



## PHASE I GEO-ENVIRONMENTAL SITE ASSESSMENT

**Stansty Chain Road  
Wrexham  
LL11 4YH**



**Report Ref: 11-130-r1**  
**Date Issued: October 2017**



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| PROJECT NUMBER                   | 11-130                                                                              |
| IMS Template Reference:<br>QR011 |                                                                                     |

## EXECUTIVE SUMMARY

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Address</b>                      | Land North of Stansty Chain Road, Wrexham, LL11 4YH                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                |
| <b>Grid Reference</b>                    | E332390 N351620                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                |
| <b>Site Area</b>                         | 21.41 Hectares                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                |
| <b>Current Site Use</b>                  | <p>The site consists of agricultural land, with footpaths, ponds and coniferous trees. There are currently no structures present on site.</p> <p>Stansty Chain Road cuts through the site from north west to south east.</p>                                                                                                                                                                                                                  |                                                                                                                                                |
| <b>Proposed Development</b>              | E3P understands that Russell Homes will develop the subject site for low rise residential end use. A proposed plot development layout has not been made available.                                                                                                                                                                                                                                                                            |                                                                                                                                                |
| <b>Environmental Setting</b>             | <i>Drift Geology</i>                                                                                                                                                                                                                                                                                                                                                                                                                          | Glaciofluvial Sheet Deposits- Glacial Sand and Gravel.                                                                                         |
|                                          | <i>Bedrock Geology</i>                                                                                                                                                                                                                                                                                                                                                                                                                        | Pennine Middle Coal Measures Formation (undifferentiated) Mudstone, Siltstone, Sandstone, Coal, Ironstone and Ferricrete.                      |
|                                          | <i>Hydrogeology</i>                                                                                                                                                                                                                                                                                                                                                                                                                           | Secondary A Aquifer and Unproductive Strata (Drift) overlying Secondary A Aquifer (Bedrock Geology).                                           |
|                                          | <i>Hydrology</i>                                                                                                                                                                                                                                                                                                                                                                                                                              | There is an unidentified surface water feature onsite, in addition to two historical ponds. The River Alyn is located 1.2km to the north east. |
|                                          | <i>Flood Risk</i>                                                                                                                                                                                                                                                                                                                                                                                                                             | The site is located within a currently defined Flood Risk Zone 1.                                                                              |
|                                          | <i>Ecology</i>                                                                                                                                                                                                                                                                                                                                                                                                                                | No sensitive receptors identified.                                                                                                             |
|                                          | <i>Compressible Ground and Subsidence Hazards</i>                                                                                                                                                                                                                                                                                                                                                                                             | No hazard identified in data searches.                                                                                                         |
| <b>Site History</b>                      | <p>Historical mapping suggests that the site has remained undeveloped agricultural land with footpaths, ponds and coniferous trees. However, more recently numerous trees and ponds have now been removed/ infilled. Furthermore, there is evidence to suggest that part of the site was formally used for meat processing/ abattoir. However, historical mapping does not indicate the location or when these processes were undertaken.</p> |                                                                                                                                                |
| <b>Utility Locations</b>                 | A formal GPR survey has not been completed, however a review of online records indicates that service infrastructure is within the site.                                                                                                                                                                                                                                                                                                      |                                                                                                                                                |
| <b>Landfill Sites &amp; Ground Gases</b> | <p>There are two landfill sites located 114m north and 118m north of the site (deposited waste, including industrial waste). Additionally, there are two waste treatment facilities located 117m north-east (metal recycling) and 162m north east of the site.</p> <p>Former ponds and field boundaries are present across the site which may be potential sources of alluvial / organic deposits that could generate ground gas.</p>         |                                                                                                                                                |
| <b>Invasive Plant Species</b>            | No invasive plant species were identified during the site walkover. However, some areas of the site were inaccessible and the presence cannot be ruled out. A full detailed Habitat Survey is likely to be required.                                                                                                                                                                                                                          |                                                                                                                                                |

## EXECUTIVE SUMMARY

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Radon</b>                        | The Envirocheck Report indicates the site is situated in an intermediate to higher probability radon area (10 to 30% are estimated to be at or above the Action Level). Full protective measures are necessary in the construction of new buildings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Coal Mining / Land Stability</b> | The site is located within a surface area that could be affected by past mining and the site is in an area where the Coal Authority believe there is coal at or close to the surface which may have been worked in the past. Additionally, there are two known coal mine entries within close proximity to the site confirming a mining legacy in the vicinity. Geological mapping for area notes that there are three coal sub-crops presented in the southern sector of the site. The three coal sub-crops include the, Beta, Gama and Delta. These three seams as well as an additional seam (Alpha) are present to the east of the site and appear to dip in a westerly direction therefore, being present at potentially shallow depth across the entire site. Geological mapping identifies the presence of a fault present along the southern boundary of the site. |

## Preliminary Geotechnical

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the predominantly undeveloped nature of the site, it is likely there will be limited Made Ground fill deposits and obstructions.
-  A number of historically infilled ponds are present within the site boundary which are potential sources of alluvial deposits, silts and possible organic peat deposits in addition to potential depths of Made Ground. Investigation will be required in order to assess these and undertake in-situ geotechnical testing to determine the likely foundation solution for plots in these areas; and,
-  The site is predominantly flat but it likely that some earthworks will be required in order to construct the low rise residential development.
-  The presence of granular soils with a moderate to high degree of effective permeability suggests that infiltration / soak-away drainage systems may be viable.

## Contaminated Land Risk Assessment

### Human Health

Due to the largely undeveloped nature of the site, there are limited potential sources of contamination identified. However, limited areas of Made Ground may be present within infilled ponds or tracks and infilled drainage ditches.

If encountered, these constituents of concern may pose a risk to constructions workers and future residential site users; however in consideration of the proposed development any impacted material will likely be capped by the proposed structure or hard-standing thereby removing the exposure pathway to future site users.

Localised remediation and/or mitigation measures such as the provision of a suitable cover system may be required for any landscaped areas.

### Controlled Waters

Significant on-site sources of potentially mobile contaminants are not anticipated at the subject site. The ICSM has not identified any potential sources of mobile contaminants at the site; as such in the absence of a complete pollutant linkage the site is considered to pose a low risk to controlled waters

### Ground Gas

Former ponds and field boundaries are present across the site which may be potential sources of alluvial / organic deposits which may be a source of carbon dioxide and methane. Carbon dioxide and methane have associated asphyxiation and explosive risks respectively and if present the risks can be appropriately mitigated through the careful design of building structures.

## **EXECUTIVE SUMMARY**

### **Recommendations**

A detailed Phase II intrusive Geo-Environmental Ground Investigation should be undertaken in order to confirm the findings of the initial conceptual site model and value engineer a development solution.

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**Appendix I** Limitations

**Appendix II** Glossary

**Appendix III** Drawings

*Drawing No 11-130-001* – Site Location Plan

*Drawing No 11-130-002* – Current Site Layout and Constraints Plan

*Drawing No 11-130-003* – Historical Features Plan

*Drawing No 11-130-004* – Coal Mining Plan

**Appendix IV** Photographs

**Appendix V** Historical Maps

**Appendix VI** Coal Authority Mining Report

## 1. INTRODUCTION

### 1.1 Background

E3P Ltd has been jointly commissioned by Russell Homes to undertake a Phase I Geo-Environmental Site Assessment at land north of Stansty Chain Road, Wrexham. This report is required to determine potential contaminated land and geotechnical liabilities associated with a proposed future residential development.

### 1.2 Proposed Development

E3P understands that Russell Homes develop the subject site for low rise residential end use. A proposed plot development layout has not been made available for the site as yet, however it is assumed that the proposed development will comprise a series of low rise residential dwellings with associated adopted estate roads and utility infrastructure.

### 1.3 Objectives

The objectives of the Geo-Environmental Investigation are to:

-  Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11));
-  Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors;
-  Assess the desk study information and where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs; and,
-  Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

### 1.4 Limitations

The limitations of this report are presented in Appendix I.

### 1.5 Sources of Information

Background information was sought from the following sources:

-  Envirocheck Search;
-  Historical mapping dated 1848 to 2015. A selection of historical maps are reproduced in Appendix V;
-  On-line planning records held by Wrexham County Borough Council;
-  Consultations with representatives of the Wrexham County Borough Council;
-  Environment Agency Groundwater Vulnerability Map ([www.environment-agency.gov.uk/wiyby](http://www.environment-agency.gov.uk/wiyby));
-  Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007); and,
-  British Geological Survey Map.

## **1.6 Confidentiality**

E3P has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

## 2. SITE SETTING

### 2.1 Site Details

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| <b>Site Address</b>            | Land north of Stansty Chain Road. Wrexham, LL11 4YH |
| <b>National Grid Reference</b> | E332390 N351620                                     |
| <b>Site Area</b>               | 21.41 Hectares                                      |

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 11-130-001.

### 2.2 Current Site Use

E3P has undertaken a site walkover of the entire site and a description of the key findings is summarised in Table 2.1.

**Table 2.1 Site Description**

|                                           |                                                                                                                                                                                                                                                                                          |     |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Occupancy/use</b>                      | The subject site is an irregular shaped parcel of land located to the north of Wrexham, which adjoins the A483 and A541, with Stansty Chain Road running through the proposed development. The site predominantly consists of agricultural land, with short grassland, hedges and trees. |     |
| <b>Structures</b>                         | The site is predominantly agricultural land with no structures present.                                                                                                                                                                                                                  |     |
| <b>Access</b>                             | Pedestrian and vehicle access can be gained from Stansty Chain Road. This road leads to the A541 Mold Road and its junction with Plas Coch Road.                                                                                                                                         |     |
| <b>Slope</b>                              | The sites topography is generally flat, however there are several slopes including slopes the south of the site and along the railway line along the north-eastern boundary.                                                                                                             |     |
| <b>Retaining structures</b>               | There are no retaining structures present on site.                                                                                                                                                                                                                                       |     |
| <b>Surface Cover (%)</b>                  | Buildings:                                                                                                                                                                                                                                                                               | 0%  |
|                                           | Hardstand:                                                                                                                                                                                                                                                                               | 5%  |
|                                           | Soft cover:                                                                                                                                                                                                                                                                              | 95% |
| <b>Vegetation/Ecology</b>                 | Unmanaged vegetation is present across the site, although the majority of the grass is short due to livestock grazing. Additionally, there are hedges that boarder the site and trees are present in the northern sector.                                                                |     |
| <b>Hazardous Material Storage</b>         | No Above Ground Storage Tanks (AST) or Underground Storage Tanks (UST) were observed at the site during the preliminary site walkover. Due to the previously undeveloped nature of the site it is unlikely hazardous materials storage will have occurred on the site.                   |     |
| <b>Asbestos Containing Material (ACM)</b> | No evidence of ACM was noted across the majority of the site during the site walkover. Due to the lack of any structures on the site it is unlikely there will be any asbestos present on the site.                                                                                      |     |
| <b>Polychlorinated Biphenyls (PCBs)</b>   | There is no equipment identified which may contain PCBs within the site boundary.                                                                                                                                                                                                        |     |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste Storage</b> | Potentially hazardous waste streams are unlikely to be generated at the site and none were observed during the preliminary site inspection.                                                                                                                                                                                                                                                                                                                                                               |
| <b>Drainage</b>      | There is a 62 AC main, which runs along Mold Road (A541), turning eastwards and then runs through the proposed development. This main continues to run north east, parallel to the A483 and continues along the south eastern boundary of the site. Moreover, there is a 62 AC main running within the carriageway of Stansty Chain Road, from north to south. The main is then routed to within the footpath opposite Oakhurst property and continues along the remainder of the south east of the site. |

## 2.3 Surrounding Area

The surrounding area land uses are summarised in Table 2.2.

**Table 2.2**      **Surrounding Land Uses**

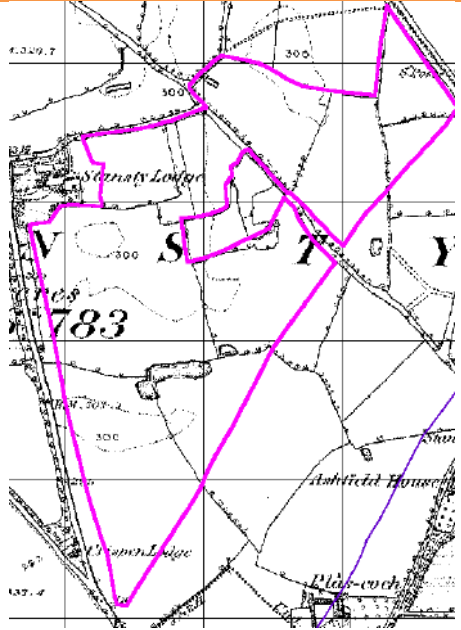
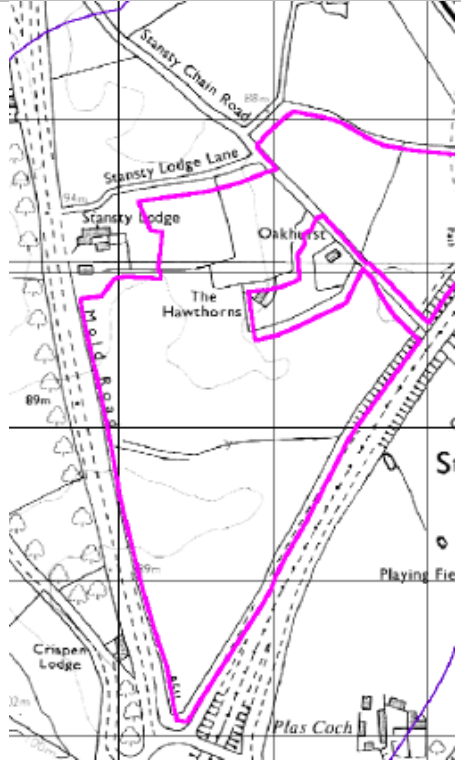
| <b>DIRECTION</b> | <b>LAND USE</b>                                                                                                      |
|------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>North</b>     | Agricultural land and residential housing further north.                                                             |
| <b>East</b>      | Residential housing and commercial and industrial units including Yodel, Tootpak and Howdens Joinery.                |
| <b>South</b>     | Residential housing, Plas Coch Retail Park, Curry's PC World, Sainsbury's Petrol Station Homebase, B&Q and Screwfix. |
| <b>West</b>      | Jones Brothers Farm, agricultural land and several farms.                                                            |

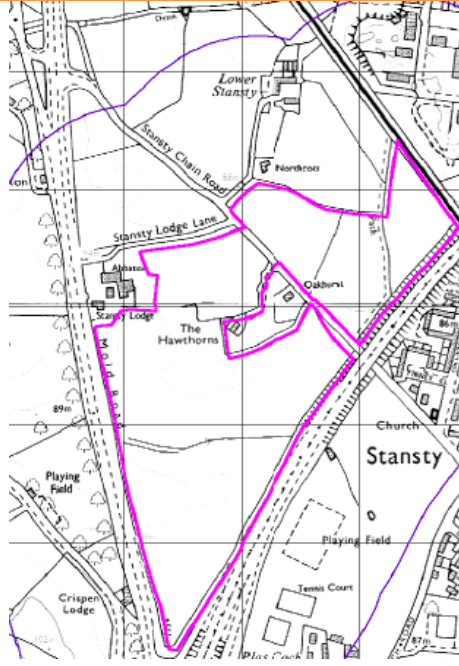
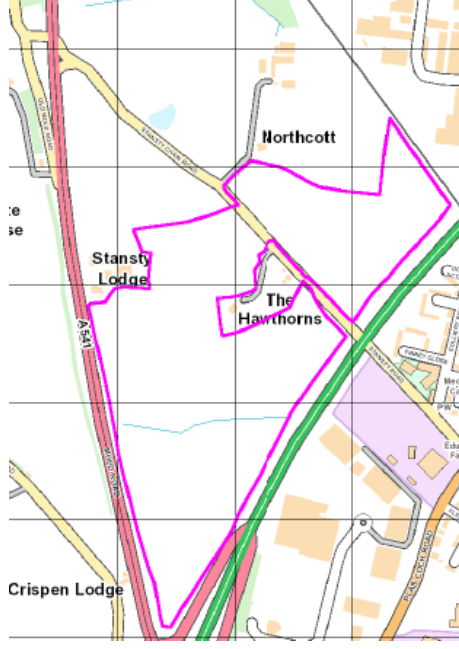
### 3. SITE HISTORY

#### 3.1 On-Site Historical Development

A review of historical mapping pertinent to the site is summarised in Table 3.1 below. In addition, historical site features are presented on Drawing No 11-130-003 in Appendix III.

**Table 3.1 Site Historical Development**

| MAP EDITION                            | HISTORICAL LAND USE                                                                                                                                       | HISTORICAL MAP EXCERPT                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p><b>1848</b><br/><b>1:10,000</b></p> | <p>The site is shown to comprise undeveloped fields, containing boundaries and footpaths. There are also two ponds recorded in the south of the site.</p> |   |
| <p><b>1874</b><br/><b>1:10,000</b></p> | <p>The site remains similar to present day. However, several trees within the site and bordering the site are no longer present after 1874.</p>           |  |

| MAP EDITION                            | HISTORICAL LAND USE                                                                                                                      | HISTORICAL MAP EXCERPT                                                              |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <p><b>1992</b><br/><b>1:10,000</b></p> | <p>Little has changed since the previous map edition. However the two ponds within the northern sector of the site are long present.</p> |   |
| <p><b>1874</b><br/><b>1:10,000</b></p> | <p>Little has changed since the previous map edition.</p>                                                                                |  |

### 3.2 Off-Site Historical Development

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250m radius of the site is summarised below in Table 3.2.

**Table 3.2 Surrounding Potentially Contaminative Land Uses.**

| SURROUNDING FEATURE                                                                                | DISTANCE | DATES                                                                               | DIRECTION  |
|----------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|------------|
| Mine (disused)<br>... Then no longer recorded<br>... Then replaced by works<br>... Then disappears | 50m      | Pre 1964- Pre 1979<br>Pre 1979- Pre 1981<br>Pre 1981- Pre 1990<br>Pre 1990- Present | North East |
| Wrexham Colliery<br>... Then no longer recorded<br>... Then replaced by residential housing        | 150m     | Pre 1879-Pre 1964<br>Pre 1964-Present                                               | North East |
| Depot<br>... Then no longer shown                                                                  | 150m     | Pre 1974- Pre 1981<br>Pre 1981- Present                                             | North East |
| Iron works<br>... Then no longer shown                                                             | 150m     | Pre 1879- Pre 1900<br>Pre 1900- Present                                             | North      |
| Factory<br>... Then no longer shown                                                                | 250m     | Pre 2000- Pre 2000<br>Pre 2000- Present                                             | East       |

### 3.3 Planning History

E3P has undertaken a detailed search of on-line planning records held by Wrexham County Borough Council which has identified that there are numerous housing developments which have planning applications in which surround the site, in addition to numerous residential extension including:

## 4. ENVIRONMENTAL SETTING

### 4.1 Geology and Hydrogeology

The British Geological Survey (BGS) map for the site, (1:50,000, Solid & Drift edition) and online records indicates the site is underlain by the geological sequence presented in Table 4.1.

**Table 4.1 Summary of Underlying Geology**

| GEOLOGICAL UNIT | CLASSIFICATION                                                                                           | DESCRIPTION                                     | AQUIFER CLASSIFICATION |
|-----------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------|
| Drift           | Glaciofluvial Sheet Deposits (West)                                                                      | Sand & Gravel                                   | Secondary Aquifer-A    |
| Drift           | Glacial Till (Devensian) (Rest of Site)                                                                  | Sandy, gravelly, Clay                           | Unproductive strata    |
| Solid           | Pennine Middle Coal Measures Formation and South Wales Middle Coal Measures Formation (undifferentiated) | Mudstone, Siltstone, Sandstone, Coal, Ironstone | Secondary Aquifer-A    |

**Table 4.2 Summary of BGS Borehole Records**

| LOCATION  | DEPTH | MADE GROUND         | DRIFT                       | SOLID           |
|-----------|-------|---------------------|-----------------------------|-----------------|
| 5m SE     | 9.14m | Not encountered     | Gravel and Clay 9.14m       | Not encountered |
| 166.76m S | 15.0m | Not encountered     | Gravel and Clay 15.0m       | Not encountered |
| 310m SE   | 24.0m | Ashes and Slag 3.0m | Sand, Silt and Gravel 24.0m | Not encountered |

**Table 4.3 Faulting**

| LOCATION | DESCRIPTION                                                                        |
|----------|------------------------------------------------------------------------------------|
| South    | A fault is present intersecting the southern sector of the site from east to west. |

The Envirocheck Report indicates that the site is not located within a Groundwater Source Protection Zone. However, there is a groundwater abstraction 709m south of the site listed to be used as process water associated with Carlsberg Tetley Brewing Ltd.

### 4.2 Geotechnical Data

Geotechnical Data presented within a commercially available environmental database is summarised within Table 4.4.

**Table 4.4 Summary of Geotechnical Data**

| HAZARD             | DESIGNATION                |
|--------------------|----------------------------|
| Shrink-Swell Clay  | Very Low Risk to No Hazard |
| Landslides         | Very Low                   |
| Ground Dissolution | No Hazard                  |

| HAZARD               | DESIGNATION                |
|----------------------|----------------------------|
| Compressible Ground  | Very low to Moderate       |
| Collapsible Deposits | Very Low Risk to No Hazard |
| Running Sand         | Very Low Risk to Low Risk  |

### 4.3 Coal Mining

The Envirocheck Report states the site is in an area which may be affected by coal mining.

The Coal Authority operates a risk based approach to the assessment of potential instability issues associated with future development of land located within the pre-defined Coal Authority Consultation Areas. This risk based approach sub-divides the potential risk into 'Low & High' Risk Categories.

The Risk Categories can be defined as:

**Low Risk Sites** - Deemed to be land where coal mining has taken place, however it was at such depth not to pose a risk to new development and it therefore contains no known recorded risks and as such no further assessment is required.

For Low Risk Sites, the Coal Authority categorically state:

*"If your proposed development is within the Development Low Risk Area **there is no need for you to submit any coal mining information with your planning application** and The Coal Authority will not be consulted by the LPA. The LPA will include our Standing Advice as an informative note within the decision notice".*

**High Risk Sites** are deemed to be landholdings located within an area known to contain legacy risks that include:

-  Mine entries (shaft or Adit);
-  Shallow Coal Workings (recorded and probable);
-  Workable coal seam outcrops;
-  Mine gas sites and areas;
-  Recorded coal mining related hazards;
-  Geological features (fissures and break lines); and,
-  Former surface mining sites (sometimes using historic opencast extraction methods).

#### 4.3.1 Coal Mining Information

Prior to the enactment of the Coal Mines Regulation Act (1872) which came into force on the 1<sup>st</sup> January 1883, there was no statutory requirement to record the extent of abandoned mine workings and as such the Coal Authority has no knowledge of extensive workings throughout the UK Coal Fields where shallow workings are present at a depth which could result in a subsidence event in the future (through successive cavitation) associated with failure of support mechanism.

To determine if a site may have unrecorded or recorded coal mine workings requires a consideration of a wide range of information and E3P has completed a review of relevant information in relation to potential coal mining activities. Table 4.5 provides a summary of pertinent coal mining information.

**Table 4.5 Coal Mining Information**

| SOURCES OF INFORMATION                    | SUMMARY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Coal Authority Mining Report</b>       | <p>The Coal Authority Mining Report (Ref: 51001621258001) dated 27<sup>th</sup> September 2017 has been obtained for the subject site by E3P. This report confirmed:</p> <ul style="list-style-type: none"> <li>▪ <i>The property is within a surface area that could be affected by past underground mining;</i></li> <li>▪ <i>There are two known coal mine entries within close proximity to the sites boundary;</i></li> <li>▪ <i>The site is in an area where the Coal Authority believe there is coal at or close to the surface which may have been worked in the past;</i></li> <li>▪ <i>There may however be mine entries in the local area for which the Coal Authority has no knowledge;</i></li> <li>▪ <i>The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining; and</i></li> <li>▪ <i>The site is not within the boundary of an opencast site from which coal has been removed by opencast methods.</i></li> </ul> |
| <b>British Geological Survey Mapping</b>  | <p>The 1:10,000 geological mapping for the area notes that there are three coal subcrops present in the southern sector of the site. The three coal subcrops include the, Beta, Gama and Delta. These three seams as well as an additional seam (Alpha) are present to the east of the site and appear to dip in a westerly direction therefore, being present at depth across the entire site. Furthermore, Geological mapping identifies the presence of a fault present along the southern boundary of the site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Review of Coal Authority Archive</b>   | <p>No Coal Authority archives / Mine Abandonment Plans are made available.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Historical Ordnance Survey Mapping</b> | <p>A review of the 1:10,000 Ordnance Survey mapping from c. 1850 which has records of mine workings which pre-dated the Mining &amp; Regulation Act of 1872 identified the following features which indicate historical mine workings in proximity to the application site:</p> <ul style="list-style-type: none"> <li>▪ Coal Shaft-10m NE</li> <li>▪ North Wales/ Coal Shaft-20m NE</li> <li>▪ Coal Shaft-25m NE</li> </ul> <p>In consideration of the historical mining features in proximity to the site and potential for coal close to the surface it is considered possible that coal extraction has occurred underlying the site at relatively shallow depths although further investigation would be required to determine the extent and depth of any worked seams.</p>                                                                                                                                                                                                                                                  |
| <b>Historical Site Investigations</b>     | <p>E3P has not been provided with any historic site investigation reports.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

#### 4.3.2 Coal Mining Risk Assessment

This Risk Assessment comprises a desk-based review of all available information on the coal mining issues which are relevant to the application site deemed to be located within a 'High Risk' area. This includes:

-  Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;

-  Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and,
-  Demonstrating to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

The Coal Mining Risk Assessment is summarised in Table 4.6.

**Table 4.6 Summary of Coal Mining Risk Assessment**

| COAL MINING RISK ASSESSMENT                                | YES / NO | RISK ASSESSMENT |
|------------------------------------------------------------|----------|-----------------|
| Recorded Underground Coal Mining at Shallow Depth (<30m)   | No       | Low             |
| Recorded Underground Coal Mining at Shallow Depth (>30m)   | Yes      | High            |
| Unrecorded Underground Coal Mining at Shallow Depth (<30m) | No       | Low             |
| Mine Entries (Shaft / Adits)                               | No       | Low             |
| Coal Mining Geology – Fractures / Fissures                 | Yes      | High            |
| Recorded Mining Surface Hazard                             | No       | Low             |
| Surface Mining (opencast)                                  | No       | Very Low / Low  |

Based on the above, a high risk of unrecorded coal mining at shallow depth has been identified. The Coal Authority as a statutory consultee will require a series of rotary open holes across the site to determine the presence of any coal on site and understand the nature of any coal workings.

#### 4.4 Brine Workings

The site is not situated within the Cheshire Salt Field therefore, no further risk assessment has been undertaken.

#### 4.5 Hydrology

Surface water features within 250m of the subject site are summarised in Table 4.7.

**Table 4.7 Surface Water Features**

| SURFACE WATER FEATURE | QUALITY | DISTANCE (m) | DIRECTION  |
|-----------------------|---------|--------------|------------|
| Unidentified Drain    | NA      | 0            | North East |

The site is within a currently defined Flood Risk Zone 1; defined as land assessed as having less than 1 in 1,000 annual probability of river or sea flooding (<0.1%), and as such is considered to be unaffected by river flooding. In addition, the Envirocheck Report states there is a limited potential for groundwater flooding to occur at the site.

#### 4.6 Radon Risk Potential

The Envirocheck Report indicates the site is situated in a intermediate to higher probability radon area (10 to 30% are estimates to be at or above the Action Level). According to the



Envirocheck report, full protective measures are necessary in the construction of new buildings.

#### 4.7 Industrial Land Uses

The Envirocheck report has identified 29 No. Trade Directory entries within a 250m radius of the study site; of which nine are still active. The closest entries relate to Jones Brothers (18m north west) and Acorn Furniture (98m North).

There are four Fuel Station entries within a 1.0km radius of the site. The closest fuel stations relate to Sainsbury's Wrexham (162m south east) and Shell Wrexham (541m south).

#### 4.8 Sensitive Land Uses

There are residential properties located adjacent to the north, east and southern boundaries of the site.

#### 4.9 Site Sensitivity Assessment

The site is assessed to be located within a **High** sensitivity setting as discussed within Table 4.8.

**Table 4.8 Site Sensitivity Assessment**

| SENSITIVITY PROFILE                                                                                               | DISCUSSION                                                                                                                                                                                                                                                                                                                                                         | RATING              |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Sensitive land uses within close proximity (e.g. residential, school, nursery, local nature reserves etc.)</b> | Gatewen Marsh SSI is located 250m north of the site. Additionally, there are residential houses in close proximity to the site in the east and north and a school 170m south east.                                                                                                                                                                                 | <b>High</b>         |
| <b>Groundwater Source Protection Zone or Drinking Water Safeguard Zone</b>                                        | The site is not in a Groundwater Source Protection Zone or Drinking Water Safeguard Zone                                                                                                                                                                                                                                                                           | <b>Low</b>          |
| <b>Distance to the closest groundwater abstraction point.</b>                                                     | Carlsberg Tetley Brewing Ltd is 709m south of the site utilised for process water (industrial purposes).                                                                                                                                                                                                                                                           | <b>Low</b>          |
| <b>Aquifer Classification in Superficial Drift Deposits.</b>                                                      | The superficial deposits are classified as Secondary Aquifer-A and Unproductive Strata, which are likely to comprise of sand, silt and gravel interbedded with low permeability clay soils to depths of 30.0m. Area of unproductive strata may reduce the potential for mobile phase contaminants to migrate towards the bedrock aquifer or adjacent watercourses. | <b>Moderate</b>     |
| <b>Aquifer classification in Bedrock.</b>                                                                         | The bedrock is classified as Secondary Aquifer- A                                                                                                                                                                                                                                                                                                                  | <b>High</b>         |
| <b>Is the site underlain by low permeability Drift to depths in excess of 10.0m?</b>                              | BGS boreholes records confirm clay and gravel deposits in excess of 10m bgl. Bedrock is present between 20 to 30m bgl                                                                                                                                                                                                                                              | <b>Low</b>          |
| <b>Is the site located within 50m of a surface watercourse?</b>                                                   | The nearest major water feature is the river Alyn 1.2km north east. Several unnamed drains and ponds are in close proximity to the site.                                                                                                                                                                                                                           | <b>Low</b>          |
| <b>Overall Site Environmental Sensitivity</b>                                                                     |                                                                                                                                                                                                                                                                                                                                                                    | <b>Low/Moderate</b> |



#### 4.10 Preliminary Geotechnical Assessment

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the predominantly undeveloped nature of the site, it is likely there will be limited Made Ground fill deposits and obstructions.
-  A number of historically infilled ponds are present within the site which are potential sources of alluvial deposits, silts and possible organic peat deposits in addition to potential depths of Made Ground. Investigation will be required in order to assess these and undertake in-situ geotechnical testing to determine the likely foundation solution for plots in these areas; and,
-  The site is predominantly flat but there are slopes, including the slopes in the south of the site. In order to construct low rise residential development, earthworks will be required to create a level developable platform.
-  The presence of granular soils with a moderate to high degree of effective permeability suggests that infiltration / soak-away drainage systems may be viable.

#### 4.1 Unexploded Ordnance

The regional unexploded bomb risk map from Zetica indicates that the site is in an area at low risk from possible Unexploded Ordnance (UXO) resulting from the Second World War. (Zetica, 2014).

## 5. CONSULTATIONS

### 5.1 Landfill Sites and Waste Treatment Sites

There are two landfill sites located 114m north and 118m north of the site which are listed as depositing waste, including industrial waste. Additionally, there are two waste treatment facilities located 117m north-east (metal recycling) and 162m north east of the site.

Due to the predominantly cohesive (clay) deposits identified across the site and distance from the site, migration of hazardous ground gas is expected to be insignificant. Furthermore, a railway line is present across the northern boundary of the site which is cut into the landform further reducing the any potential migration of landfill gasses.

### 5.2 Regulatory Database

The information summarised in Table 5.1 has been obtained from a commercially available environmental database. The summary table only includes records from within 250m of the subject site and not otherwise detailed in the report.

**Table 5.1** *Summary of Environmental Data*

| RECORD                                                             | ENTRIES<br>WITHIN<br>250m | DETAILS                                                                                                                                                                                                                         |
|--------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contaminated Land Register Entries and Notices                     | 0                         | None Identified (N/A).                                                                                                                                                                                                          |
| Authorised industrial processes (IPC/IPPC/LAPPC).                  | 5                         | There are 5 LAPPC's: Johnson Cleaners Uk Ltd (122m east), Sainsbury's supermarket Petrol Filling Station (164 south east), Cemex (207m north), Tudor Griffiths Group (207m north) and Dane Motor Company Ltd (119m north east). |
| Fuel Stations Entries                                              | 1                         | Sainsburys Wrexham (162m south east).                                                                                                                                                                                           |
| Licensed radioactive substances                                    | 0                         | N/A                                                                                                                                                                                                                             |
| Enforcements, prohibitions or prosecutions                         | 0                         | N/A                                                                                                                                                                                                                             |
| Discharge Consents                                                 | 0                         | N/A                                                                                                                                                                                                                             |
| Pollution Incidents                                                | 3                         | There was a minor incident by sewage-treated effluent (103m south), a significant incident by sewage-treated effluent (11m North) and major incident by chemical runoff (244m south).                                           |
| Consents issued under the Planning (Hazardous Substances) Act 1990 | 0                         | N/A                                                                                                                                                                                                                             |
| Control of Major Accident Hazard (COMAH) sites                     | 1                         | A Butlers & Co Wrexham Ltd (118m north east).                                                                                                                                                                                   |

## 6. INITIAL CONCEPTUAL SITE MODEL

### 6.1 Initial CSM

In accordance with Environment Agency, CLR 11 (2004) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P Ltd has developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 6.1.

**Table 6.1 Initial Conceptual Site Model**

| SOURCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PATHWAY                                                           | RECEPTOR                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Human Health</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                   |                                                                       |
| <b>Heavy Metals and Non-volatile PAH in Made Ground</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Dermal Contact and Ingestion<br>Consumption of Home-grown Produce | Construction Workers<br>Residential End Users                         |
| <p><b>Discussion:</b></p> <p>The presence of Made Ground underlying part of the site associated with historic site meat processing/ abattoir as well as site wide usage as arable agricultural purposes which may have included the application of pesticides and herbicides. It is possible that low-level source of Polycyclic Aromatic Hydrocarbon (PAH) and heavy metals may be present within shallow soils across the site.</p> <p>If present, the above constituents may pose a short term risk to construction workers who may come into contact with impacted soils during earthworks. However, this risk can be mitigated through the use of appropriate Personal Protective Equipment (PPE) and the provision of adequate welfare facilities.</p> <p>The site is likely to be covered by the proposed structure or hard-standing; however future residential users may come into contact with impacted soils within any landscaped areas. If impacted soils are identified then localised remediation or an appropriate cover system, designed in accordance with BRE465 (Cover Systems for Land Regeneration), will remove the exposure pathway and therefore risk to future residential site users.</p> |                                                                   |                                                                       |
| <b>Asbestos Containing Materials (ACM) within Made Ground</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Fibre / Dust Inhalation                                           | Construction Workers<br>Residential End Users<br>Third Party Property |
| <p><b>Discussion:</b></p> <p>No ACM was noted during the site walkover survey; however, the presence of ACM within the Made Ground associated with part of the site being used as a former meat processing / abattoir cannot be discounted. ACM poses a risk through fibre and dust inhalation and if present may pose a risk to construction workers during any future earthworks / demolition and to adjacent third party property should dust be generated during those works.</p> <p>These risks can be mitigated through the development of a detailed enabling works strategy following guidance and protocol specified within the Control of Asbestos Regulations (2012) and industry best practice as detailed in CIRIA733 (Asbestos in Soil and Made Ground: A guide to understanding risk).</p>                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                   |                                                                       |

### Hazardous Ground Gases

**Methane and Carbon Dioxide associated with onsite infilled ponds and off-site Landfill**

Inhalation  
Accumulation

Construction Workers  
Residential End Users

#### Discussion:

Historic infilling of ponds on site nearby historic landfill and Made Ground deposits may be a source of hazardous ground gas which may pose a low-level risk to construction workers and residential end users. Carbon dioxide and methane can migrate to indoor air spaces through service ducts and collect in deep excavations and have associated asphyxiation and explosive risks, respectively. Should a ground gas risk be identified to end users, the risks can be mitigated through the adoption of suitable control measures within the building construction using guidance presented within CIRIA 665 (Assessing Risk Posed by Hazardous Ground Gases to Buildings) and BS8485 (Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments).

### Controlled Waters

**Pesticides/Herbicides**

Vertical / Lateral Migration

Secondary Aquifer-A and  
Unproductive Strata

#### Discussion:

The application of pesticides and herbicides during agricultural use will have been completed within guideline limits and will cease upon development of the site. Therefore, the likely source of impact will be removed. Additionally, the presence of likely low permeability Glacial Till beneath most the site will reduce possible migration to the identified controlled waters receptors.

### Buildings and Infrastructure

**pH & Sulphate**

Corrosion of Concrete

Foundations / Concrete

#### Discussion

Assessment must be undertaken to confirm the levels of pH and sulphate within the underlying strata and in particular any Made Ground deposits so that a concrete classification can be determined.

### Ecology

**Non identified**

N/A

N/A

#### Discussion

In the absence of any potential / viable receptors, no risk to ecology or aquatic ecosystems has been identified with respect to contaminated land.

## 7. CONCLUSIONS AND RECOMMENDATIONS

### Site Summary

The subject site is an irregular shaped parcel of land located north of Stansty Chain Road. Historical mapping suggests that the site has always been undeveloped agricultural land with footpaths, ponds and coniferous trees. However, more recently numerous trees and the two ponds have now been removed.

### Contamination Issues

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Human Health      | <p>Due to the largely undeveloped nature of the site, there are limited potential sources of contamination identified. However, limited Made Ground may give rise to heavy metals, PAHs, and asbestos within the subsurface. In addition, the historic meat processing/ abattoir as well as site wide usage as arable agricultural purposes may have included the application of pesticides and herbicides. It is possible that low-level source of Polycyclic Aromatic Hydrocarbon (PAH) and heavy metals may be present within shallow soils across the site.</p> <p>If impacted soil is present, then the risk to construction workers can be managed using appropriate personal protective equipment (PPE). The risk to end users will be significantly reduced due to the likely commercial end use but if impacted soil is present then it may be necessary to utilise a cover system designed in accordance with guidance published in BRE 465 <i>Cover systems for land regeneration - thickness of cover systems for contaminated land</i>.</p> |
| Controlled Waters | The application of pesticides and herbicides during agricultural use will have been completed within guideline limits and will cease upon development of the site. Therefore, the likely source of impact will be removed. Additionally, the presence of likely low permeability Glacial Till beneath most the site will reduce possible migration to the identified controlled waters receptors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Ground Gas        | Former ponds, nearby landfill and field boundaries are present across the site which may be potential sources of alluvial / organic deposits which may be a source of carbon dioxide and methane. Carbon dioxide and methane have associated asphyxiation and explosive risks respectively and if present the risks can be appropriately mitigated through the careful design of building structures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Potable Waters    | Based on existing information, it is considered the site will be suitable for PE water supply pipework.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### Geotechnical Issues

Based on the desk study information, the following geotechnical assessment has been made:

-  Given the predominantly undeveloped nature of the site, it is likely there will be limited Made Ground fill deposits and obstructions.
-  A number of historically infilled ponds are present within the site boundary which are potential sources of alluvial deposits, silts and possible organic peat deposits in addition to potential depths of Made Ground. Investigation will be required in order to assess these and undertake in-situ geotechnical testing to determine the likely foundation solution for plots in these areas; and,
-  The site is predominantly flat in topography. However, there are several slopes, including the slopes in the south of the site dipping north. In order to construct low rise residential development, earthworks will be required to create a level developable platform.
-  The site is located within an area where coal seams may be present at or close to the surface which have been subject to unrecorded working at some point in the past. A detailed intrusive investigation is required to investigate the potential for workings and requirement for any stabilisation works.

## END OF REPORT

## APPENDIX I LIMITATIONS



1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access
6. considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
7. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
8. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
9. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
10. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.
11. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.



## APPENDIX II GLOSSARY



## TERMS

|              |                                                            |                         |                                                      |
|--------------|------------------------------------------------------------|-------------------------|------------------------------------------------------|
| <b>AST</b>   | Above Ground Storage Tank                                  | <b>SGV</b>              | Soil Guideline Value                                 |
| <b>BGS</b>   | British Geological Survey                                  | <b>SPH</b>              | Separate Phase Hydrocarbon                           |
| <b>BSI</b>   | British Standards Institute                                | <b>TPH CWG</b>          | Total Petroleum Hydrocarbon (Criteria Working Group) |
| <b>BTEX</b>  | Benzene, Toluene, Ethylbenzene, Xylenes                    | <b>SPT</b>              | Standard Penetration Test                            |
| <b>CIEH</b>  | Chartered Institute of Environmental Health                | <b>SVOC</b>             | Semi Volatile Organic Compound                       |
| <b>CIRIA</b> | Construction Industry Research Association                 | <b>UST</b>              | Underground Storage Tank                             |
| <b>CLEA</b>  | Contaminated Land Exposure Assessment                      | <b>VCCs</b>             | Vibro Concrete Columns                               |
| <b>CSM</b>   | Conceptual Site Model                                      | <b>VOC</b>              | Volatile Organic Compound                            |
| <b>DNAPL</b> | Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB) | <b>WTE</b>              | Water Table Elevation                                |
| <b>DWS</b>   | Drinking Water Standard                                    | <b>m</b>                | Metres                                               |
| <b>EA</b>    | Environment Agency                                         | <b>km</b>               | Kilometres                                           |
| <b>EQS</b>   | Environmental Quality Standard                             | <b>%</b>                | Percent                                              |
| <b>GAC</b>   | General Assessment Criteria                                | <b>%v/v</b>             | Percent volume in air                                |
| <b>GL</b>    | Ground Level                                               | <b>mb</b>               | Milli Bars (atmospheric pressure)                    |
| <b>GSV</b>   | Gas Screening Value                                        | <b>l/hr</b>             | Litres per hour                                      |
| <b>HCV</b>   | Health Criteria Value                                      | <b>µg/l</b>             | Micrograms per Litre (parts per billion)             |
| <b>ICSM</b>  | Initial Conceptual Site Model                              | <b>ppb</b>              | Parts Per Billion                                    |
| <b>LNAPL</b> | Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)  | <b>mg/kg</b>            | Milligrams per kilogram (parts per million)          |
| <b>ND</b>    | Not Detected                                               | <b>ppm</b>              | Parts Per Million                                    |
| <b>LMRL</b>  | Lower Method Reporting Limit                               | <b>mg/m<sup>3</sup></b> | Milligram per metre cubed                            |
| <b>NR</b>    | Not Recorded                                               | <b>m bgl</b>            | Metres Below Ground Level                            |
| <b>PAH</b>   | Polycyclic Aromatic Hydrocarbon                            | <b>m bcl</b>            | Metre Below Cover Level                              |
| <b>PCB</b>   | Poly-Chlorinated Biphenyl                                  | <b>mAOD</b>             | Metres Above Ordnance Datum (sea level)              |
| <b>PID</b>   | Photo Ionisation Detector                                  | <b>kN/m<sup>2</sup></b> | Kilo Newtons per metre squared                       |
| <b>QA</b>    | Quality Assurance                                          | <b>µm</b>               | Micro metre                                          |
| <b>SGV</b>   | Soil Guideline Value                                       |                         |                                                      |
|              |                                                            |                         |                                                      |

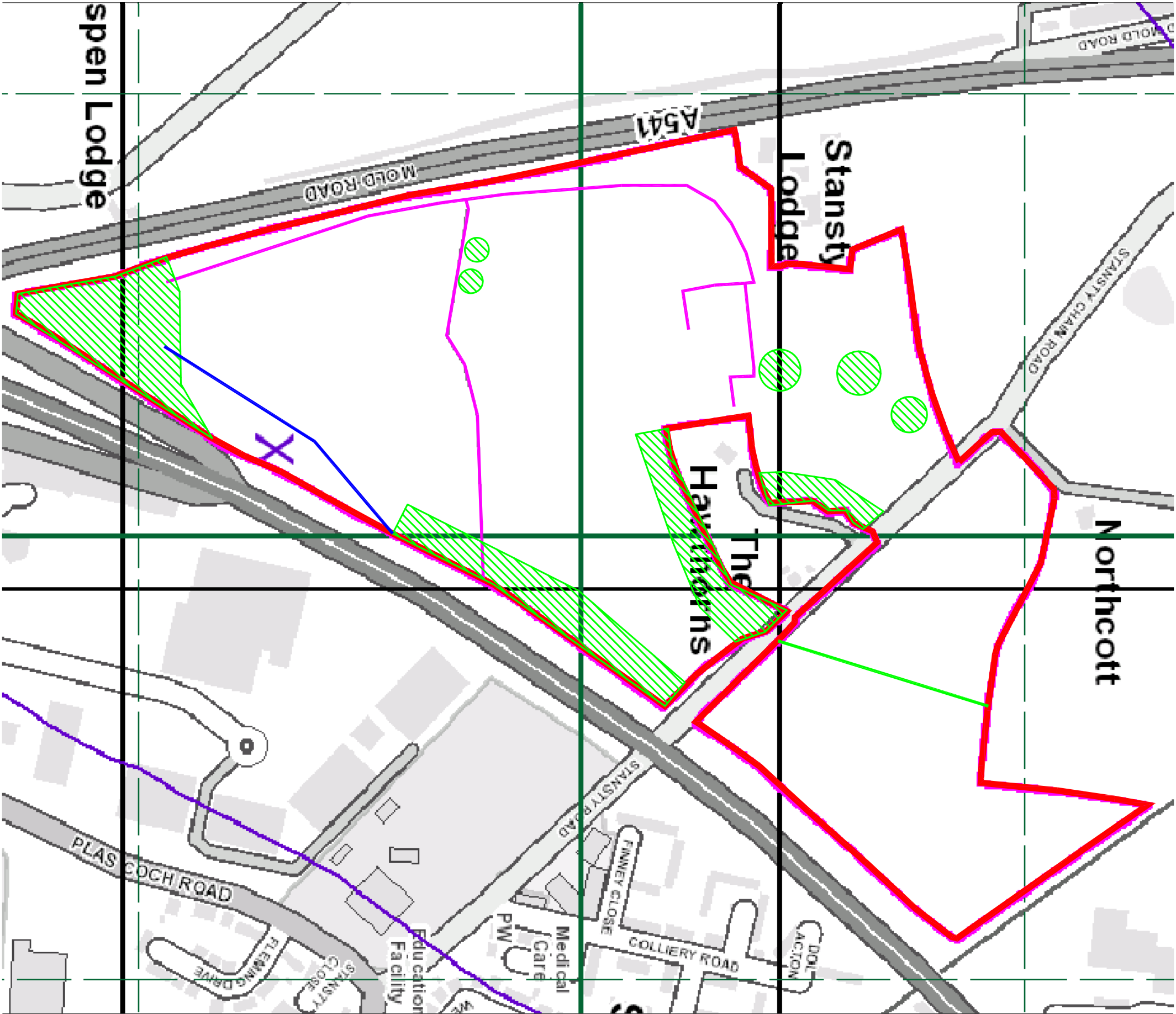
## APPENDIX III DRAWINGS





Drawing 11-130-001  
Site Location Plan





- Historical Features**
- Paths
  - Area of Trees and Hedges
  - Overhead Power Lines

|        |  |  |  |  |  |
|--------|--|--|--|--|--|
| Notes: |  |  |  |  |  |
|        |  |  |  |  |  |
|        |  |  |  |  |  |

|             |  |          |  |            |  |
|-------------|--|----------|--|------------|--|
| Phase       |  | Revision |  | Date       |  |
| P1          |  | -        |  | 13.10.2017 |  |
| Issue       |  | Drawn    |  | Authorised |  |
| Job No.     |  | 11-130   |  | Date       |  |
| Drawing No. |  | 002      |  | 13.10.2017 |  |
| Scale       |  | NTS @ A3 |  |            |  |

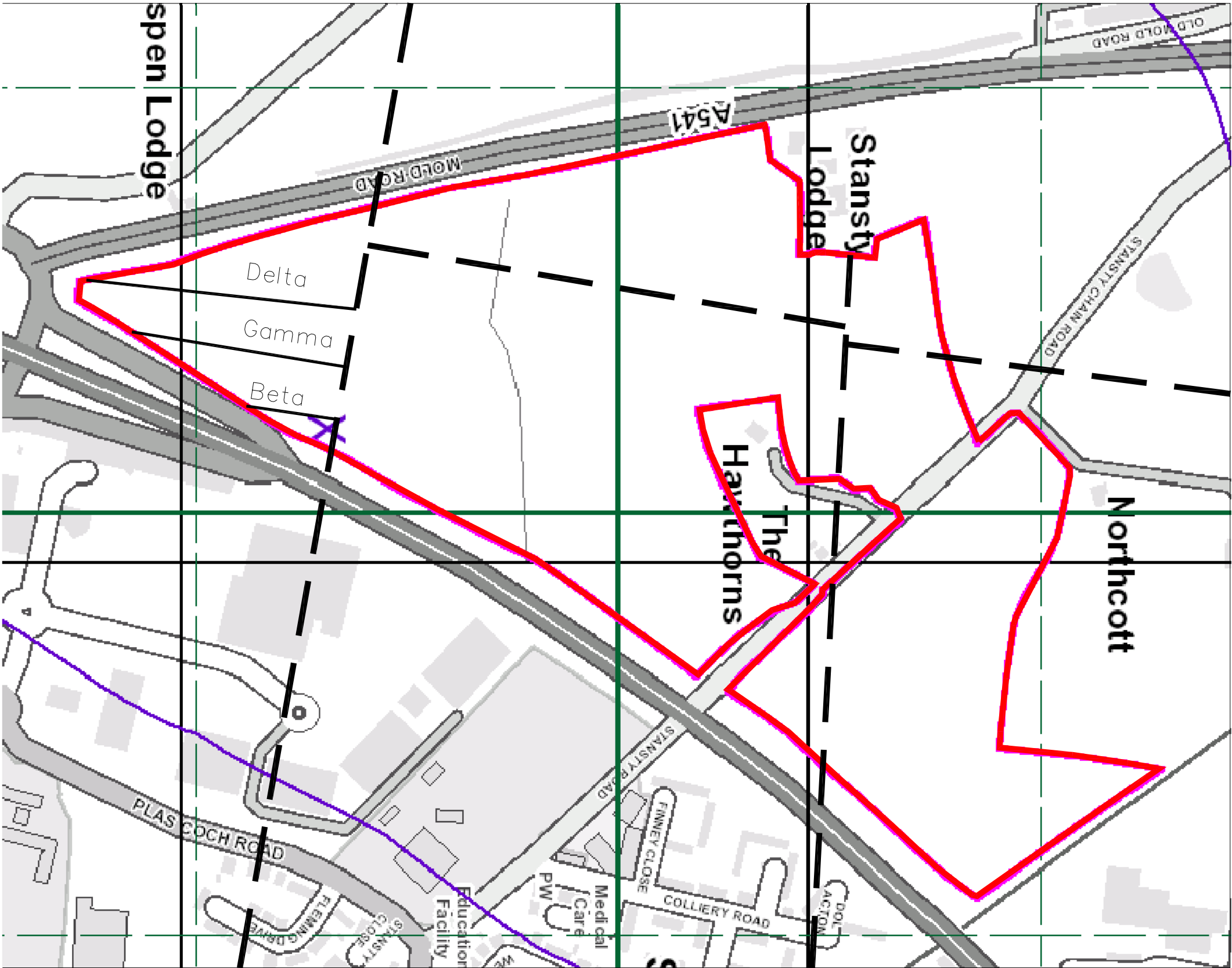
|            |                             |                |                    |
|------------|-----------------------------|----------------|--------------------|
| Job Title: | Stansty Chain Road, Wrexham | Drawing Title: | Site Features Plan |
|------------|-----------------------------|----------------|--------------------|



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Key:

Coal Mining Plan

Fault Lines

Coal Seams

Notes:

|         |               |            |             |        |                  |
|---------|---------------|------------|-------------|--------|------------------|
| P1      | -             | 17.10.2017 | DRAFT       | AL     | MD               |
| Phase   | Revision      | Date       | Issue       | Drawn  | Authorised       |
| Client: | Russell Homes |            | Job No:     | 11-130 | Date: 17.10.2017 |
|         |               |            | Drawing No: | 004    | Scale: NTS @ A3  |

|            |                             |                  |
|------------|-----------------------------|------------------|
| Job Title: | Stansty Chain Road, Wrexham | Coal Mining Plan |
|------------|-----------------------------|------------------|



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## APPENDIX IV PHOTOGRAPHS





**PLATE 1 – VIEW FACING SOUTH TOWARDS MOLD ROAD**



**PLATE 2 – VIEW FACING NORTH TOWRDS STANSTY LODGE LANE**



## APPENDIX V HISTORICAL MAP



# 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                                                   |
|  | Bracken                                                               |  | Heath                                                   |
|  | Marsh                                                                 |  | Reeds                                                   |
|  | Building                                                              |  | Glasshouse                                              |
|  | Sloping Masonry                                                       |  | Pylon                                                   |
|  | Cutting                                                               |  | Embankment                                              |
|  | Road Under                                                            |  | Road Over                                               |
|  | Level Crossing                                                        |  | Foot Bridge                                             |
|  | 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                   |
|  | Civil Parish                                                          |  |                                                         |
|  | BP, BS Boundary Post or Stone                                         |  | Police Station                                          |
|  | Church                                                                |  | Post Office                                             |
|  | Club House                                                            |  | Public Convenience                                      |
|  | Fire Engine Station                                                   |  | Public House                                            |
|  | Foot Bridge                                                           |  | Signal Box                                              |
|  | Fountain                                                              |  | Spring                                                  |
|  | Guide Post                                                            |  | Telephone Call Box                                      |
|  | Mile Post                                                             |  | Telephone Call Post                                     |
|  | Mile Stone                                                            |  | Well                                                    |

## 1:10,000 Raster Mapping

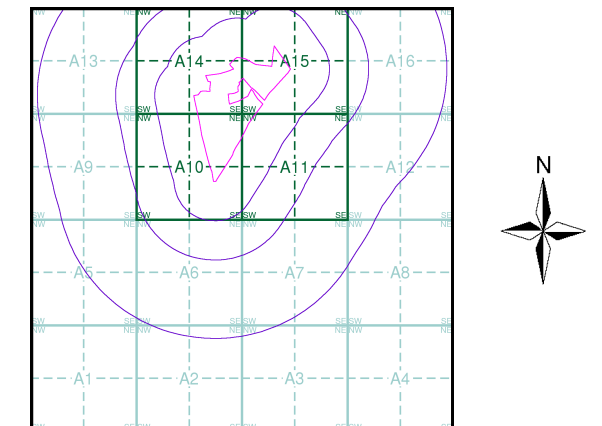
|  |                                                          |  |                                            |
|--|----------------------------------------------------------|--|--------------------------------------------|
|  | Gravel Pit                                               |  | Refuse tip 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                                |
|  | Mean high water (springs)                                |  | 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 |
|----------------------|----------|-------------|----|
| Denbighshire         | 1:10,560 | 1879        | 2  |
| Denbighshire         | 1:10,560 | 1900        | 3  |
| Denbighshire         | 1:10,560 | 1915        | 4  |
| Denbighshire         | 1:10,560 | 1938        | 5  |
| Denbighshire         | 1:10,560 | 1938        | 6  |
| Denbighshire         | 1:10,560 | 1954        | 7  |
| Ordnance Survey Plan | 1:10,000 | 1964        | 8  |
| Ordnance Survey Plan | 1:10,000 | 1974 - 1979 | 9  |
| Ordnance Survey Plan | 1:10,000 | 1981        | 10 |
| Ordnance Survey Plan | 1:10,000 | 1988        | 11 |
| Ordnance Survey Plan | 1:10,000 | 1990 - 1993 | 12 |
| Ordnance Survey Plan | 1:10,000 | 1992        | 13 |
| 10K Raster Mapping   | 1:10,000 | 2000        | 14 |
| Street View          | Variable |             | 15 |

## Historical Map - Slice A



## Order Details

Order Number: 140834096\_1\_1  
Customer Ref: 11130/6949/hc  
National Grid Reference: 332390, 351620  
Slice: A  
Site Area (Ha): 21.41  
Search Buffer (m): 1000

## Site Details

Lower Stansty Farm, Chain Road, Stansty, WREXHAM, LL11 4YH

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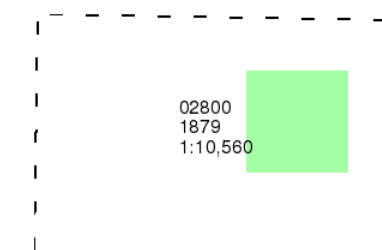
## Denbighshire

Published 1879

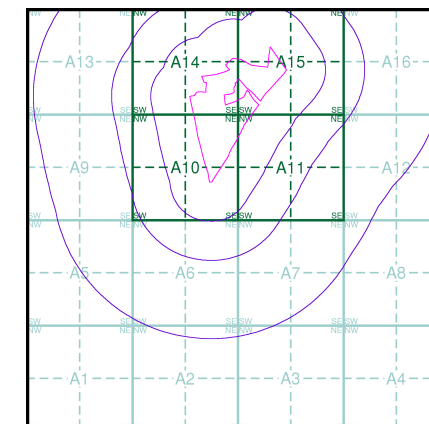
Source map scale - 1:10,560

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

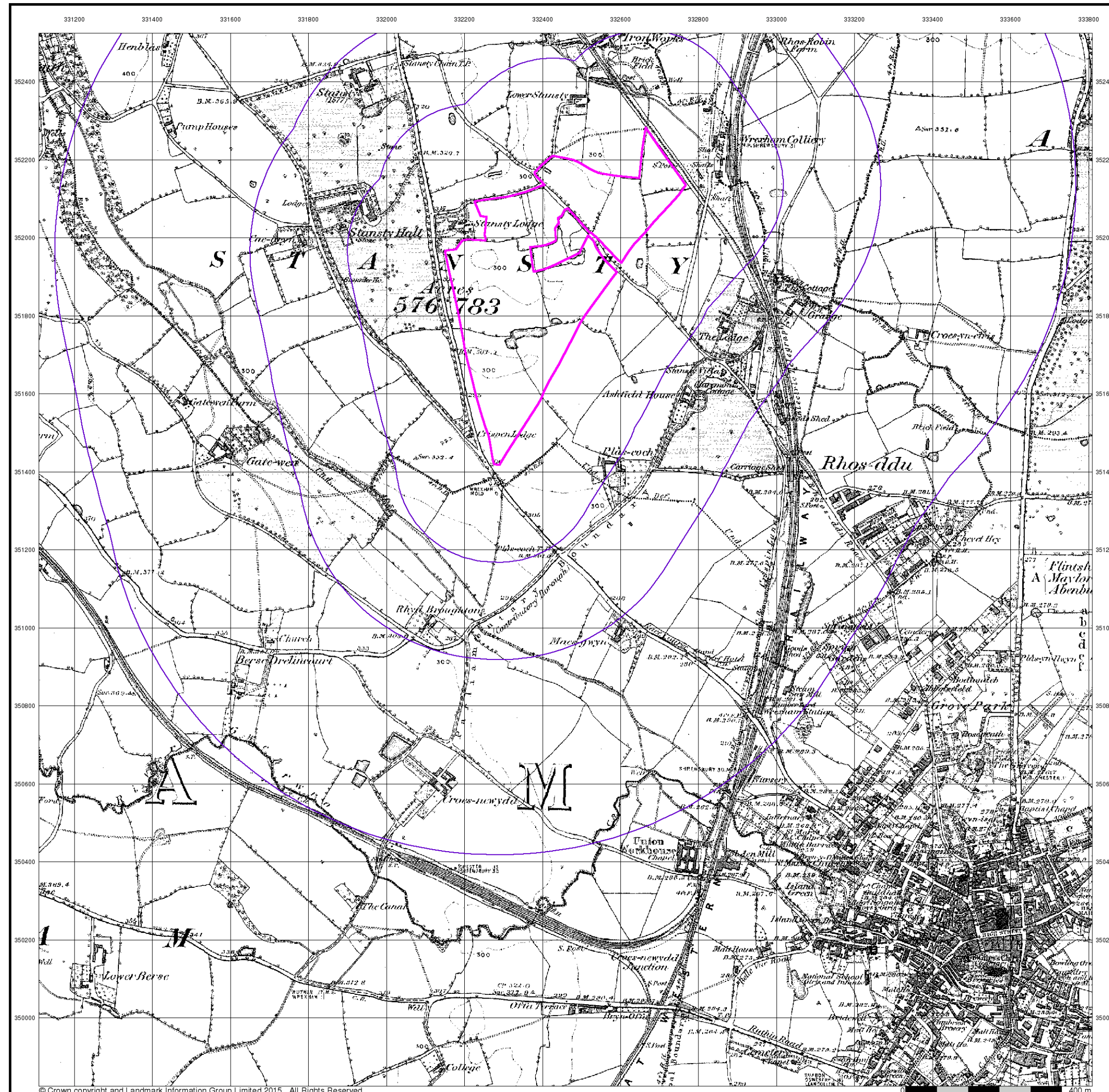
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National Grid Reference: 332390, 351620  
Slice: A  
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Search Buffer (m): 1000

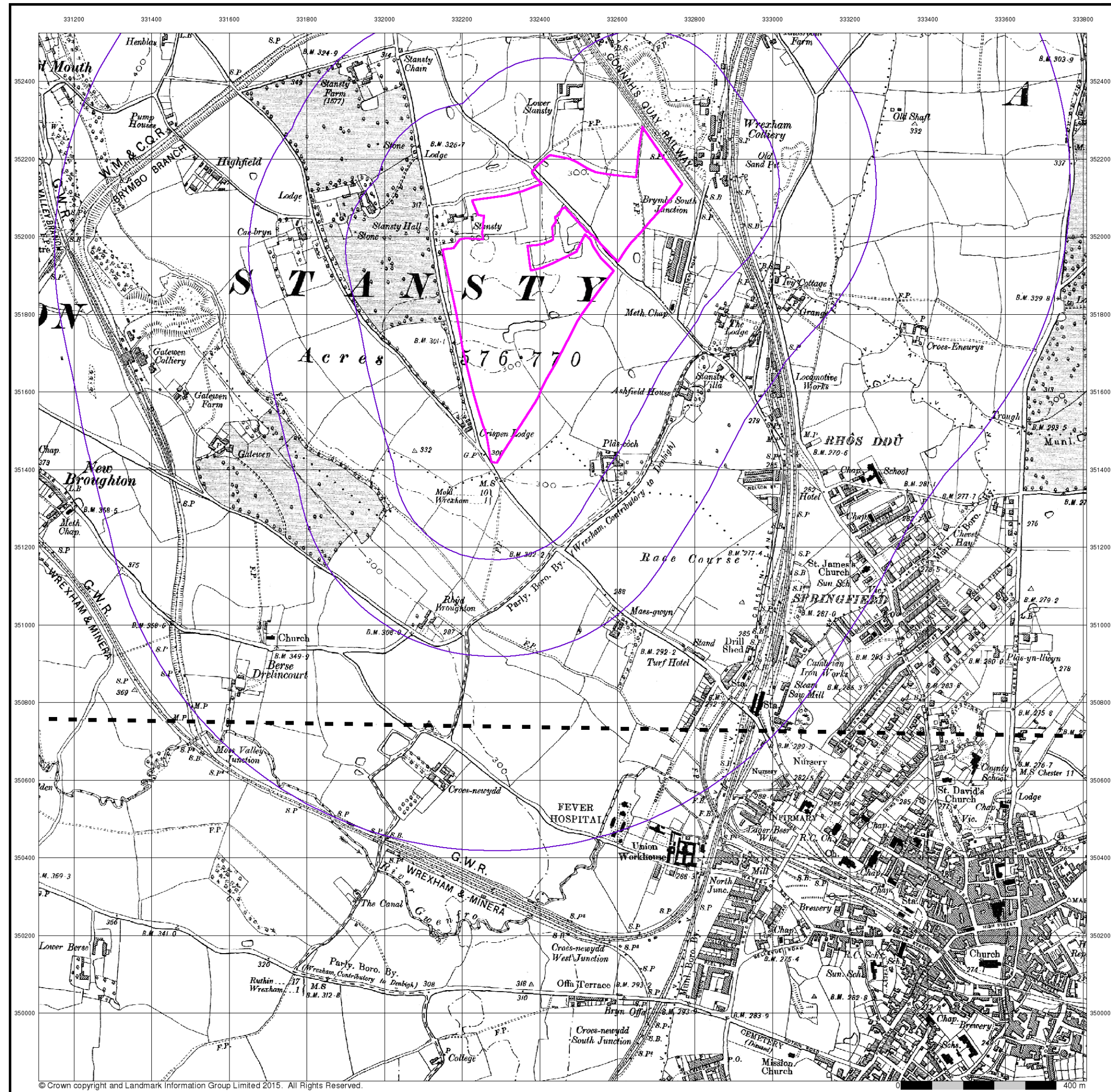
### Site Details

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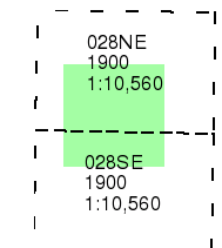
## Denbighshire

Published 1900

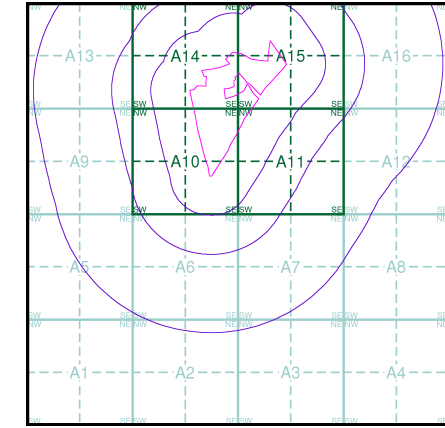
Source map scale - 1:10,560

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## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

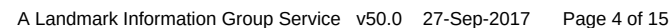
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Search Buffer (m): 1000

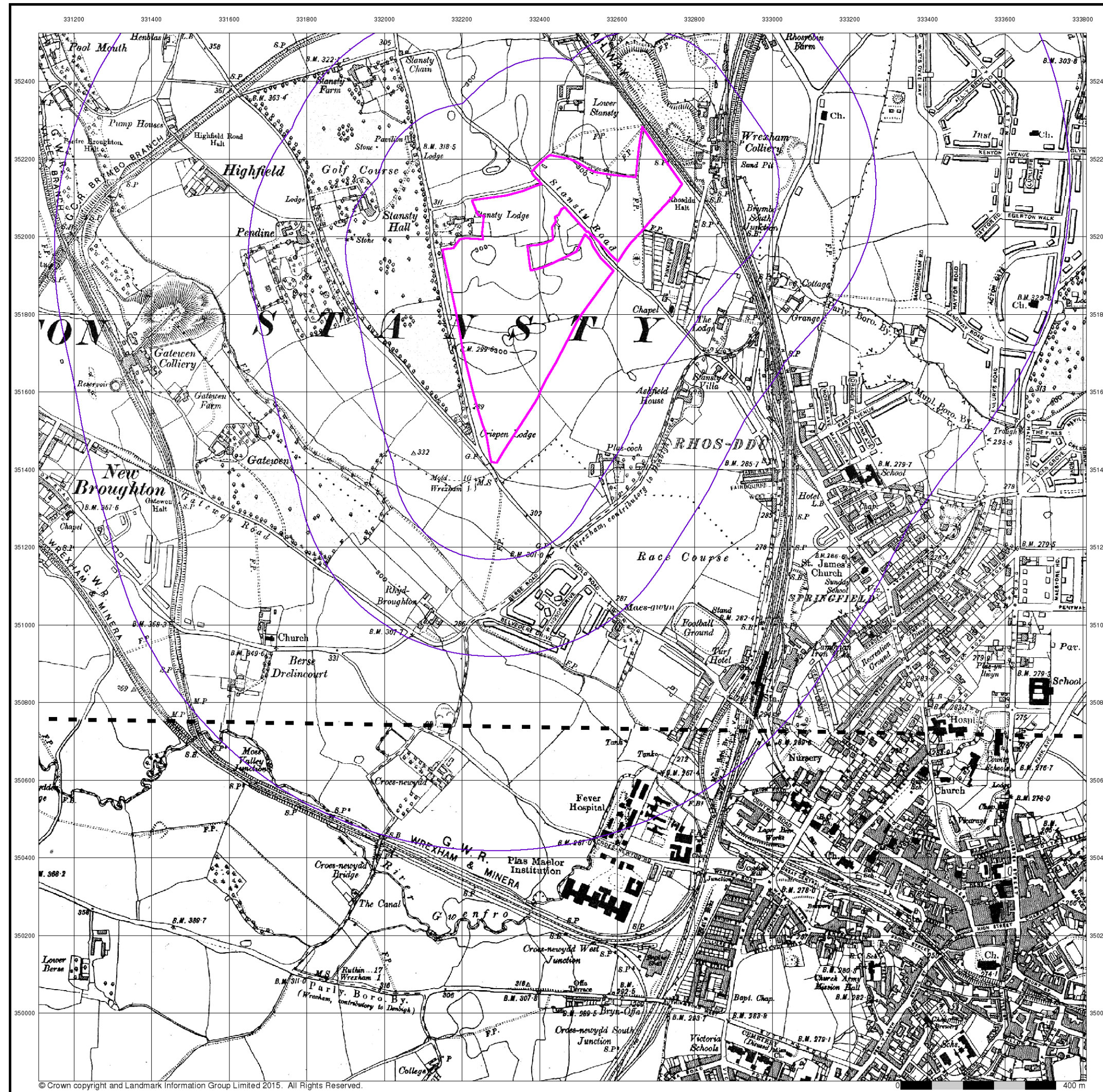
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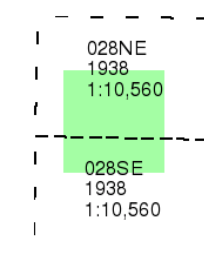
## Denbighshire

Published 1938

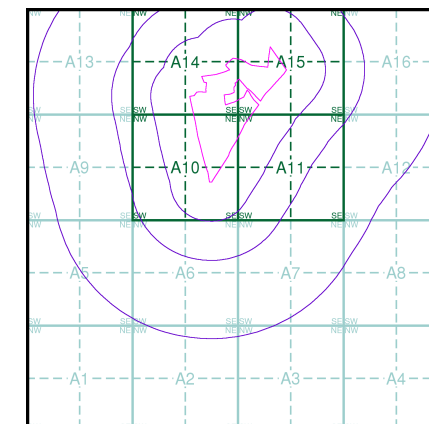
Source map scale - 1:10,560

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

### Map Name(s) and Date(s)



### Historical Map - Slice A



### Order Details

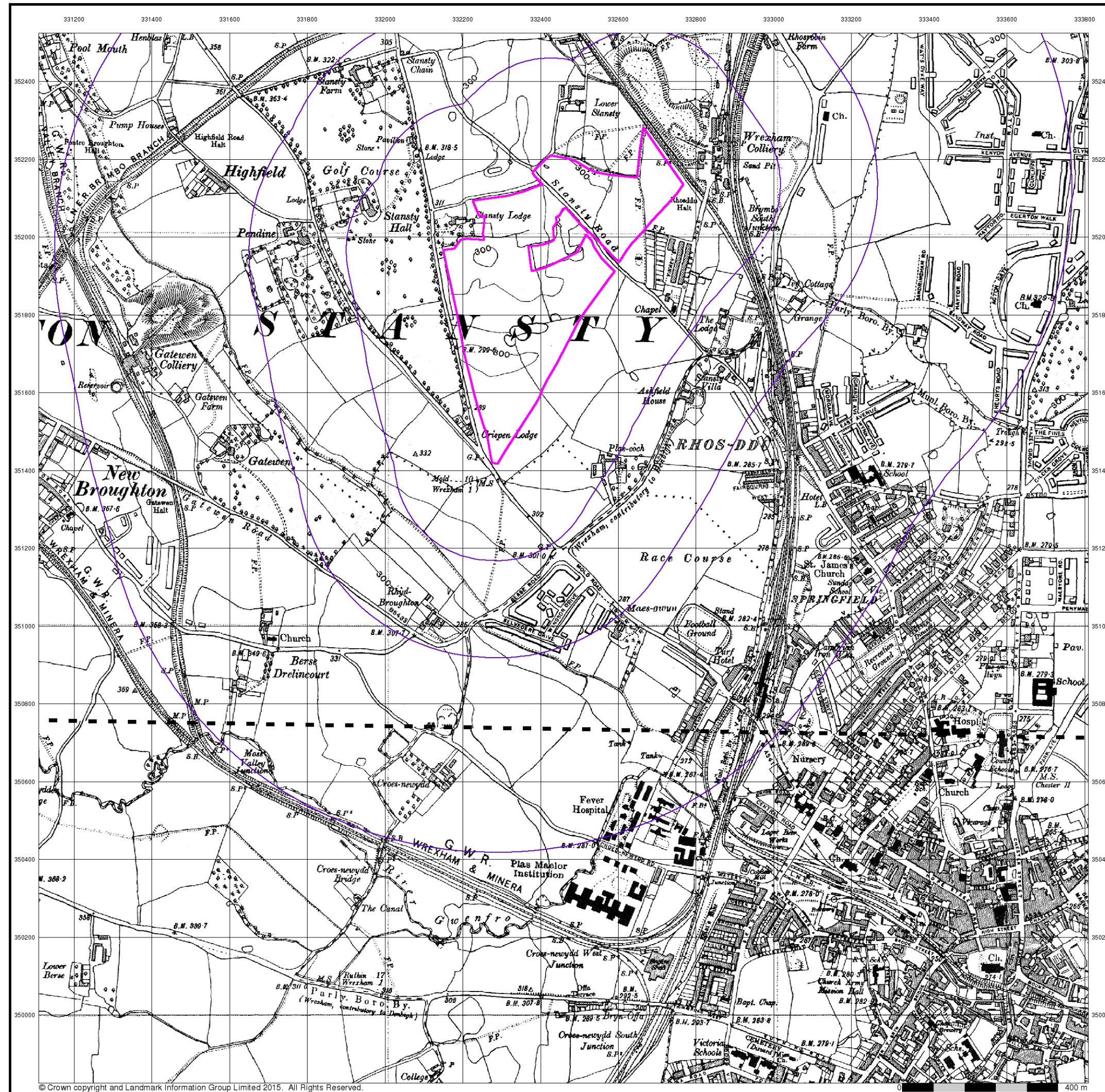
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Slice: A  
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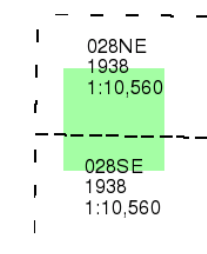
Denbighshire

Published 1938

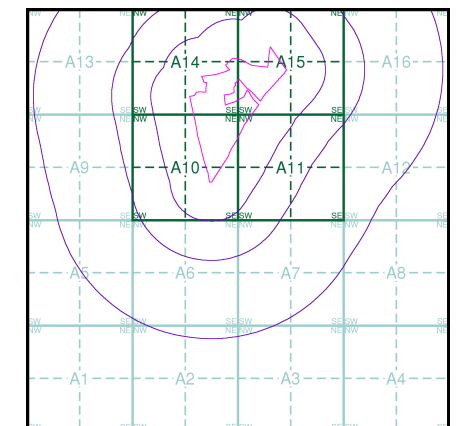
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

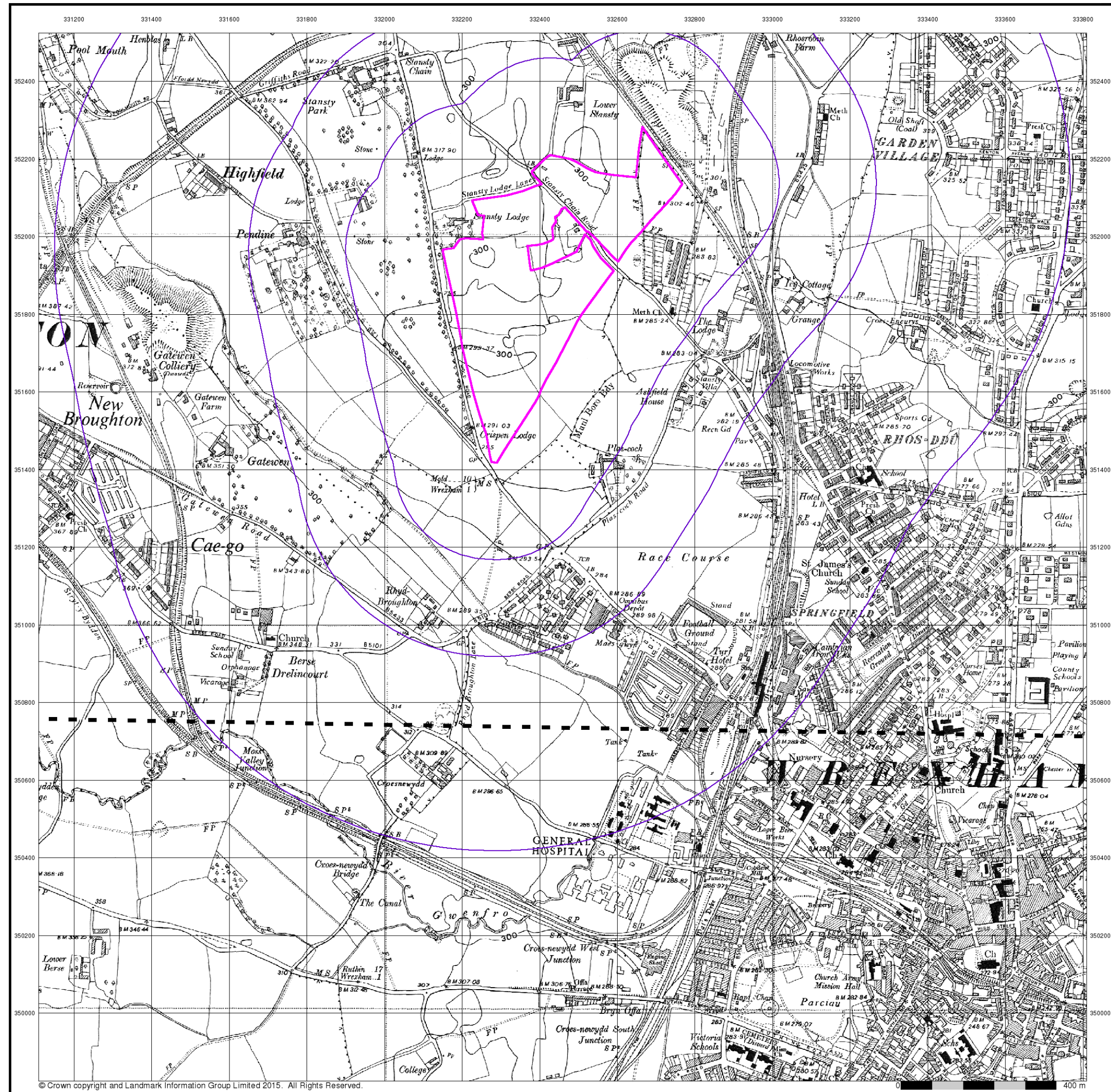
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National Grid Reference: 332390, 351620  
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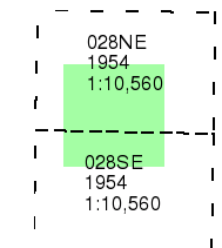
## Denbighshire

Published 1954

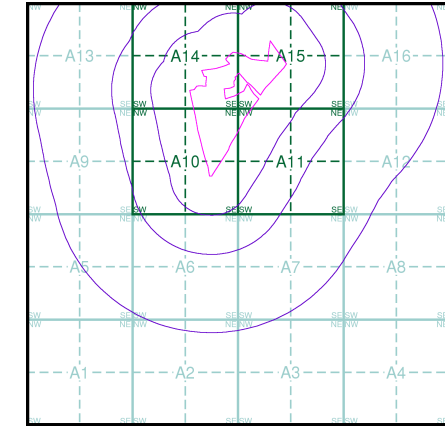
Source map scale - 1:10,560

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## Map Name(s) and Date(s)



## Historical Map - Slice A



## Order Details

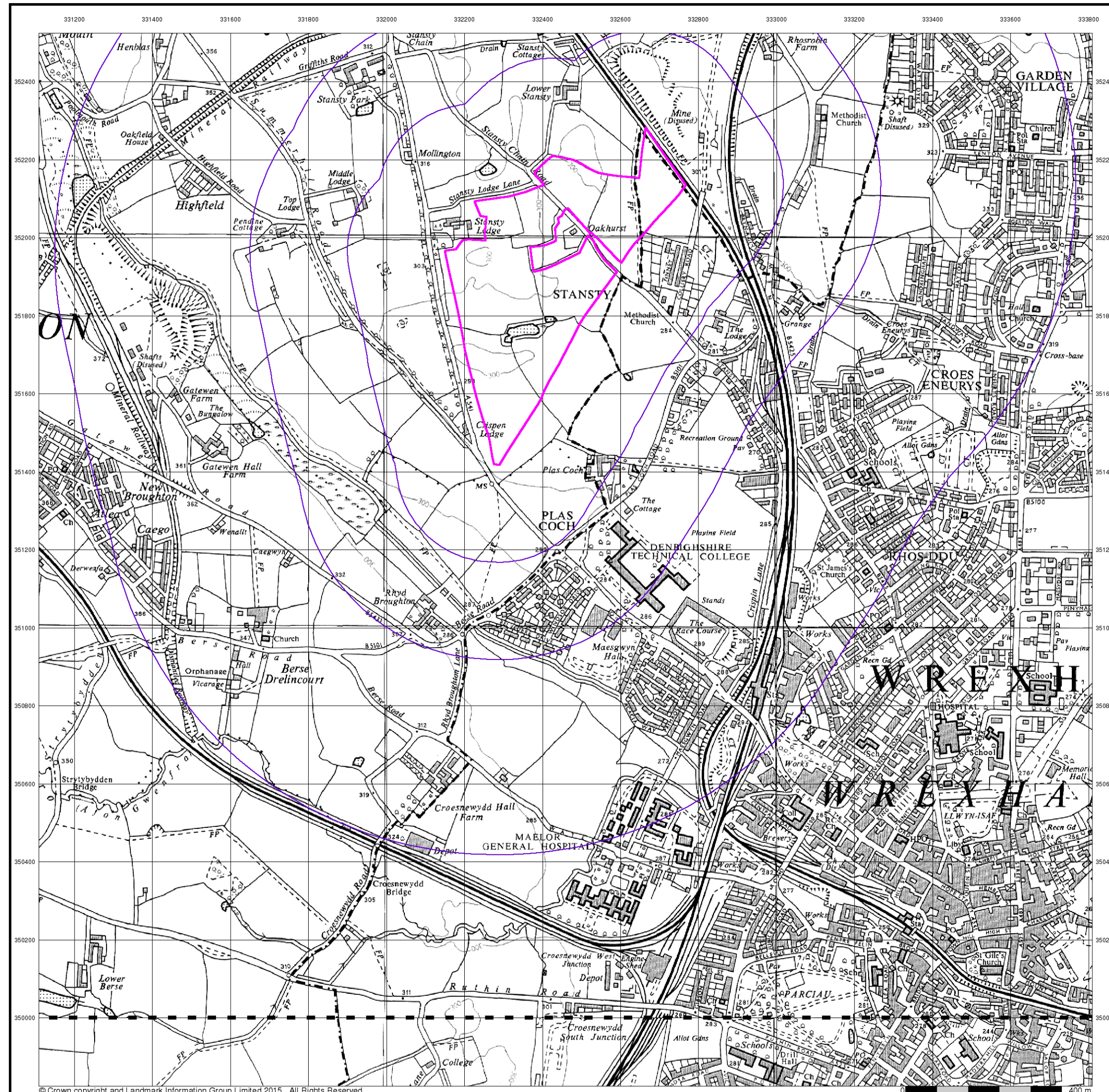
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# Ordnance Survey Plan

## Published 1964

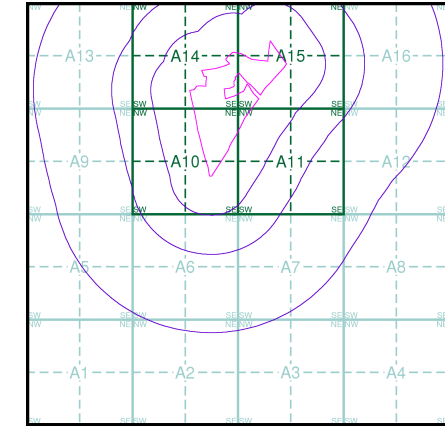
### Source map scale - 1:10,000

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.

### Map Name(s) and Date(s)

|          |      |
|----------|------|
| SJ35SW   | 1964 |
| 1:10,560 |      |
| SJ34NW   | 1964 |
| 1:10,560 |      |

### Historical Map - Slice A



### Order Details

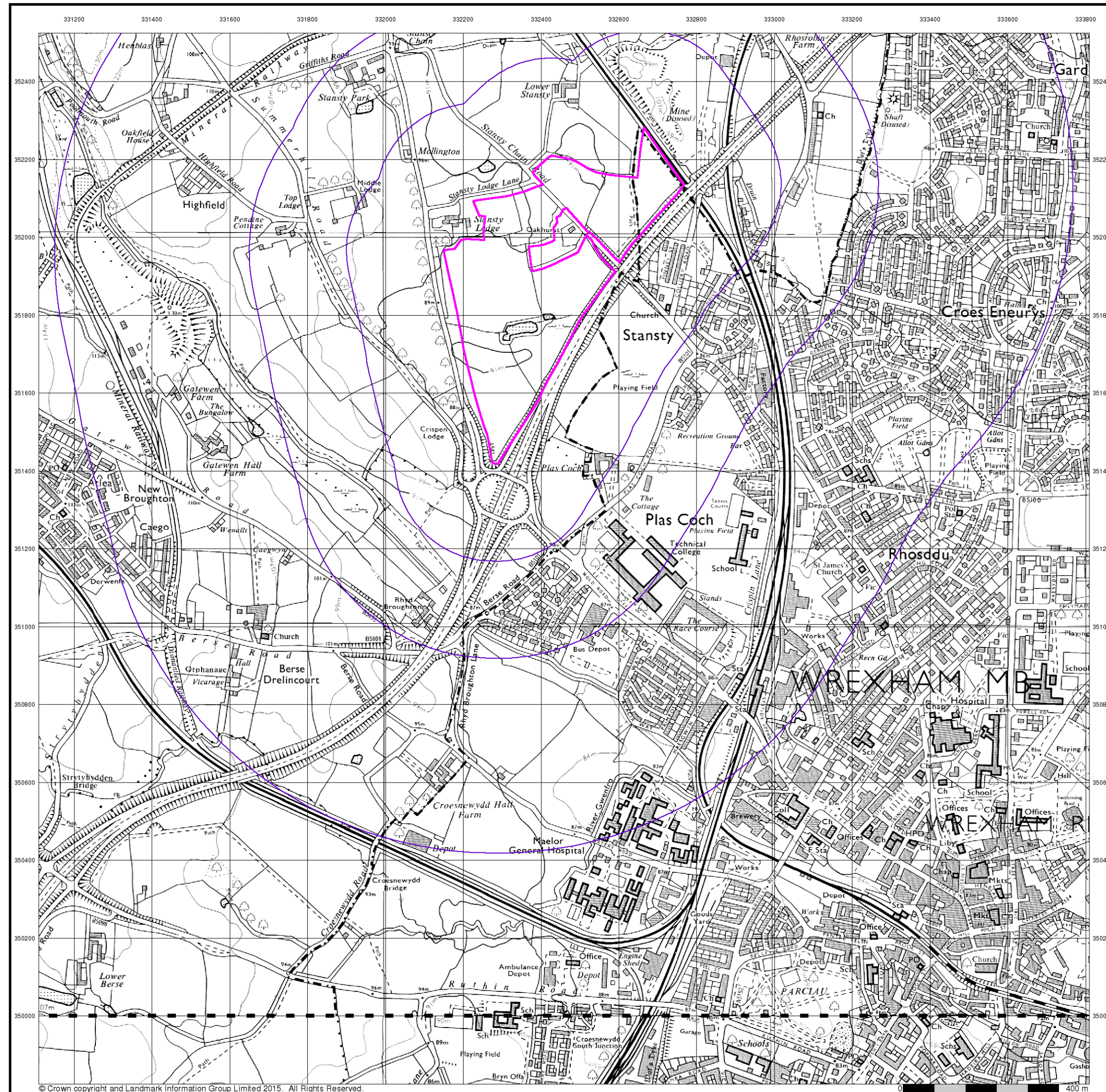
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Customer Ref: 11130/6949/hc  
National Grid Reference: 332390, 351620  
Slice: A  
Site Area (Ha): 21.41  
Search Buffer (m): 1000

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## Ordnance Survey Plan

Published 1974 - 1979

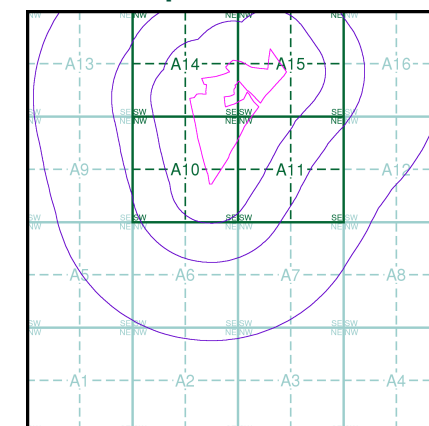
Source map scale - 1:10,000

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.

### Map Name(s) and Date(s)

|          |      |
|----------|------|
| SJ35SW   | 1974 |
| 1:10,000 |      |
| SJ34NW   | 1979 |
| 1:10,000 |      |

### Historical Map - Slice A



### Order Details

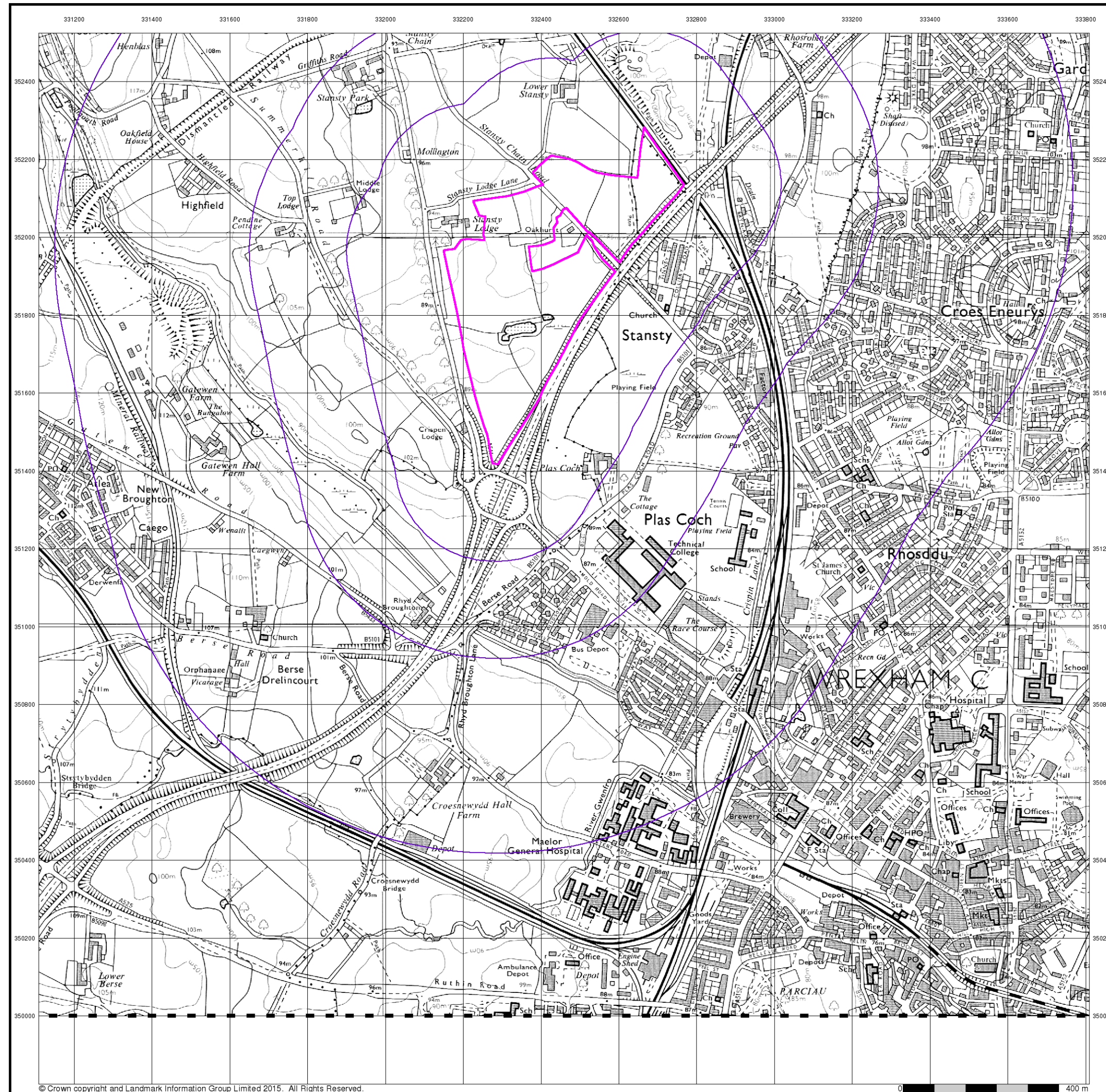
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Customer Ref: 11130/6949/hc  
National Grid Reference: 332390, 351620  
Slice: A  
Site Area (Ha): 21.41  
Search Buffer (m): 1000

### Site Details

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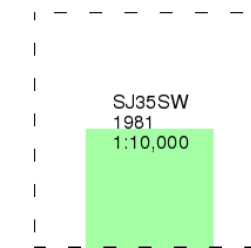
## Ordnance Survey Plan

Published 1981

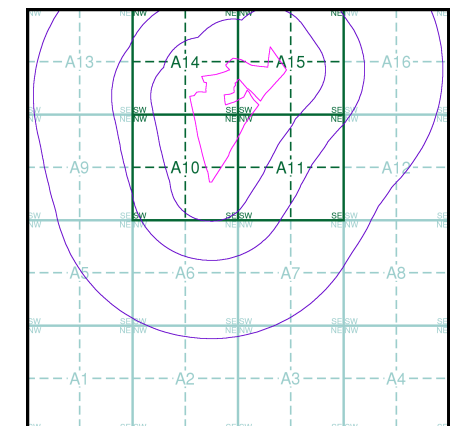
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### Map Name(s) and Date(s)



### Historical Map - Slice A



### Order Details

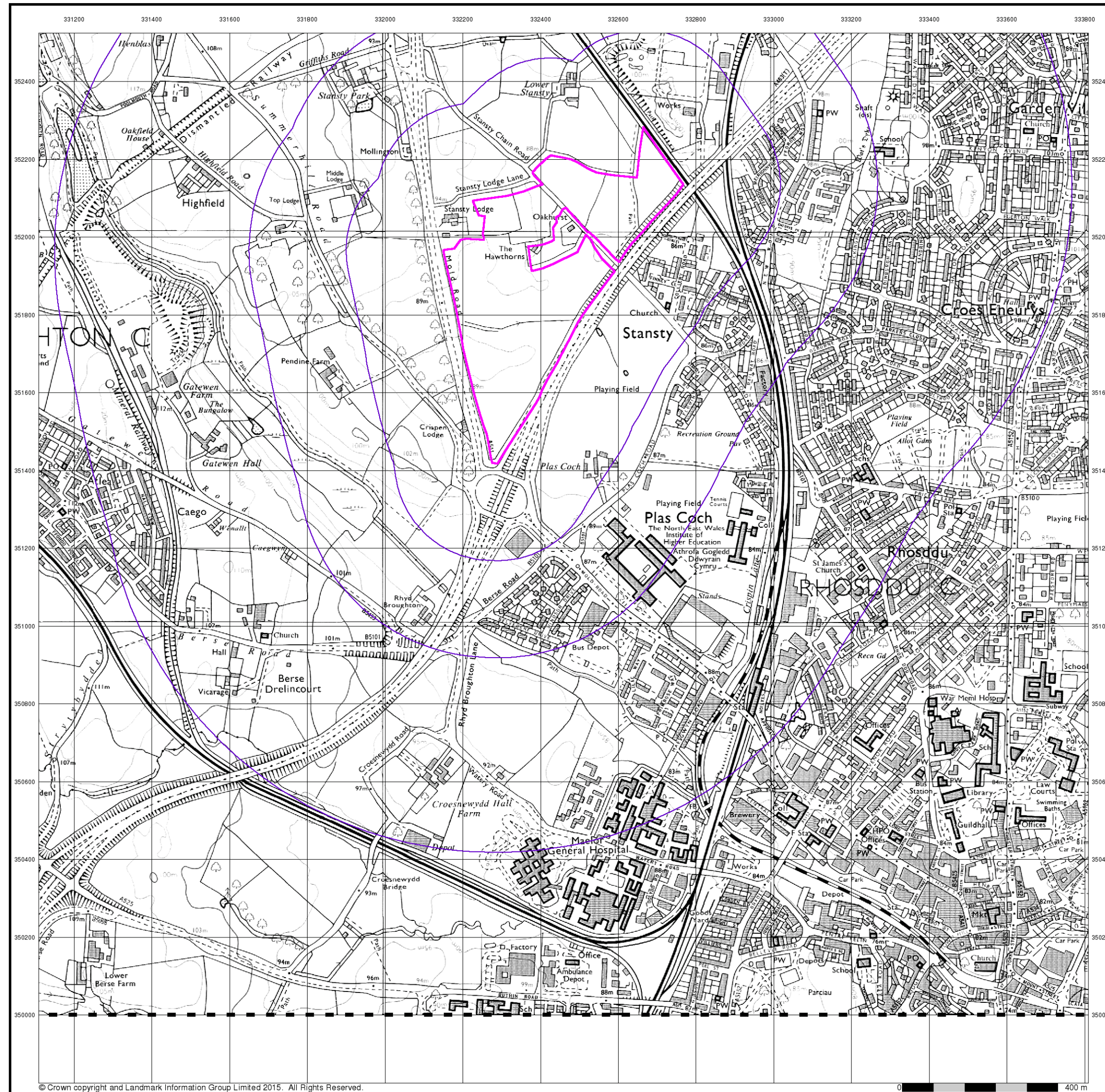
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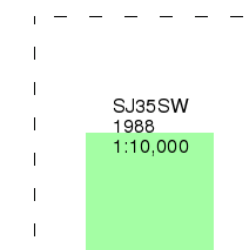
## Ordnance Survey Plan

Published 1988

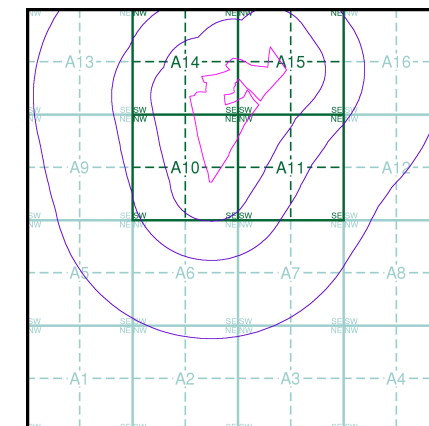
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

### Map Name(s) and Date(s)



### Historical Map - Slice A



### Order Details

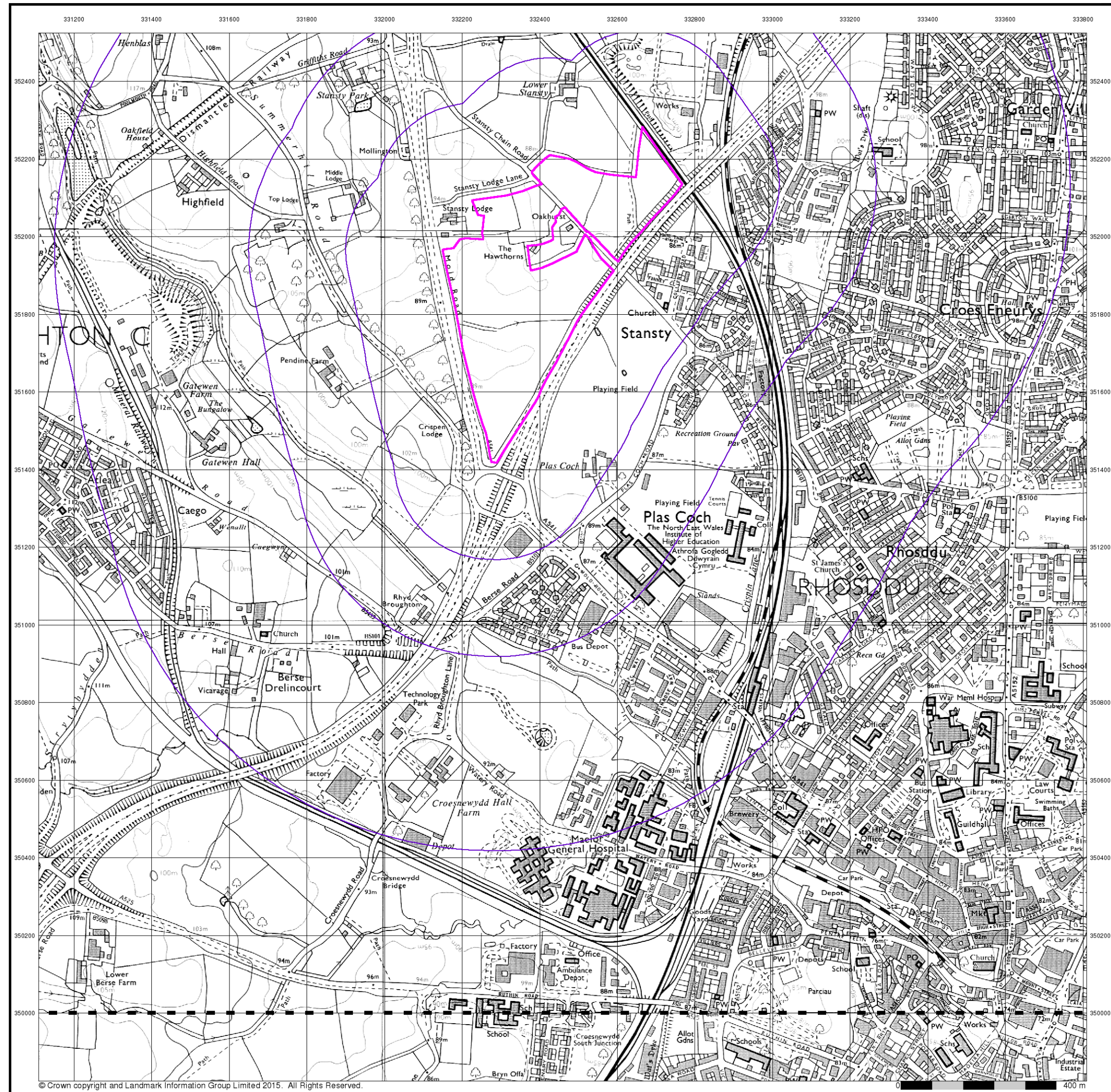
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## Ordnance Survey Plan

### Published 1990 - 1993

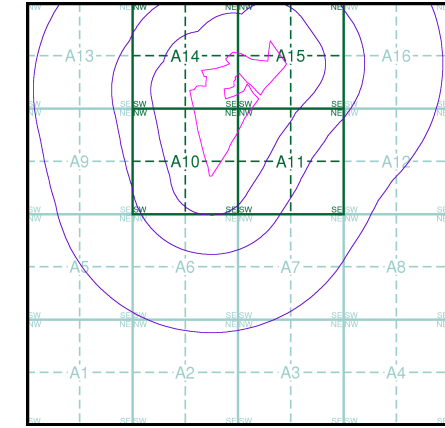
### Source map scale - 1:10,000

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.

### Map Name(s) and Date(s)

|          |      |
|----------|------|
| SJ35SW   | 1990 |
| 1:10,000 |      |
| SJ34NW   | 1993 |
| 1:10,000 |      |

### Historical Map - Slice A



### Order Details

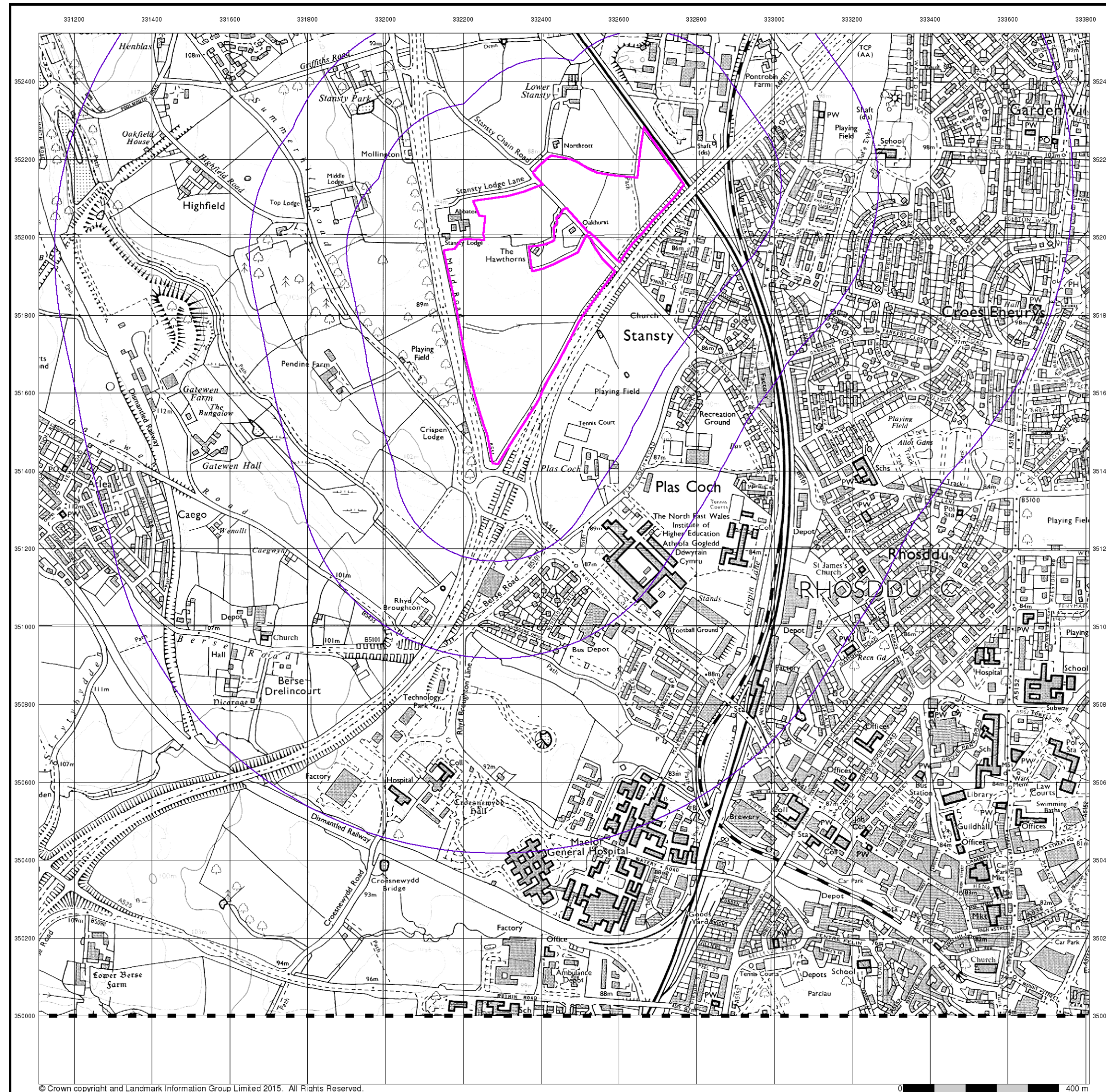
|                          |                |
|--------------------------|----------------|
| Order Number:            | 140834096_1_1  |
| Customer Ref:            | 11130/6949/hc  |
| National Grid Reference: | 332390, 351620 |
| Slice:                   | A              |
| Site Area (Ha):          | 21.41          |
| Search Buffer (m):       | 1000           |

### Site Details

Lower Stansty Farm, Chain Road, Stansty, WREXHAM, LL11 4YH



Tel: 0844 844 9952  
Fax: 0844 844 9951  
Web: [www.envirocheck.co.uk](http://www.envirocheck.co.uk)



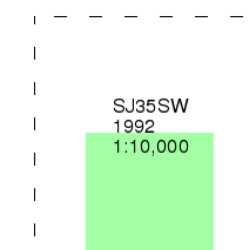
## Ordnance Survey Plan

Published 1992

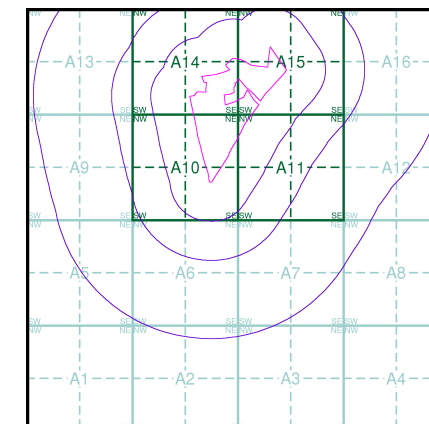
Source map scale - 1:10,000

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.

### Map Name(s) and Date(s)



### Historical Map - Slice A



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## 10k Raster Mapping

Published 2000

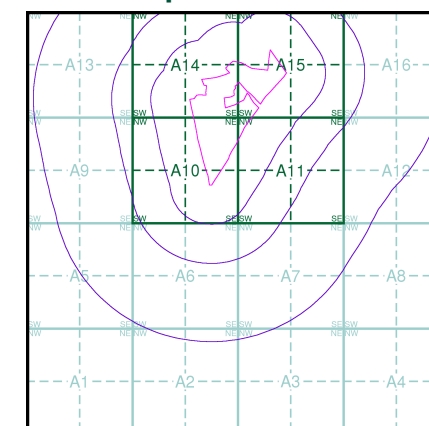
Source map scale - 1:10,000

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)

|          |      |
|----------|------|
| SJ35SW   | 2000 |
| 1:10,000 |      |
| SJ34NW   | 2000 |
| 1:10,000 |      |

### Historical Map - Slice A



### Order Details

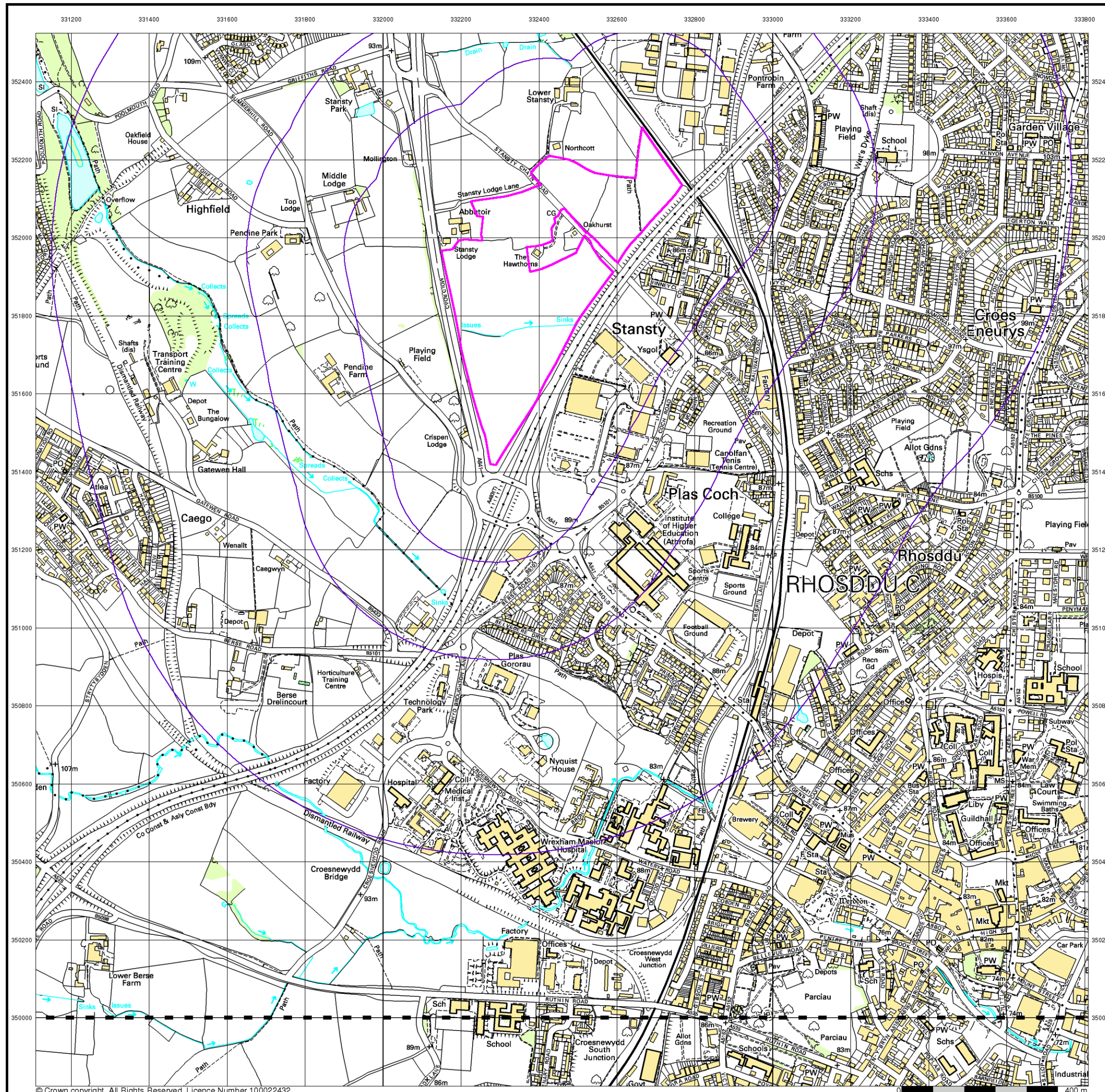
Order Number: 140834096\_1\_1  
Customer Ref: 11130/6949/hc  
National Grid Reference: 332390, 351620  
Slice: A  
Site Area (Ha): 21.41  
Search Buffer (m): 1000

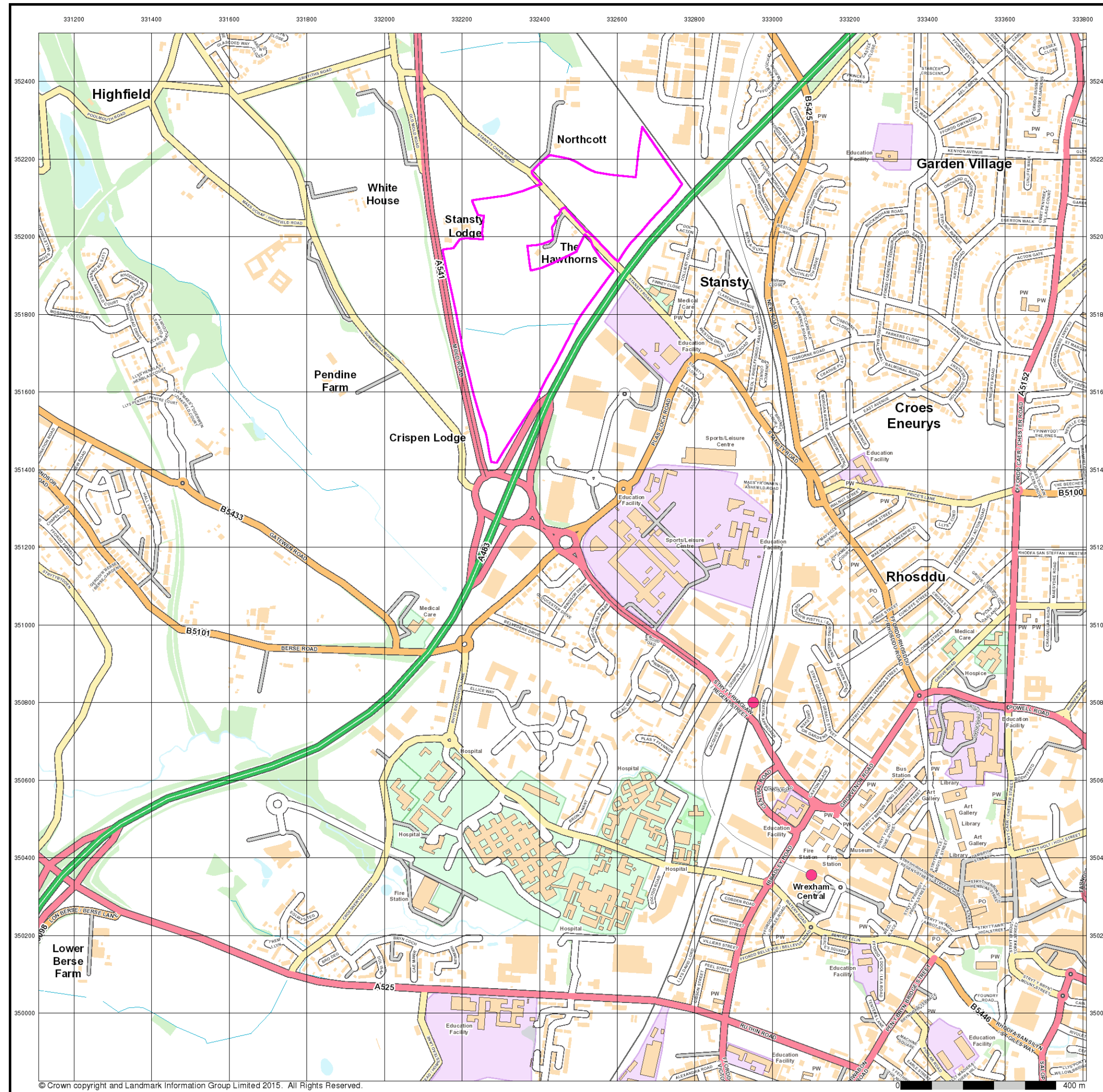
### Site Details

Lower Stansty Farm, Chain Road, Stansty, WREXHAM, LL11 4YH

**Landmark**  
INFORMATION GROUP

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## Street View

Published 2017

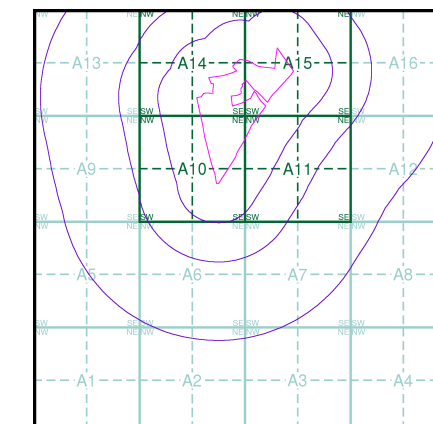
Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

## Map Name(s) and Date(s)



## Street View Map - Slice A



## Order Details

Order Number: 140834096\_1\_1  
Customer Ref: 11130/6949/hc  
National Grid Reference: 332390, 351620  
Slice: A  
Site Area (Ha): 21.41  
Search Buffer (m): 1000

## Site Details

Lower Stansty Farm, Chain Road, Stansty, WREXHAM, LL11 4YH

**Landmark**  
INFORMATION GROUP

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**APPENDIX VI  
COAL AUTHORITY  
MINING REPORT**





The Coal  
Authority

Resolving the **impacts** of mining

# Non-Residential Coal Mining Consultants Report



THE HAWTHORNS, CHAIN ROAD, STANSTY, WREXHAM,  
LL11 4YH

|                        |                   |
|------------------------|-------------------|
| Date of enquiry:       | 27 September 2017 |
| Date enquiry received: | 27 September 2017 |
| Issue date:            | 27 September 2017 |

|                 |                |
|-----------------|----------------|
| Our reference:  | 51001621258001 |
| Your reference: | 11-130-6958-EM |

# Non-Residential Coal Mining Consultants Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

## Client name

E3P

## Enquiry address

THE HAWTHORNS, CHAIN ROAD, STANSTY,  
WREXHAM, LL11 4YH

## How to contact us

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 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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# Detailed findings

## Past underground coal mining

| Colliery | Seam           | Mineral | Panel | Depth (m) | Direction to working | Disposition | Extraction thickness (cm) | Year |
|----------|----------------|---------|-------|-----------|----------------------|-------------|---------------------------|------|
| unnamed  | POWELL         | Coal    | 3U23  | 152       | Beneath Property     | 0.0         | 130                       | 1924 |
| unnamed  | CRANK          | Coal    | 3U4A  | 166       | Beneath Property     | 0.0         | 90                        | 1924 |
| unnamed  | QUAKER         | Coal    | 3U5K  | 214       | Beneath Property     | 0.0         | 140                       | 1921 |
| unnamed  | CRANK          | Coal    | 3U3W  | 218       | N                    | 0.3         | 90                        | 1924 |
| unnamed  | POWELL         | Coal    | 3VKN  | 218       | NE                   | 0.3         | 130                       | 1924 |
| unnamed  | LOWER STINKING | Coal    | 3VJL  | 227       | N                    | 0.3         | 130                       | 1924 |
| unnamed  | TWO YARD       | Coal    | 3U2W  | 235       | Beneath Property     | 0.0         | 180                       | 1924 |
| unnamed  | POWELL         | Coal    | 3U22  | 236       | W                    | 0.7         | 90                        | 1932 |
| unnamed  | TWO YARD       | Coal    | 3U2X  | 244       | Beneath Property     | 0.0         | 180                       | 1924 |
| unnamed  | MAIN           | Coal    | 3V3Z  | 244       | Beneath Property     | 0.0         | 210                       | 1917 |
| unnamed  | QUAKER         | Coal    | 3U4Y  | 251       | N                    | 0.2         | 140                       | 1921 |
| unnamed  | CRANK          | Coal    | 3U4B  | 253       | SE                   | 0.2         | 90                        | 1924 |
| unnamed  | TWO YARD       | Coal    | 3U2S  | 256       | N                    | 0.3         | 180                       | 1924 |
| unnamed  | TWO YARD       | Coal    | 3U33  | 260       | SE                   | 0.2         | 180                       | 1924 |
| unnamed  | MAIN           | Coal    | 3V42  | 267       | W                    | 0.7         | 200                       | 1932 |
| unnamed  | MAIN           | Coal    | 3V2I  | 273       | N                    | 0.2         | 210                       | 1887 |
| unnamed  | QUAKER         | Coal    | 3U5J  | 276       | Beneath Property     | 0.0         | 140                       | 1921 |
| unnamed  | QUAKER         | Coal    | 3U5O  | 281       | E                    | 0.2         | 140                       | 1921 |
| unnamed  | QUAKER         | Coal    | 3U4Z  | 286       | NE                   | 0.6         | 140                       | 1921 |
| unnamed  | MAIN           | Coal    | 3V3Y  | 299       | Beneath Property     | 0.0         | 210                       | 1917 |
| unnamed  | MAIN           | Coal    | 3V3E  | 307       | E                    | 0.2         | 210                       | 1917 |
| unnamed  | MAIN           | Coal    | 3V3W  | 312       | NE                   | 0.6         | 210                       | 1917 |

## Probable unrecorded shallow workings

None.

### Outcrops

None recorded.

### Spine roadways at shallow depth

None recorded.

### Future underground mining

None recorded.

### Licence details (AOR)

None recorded.

### Section 46 notices

None recorded.

### Geology

Faults under or close to the property recorded.

### Mine entries

| Entry type | Reference  | Grid reference | Treatment description                                                                                                                                                      | Mineral | Conveyance details |
|------------|------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------|
| Shaft      | 332352-104 | 332841 352113  |                                                                                                                                                                            | Coal    |                    |
| Shaft      | 332352-081 | 332855 352197  | Shaft filled with hardcore incorporating a concrete plug inserted at Rockhead at a depth of 46m and a reinforced concrete cap at the surface by the NCB between 1972/1973. | Coal    |                    |
| Shaft      | 332352-103 | 332845 352190  | This entry and fan drift has been filled by the Council in 1971 as part of the By-pass development works. The specification for these works is unknown.                    | Coal    |                    |

### Court orders

None recorded.

### Worked out opencast sites

None recorded.

### Coal mining related hazards

None recorded.

### Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

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

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

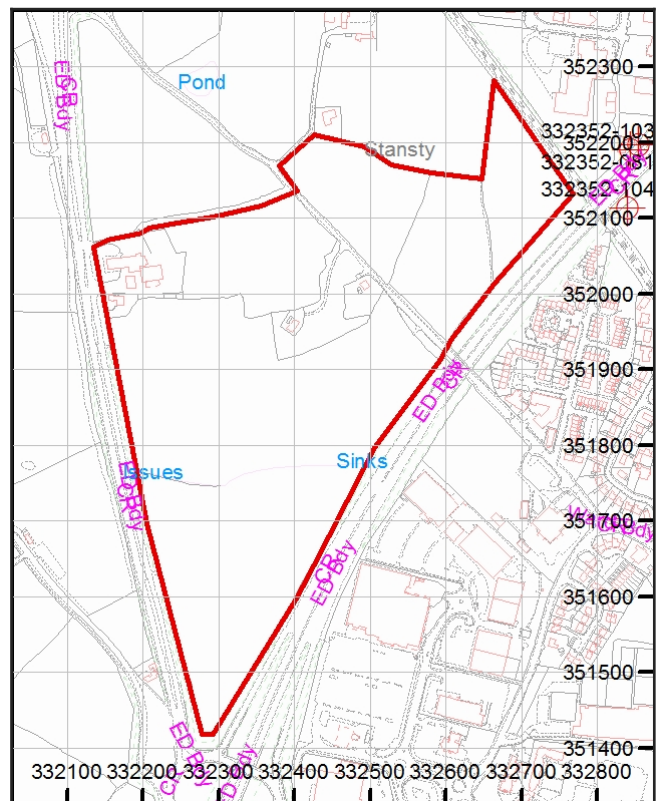
# Enquiry boundary

## Key

Approximate position of enquiry boundary shown



Disused mineshaft



## How to contact us

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 /company/the-coal-authority

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