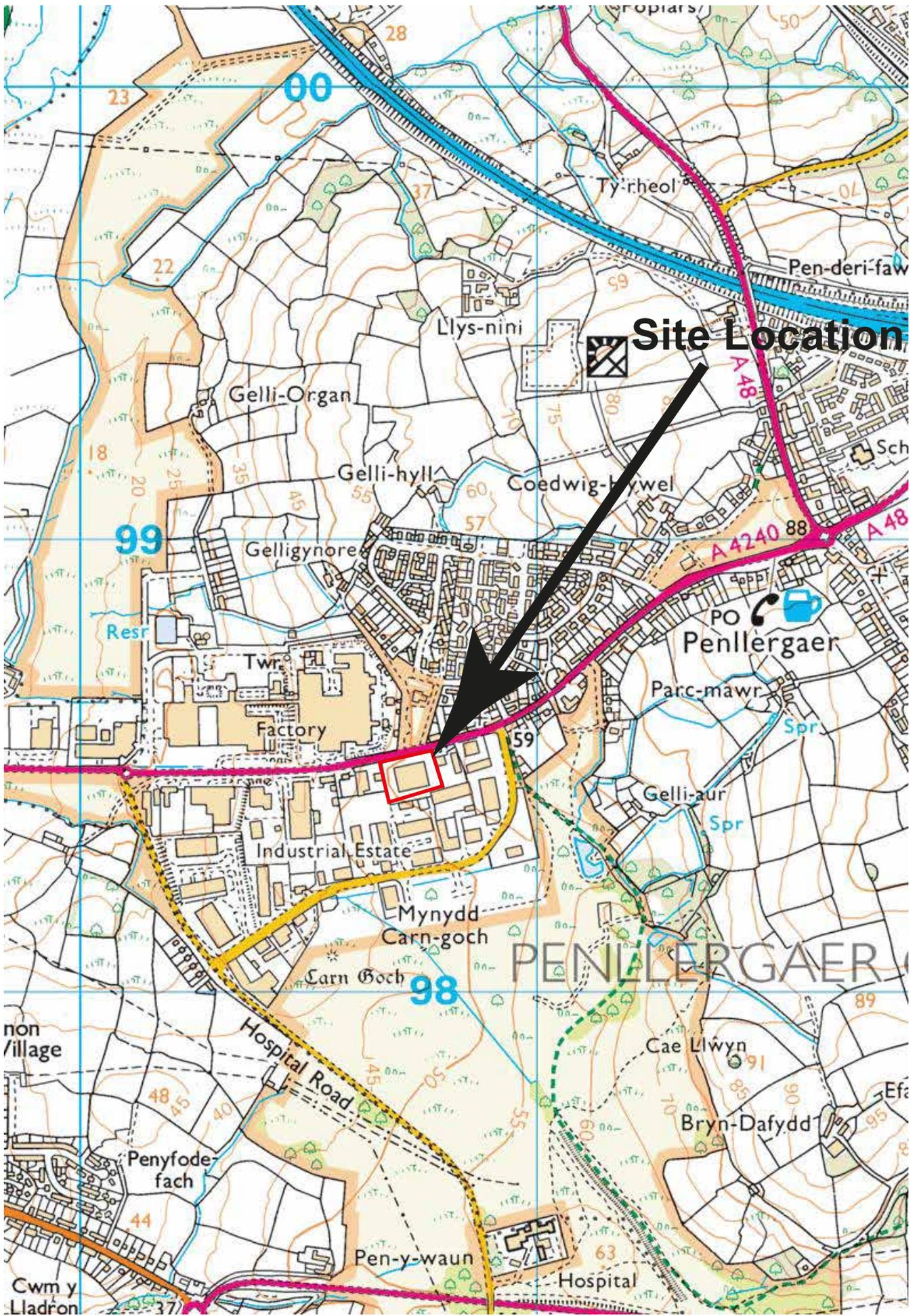


FIGURES

Figure 1 Site Location Plan

Figure 2 Existing Site Layout

Figure 3 Proposed Site Layout



Notes

| | | | | | | | |
|---------------|------------------------------|-------|----------|---------|-----|-------------------|----|
| Project Title | Gorseion (Store Relocation) | Scale | as shown | Drawn | PD | Size | A4 |
| Drawing Title | Figure 1: Site Location Plan | Date | 05.10.20 | Job No. | 795 | Drawing / Rev No. | 01 |

Client
 Lidl Great Britain Ltd  **Remada**





Legend

Notes
 EDI Survey Ltd's Topographic Survey & Buried Utilities
 Survey drawing No. 18927/T&S/01-01 (issued in August 2020)
 reproduced as base plan.

Project Title
 Lidl Gorseinon (Relocation)

Drawing Title
 Figure 2 - Existing Site Plan

Client
 Lidl Great Britain Ltd



| | | |
|-------------------|----------------|-------------------------|
| Scale As shown | Drawn PD | Size A3 |
| Date 23.10.20 | Job No. 795 | Drawing / Rev No. 01 |

Remada



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)
Co. Boro. Bdy.
County Burgh Boundary (Scotland)
Boundary Post or Stone **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**

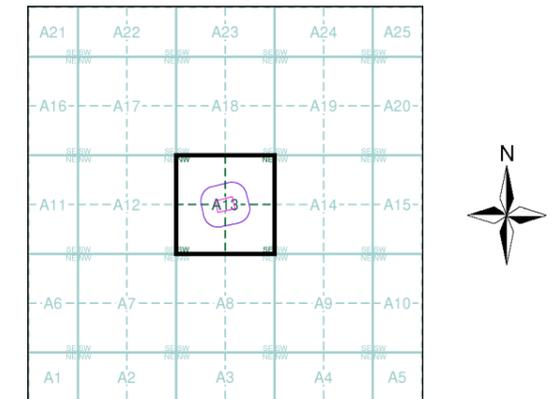
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|--------------------------------|---------|-------------|----|
| Glamorganshire | 1:2,500 | 1880 | 2 |
| Glamorganshire | 1:2,500 | 1898 | 3 |
| Glamorganshire | 1:2,500 | 1916 | 4 |
| Glamorganshire | 1:2,500 | 1936 | 5 |
| Ordnance Survey Plan | 1:2,500 | 1959 | 6 |
| Ordnance Survey Plan | 1:2,500 | 1971 | 7 |
| Additional SIMs | 1:2,500 | 1978 - 1988 | 8 |
| Additional SIMs | 1:2,500 | 1988 | 9 |
| Additional SIMs | 1:2,500 | 1992 | 10 |
| Large-Scale National Grid Data | 1:2,500 | 1993 | 11 |
| Large-Scale National Grid Data | 1:2,500 | 1993 - 1994 | 12 |

Historical Map - Segment A13



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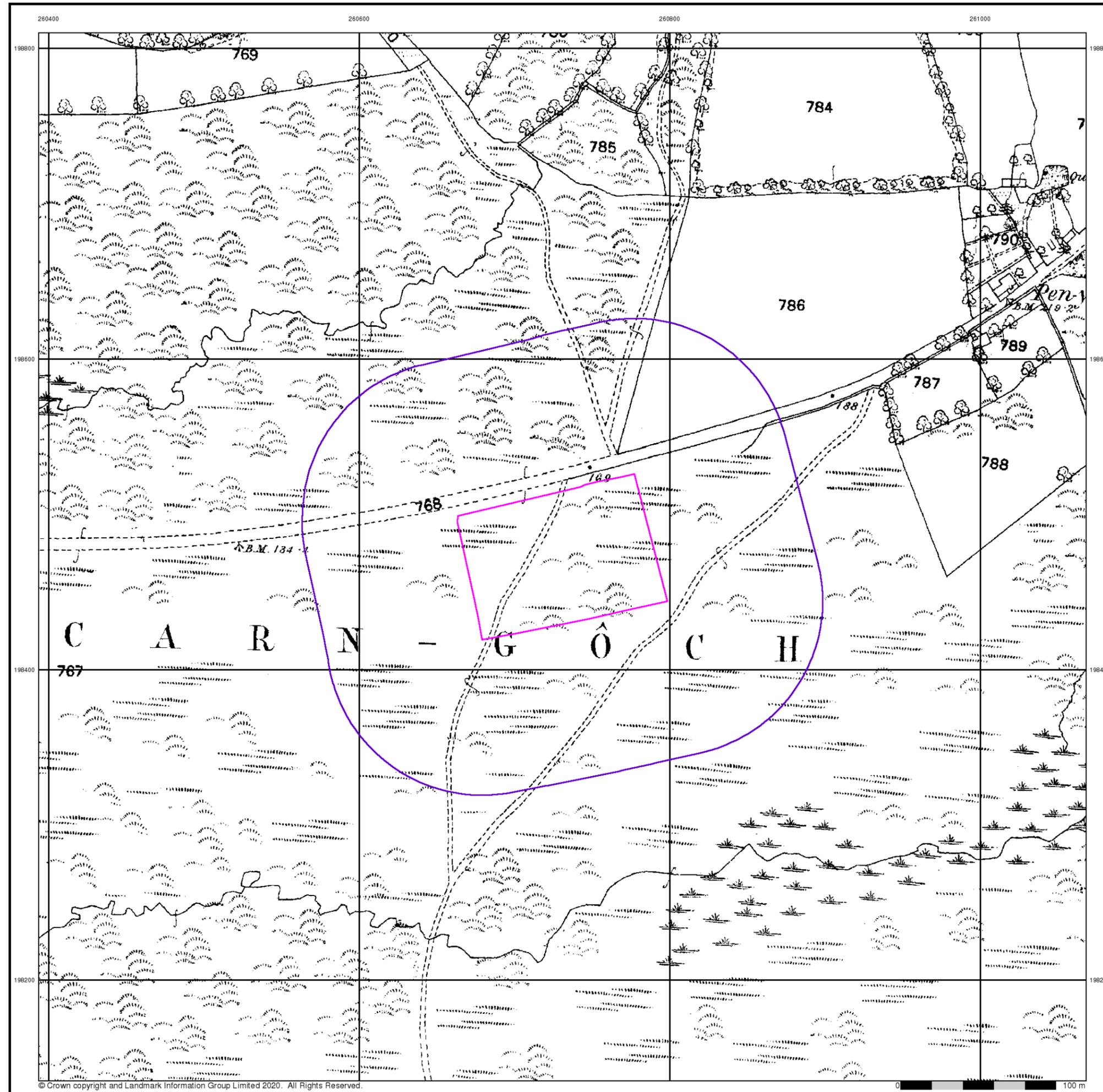
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Site Details

Poundstretchers Ltd, Gorseinon Road, Penllergaer,
 SWANSEA, SA4 9GE

Landmark
 INFORMATION GROUP

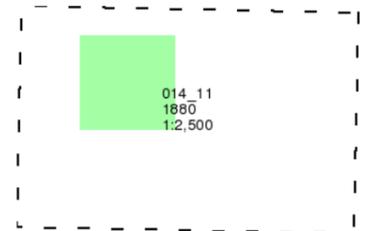
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



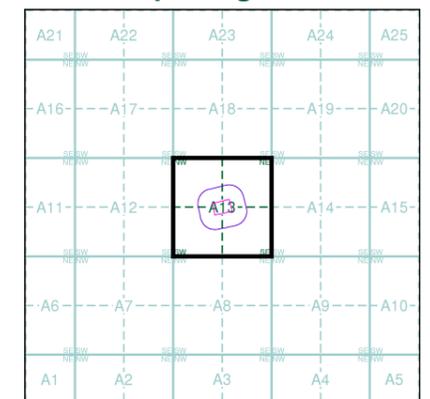
Glamorganshire
Published 1880
Source map scale - 1:2,500

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)



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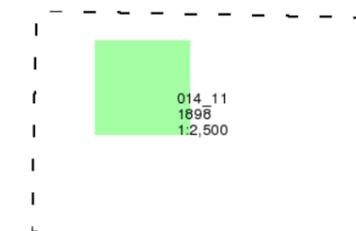
Glamorganshire

Published 1898

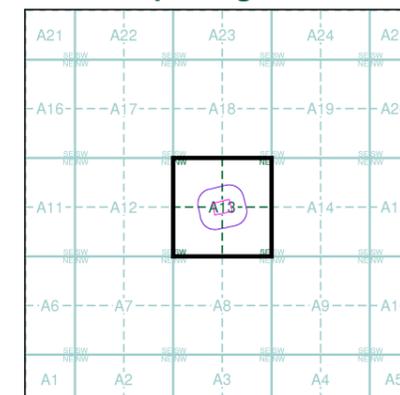
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Map Name(s) and Date(s)



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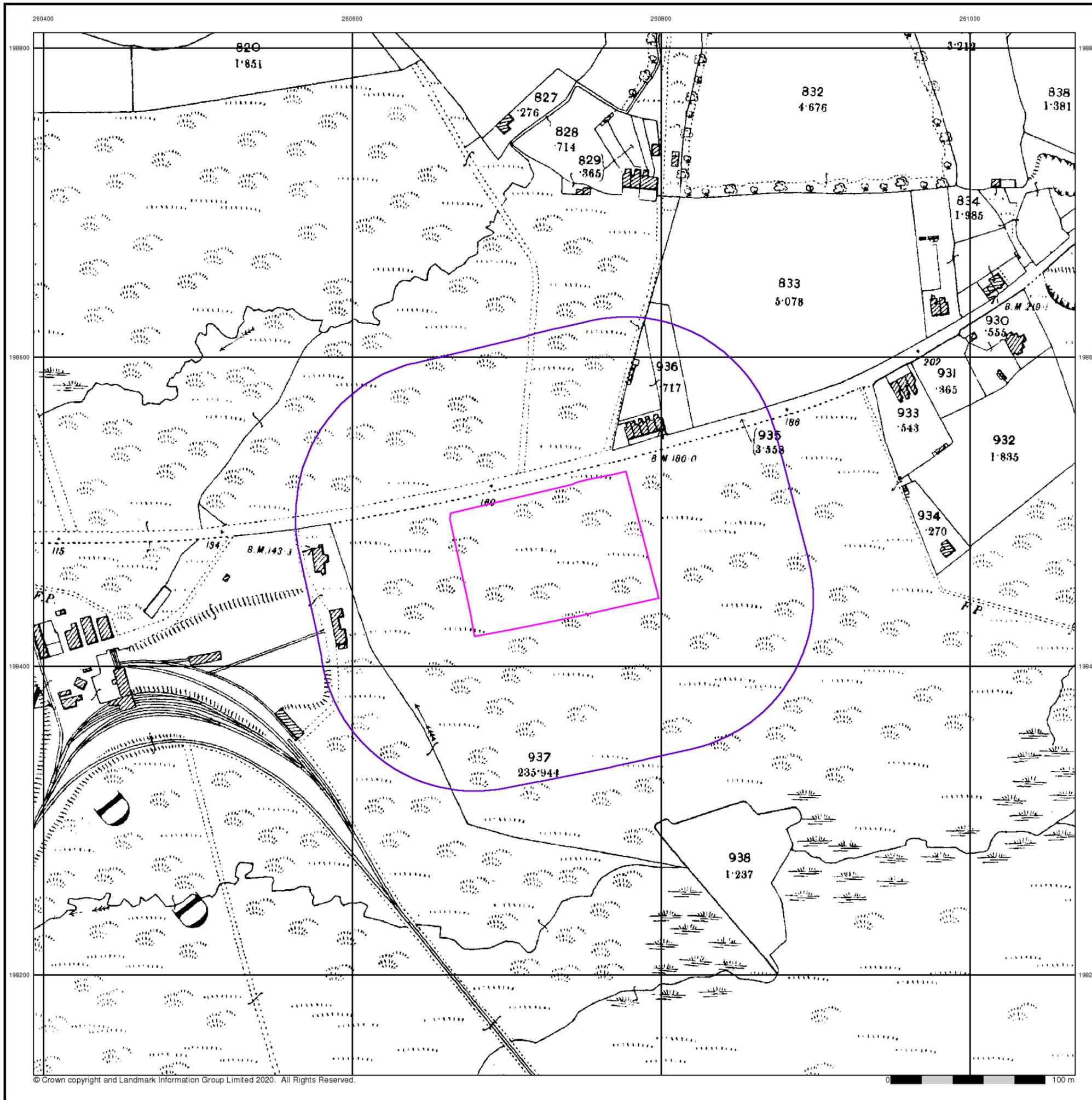


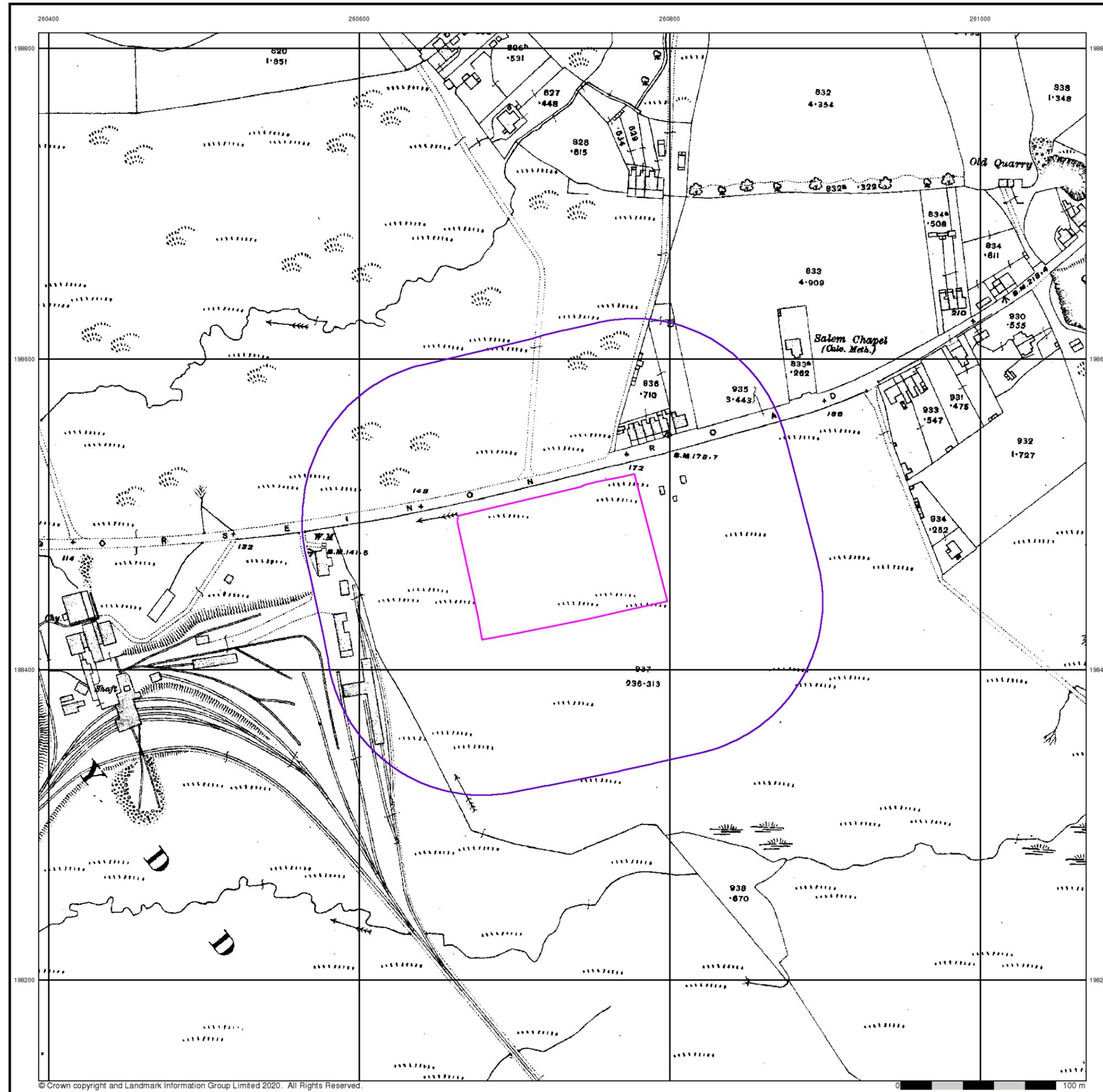
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SWANSEA, SA4 9GE

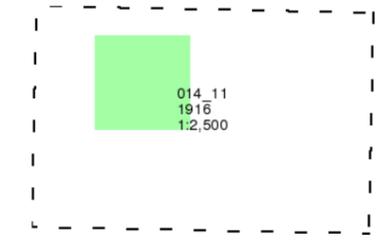




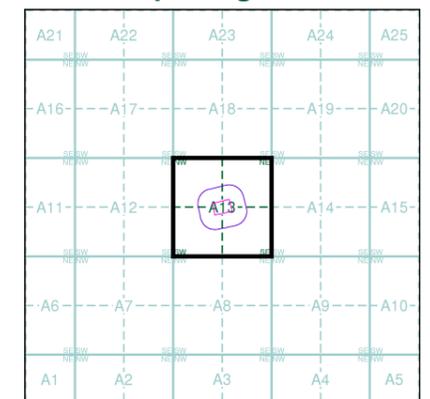
Glamorganshire
Published 1916
Source map scale - 1:2,500

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Map Name(s) and Date(s)



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 SWANSEA, SA4 9GE

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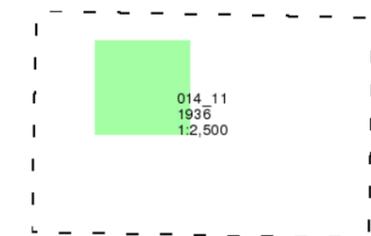
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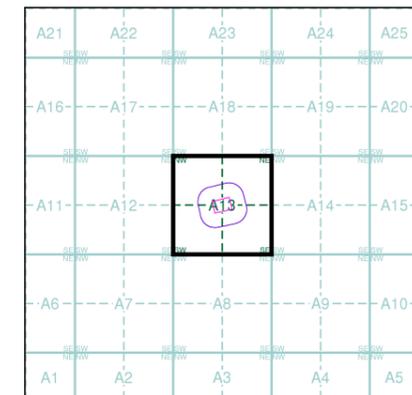
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Map Name(s) and Date(s)



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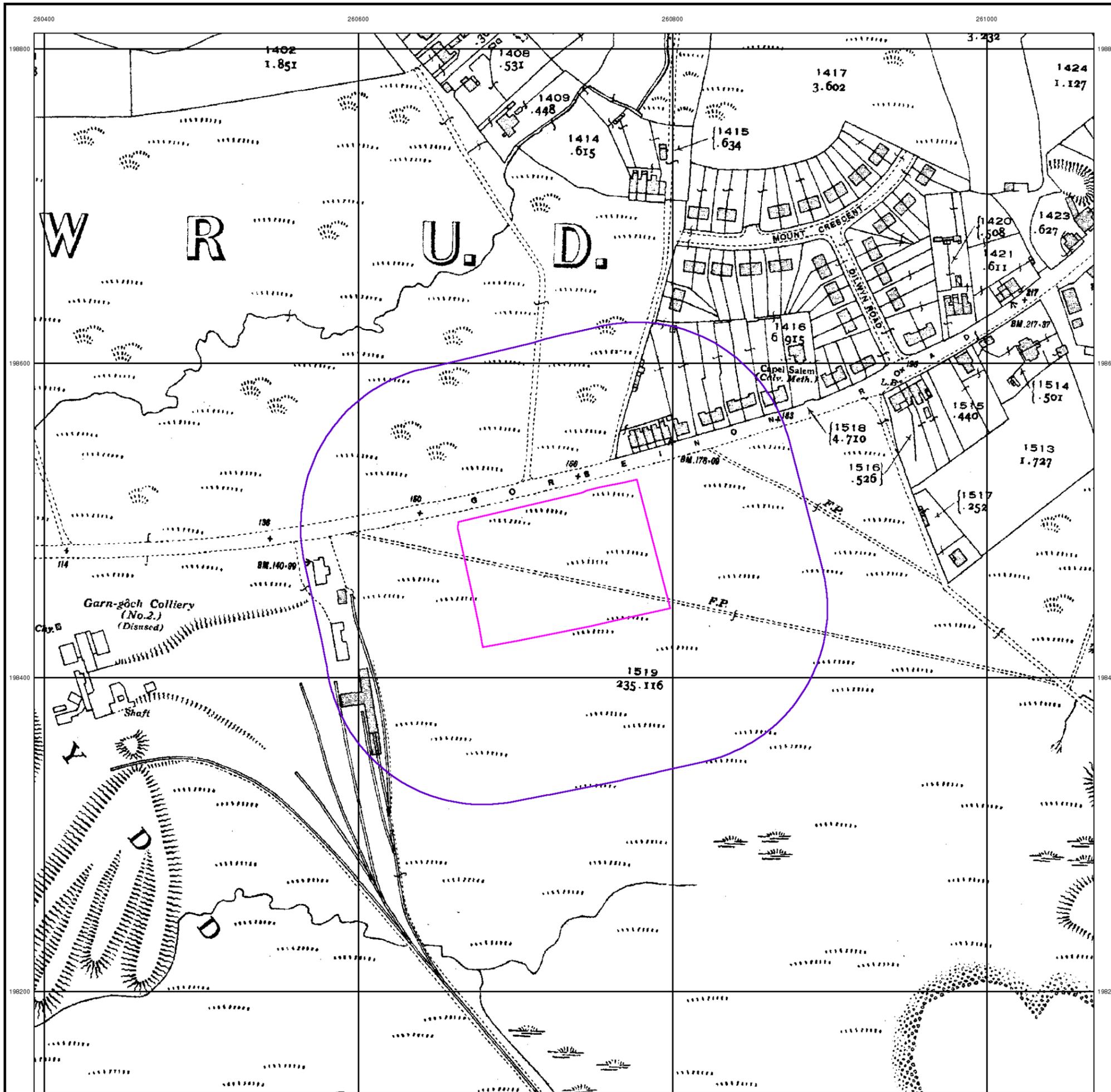


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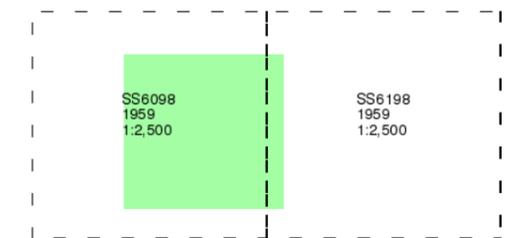
Ordnance Survey Plan

Published 1959

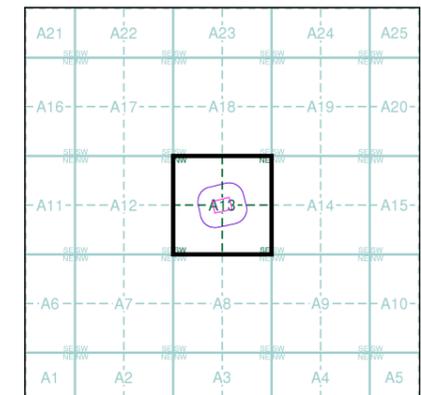
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Map Name(s) and Date(s)



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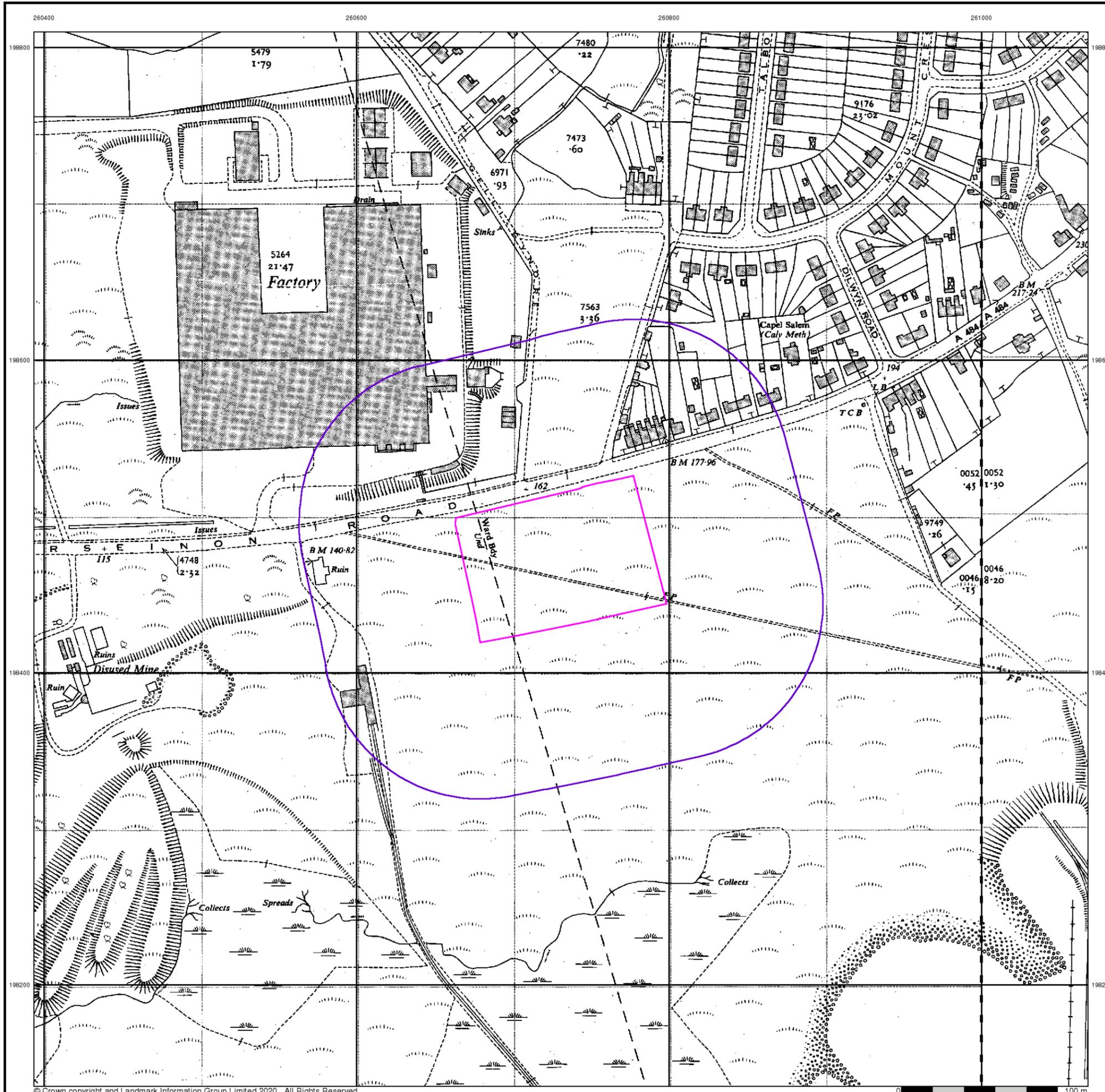


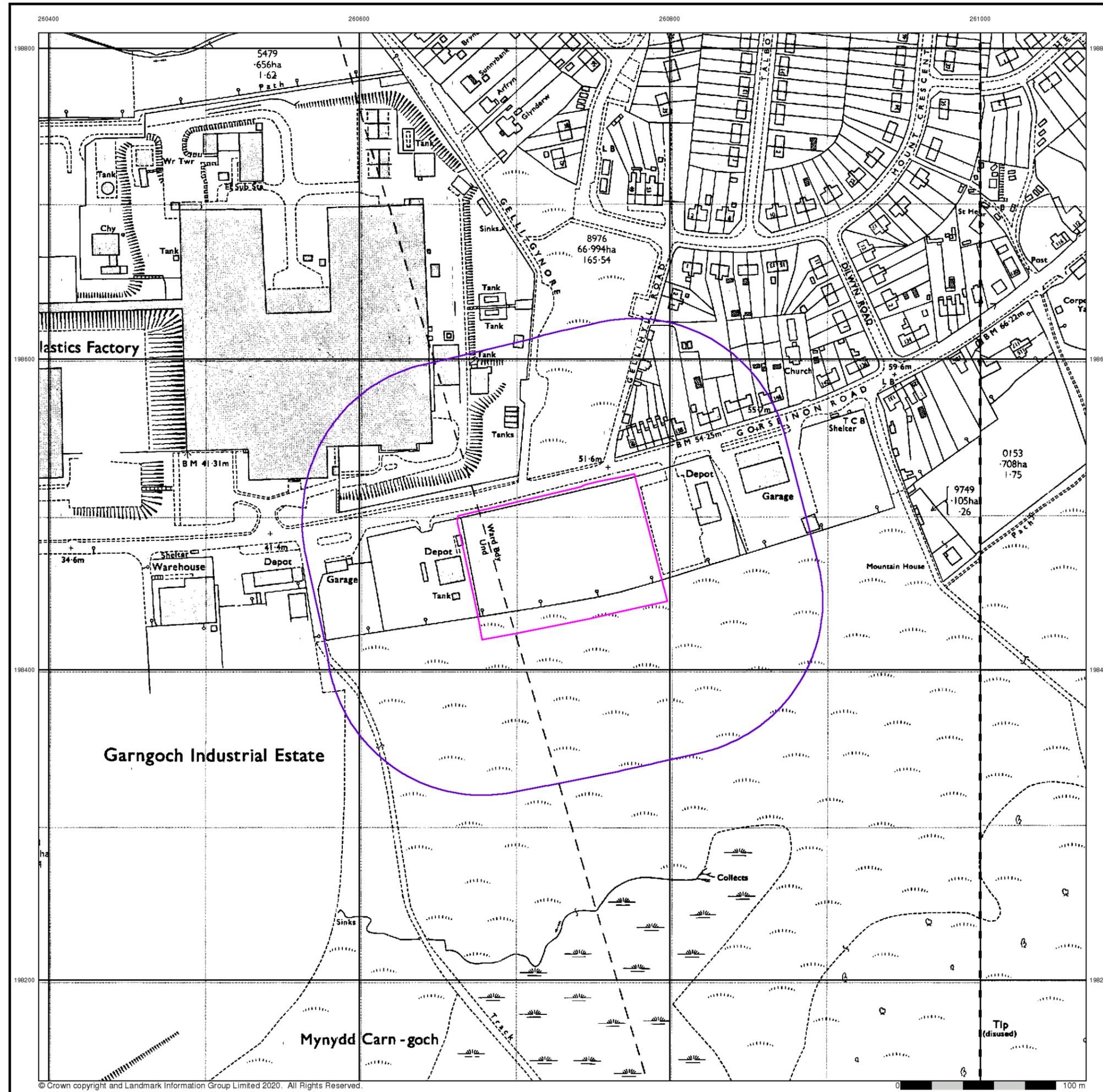
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 SWANSEA, SA4 9GE

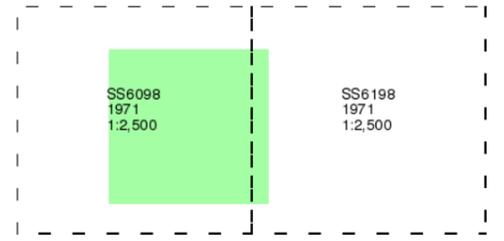




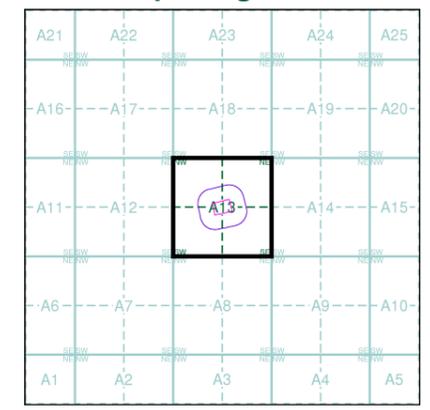
Ordnance Survey Plan
Published 1971
Source map scale - 1:2,500

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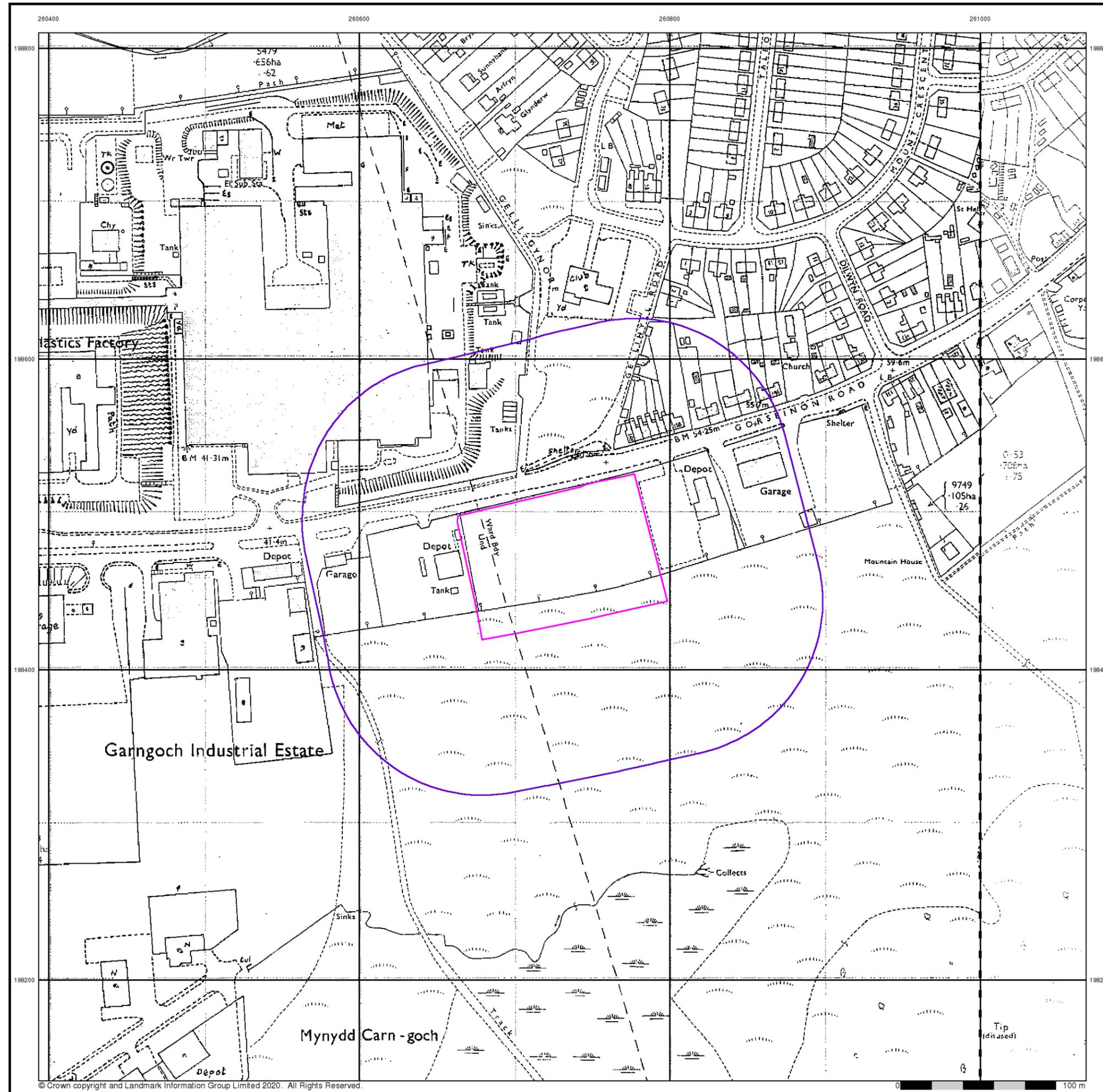


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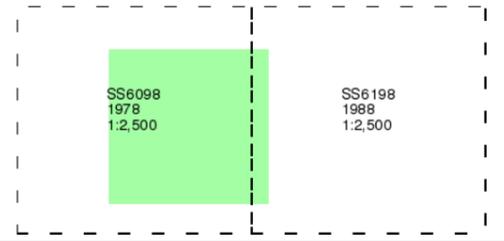
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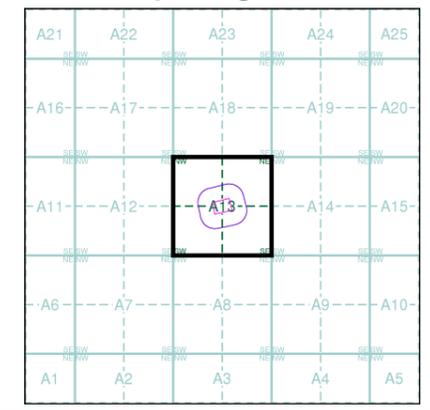
Additional SIMs
Published 1978 - 1988
Source map scale - 1:2,500

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)

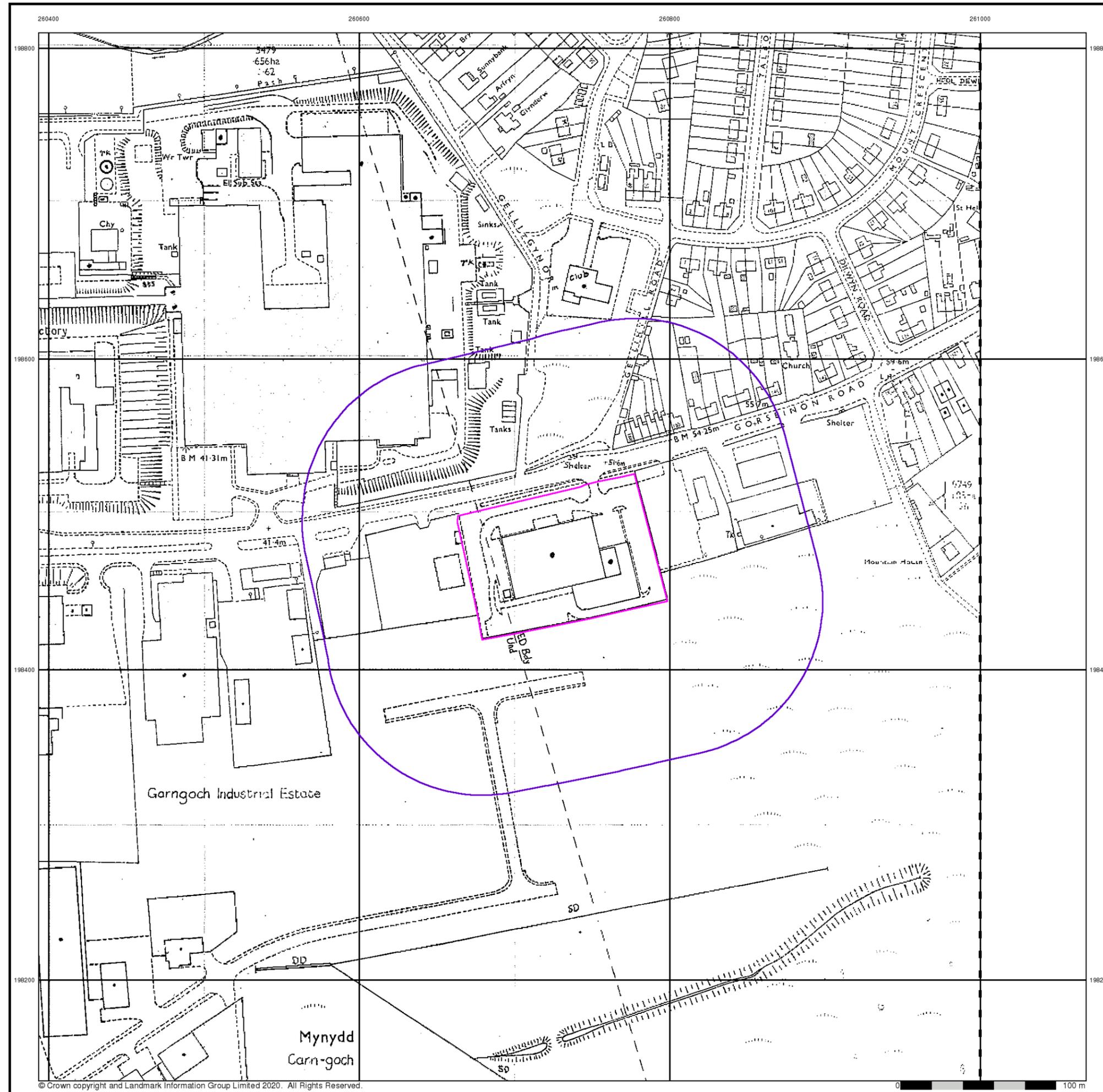


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Site Details
 Poundstretchers Ltd, Gorseinon Road, Penllergaer,
 SWANSEA, SA4 9GE



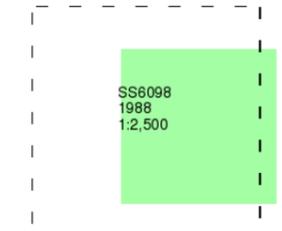
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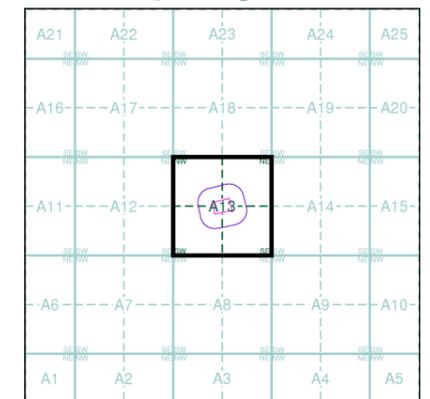
Additional SIMs
Published 1988
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Map Name(s) and Date(s)

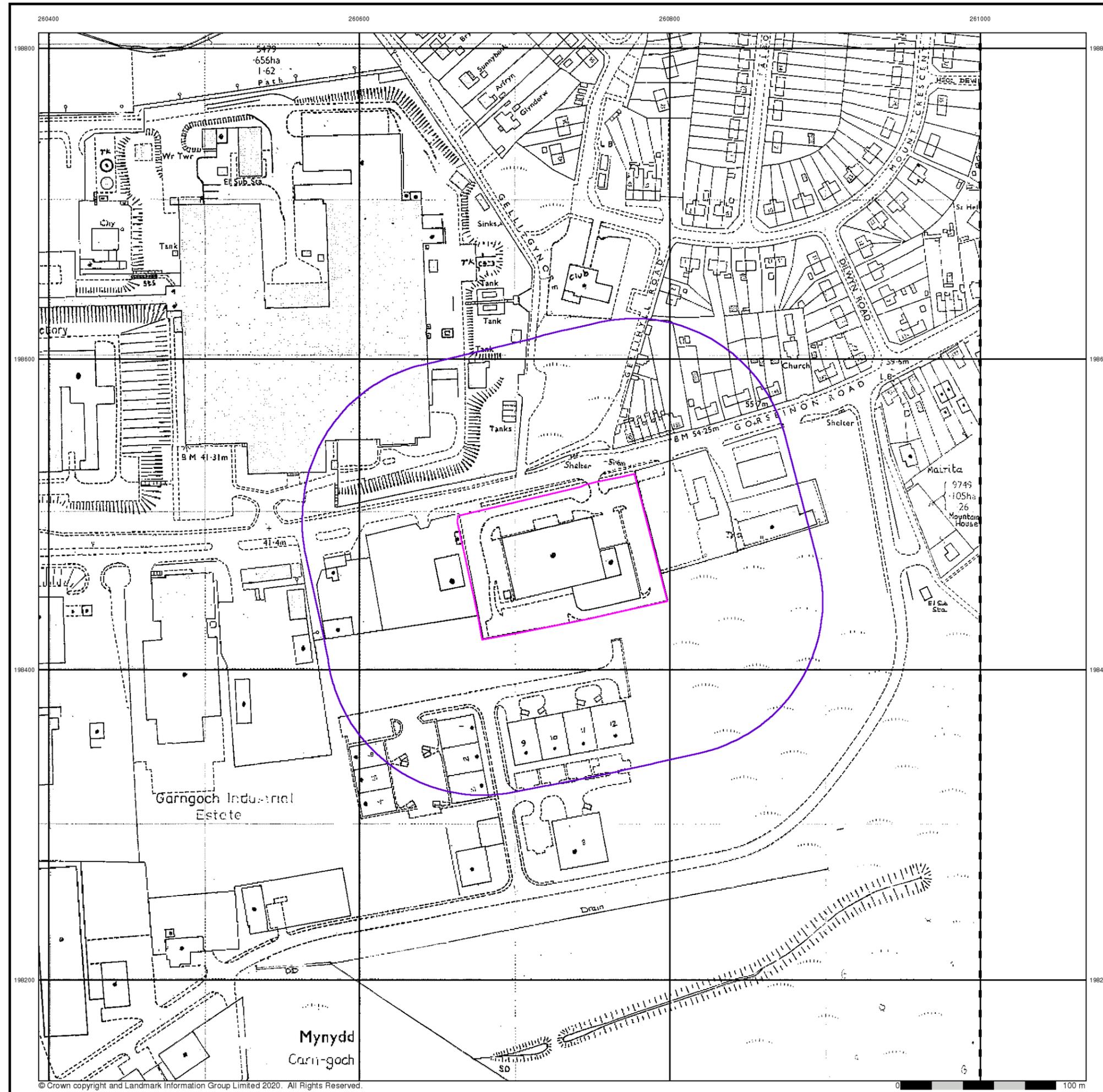


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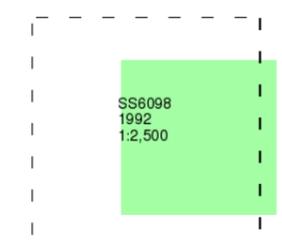
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 SWANSEA, SA4 9GE



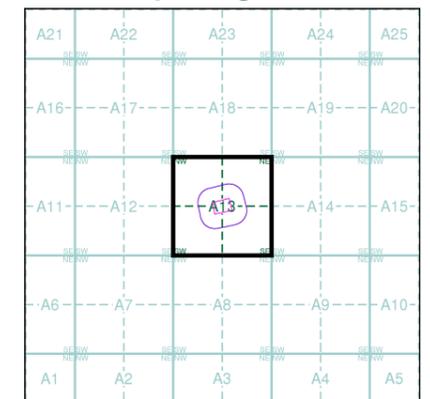
Additional SIMs
Published 1992
Source map scale - 1:2,500

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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 Customer Ref: 795.01
 National Grid Reference: 260730, 198470
 Slice: A
 Site Area (Ha): 1.
 Search Buffer (m): 100

Site Details
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 SWANSEA, SA4 9GE

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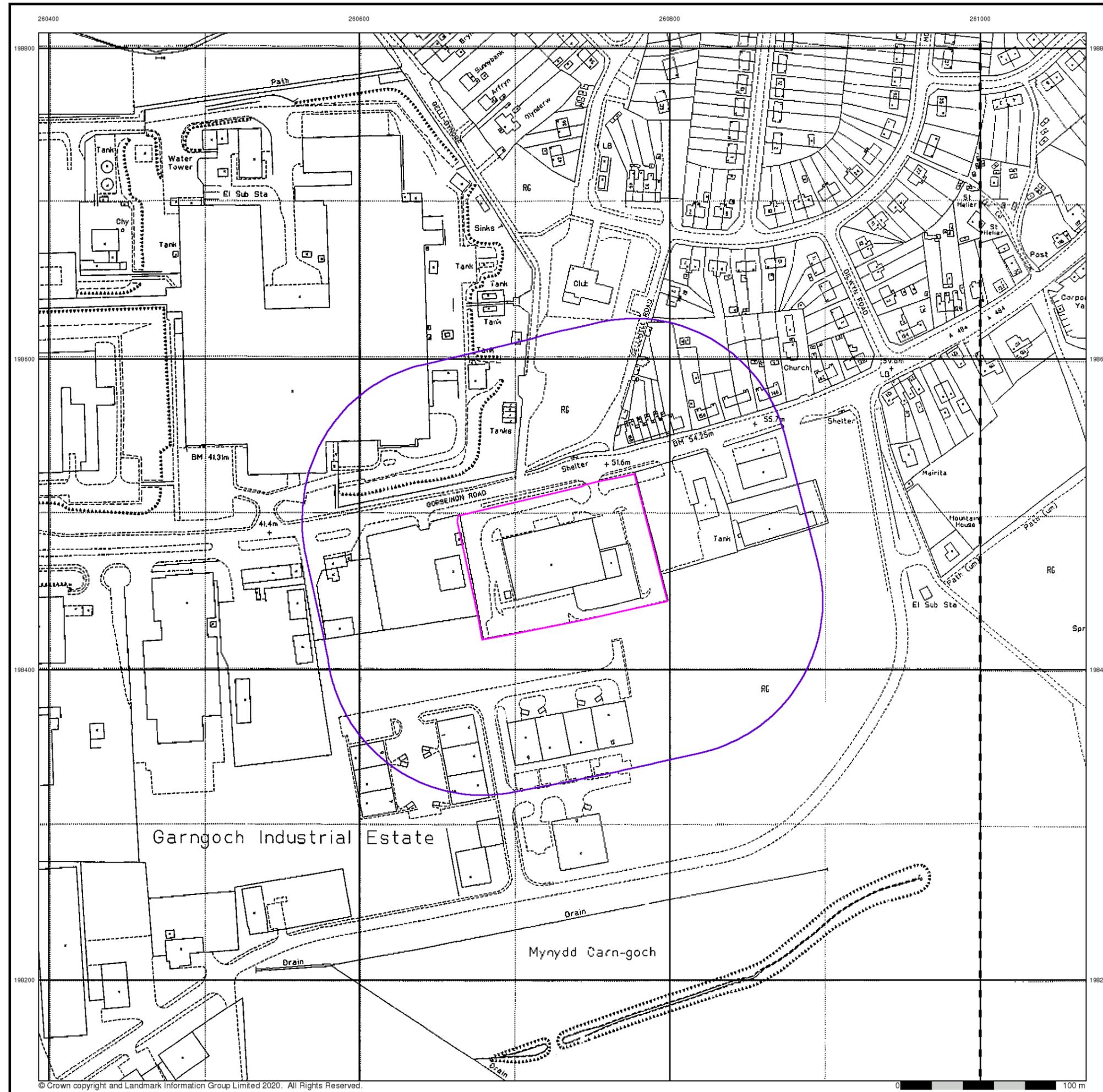
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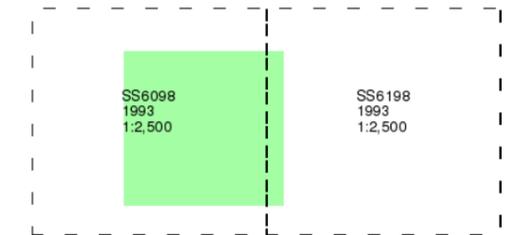
Large-Scale National Grid Data

Published 1993

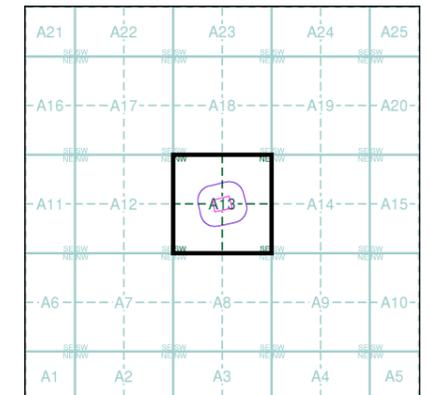
Source map scale - 1:2,500

'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)



Historical Map - Segment A13



Order Details

Order Number: 260939630_1_1
 Customer Ref: 795.01
 National Grid Reference: 260730, 198470
 Slice: A
 Site Area (Ha): 1.
 Search Buffer (m): 100

Site Details

Poundstretchers Ltd, Gorseinon Road, Penllergaer, SWANSEA, SA4 9GE

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 Web: www.envirocheck.co.uk

260400

260600

260800

261000

198800

198800

198600

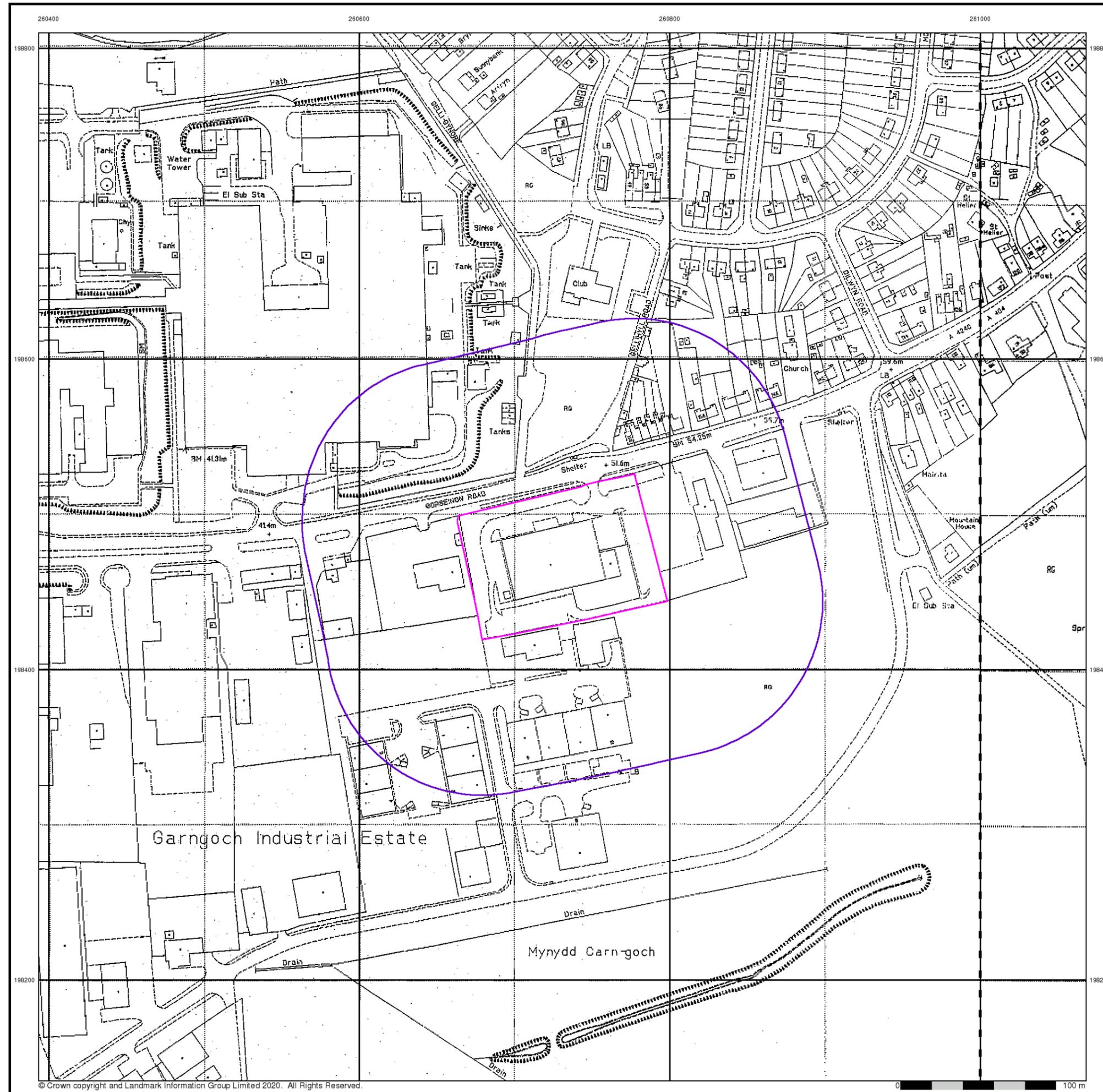
198600

198400

198400

198200

198200



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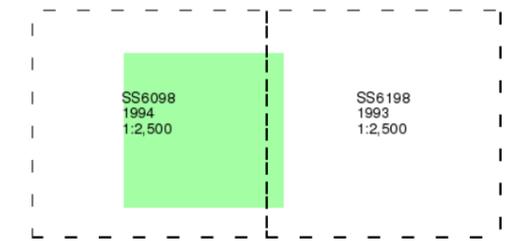
Large-Scale National Grid Data

Published 1993 - 1994

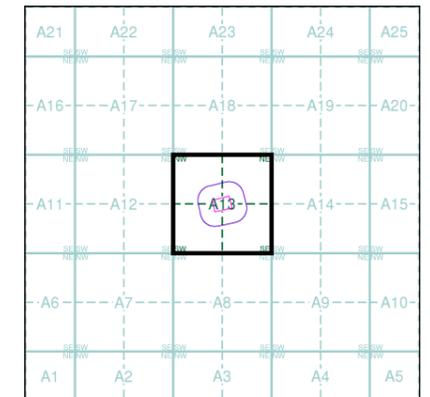
Source map scale - 1:2,500

'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)



Historical Map - Segment A13



Order Details

Order Number: 260939630_1_1
 Customer Ref: 795.01
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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 |

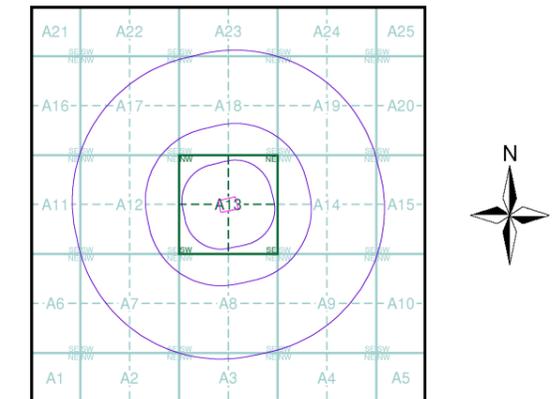
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Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|----------------------|----------|-------------|----|
| Glamorganshire | 1:10,560 | 1884 | 2 |
| Carmarthenshire | 1:10,560 | 1889 | 3 |
| Glamorganshire | 1:10,560 | 1900 - 1901 | 4 |
| Carmarthenshire | 1:10,560 | 1907 - 1908 | 5 |
| Glamorganshire | 1:10,560 | 1921 | 6 |
| Carmarthenshire | 1:10,560 | 1921 | 7 |
| Carmarthenshire | 1:10,560 | 1935 - 1936 | 8 |
| Glamorganshire | 1:10,560 | 1935 - 1936 | 9 |
| Carmarthenshire | 1:10,560 | 1938 | 10 |
| Glamorganshire | 1:10,560 | 1938 - 1951 | 11 |
| Glamorganshire | 1:10,560 | 1951 | 12 |
| Carmarthenshire | 1:10,560 | 1951 | 13 |
| Ordnance Survey Plan | 1:10,000 | 1964 | 14 |
| Ordnance Survey Plan | 1:10,000 | 1968 - 1969 | 15 |
| Ordnance Survey Plan | 1:10,000 | 1974 | 16 |
| Ordnance Survey Plan | 1:10,000 | 1982 - 1989 | 17 |
| Ordnance Survey Plan | 1:10,000 | 1993 - 1995 | 18 |
| 10K Raster Mapping | 1:10,000 | 1999 | 19 |
| Street View | Variable | | 20 |

Historical Map - Slice A



Order Details

Order Number: 260939630_1_1
 Customer Ref: 795.01
 National Grid Reference: 260730, 198470
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