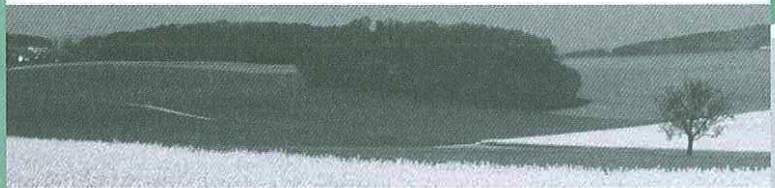


Slope Stability Desk Study Report
Proposed Residential Development
North Cliff Lodge, Penarth

Prepared for:
Celtic Developments Penarth Limited

December 2015

Job No: 13124



REPORT TITLE : **Slope Stability Desk Study Report – North Cliff Lodge, Penarth**

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Executive Summary

Terra Firma Wales Ltd were retained by Scimitar Developments Limited to perform a Desk Study Assessment of the stability of a site at North Cliff, Penarth

The site is situated at a National Grid Reference of 318900 172370. The site currently comprises a domestic property and a large garden set on three levels.

The site locates on the Penarth Escarpment. The escarpment has a history of slope instability including a recent landslide (2013) located immediately northeast of the study site.

The current study site exhibits evidence of ground movement.

The site is considered at High Risk of subsidence related to landslide although it should be noted that 'Highcliff' has experienced no significant movement since its construction. We would recommend that the site be investigated using rotary core boreholes. The boreholes will allow the installation of piezometers and inclinometers to monitor the long term stability of the site.

We anticipate that the final foundation solution will have to be piles to ensure the foundation load are transferred below the slope. Such a foundation solution together with a sympathetic development ethos should reduce the risk of ground movement to an acceptable level. The given foundation solution will be verified by the investigation.

TABLE OF CONTENTS

Section 1 Introduction and Proposed Development

- 1.1 Limitations and Exceptions of Desk Study

Section 2 Review of Existing Data

- 2.1 Physical Setting
- 2.2 Site History
- 2.3 Current Use and Site Conditions
- 2.4 Environmental Setting
 - 2.4.1 Geology
 - 2.4.2 Previous Subsidence Events
 - 2.4.3 Hydrogeology

Section 3 Conclusions and Recommended Further Works

- 3.1 Conclusion
- 3.2 Recommended Further Works
- 3.3 Anticipated Foundation Solution

Plates

- Plate 2.1 Cracking in Retaining Wall
- Plate 2.2 Landslide adjacent to study site
- Plate 2.3 Evidence of Ground Movement during October 2015 visit

ANNEX

- Annex A Envirocheck History Report

Figures

- Figure 2.1 Site Location

SECTION 1 Introduction and Proposed Development

Celtic Developments Penarth Limited have requested that a Slope Stability Desk Study be performed for North Lodge, Penarth

The main objectives of the desk study were to:

- Determine the geological setting of the site
- Investigate the history of the site by referring to old Ordnance Survey maps
- Collate information relating to historical subsidence in the vicinity of the site

Based on the desk study information, the following assessment is to be made:

- Identify geotechnical liabilities associated with the site
- Provide provisional recommendations in relation to likely foundation solutions
- Detail recommended further works necessary to assess the ground conditions beneath the site

1.1 Limitations and Exceptions of Desk Study

Celtic Developments Penarth Limited has requested that a Slope Stability Desk Study be carried out in order to determine the geological setting, past history and recommended further works for stability assessment for the study site.

The desk study has been conducted and this report has been prepared for the sole internal reliance of Celtic Developments Penarth Limited and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (Wales) Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The report represents the findings and opinions of experienced geo-environmental and geo-technical consultants. Terra Firma (Wales) Limited does not provide legal advice and the advice of lawyers may also be required.

SECTION 2 Review of Existing Data

2.1 Physical Setting

The site is located at the top of the Penarth Escarpment, at the eastern end of North Cliff Drive, at an approximate National Grid Reference of 318900, 172370. The site is located on three terraces. The upper, middle and lower terraces have an approximate altitude of 37m AOD, 29m AOD and 20m AOD respectively.

A masonry retaining wall in a poor state of repair separates the middle and lower terraces. The southern and northern areas of the site are heavily wooded with dense vegetation. North Cliff Lodge locates on the upper terrace.

The site has an approximate plan area of 0.64 Ha.

The site location is presented in **Figure 2.1**.



Figure 2.1. Site Location (NTS)

2.2 Site History

Historical 1:1,250 and 1:2,500 Scale maps of the site have been provided by Landmark Information Group, presented in **Annex A**. The relevant editions are summarised below:

1880

The 1:2,500 Scale 1880 map shows the site to be part of the garden of Cliff Villa, located east of the site. The far northeast of the site extends onto the slope and beyond, onto the boulders of the shoreline to the northeast of the site. Custom House is shown to locate at the base of the slope to the north of the site. Pathways are shown to traverse the slope. A quarry is shown approximately 100m west of the site.

1900

The 1:2,500 Scale 1900 edition shows Cliff Villa to have been renamed Northcliff. A lifeboat station has been added to the base of the escarpment, with a number of its buildings extending onto the far northeast of the site. The quarry is no longer identified west of the site.

1920

The 1: 2,500 scale 1920 map shows the site as previously described.

1942

The 1: 2,500 scale 1942 edition shows a building to have been constructed within the west of the site. A distinct line runs across the site which may represent the retaining wall located on site today. The shape of the main building identified as Northcliff house has been shown to have changed since the previous edition and surrounding buildings appear to have been replaced by new buildings.

1955

The 1:1,250 and 1:2,500 scale 1955 edition shows the site as previously described apart from some minor alterations to the foot print of the building at the west of the site.

1990, 1992 and 1995

The 1:1,250 and 1:2,500 scale 1990, 1992 and 1995 editions show the site to contain North Cliff Lodge in the west of the site as previously described. The northwest of the site's boundary is formed by Northcliffe Drive, and a small square building to the south of the road extends onto the site. A small road providing access to a car park extends onto the southwest of the site. Dyfed flats are indicated at the site of the former Northcliff house.

2.3 Current Use and Site Conditions

The site was visited on 23rd October 2015. The site currently comprises a domestic property with a large garden. The garden is divided into terraces with the lower terrace accessed via steps from the mid-terrace. A stone retaining wall separates the lower and mid terrace. Significant cracking is apparent in the retaining wall.



Plate 2.1. Cracking in retaining wall.

Cracking was also noted in the ground above the retaining wall and evidence of ground movement was also apparent in the garden steps.

There is, however, discernible evidence of movement within 'Highcliff'.

A higher terrace locates behind the house, and this area has significant tree cover.

2.4 Environmental Setting

2.4.1 Geology

A 1:50,000 Scale Geology Report was purchased from landmark Information Group.

The Geology Report shows the site to be underlain by rocks of the Penarth Group and, possibly the St Marys Well Bay Member in the southwest of the site (i.e. the highest point of the site).

The site is not shown to have superficial cover. Roughly east-west trending faults are shown to locate approximately 150m south of the site.

2.4.2 Previous Subsidence Events

In 2006 Thomas *et al* published a paper titled 'Implications of urban development on escarpment instability'. The paper detailed that between 1859 and 1865 the Penarth Dock was developed and railway sidings and shunting yards, associated with the adjacent Penarth Dock, ran along the base of the escarpment.

Historically limestone was also quarried from the escarpment. The toe of the escarpment has therefore been subject to haphazard excavation historically.

Thomas *et al* (2006) record at least three previous slope failure events preceding their paper which, itself, details a fourth event in 2004. During an inspection of the slope, Thomas *et al* (2006) encountered morphological evidence of a large scale historical failure in the slope previously obstructed by vegetation.

In 2013 Terra Firma Wales Ltd were engaged to assess a landslide at Penarth Marina, located immediately east of the current study site. A failure had occurred on the slope and Terra Firma Wales Ltd performed an inspection of the slope and the surrounding area. Landslide morphology was apparent and features including tree 'piston gripping' (i.e., curvature in the base of trees as they correct themselves to vertical following historical ground movement events) was noted adjacent to the slide, indicating further historical land movement to the northwest of the 2013 landslide.

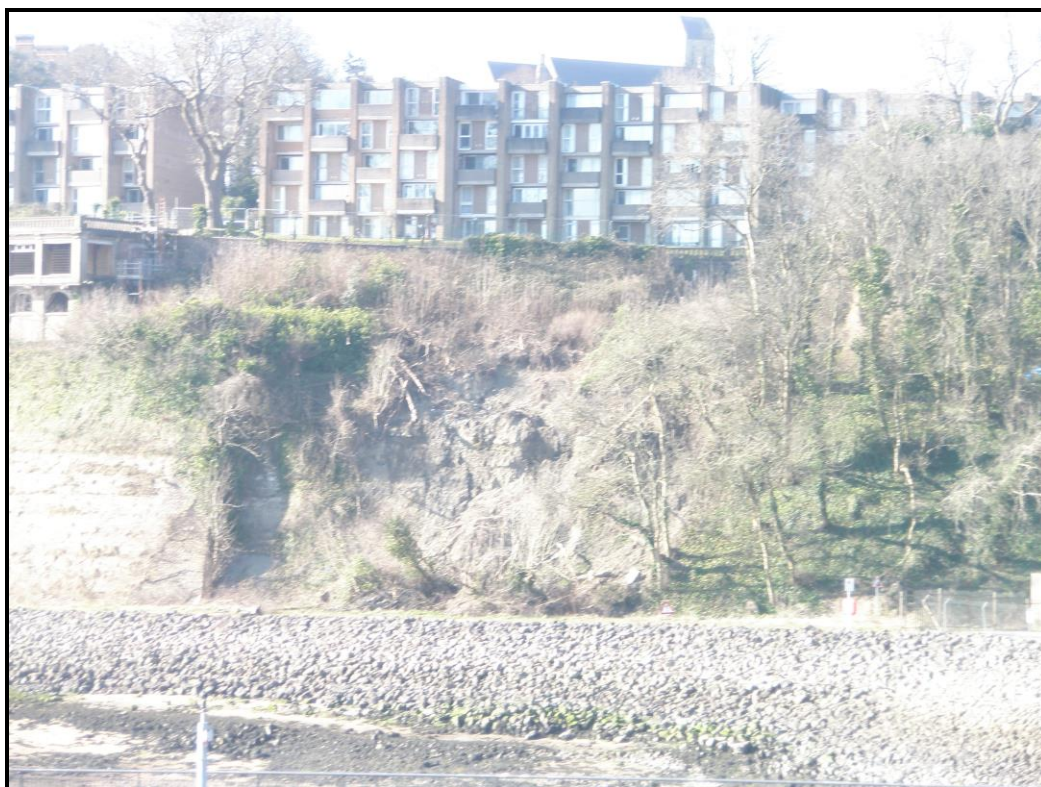


Plate 2.2. 2013 Landslide adjacent to study site.

During the walkover of the current study site significant damage to a retaining wall, gaps between the retaining wall and the stairs and cracking in the ground of the mid level terrace were noted.

2.4.2 Previous Subsidence Events (Continued)



Plate 2.3. Evidence of Ground Movement during October 2015 visit.

2.4.3 Hydrogeology

The groundwater elevation beneath the site is currently unknown to Terra Firma Wales Ltd. During the 2013 landslide areas of seepage were noted in the face following the failure. An inspection chamber and damaged pipe work were noted in the slope and it is conceivable that these may have directed water in to the landslide.

Thomas et al (2006) note that the 2004 landslide was preceded by a period of heavy rain and this may have contributed to the failure.

SECTION 3 Conclusions and Recommended Further Works

3.1 Conclusions

The current study site locates within an area with a known history of landslide events, including a slide adjacent to the site in 2013 and there is evidence of ground movement within the study site.

The site is therefore considered to be at High Risk of ground movement associated with landslide. The risk will therefore need to be assessed to quantify this risk.

The landslide complex is likely to extend beyond the site and the system will have to be considered as a whole if any engineering works are undertaken not only within the study site but also within the slopes above and below the site. For example, excavation below the study site could reduce the factor of safety of the study site.

3.2 Recommended Further Works

We would recommend that an intrusive investigation be performed to determine the ground conditions beneath the site and also to install monitoring instrumentation to assess seasonal groundwater variation beneath the site and to assess whether any deep seated movement is underway.

Given the geology of the site drilling will have to be performed using Rotary Core Drilling Techniques. Upon completion of drilling inclinometers and piezometers can be installed in the boreholes to assess groundwater levels and ground movement respectively.

Undisturbed samples of soil and rock should be taken to determine effective shear strength parameters.

A programme of monitoring, extending at least 12 months, should be implemented after the drilling. It is recommended that at least 6 months of monitoring should have taken place prior to construction.

The shear strength parameters and groundwater information can then be used in a computer slope stability analysis on the pre and post development ground profiles.

Morphological mapping of the site and beyond should be performed and linked into the existing morphological map prepared for the 2013 landslide.

3.3 Anticipated Foundation Solutions

We anticipate that given the evidence detailed above it will be necessary to employ a foundation solution that will transfer the foundation load to depth, below any potential slip surface.

We therefore anticipate that any new development will require pre-bored steel cased piled foundations. Such a foundation would not further load any landslip and also provide a degree of lateral support. Such a foundation solution together with a sympathetic development ethos should reduce the risk of ground movement to an acceptable level.

Thomas et al (2006) identified the potential for deep seated failures and pile lengths may, therefore, extend to considerable depth.

Retaining structures on site may also be required to be founded on piles. The final foundation solution will be verified by the investigation works.

Depending on the outcome of the further investigations, further slope stabilisation measures may be recommended for the site.

The stability of the site has to be viewed in terms of a broader system including the slope beyond the site. Consequently any development within the slope below the site should take consideration of its potential effect of the study site. Groundwater can be a major contributor to ground instability and we do not recommend the use of soakaways at the site. In addition, any drainage pipes running close to or through the slope should be inspected to confirm their integrity.

**ANNEX A
ENVIROCHECK HISTORY REPORT**

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

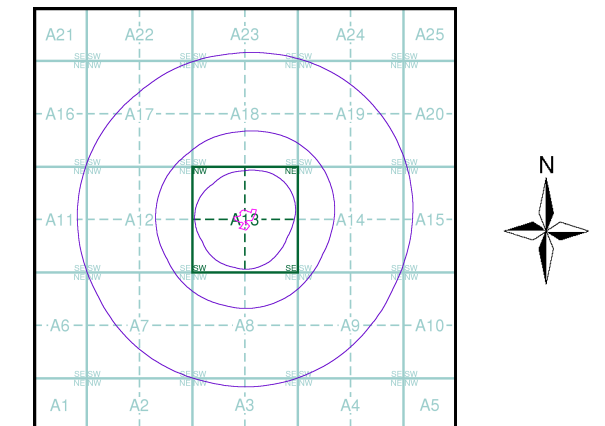
| | | | |
|--|--|--|--|
| | Gravel Pit | | Refuse tip or slag heap |
| | Rock | | Rock (scattered) |
| | Boulders | | Boulders (scattered) |
| | Shingle | | Mud |
| | Sand | | Sand Pit |
| | Slopes | | Top of cliff |
| | General detail | | Underground detail |
| | Overhead detail | | Narrow gauge railway |
| | 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 |



Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|-------------------------------|----------|-------------|----|
| Glamorganshire | 1:10,560 | 1885 | 3 |
| Glamorganshire | 1:10,560 | 1901 | 4 |
| Glamorganshire | 1:10,560 | 1922 | 5 |
| Glamorganshire | 1:10,560 | 1922 | 6 |
| Glamorganshire | 1:10,560 | 1938 | 7 |
| Glamorganshire | 1:10,560 | 1947 | 8 |
| Historical Aerial Photography | 1:10,560 | 1947 | 9 |
| Historical Aerial Photography | 1:10,560 | 1947 | 10 |
| Ordnance Survey Plan | 1:10,000 | 1964 - 1965 | 11 |
| Ordnance Survey Plan | 1:10,000 | 1970 - 1974 | 12 |
| Cardiff | 1:10,000 | 1982 | 13 |
| Ordnance Survey Plan | 1:10,000 | 1984 | 14 |
| Ordnance Survey Plan | 1:10,000 | 1993 - 1996 | 15 |
| 10K Raster Mapping | 1:10,000 | 2006 | 16 |
| VectorMap Local | 1:10,000 | 2015 | 17 |

Historical Map - Slice A



Order Details

Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 1000

Site Details

Northcliffe Lodge, Northcliffe Drive, PENARTH, South Glamorgan, CF64 1DQ



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

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

| | | | |
|--|--|--|---|
| | Government and Administrative Buildings | | Military and Industrial Buildings |
| | Military and Communication Areas | | Subway Entrance |
| | Fireproof Building | | Prominent Fireproof Building |
| | Non-fireproof Building | | Non-fireproof Building (non-dwelling) |
| | Factory, mill, and flour mill, with chimneys | | Factory, mill, and flour mill, without chimneys |
| | Power Station, drawn to scale | | Hydroelectric Power Station |
| | Radio Station, drawn to scale | | Telephone Station, drawn to scale |
| | Abandoned Open-pit Mine or Quarry | | Open-pit Salt Mine |
| | Pit | | Oil Deposit or Well |
| | Oil Seepage | | Natural Gas Tank |
| | Tailings Pile | | Fuel Storage Tanks |
| | Bench Mark | | Drill Hole |
| | Burial Mound | | Triangulation Point on Burial Mound |
| | Single-track Railroad | | Double-track Railroad |
| | Small Bridge | | Pipe (Culvert) |
| | Tunnel | | Railroad and Station Building |
| | Coniferous Forest | | Deciduous Forest |
| | Mixed Forest | | Lawns |
| | Citrus Orchard | | Wet Ground |
| | Scattered Vegetation | | |

243,8 Values for prominent elevations
186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
0,2 Velocity of the current, width of river bed, depth of river
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

| | | | |
|-----------------|----------------|-----------------|-----------------------|
| А а (A) | З з (Z) | П п (P) | Ч ч (CH) |
| Б б (B) | И и (I) | Р р (R) | Ш ш (SH) |
| В в (V) | Й й (Y) | С с (S) | Щ щ (SHCH) |
| Г г (G) | К к (K) | Т т (T) | Ъ (-) |
| Д д (D) | Л л (L) | У у (U) | Ы (Y) |
| Е е (E) | М м (M) | Ф ф (F) | Ь (') |
| Ё ё (YO) | Н н (N) | Х х (KH) | Э э (E) |
| Ж ж (ZH) | О о (O) | Ц ц (TS) | Ю ю (YU or IU) |
| | | | Я я (YA or IA) |

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

| | | | |
|--|--|--|--|
| | Government and Administrative Buildings | | Military and Industrial Buildings |
| | Military and Communication Areas | | Subway Entrance |
| | Partly Demolished Buildings | | Demolished Buildings |
| | Built-Up Area with Fireproof Buildings Predominant | | Built-Up Area with Non-Fireproof Buildings Predominant |
| | Individual Fireproof Building | | Prominent Industrial Building |
| | Individual Dwelling, Fireproof | | Ruins of an Individual Dwelling |
| | Factory or Mill Chimney | | Factory or Mill with Chimney |
| | Factory or Mill without Chimney | | Salt Mine |
| | Tailings Pile | | Mine or Open Pit Mine |
| | Operating Shaft or Mine | | Non-Operating Shaft or Mine |
| | Pit | | Stone Quarry |
| | Gas Pump or Service Station | | Fuel Storage or Natural Gas Tank |
| | Oil or Natural Gas Derrick | | Small Hydroelectric Power Station |
| | Power Station | | Transformer Station |
| | Cemetery | | Burial Mound (height in metres) |
| | Triangulation Point on Burial Mound | | Triangulation Point |
| | Bench Mark | | Bench Mark (monumented) |
| | Telegraph Office | | Telephone Station |
| | Radio Station | | Radio Tower |
| | Airfield or Seaplane Base | | Landing Strip |
| | Cut | | Fill |
| | Km Post | | Plantings |
| | Main Highway | | Highway under Construction |
| | Improved Dirt Road (former truck road) | | Width of Road |
| | Steep Grade | | Small Bridge |
| | Pipe (Culvert) | | Tunnel |
| | Dismantled Railroad | | Double-track Railroad with First Class Station |
| | Railroad Under Construction | | Shore Embankment |
| | River or Ditch with Embankment | | Water Gauge |
| | Direction and velocity of current | | Water Level Mark |
| | Well | | Water Reservoir or Rain Water Pit |
| | Spring | | Isobath with value |
| | Heavy (Index) Contour Line | | Contour Line and Value |
| | Half Contour Line | | Spot Elevation Value |
| | Coniferous | | Deciduous |
| | Mixed | | Scrub |

Key to Numbers on Mapping

ST17SE_Cardiff

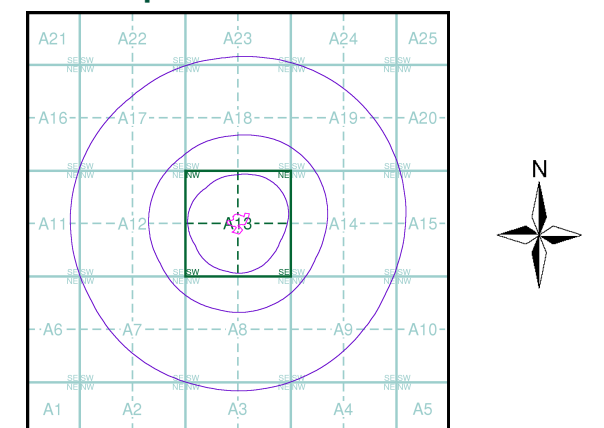
| No. | Description |
|-----|------------------------|
| 49 | Factory (Oil Refining) |
| 85 | Post Office |
| 107 | Custom House |
| 109 | Tunnel (Pedestrian) |



Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|-------------------------------|----------|-------------|----|
| Glamorganshire | 1:10,560 | 1885 | 3 |
| Glamorganshire | 1:10,560 | 1901 | 4 |
| Glamorganshire | 1:10,560 | 1922 | 5 |
| Glamorganshire | 1:10,560 | 1922 | 6 |
| Glamorganshire | 1:10,560 | 1938 | 7 |
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| 10K Raster Mapping | 1:10,000 | 2006 | 16 |
| VectorMap Local | 1:10,000 | 2015 | 17 |

Russian Map - Slice A



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 Customer Ref: 13124
 National Grid Reference: 318910, 172360
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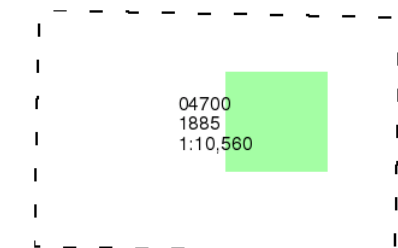
Glamorganshire

Published 1885

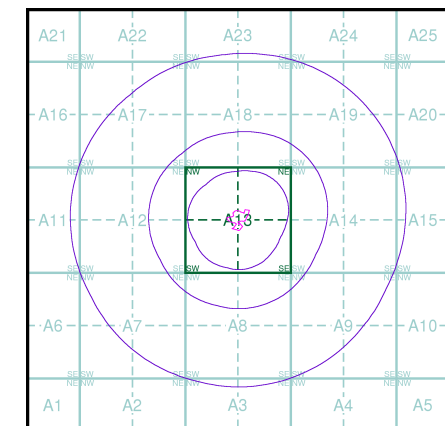
Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

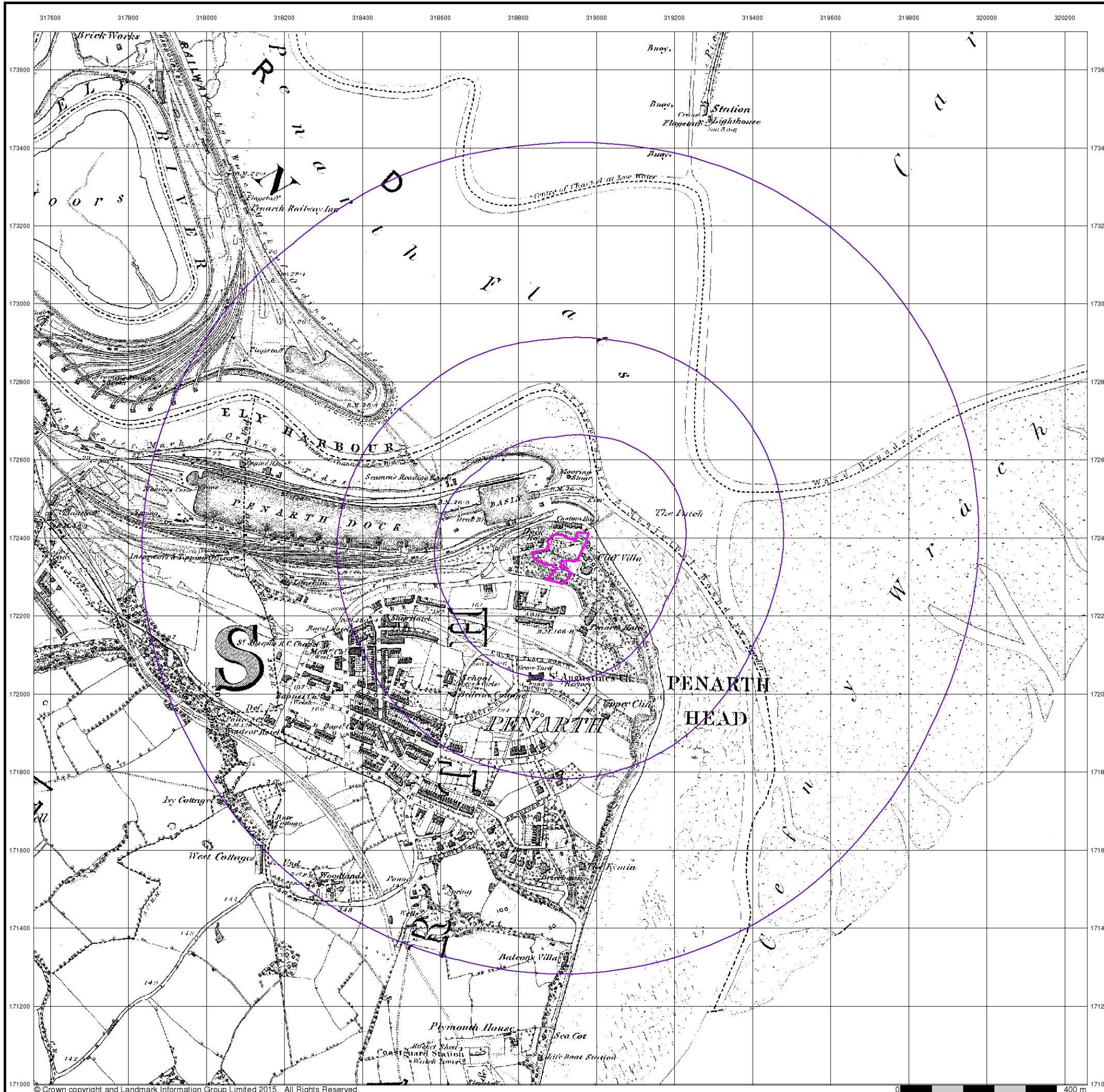
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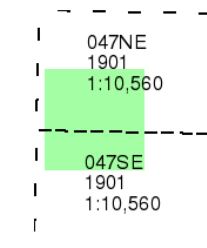
Glamorganshire

Published 1901

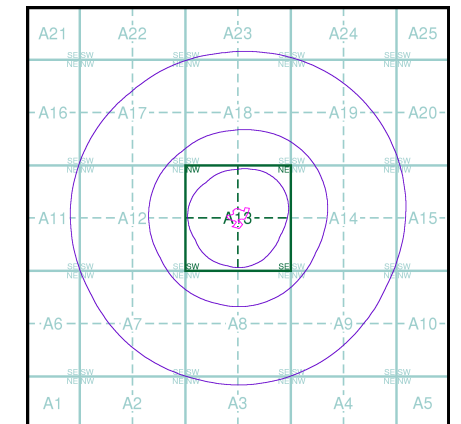
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Historical Map - Slice A



Order Details

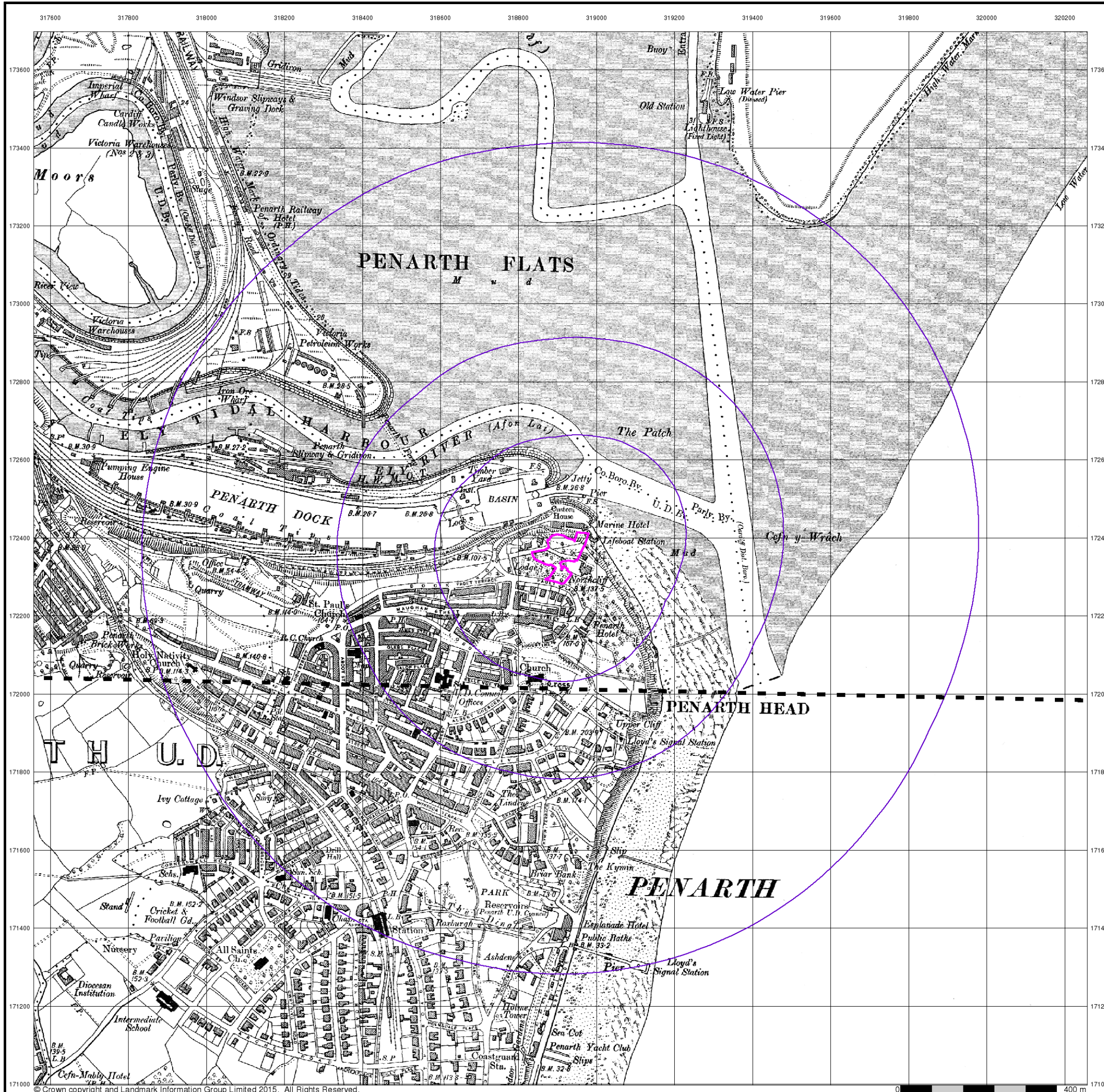
Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
Slice: A
Site Area (Ha): 0.9
Search Buffer (m): 1000

Site Details

Northcliffe Lodge, Northcliffe Drive, PENARTH, South Glamorgan, CF64 1DQ



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





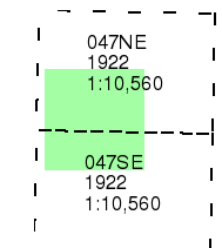
Glamorganshire

Published 1922

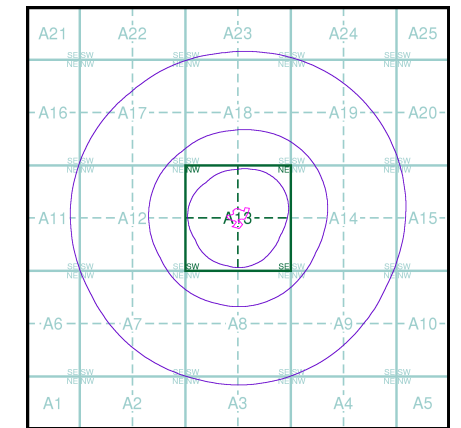
Source map scale - 1:10,560

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)



Historical Map - Slice A



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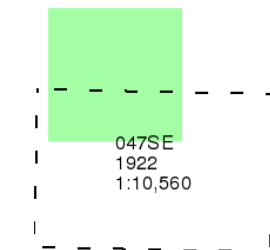
Glamorganshire

Published 1922

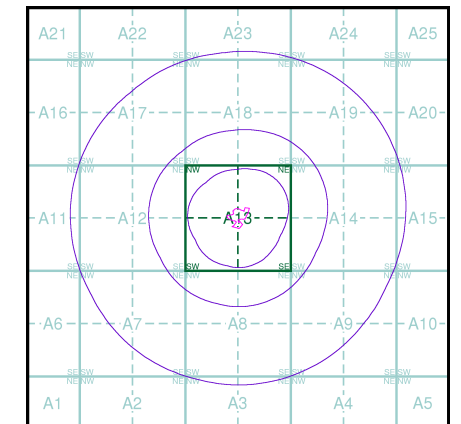
Source map scale - 1:10,560

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)



Historical Map - Slice A



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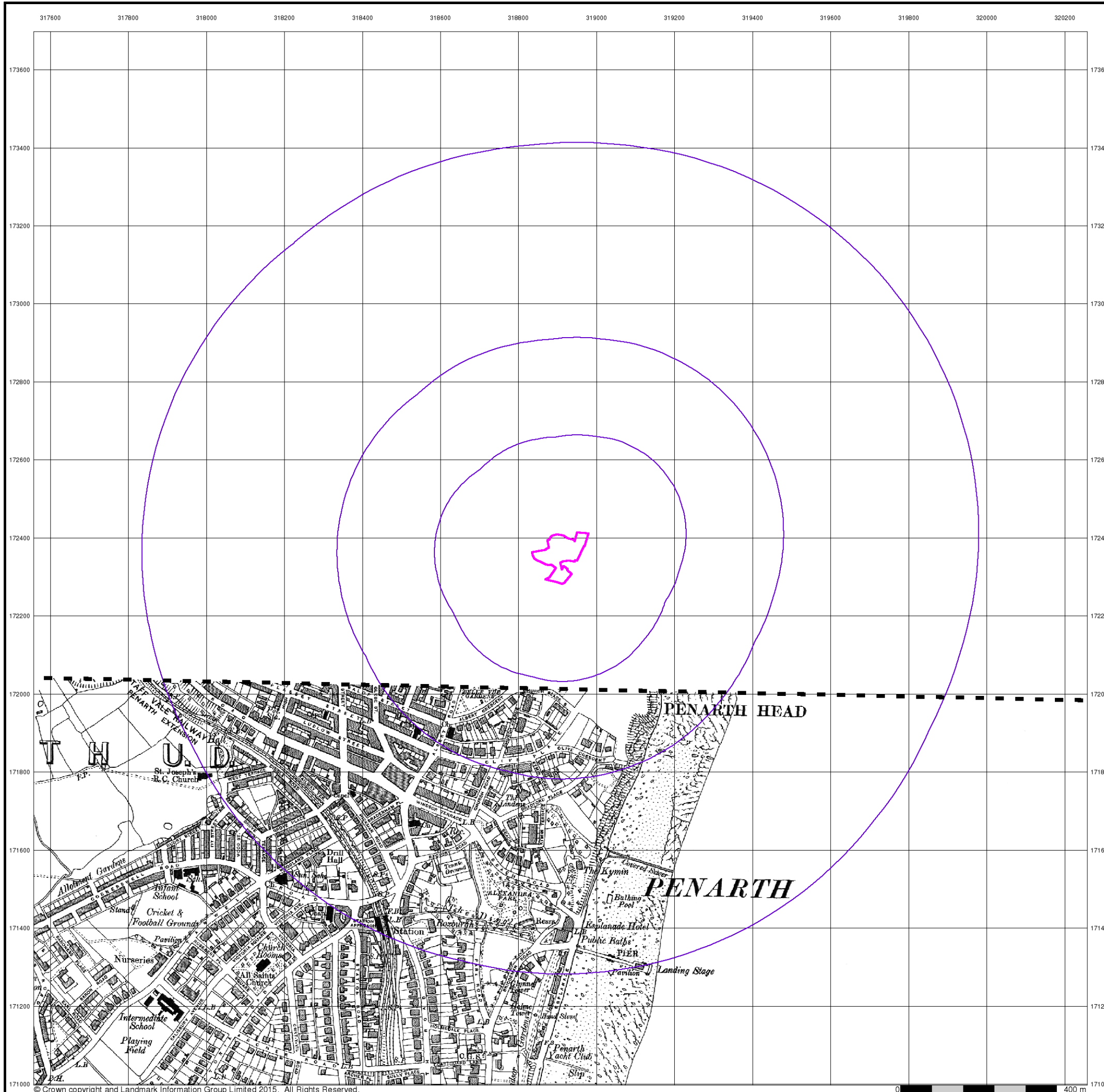
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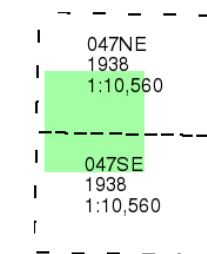
Glamorganshire

Published 1938

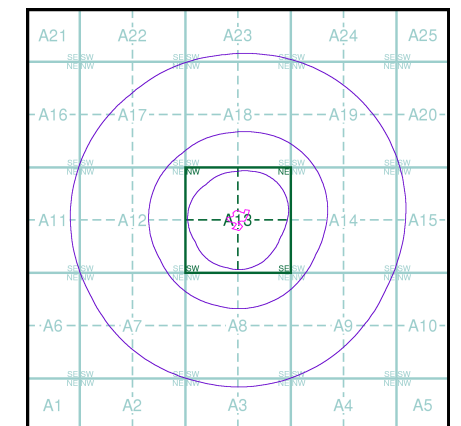
Source map scale - 1:10,560

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.

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Glamorganshire

Published 1947

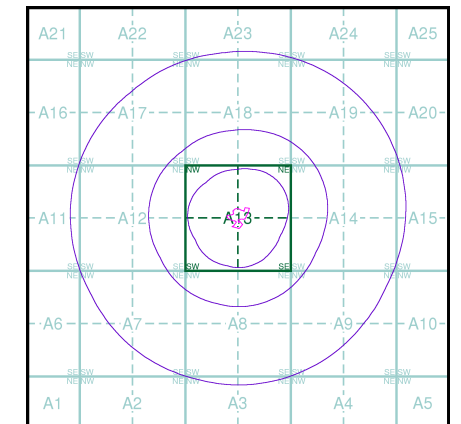
Source map scale - 1:10,560

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)

| |
|----------|
| 047NE |
| 1947 |
| 1:10,560 |
| 047SE |
| 1947 |
| 1:10,560 |

Historical Map - Slice A



Order Details

Order Number: 76477814_1_1
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Historical Aerial Photography

Published 1947

Source map scale - 1:10,560

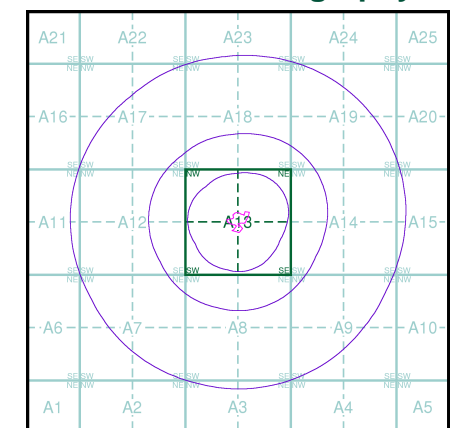
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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Map Name(s) and Date(s)

| | |
|----------------------------|----------------------------|
| ST17SE 1947 1:10,560 | ST27SW 1947 1:10,560 |
|----------------------------|----------------------------|

Historical Aerial Photography - Slice A



Order Details

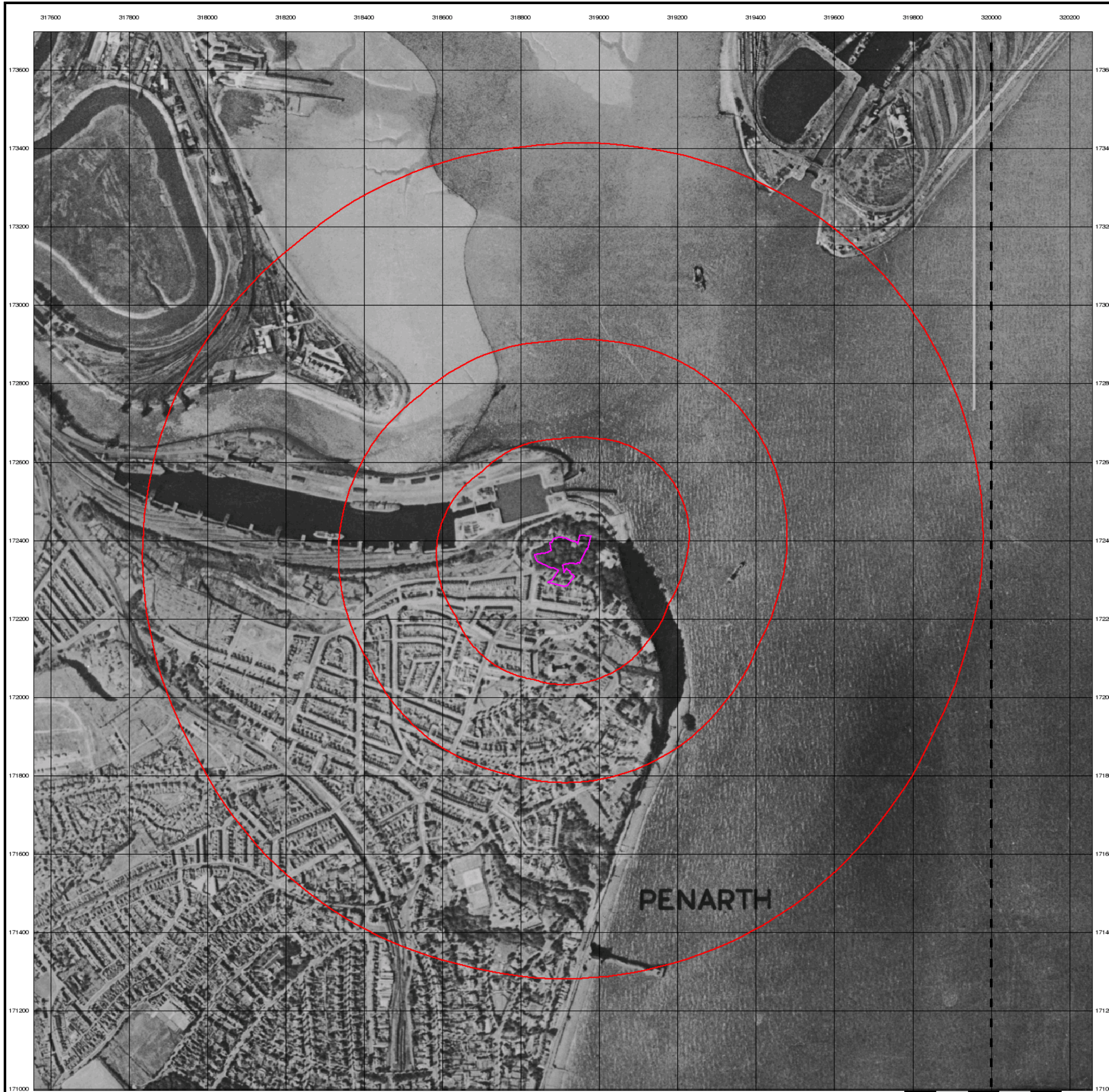
Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
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Historical Aerial Photography

Published 1947

Source map scale - 1:10,560

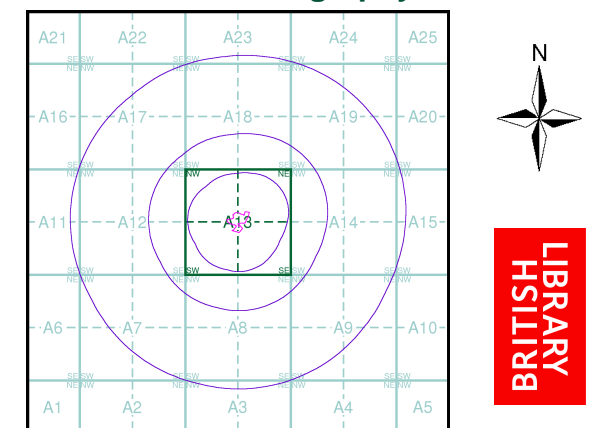
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| | |
|----------------------------|----------------------------|
| ST17SE 1947 1:10,560 | ST27SW 1947 1:10,560 |
|----------------------------|----------------------------|

Historical Aerial Photography - Slice A



Order Details

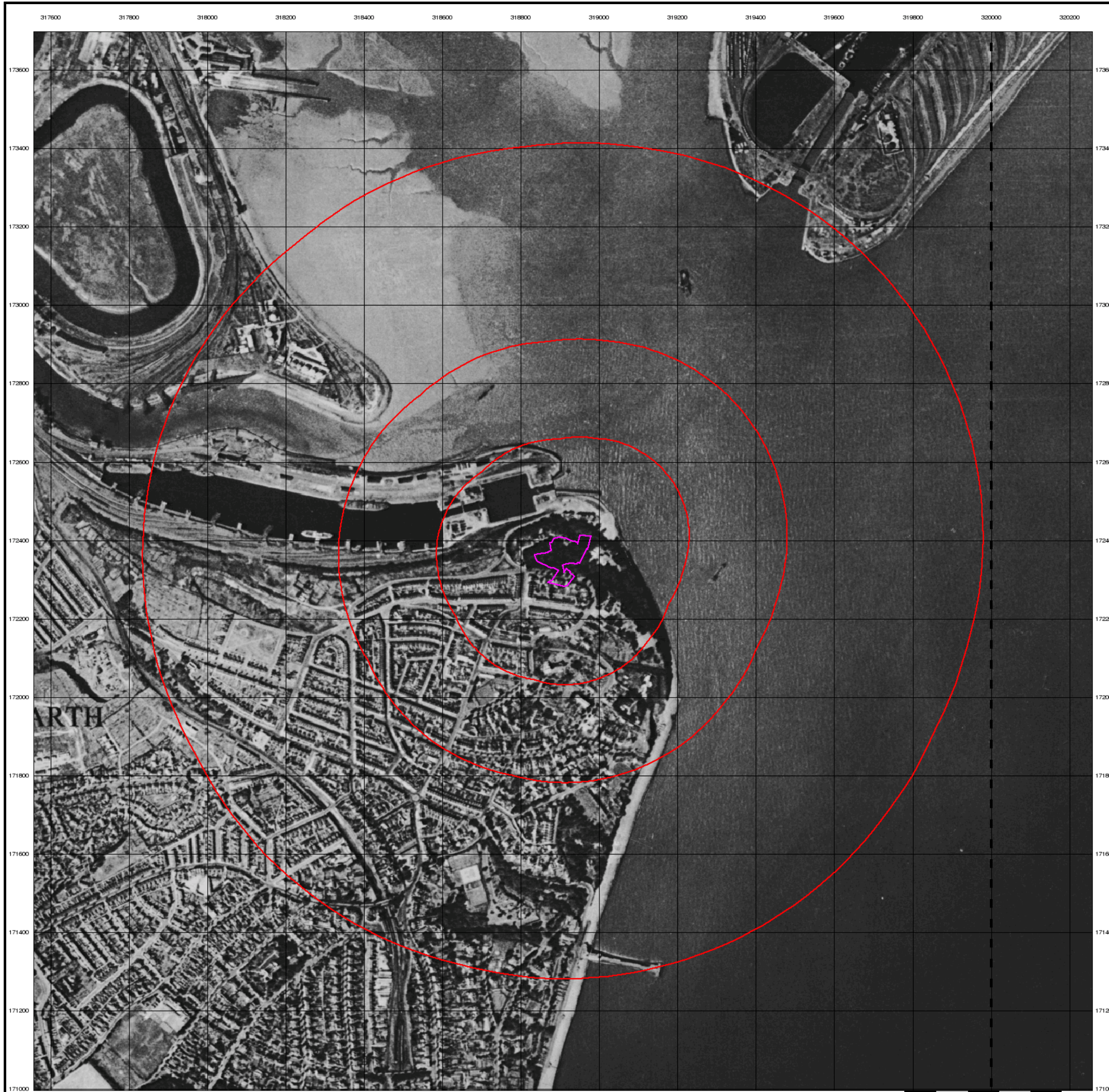
Order Number: 76477814_1_1
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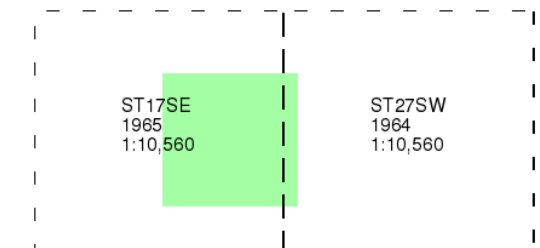
Ordnance Survey Plan

Published 1964 - 1965

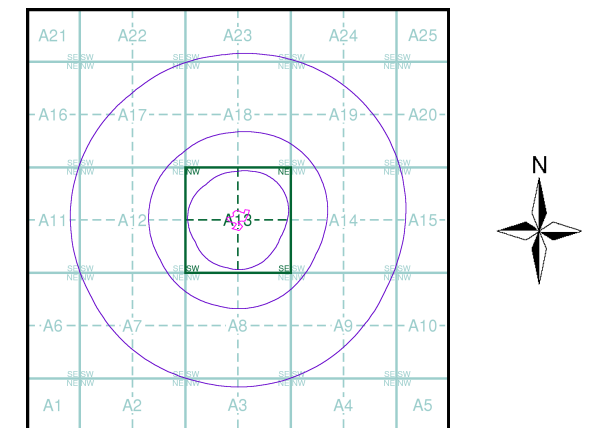
Source map scale - 1:10,000

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.

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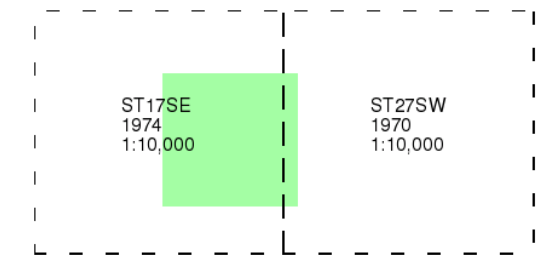
Ordnance Survey Plan

Published 1970 - 1974

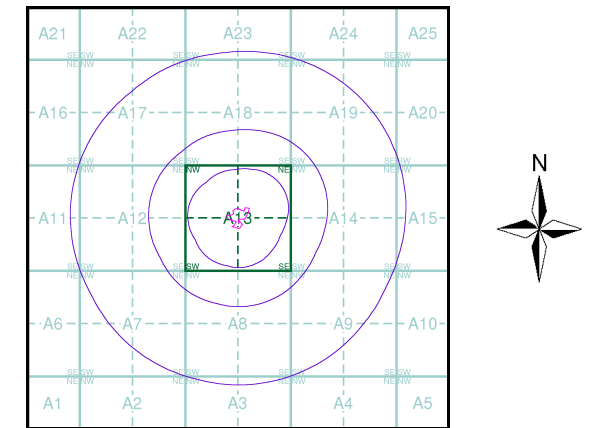
Source map scale - 1:10,000

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.

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Historical Map - Slice A



Order Details

Order Number: 76477814_1_1
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National Grid Reference: 318910, 172360
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Site Details

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Cardiff

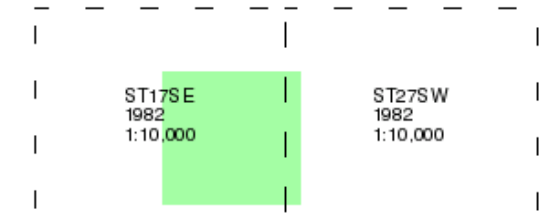
Published 1982

Source map scale - 1:10,000

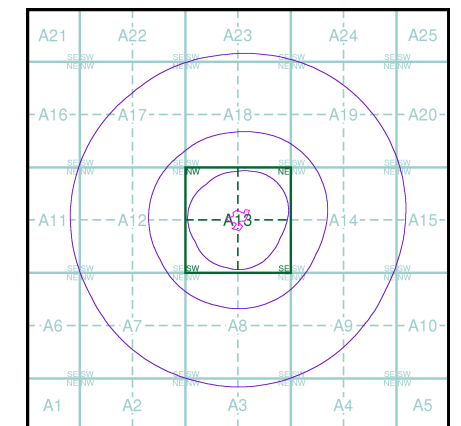
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

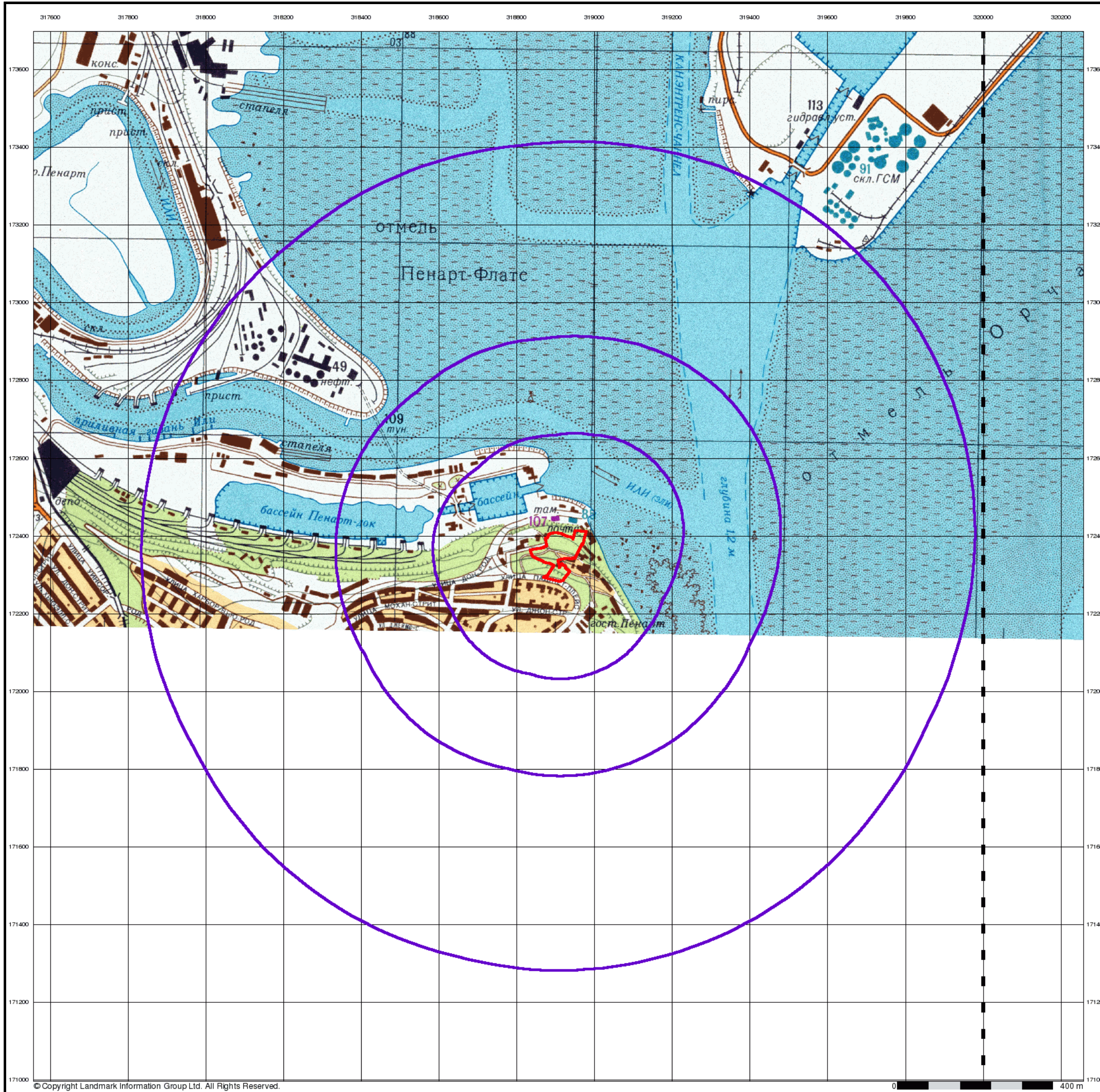
Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
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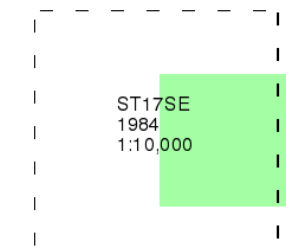
Ordnance Survey Plan

Published 1984

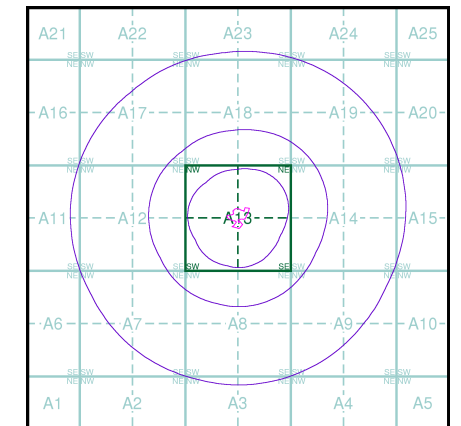
Source map scale - 1:10,000

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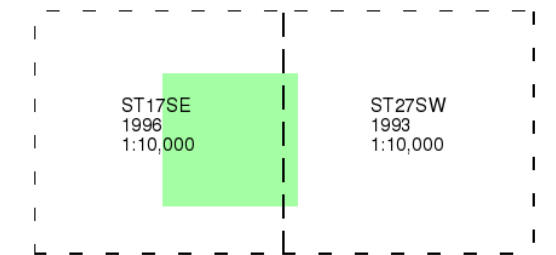




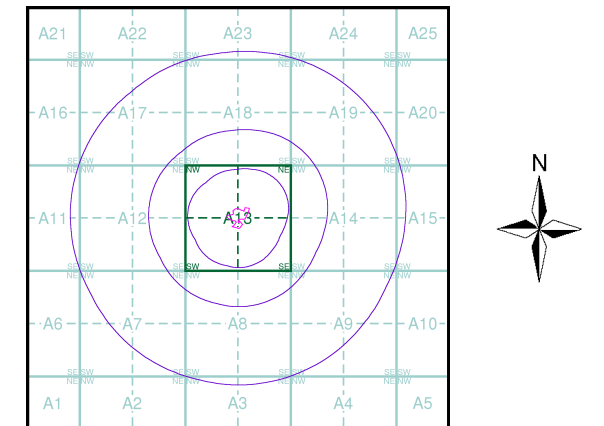
Ordnance Survey Plan
Published 1993 - 1996
Source map scale - 1:10,000

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.

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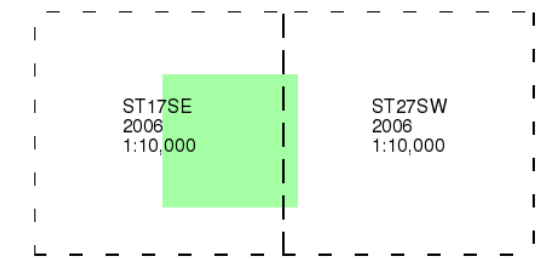
10k Raster Mapping

Published 2006

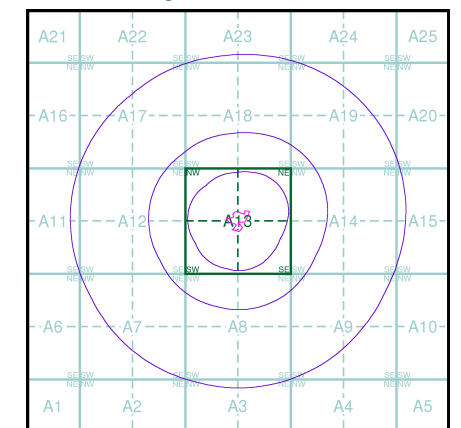
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

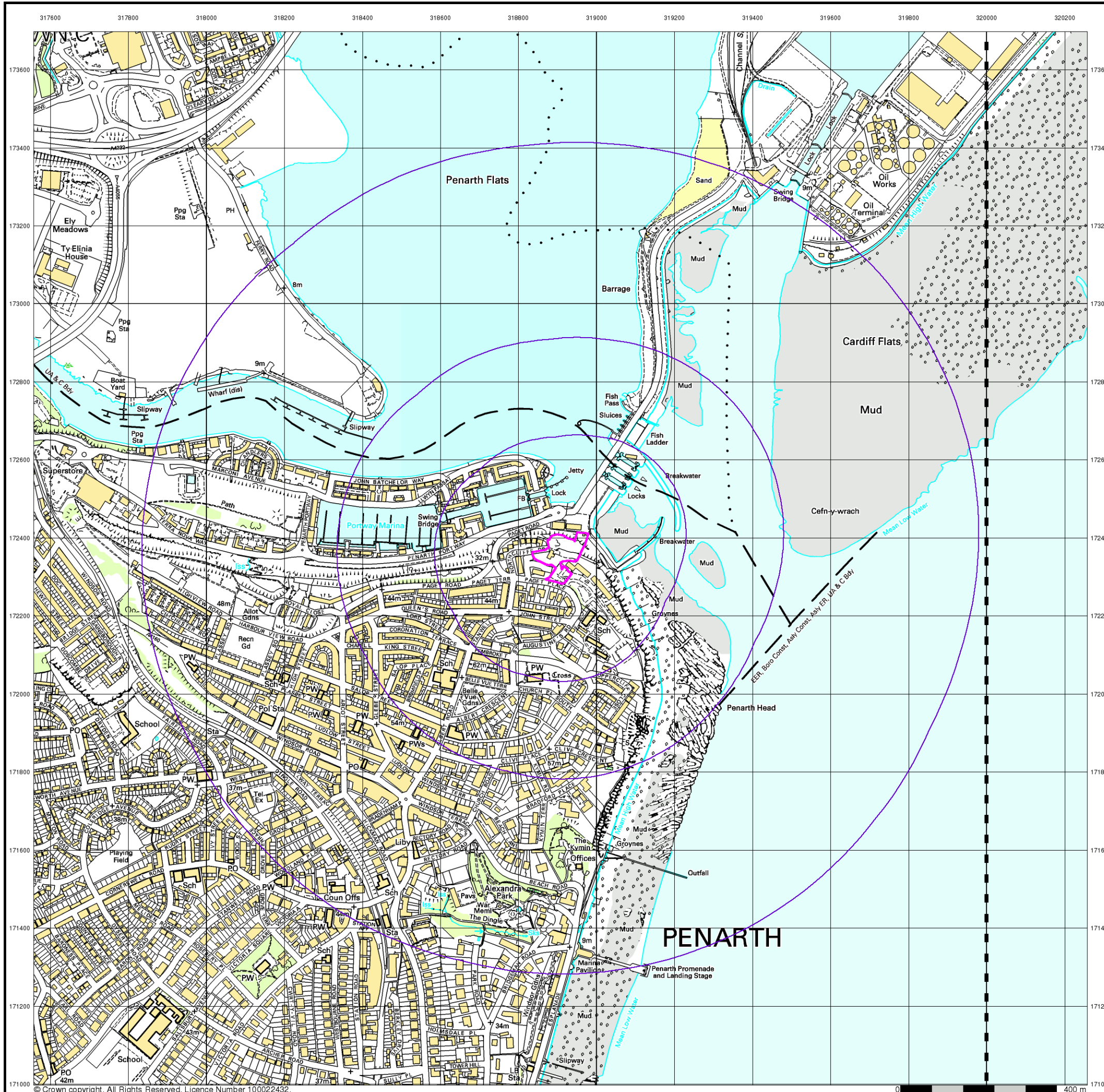
Order Number: 76477814_1_1
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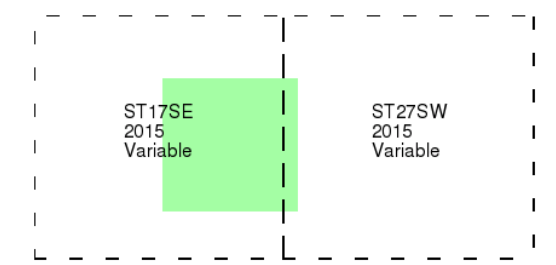
VectorMap Local

Published 2015

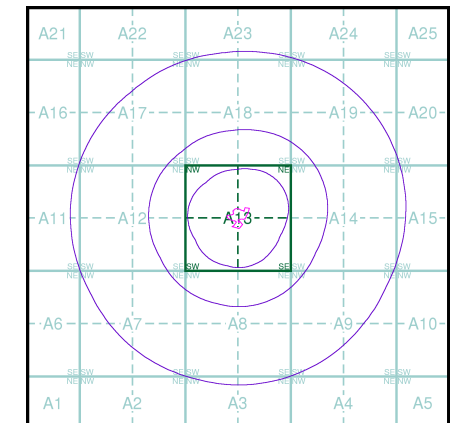
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

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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

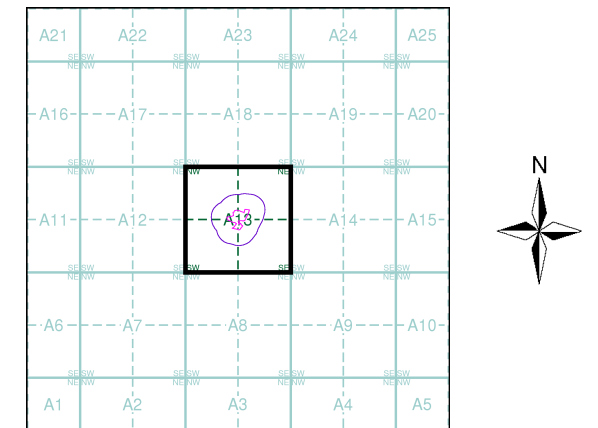
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **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



Historical Mapping & Photography included:

| Mapping Type | Scale | Date | Pg |
|--------------------------------|---------|-------------|----|
| Glamorganshire | 1:2,500 | 1879 - 1880 | 2 |
| Glamorganshire | 1:2,500 | 1900 | 3 |
| Glamorganshire | 1:2,500 | 1920 | 4 |
| Glamorganshire | 1:2,500 | 1940 - 1942 | 5 |
| Ordnance Survey Plan | 1:1,250 | 1954 - 1955 | 6 |
| Ordnance Survey Plan | 1:2,500 | 1955 | 7 |
| Additional SIMs | 1:1,250 | 1955 - 1989 | 8 |
| Ordnance Survey Plan | 1:1,250 | 1973 - 1976 | 9 |
| Ordnance Survey Plan | 1:1,250 | 1990 | 10 |
| Additional SIMs | 1:1,250 | 1990 | 11 |
| Additional SIMs | 1:1,250 | 1990 | 12 |
| Large-Scale National Grid Data | 1:1,250 | 1992 | 13 |
| Large-Scale National Grid Data | 1:1,250 | 1993 - 1995 | 14 |

Historical Map - Segment A13



Order Details

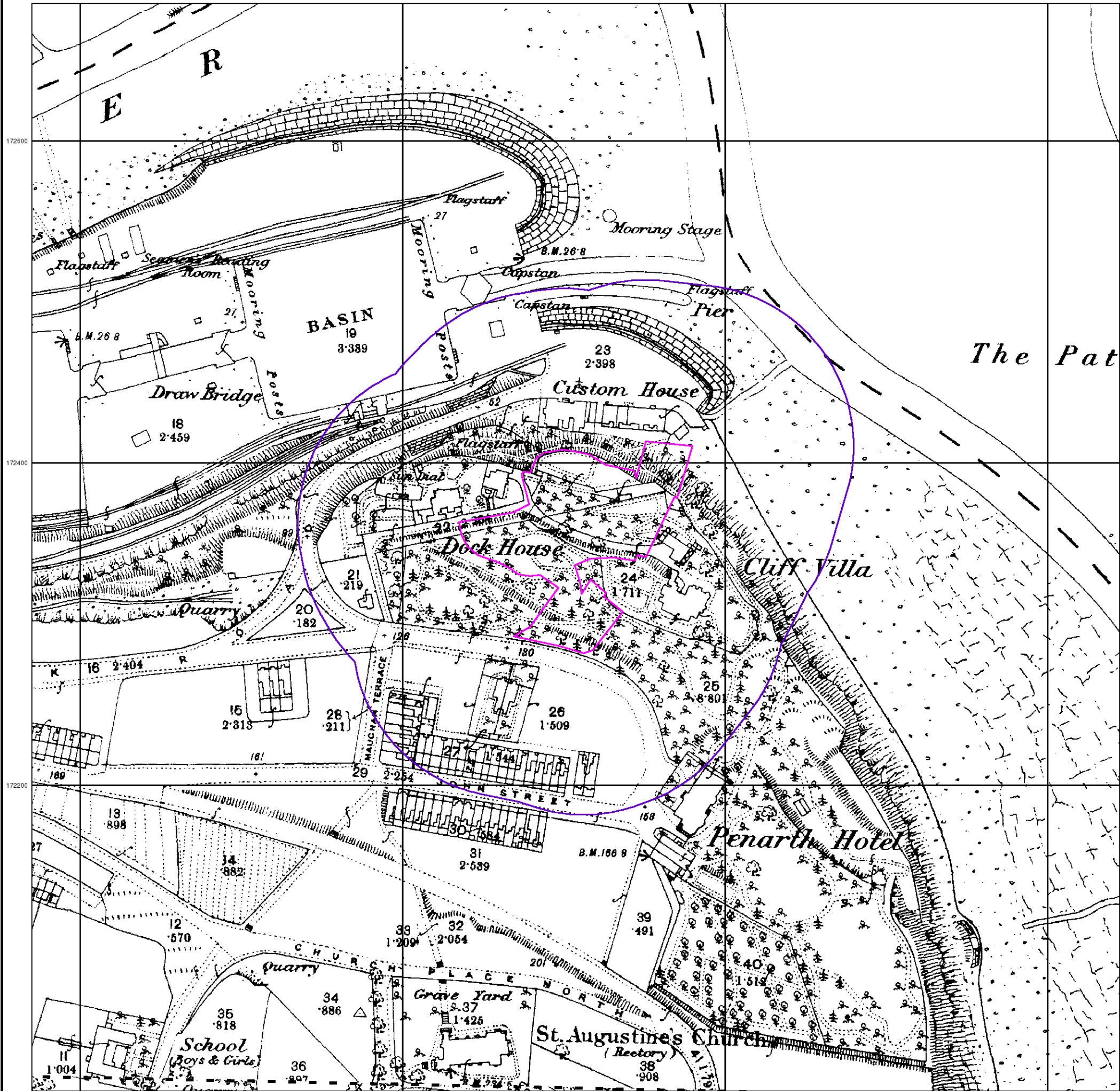
Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

Site Details

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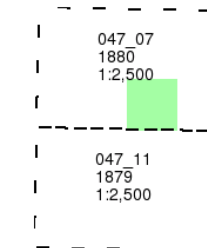
Glamorganshire

Published 1879 - 1880

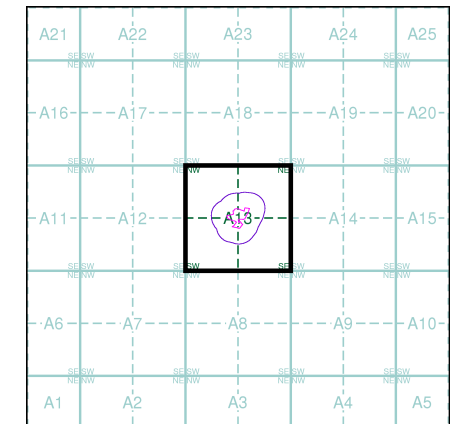
Source map scale - 1:2,500

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)



Historical Map - Segment A13



Order Details

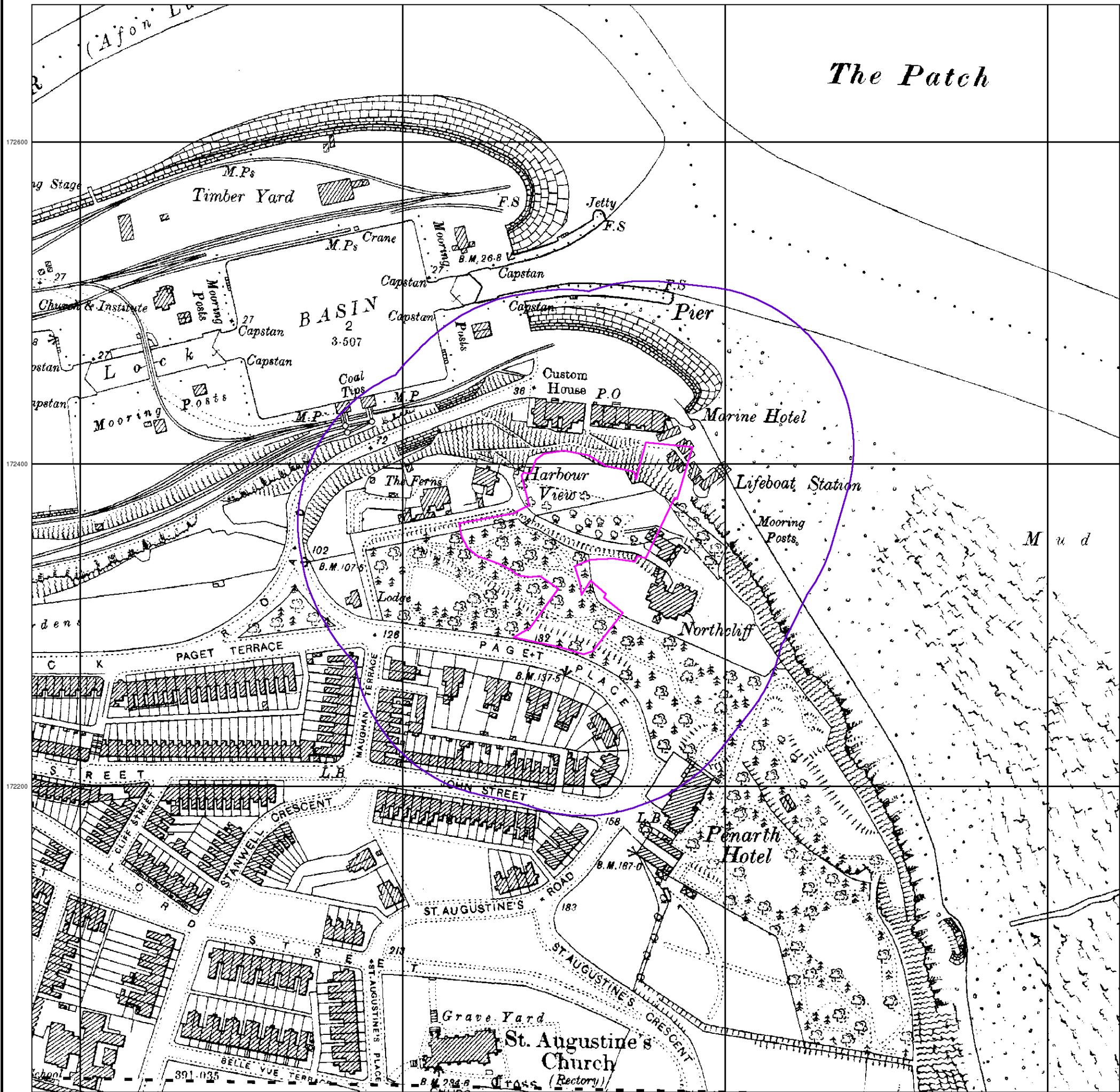
Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

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The Patch

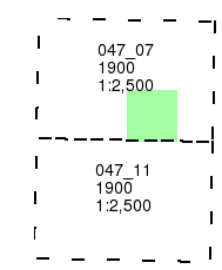


Glamorganshire
Published 1900

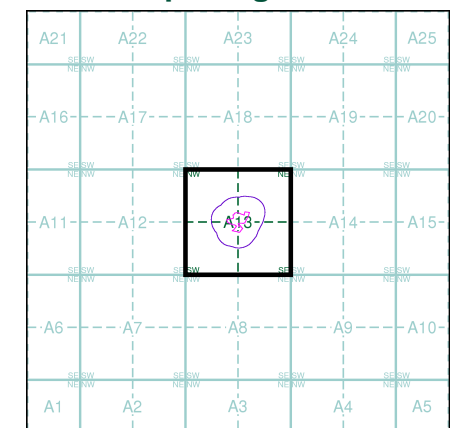
Source map scale - 1:2,500

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: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

Site Details

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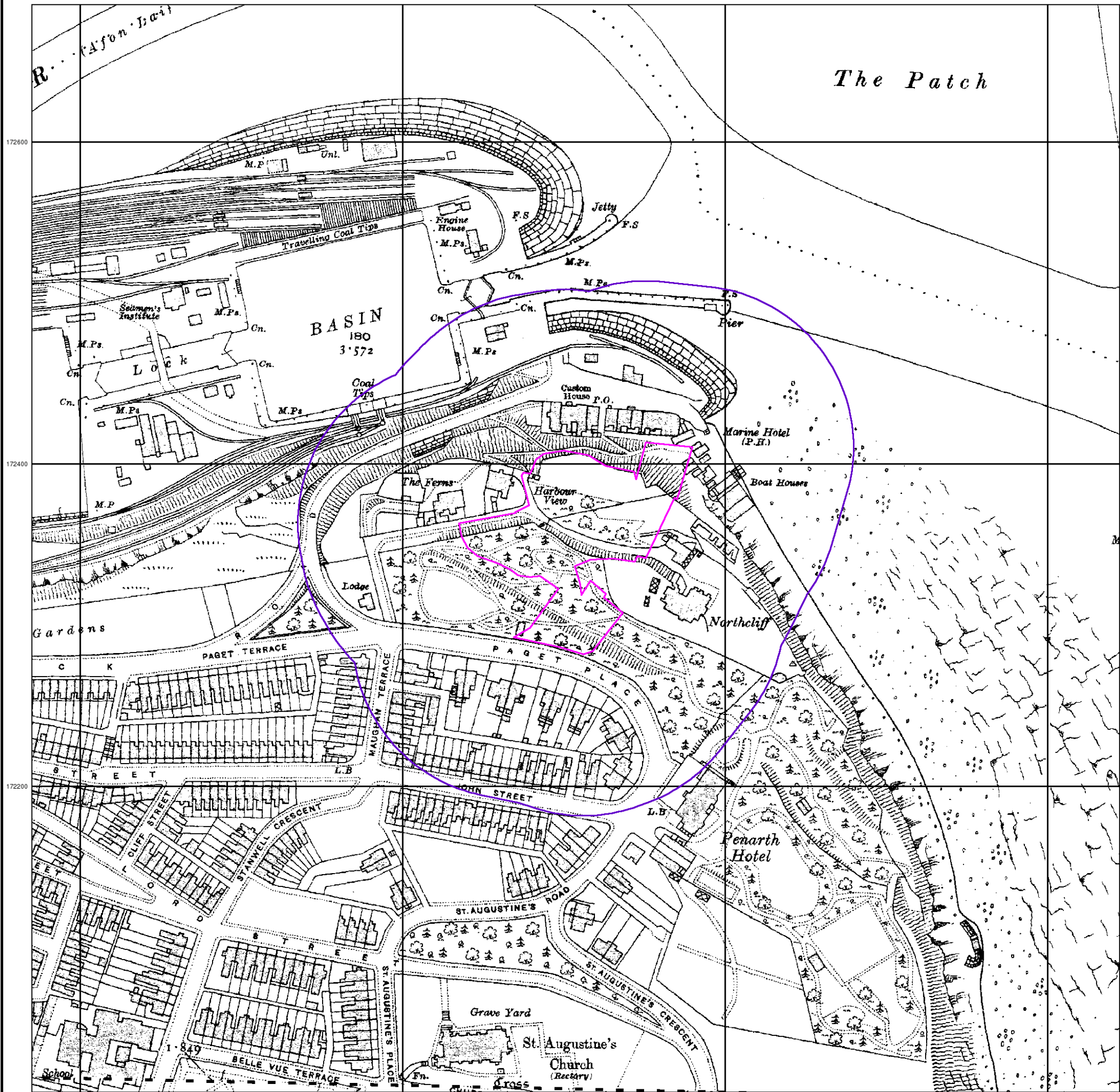
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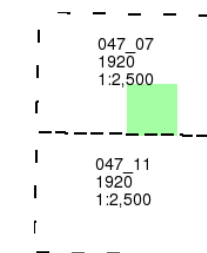
Glamorganshire

Published 1920

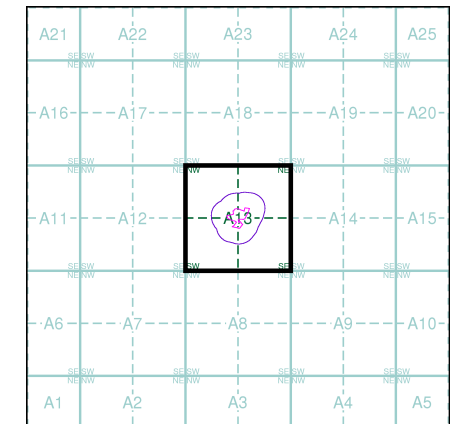
Source map scale - 1:2,500

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: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

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Glamorganshire

Published 1940 - 1942

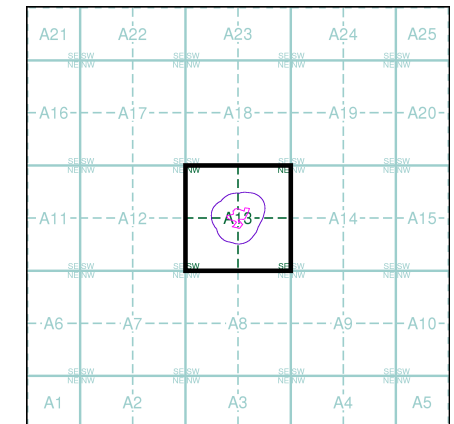
Source map scale - 1:2,500

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)

| | | |
|--------|------|---------|
| 047 07 | 1942 | 1:2,500 |
| 047 11 | 1940 | 1:2,500 |

Historical Map - Segment A13



Order Details

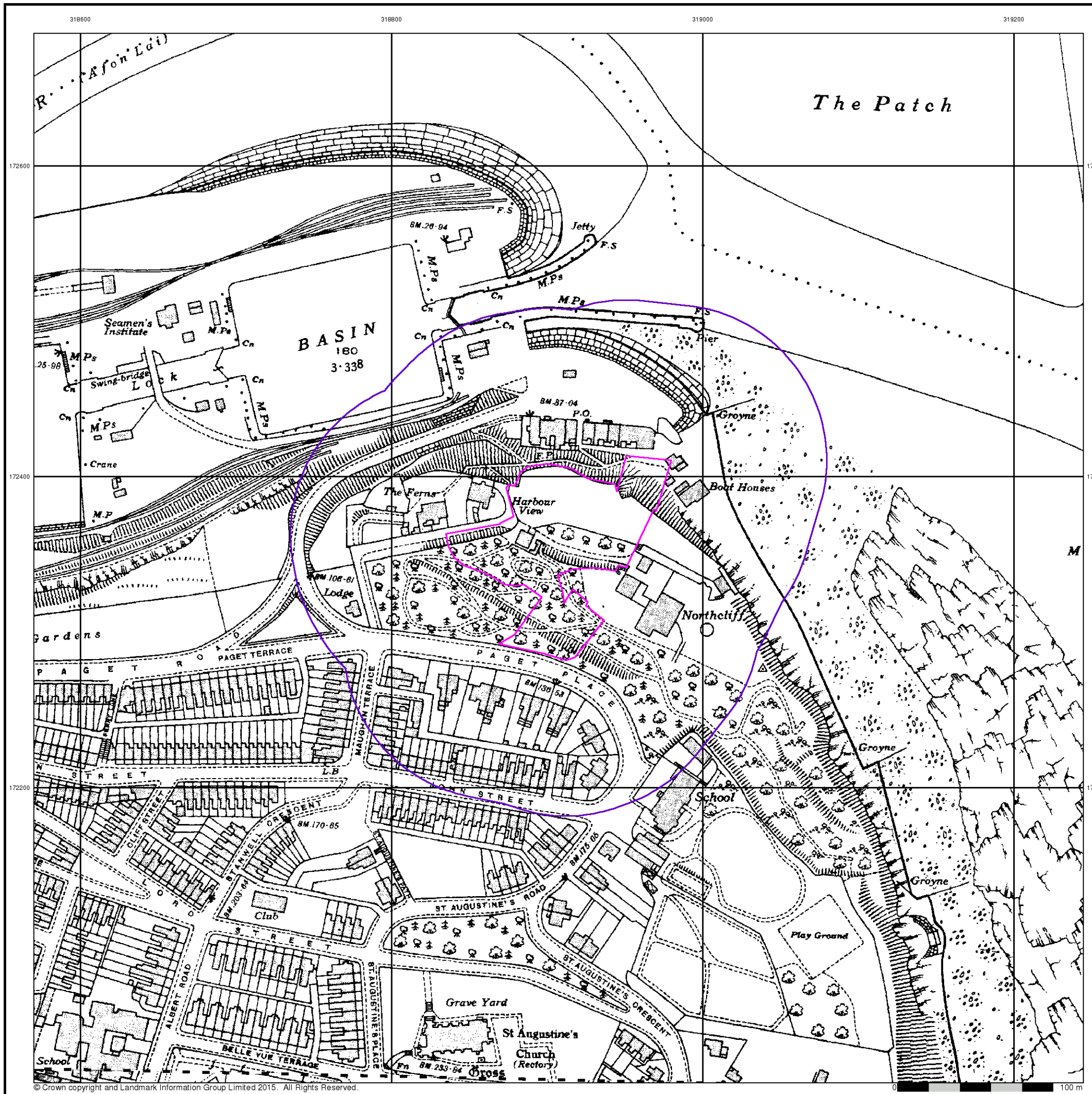
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 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

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Ordnance Survey Plan

Published 1954 - 1955

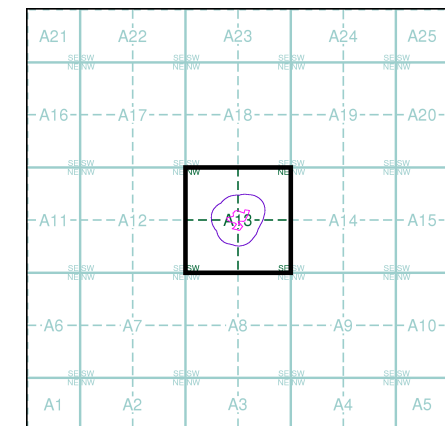
Source map scale - 1:1,250

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)

| | | |
|----------|------|---------|
| ST1872NE | 1955 | 1:1,250 |
| ST1872SE | 1955 | 1:1,250 |
| ST1972SW | 1954 | 1:1,250 |

Historical Map - Segment A13



Order Details

Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

Site Details

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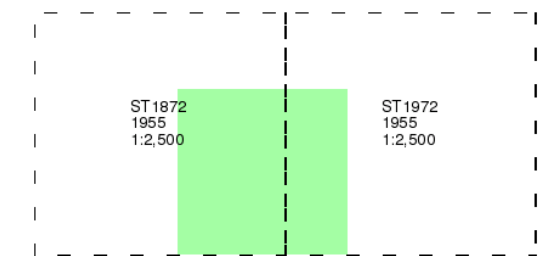
Ordnance Survey Plan

Published 1955

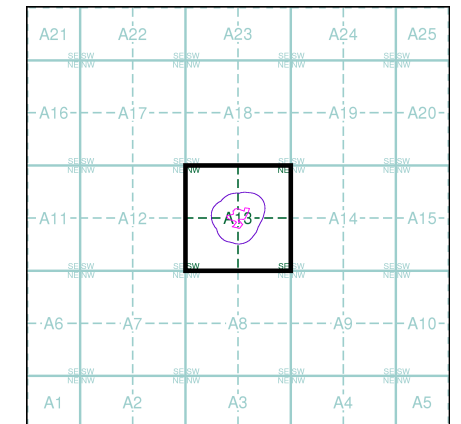
Source map scale - 1:2,500

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: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

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Additional SIMs

Published 1955 - 1989

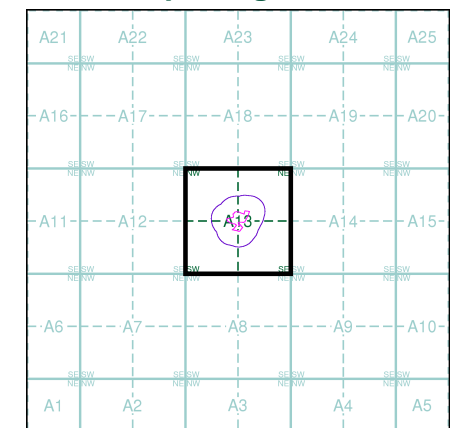
Source map scale - 1:1,250

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)

| | | |
|----------|------|---------|
| ST1872NE | 1988 | 1:1,250 |
| ST1872SE | 1955 | 1:1,250 |
| ST1972SW | 1989 | 1:1,250 |

Historical Map - Segment A13



Order Details

Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

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Ordnance Survey Plan

Published 1973 - 1976

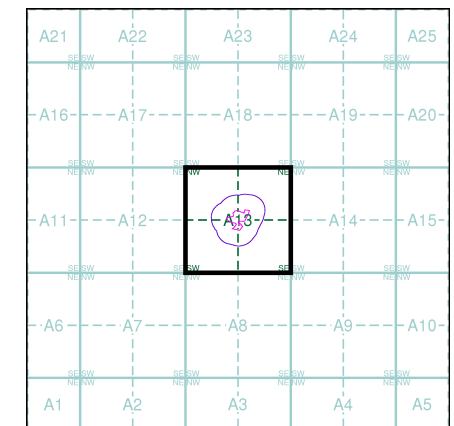
Source map scale - 1:1,250

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)

| | | |
|----------|------|---------|
| ST1872NE | 1973 | 1:1,250 |
| ST1972SW | 1976 | 1:1,250 |

Historical Map - Segment A13



Order Details

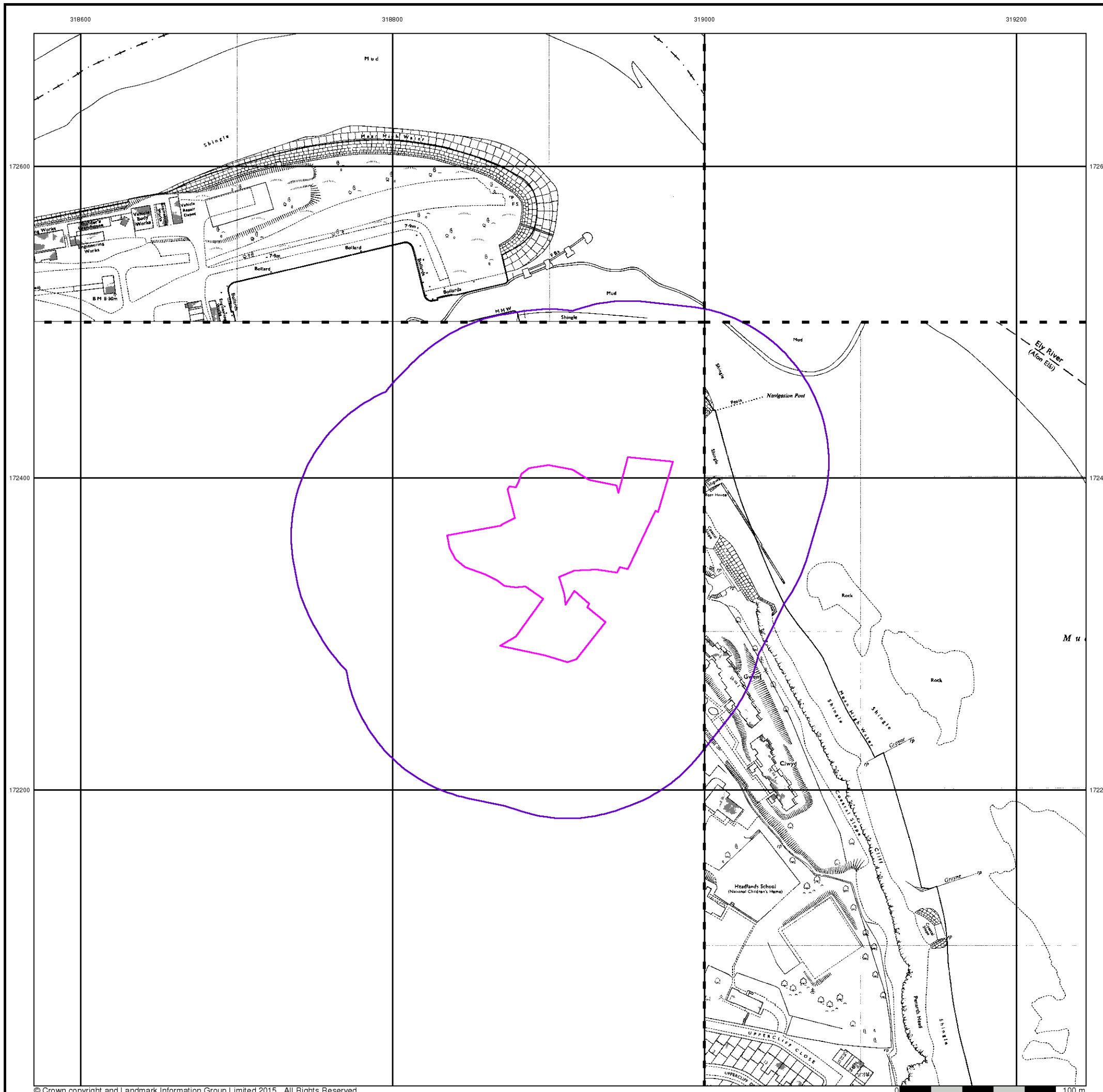
Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

Site Details

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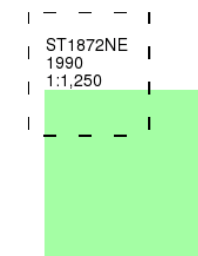
Ordnance Survey Plan

Published 1990

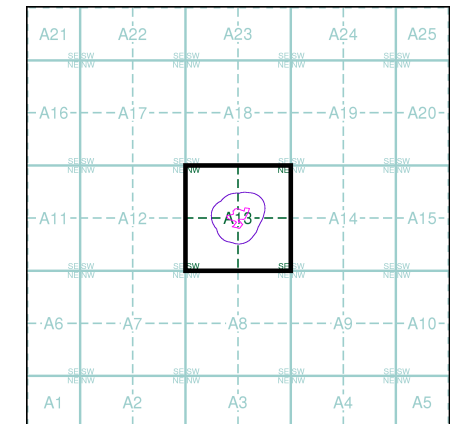
Source map scale - 1:1,250

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



Order Details

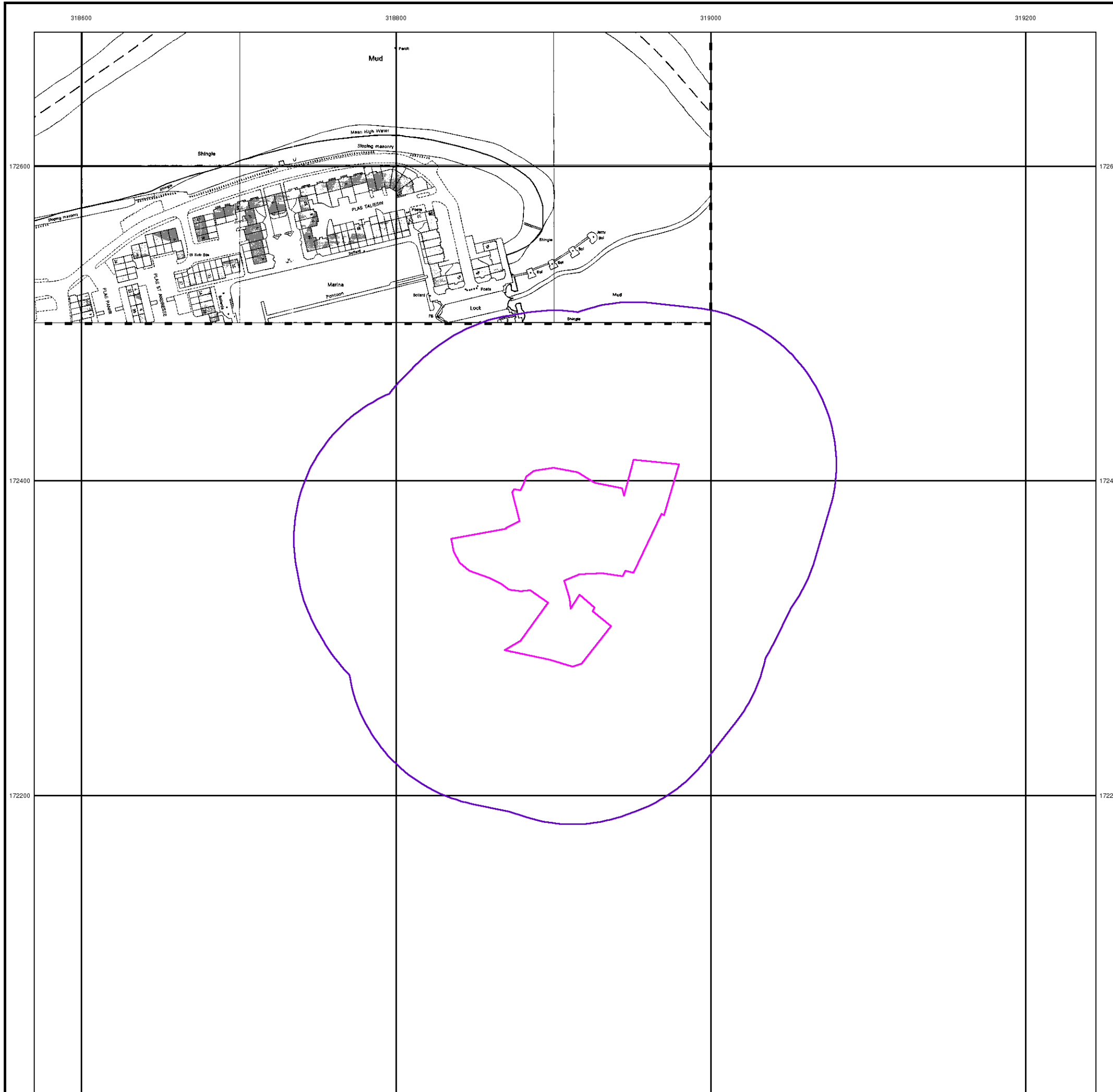
Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
Slice: A
Site Area (Ha): 0.9
Search Buffer (m): 100

Site Details

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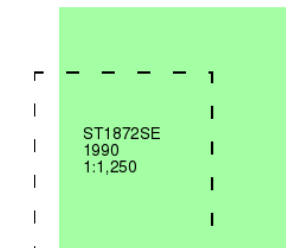
Additional SIMs

Published 1990

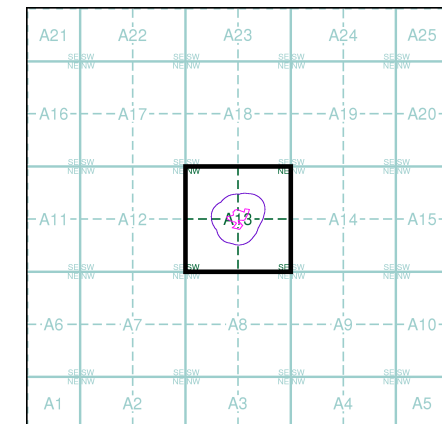
Source map scale - 1:1,250

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

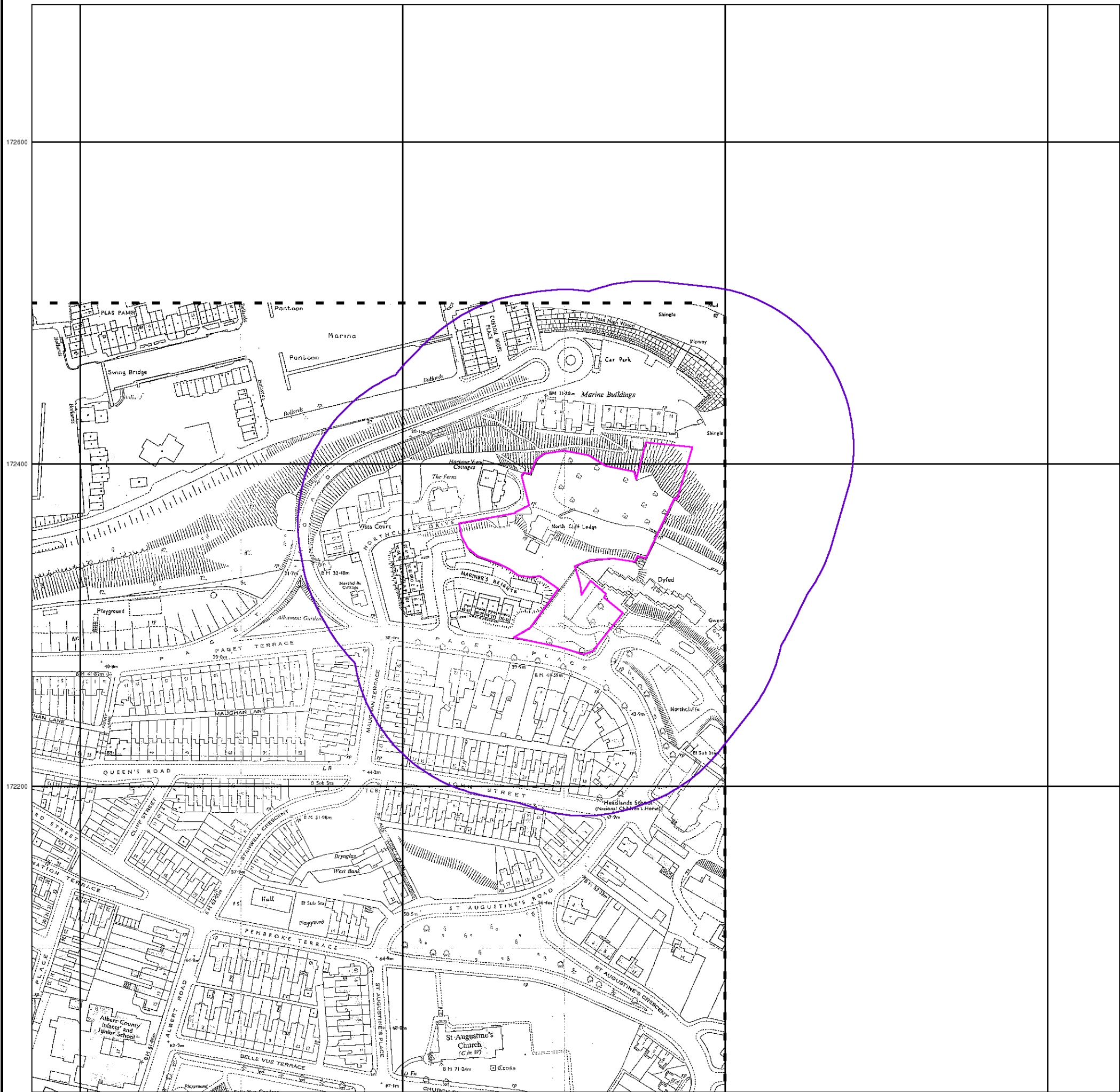
Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
Slice: A
Site Area (Ha): 0.9
Search Buffer (m): 100

Site Details

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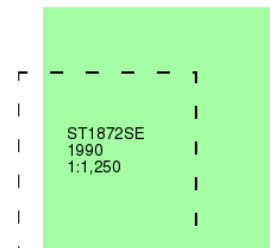
Additional SIMs

Published 1990

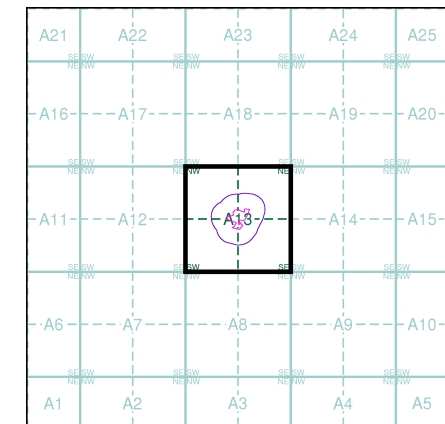
Source map scale - 1:1,250

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

Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
Slice: A
Site Area (Ha): 0.9
Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1992

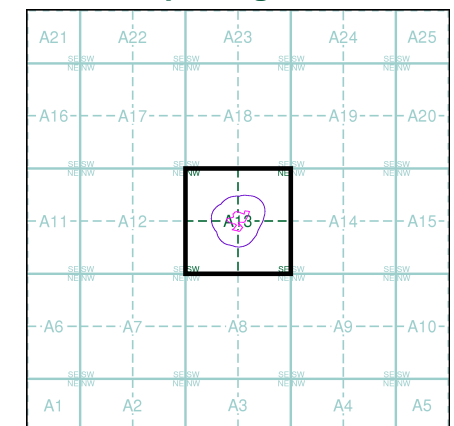
Source map scale - 1:1,250

'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)

| | |
|-----------------------------|-----------------------------|
| ST1872NE 1992 1:1,250 | ST1972NW 1992 1:1,250 |
| ST1872SE 1992 1:1,250 | ST1972SW 1992 1:1,250 |

Historical Map - Segment A13



Order Details

Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1993 - 1995

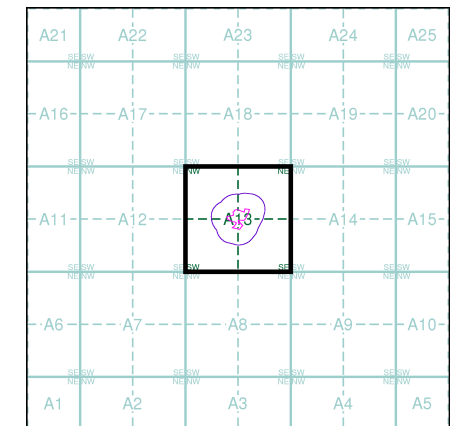
Source map scale - 1:1,250

'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)

| | | |
|----------|------|---------|
| ST1872NE | 1993 | 1:1,250 |
| ST1872SE | 1995 | 1:1,250 |

Historical Map - Segment A13



Order Details

Order Number: 76477814_1_1
 Customer Ref: 13124
 National Grid Reference: 318910, 172360
 Slice: A
 Site Area (Ha): 0.9
 Search Buffer (m): 100

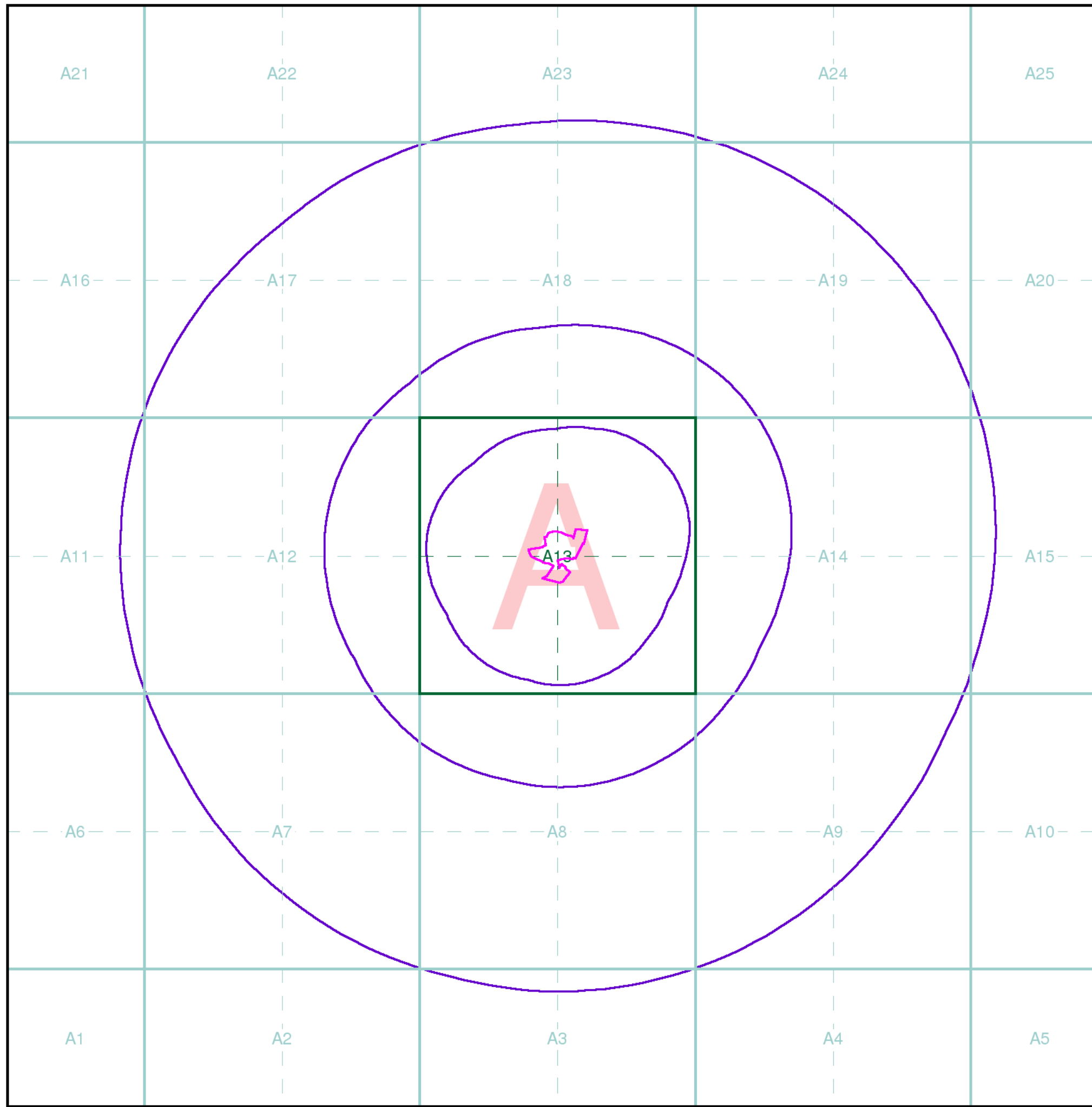
Site Details

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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Ms H Brooke-Smith, Terra Firma (Wales) Ltd, 5 Deryn Court, Wharfdale Road, Pentwyn, Cardiff, CF23 7HB

Order Details

Order Number: 76477814_1_1
Customer Ref: 13124
National Grid Reference: 318910, 172360
Site Area (Ha): 0.9
Search Buffer (m): 1000

Site Details

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