

**STEPHEN G DALTON  
& SON**



## **SALAMANDER STREET, EDINBURGH**



### **STAGE 1 GEOENVIRONMENTAL INVESTIGATION REPORT INCORPORATING COAL MINING RISK ASSESSMENT (CMRA)**

<b>STATUS</b>	<b>REV 0 ISSUE</b>
<b>DATE OF ISSUE</b>	<b>OCTOBER 2023</b>

**SALAMANDER STREET, EDINBURGH**

**STAGE 1 GEOENVIRONMENTAL INVESTIGATION REPORT**

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Date	Issue / Revision	Details of Amendment	Authorised by:
Sept 2023	Rev 0		MAK
Nov 2023	Rev 1	Update to client name	MAK

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## EXECUTIVE SUMMARY

Johnson Poole & Bloomer Limited (JPB) were commissioned by Stephen G Dalton & Son to undertake a Stage 1 Geoenvironmental Investigation of a site at Salamander Street, Edinburgh (JPB Drawing XG240-02/R/F/01). This section provides a brief summary of the desk study findings in relation to the geotechnical, mining, chemical contamination and gas emissions issues at the site. It is understood that the intended land use is for residential apartments development.

### Invasive Plants

No invasive plants were recorded on the date of the inspection.

The ecologist noted the presence of some invasive or non-native species during the visit that may be of concern, including buddleia. The report notes that the vegetation clearance should be undertaken in a controlled manner which ensures that no further spread of these invasive weeds results.

### Historical Background

On Site	Off Site
Iron Works/Slaughter House/Reservoirs/Scrapyard	Rope Works/Reservoir/Chemical Works

### Geology

Based on our assessment of the available geological information made ground is anticipated across the site associated with the former developments and iron works on site. The underlying natural superficial deposits are shown to comprise raised marine deposits, clays, sands and gravels. These are thought to be underlain by silts and clays of marine origin.

The underlying rock strata are indicated to belong to the Gullane Formation. These typically comprise mainly interbedded sandstones with siltstones and mudstones.

### Foundation Options

The desk study has indicated the site to likely be overlain by significant made ground. Due to the inherent variability of this material it is considered that this horizon would not be very suitable as a founding horizon in its present condition. Consideration of vibro-improvement or piling may be required.

However given that peat has been identified in the underlying raised marine deposits and it is probable that vibro improvement will not be suitable and piling maybe required.

In addition the site was a former iron works and there is the potential for slag deposits which may be expansive. This could also impact on the foundation solution for the site.

A detailed site investigation will be required to confirm the foundation solution.

### Mining & Mine Entries

Examination of historical records shows no evidence of underground mining within the vicinity of the site and there is no current mining within influencing distance. The Coal Authority indicates the property is not within an area that could be affected by past recorded underground workings. The geological maps, and memoirs, the mine plans catalogues and Department of the Environment Report "Mining Instability in Great Britain", 1991 and BGS record on non-coal mining plans contain have no records of any mineworkings or mine entries beneath the site. Therefore, based on our researches the risks relating to **mining are considered to be very low.**

### Chemical Contamination and Gas Emissions

#### Stage 1 Preliminary Qualitative Risk Assessment

Risk	Risk classification
Exposure of sensitive residential receptors to contaminants	High
Migration of soil gas/vapours to on site properties	High
Phytotoxic Risks	High
Groundwater contamination at the site due to the leaching of contaminants	High
Surface water contamination at the site due to contaminants migrating to local waters	High
Exposure of buildings and services to site contaminants	Moderate

## JPB Site Evaluation and Part 2A Risk Assessment

With regard to any inherent liabilities on ownership, the liability relating to humans is considered to be **high**. In addition, the risk of pollution migrating off site is considered to be **high**. As such the related liability is considered to be **high**, primarily due to the historical land uses of the site.

Under the regulatory framework outlined in Section 2.1, the local authority has a duty to identify and enforce the remediation of “contaminated land”, by serving a remediation notice on an appropriate person. The notice would only be served if, after a period of consultation with the site owner or the person causing the pollution, no works had been carried out. **Based on this it is assumed that the site will be Priority Category 2** indicates a site that the condition is such that possibly it may not be suitable for its present use and environmental setting, due to the possible presence of contaminants. The assessment of the site is that there is only a possibility of an impact and action may be required in the medium term. This category would also fall within the legislation under the “significant possibility” term.

**By undertaking an intrusive site investigation it would be possible to reassess this categorisation with actual site data.**

### Proposed Stage 2 Investigations

On the basis of the assessment, it is considered prudent to undertake an in-depth ground investigation at the site.

Such an investigation would allow any issues of concern regarding protection of site workers, potential environmental liabilities associated with the site and any financial implications during redevelopment to be more fully assessed.

## 1.0 INTRODUCTION AND BRIEF

This report presents the findings of the Stage 1 Geoenvironmental Investigation carried out for a site at Salamander Street, Edinburgh (JPB Drawing XG240-02/R/F/01). JPB were commissioned by **Stephen G Dalton & Son** to prepare this assessment on their behalf. It is understood that the intended land use is for residential apartments development. A client supplied drawing showing the current development proposals is given in Appendix 1.

The purpose of this report is to identify the potential geotechnical, environmental and mining constraints to the site and the potential for land contamination from current or previous site uses, or from the surrounding land use. In addition, we have undertaken an evaluation of the potential for excessive soil gas emissions or mining instability. Issues which could lead to potential environmental or financial liabilities affect the land value relating to the ground conditions or impact on redevelopment options has been identified. Recommendations for further investigations have been provided where appropriate.

In the preparation of this report we have studied relevant information held within our archives which included editions of past and present Ordnance Surveys, geological maps and memoirs, archive borehole information and other documentation. Our researches using the above data are now complete and this report presents our interpretation of the data examined.

This report has been prepared and written on behalf of Stephen G Dalton & Son in the context of the purpose stated above and should not be used in any differing context. No duty of care extends to any third party that may make use of the information unless written confirmation has been provided by Johnson Poole & Bloomer Ltd. In addition, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances, or after the expiry of one year from the date of the report, it should be referred to us for reassessment and, if necessary, amendment. No action or proceedings can be commenced against the JPB after the expiry of 12 years from the date of this report.

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## 2.0 METHODOLOGY

### 2.1 Regulatory Framework

The assessment of potentially contaminated sites and the associated risk to the proposed development is dependent on a number of factors namely, the intended site end use, distribution and level of contamination, characteristics of the soil (i.e. pH, permeability) the groundwater regime and the sensitivity of the surrounding area. An analysis of the interaction between these various factors allows a decision to be made with regard to the extent of any remedial measures required for the development.

The contaminated land provision of the Environment Protection Act 1990, inserted by Section 57 of the Environment Act 1995, came into force in July 2000. In May 2006 the Scottish Executive issued a revised Statutory Guidance Edition 2 (SE/2000/43). Within this “Contaminated Land” is defined as

*“Any land ..... in such a condition by reason of substances in, on or under the land, that*

- a) significant harm is being caused or there is a significant possibility of such harm being caused; or*
- b) pollution of the water environment is being, or is likely to be caused;”*

In addition *“the questions*

- a) what harm or pollutant of the water environment is likely to be regarded as significant*
- b) whether the possibility of the significant harm or significant pollution of all the water environment being considered significant”*

In addition PAN 33 is affected by this and requires a “suitable for use approach” which requires remediation only where there are unacceptable risks to health and the environment depends on the current and proposed end use.

In addition, the guidance requires a significant contaminant linkage to be present which includes

- A source (pollutant)
- A pathway
- A receptor

JPB have therefore developed a risk assessment approach based on this philosophy. The overall process of risk assessment for sites employed by JPB is summarised for a Stage 1 Geoenvironmental Investigation as follows.

### 2.2 Stage 1 - Preliminary Investigation

#### *Technical Guidance*

The methodology utilised for this desk study follows the specifications outlined in BS10175, Investigation of Potentially Contaminated Sites – Code of Practice, CLR2 “Guidance on Preliminary Site Inspection of Contaminated Land” and CLR6 “Prioritisation and Categorisation Procedure for Sites which May be Contaminated” and CIRIA C552, “Contaminated Land Risk Assessment”. The report also takes cognisance of the information contained in the guidance documents “Risk Based Approach to Development Management – Resources for Developers” published by the Coal Authority in and CIRIA C758 “Abandoned Mine Workings Manual”.

The research is now complete and this report presents the interpretation of the data examined.

#### *Site Reconnaissance*

A walkover survey was carried out on 25 September 2023 to determine the existing site conditions and operations. A photographic record of the site taken during the walkover survey is presented in Appendix 2.

A walkover was carried out by ecologist in September 2023 in order to identify the presence of any invasive plants. A record of the study is given in Appendix 3

#### *Desk Study*

During the study, documentary research included an examination of the Ordnance Survey maps for details regarding previous site and adjacent land uses. As part of our researches JPB obtained historical map extracts (Appendix 4) together with British Geological Survey (BGS) supplied borehole logs (Appendix 5).



Similarly the available geological maps were examined to determine the geological/hydrogeological conditions beneath and adjacent to the site. In addition, regional memoirs were consulted together with mine abandonment plan data and any available borehole records, in order to assess the mining conditions with a view to assessing the risk to the proposed development arising from the possible presence of mining.

Information was also obtained from the SEPA website and a review of in-house information. Results of the SEPA researches are presented in Appendix 6. An Envirocheck Report of environmental database information was also obtained and is presented in Appendix 7. Information from the Local Authority Petroleum Officer was obtained and is included in Appendix 8.

A Zetica Map and desk study has been obtained with regard to the assessment of any risks which may or may not be posed by Unexploded Ordnance (UXO) at the site. A copy of this map can be found in Appendix 9.

#### *Conceptual Site Model*

A Conceptual Site Model (CSM), which describes how potential chemical sources at the site could contribute to increased levels of risk to potentially sensitive receptors, has been developed at an early stage and constantly reassessed in light of investigative findings. This has been generated in accordance with Guide to Good Practice for the Development of Conceptual Models and the Selection and Application of Mathematical Models of Contaminant Transport Processes in the Subsurface - National Groundwater & Contaminated Land Centre report NC/99/38/2 – Environment Agency 2001.

The first step in developing such a model is to identify whether there are potential hazards which may pose a risk on the site through desk top research and professional judgement. In addition, information regarding the site-specific environmental setting including geology, hydrogeology, hydrology etc, is gathered in order to assess the potential exposure pathways which are likely to exist and the location of humans and environmental resources which could be impacted by the site.

#### *Stage 1 Preliminary Quantitative Risk Assessment*

Contaminants are likely to be present at the site and ground gases may be being generated, therefore risks posed by the site to receptors have been evaluated in accordance with the methodology given in the guidance document CIRIA C552. This methodology for risk evaluation is a qualitative method of interpreting the available data from the information gathering phase of the assessment. It involves the classification of the:

- magnitude of the probability (likelihood) of the risk occurring.
- magnitude of the potential consequence (severity) of risk occurring

Once the consequence and probability have been classified, a risk category, ranging from "very high risk" to "very low risk", can be assigned to each possible contaminant linkage.

Chemical contamination and ground gas risks are assessed in accordance the source-pathway-receptor concept and contemporary contaminated land guidance. Risks posed to the water environment are assessed in accordance with current Scottish Government and SEPA guidance.

#### *Site Prioritisation – Part 2A Considerations*

JPB'S Site Evaluation Risk Assessment (SERA model) was utilised in order to prioritise the site, based on the methodology set out in the Department of the Environment Contaminated Land Review Report No. 6 (DOE CLR No.6). The SERA model has been developed to evaluate sites by determining the level of priority the site should be given based on the source-pathway-receptor model. The model is based on DOE Report CLR6 and Part 2A of the EPA but develops the principles further than CLR6 by determining the level of priority of a site more objectively and in more detail. The results of the SERA assessment procedure are given in Appendix 10.

### **3.0 SITE DETAILS**

#### **3.1 Site Walkover**

The site is located in the Leith area of Edinburgh, approximately centred on Ordnance Survey National Grid Reference NT 276 762. A selection of site photographs is presented in Appendix 3. The site covers an area of approximately 0.49 hectares.

At the time of the site walkover on 25<sup>th</sup> September 2023 the site comprised of an active scrap yard, with a building in the south-east corner. The site was bounded by Salamander Street to the north, by Salamander Place to the west and by buildings with multiple businesses in to the south and east respectively.

The site was occupied by an active scrap yard, multiple piles of metal scrap, cars and kitchen appliances were present across the site. As well as multiple containers full of various fuels and liquids such as windscreen wash, were spread across the site. A petrol tank and tanks for contaminated fuel and antifreeze were also noted.

#### **3.2 Invasive Plant Survey**

An invasive plant survey was carried out during the works prior to commence of the investigation. The report is included in Appendix 2. The summary of the report is.

No Japanese Knotweed, Giant Hogweed or Himalayan Balsam plants were identified during the walkover.

However, the ecologist noted the presence of some invasive or non-native species that may be of concern, including Buddleia during the visit. The report notes that the vegetation clearance should be undertaken in a controlled manner which ensures that no further spread of these invasive weeds results.

#### 4.0 HISTORY OF LAND USE

An investigation of the past usage of the site can often provide an indication of the presence of potentially contaminated soils arising from processes associated with former land uses. These researches can help to identify any potential constraints to developments upon which physical investigations can then concentrate. Past copies of Ordnance Survey Maps and air photos were examined, with particular attention being given to the industrial heritage of the study area and the changing land use of the site. The summary of the historical land uses identified on and adjacent to the site are described below.

Ordnance Survey Edition (Appendix 4)	On Site	Surrounding Area
1853	Large warehouse building occupies site.	Site sits in an industrial area by the docks and is therefore surrounded by large industrial buildings. Water lies to the north of site, approx. 250m away.  A chemical works is shown immediately to the north and the Edinburgh and Leith Glass works is located. 50m north west.  A soap works forms the eastern boundary with Edinburgh Ropery and Cloth Manufacturer to the west and Leith Ropery to the south.
1855	No significant changes	To the south of site is the town of Leith with many houses and Leith Links (a recreational park).  Multiple docks are present to the north west including Albert Dock and Leith Dock.
1876-1878	The site is shown to be occupied by Leith Slaughter House in the west and an Iron Works in the east. Several reservoirs are shown on the southern boundary with one just encroaching onto the southern margin of the site.	Reservoirs are shown 50m to the south of the site between the Leith and Edinburgh Ropery works
1895	The reservoirs are no longer shown on the site and the Iron Works are not labelled	The chemical works to the north is labelled as Lothian Chemical Manure and Sulphuric Acid Works.  A smallpox hospital is present approximately 200m to the south of the site.
1896-1897	No significant changes	Sands of Leith noted at the coast, north and east of site.  South Leith goods station noted approx. 400m north of site.
1908/09	No significant changes	Leith goods and mineral station noted approx. 100m south of site on the former ropery.  The ropery to the west is now labelled as a biscuit factory and warehouse.
1914	No significant changes	No significant changes
1915-1920	No significant changes	An engine house is noted in Edinburgh Dock, approx. 500m north of site.  Continued development to Leith and expansion of the train lines which connect to the docks.
1931-1932	No significant changes	Continued development to Leith, including the Links School which is approx. 500m south of site.
1938	No significant changes	No significant changes
1938-1946	No significant changes	Bacon curing factory now present 150m south of site.  Links Distillery now present 500m west of site.  Allotment gardens added across Leith residential areas including beside the Links School.

Ordnance Survey Edition (Appendix 4)	On Site	Surrounding Area
1946	No significant changes	A chemical works is shown on the eastern boundary.
1948	No significant changes	Area of site now titled South Leith Ward Oil and fat refinery present 100m east of site.
1955	No significant changes	No significant changes
1966	No significant changes	No significant changes
1971/73	Some of the buildings have been demolished on site	Chemical works to the north and east now titled fertiliser works with a fertiliser store approx. 500m north east of site, to the east of the fertiliser store lies an edible fat works.
1985	No significant changes	Train station no longer present to the south of site, and this is identified as a warehouse.
1989	The site is labelled a scrap yard	Biscuit factory now bonded warehouse. Warehouse to the south is no longer shown and the train station to the north is not labelled. Area to the west of site now named harbour ward.
1992	No significant changes	Lorry park 250m north west of site.
1994	No significant changes	No significant changes
1999	Only one building left on site in the south east corner	Continued urban development
2006	No significant changes	Continued urban development
2009	No significant changes	No significant changes
2023	No significant changes	Buildings located to the south of the site

## 5.0 GEOLOGICAL ASSESSMENT

### 5.1 General Geology

An initial appreciation of the general geological conditions underlying the site was made from the available Geological Survey sheets (JPB Drawings XG240-02/R/F/02 and 03), BGS supplied borehole logs (Appendix 5). The following is a summary of the indicated conditions as interpreted from the above information by JPB.

<b>Made Ground</b>	As the site has been developed as an iron works and before that multiple warehouse's, significant made ground is anticipated to be present across the site.
<b>Natural Superficial Deposits</b>	<p>Raised marine deposits comprising mainly clays/silts/sands are indicated to be present across the site. These have been recorded to 8m depth and peat has been noted in the locality although further west.</p> <p>These in turn appear to be underlain by glacial till deposits which have been proven to in excess of 20m.</p> <p>The anticipated depth to rockhead is unknown.</p>
<b>Rock Strata</b>	The underlying rock strata are indicated to belong to the Gullane formation. These typically comprise interbedded sandstones, siltstones and mudstones.

### 5.2 Hydrology and Hydrogeology

The available information, including SEPA's online water environment data (Appendix 6), indicates that the following hydrological and hydrogeological conditions are present at the site.

<b>Surface Water Features</b>	<p>The nearest major surface water feature to the site is the Kinghorn to Leith docks located 270m to the north.</p> <p>SEPA's Draft River Basin Management Plan online classifies the Kinghorn to Leith docks as being of "Good" ecological potential, with an overall ecological status of "Good" and a chemical status of "Pass".</p> <p>No surface water abstractions were recorded within 1km of the site.</p>
<b>Superficial Deposits</b>	<p>Made ground deposits may be present and may comprise granular materials. It is considered that these will have a medium to high permeability and are therefore susceptible to contamination.</p> <p>Raised marine deposits comprising clays, sands and gravels are present locally and are likely to have a moderate permeability and therefore a moderate susceptibility to contamination.</p> <p>Glacial till may be present which is stiff, silty, sandy clay with rock clasts and irregular bands or lenses of sand and gravel. This is considered to be of low permeability, to have a low susceptibility to contamination and may afford some protection to the underlying strata from the downward percolation of mobile contaminants.</p>
<b>Rock Strata</b>	SEPA Water Environment Hub online maps indicate that the site is underlain by the Edinburgh Coastal (ID:150724). This is reported to have an overall status of "Good" and to be of "Good" quality under the quantitative classification and to have a "Good" chemical status.
<b>Groundwater Abstraction</b>	The Envirocheck report (Appendix 6) indicated there are no groundwater abstraction records with 1km of the site. However the BGS indicate several wells associated with the former industrial uses in

### 5.3 Geo-Hazards

Johnson Poole & Bloomer commissioned an "Envirocheck" UK regulatory authority database search (Appendix xx) to obtain information on various operations within a 1 km radius of the centre of the site. A plan showing the location of these operations is presented in Appendix 7. The key findings of geological hazards database search are summarised below. JPB's default distance for commenting on features in the vicinity of the site is 50m.

<b>Geo-hazard</b>	<b>Distance from site measured to the registered location (i.e. centre of the site)</b>	<b>Hazard Rating</b> <b>No Hazard/Very Low/Low/Medium/High</b>
Potential for Collapsible Ground Stability Hazards	None within 1km	No hazard

Geo-hazard	Distance from site measured to the registered location (i.e. centre of the site)	Hazard Rating No Hazard/Very Low/Low/Medium/High
Potential for Compressible Ground Stability Hazards	None within 1km	No hazard
Potential for Ground Dissolution Stability Hazards	None within 1km	No hazard
Potential for Landslide Ground Stability Hazards	One on site (SW)	Very low
Potential for Running Sand Ground Stability Hazards	One on site (SW)	Very low
Potential for Shrinking or Swelling Clay Ground Stability Hazards	None within 1km	No hazard

#### 5.4 Foundation Options

The desk study has indicated the site to likely be overlain by significant made ground. Due to the inherent variability of this material it is considered that this horizon would not be very suitable as a founding horizon in its present condition. Consideration of vibro-improvement or piling may be required.

However given that peat has been identified in the underlying raised marine deposits and it is probable that vibro improvement will not be suitable and piling may be required.

In addition the site was a former iron works and there is the potential for slag deposits which may be expansive. This could also impact on the foundation solution for the site.

A detailed site investigation will be required to confirm the foundation solution.

## 6.0 QUARRYING, MINING AND MINE ENTRIES

### 6.1 Quarrying

There is no indication of quarrying on site or in the immediate vicinity.

### 6.2 Mining Conditions

#### Underground Mining

The objective of this part of the assessment was to undertake a desk study review of the indicated site geology and the underlying mining conditions with a view to assessing the risk to the proposed development arising from the possible presence of mining.

Examination of historical records shows no evidence of underground mining within the vicinity of the site and there is no current mining within influencing distance. The Coal Authority indicates the property is not within an area that could be affected by past recorded underground workings. The geological maps, and memoirs, the mine plans catalogues and Department of the Environment Report "Mining Instability in Great Britain", 1991 and BGS record on non-coal mining plans contain have no records of any mineworkings or mine entries beneath the site. Therefore, based on our researches the risks relating to **mining are considered to be very low.** .

## 7.0 REGULATORY SEARCH

### 7.1 Regulatory Database

Johnson Poole & Bloomer commissioned an “Envirocheck” UK regulatory authority database search (Appendix 7) to obtain information on various operations within a 1 km radius of the centre of the site. A plan showing the location of these operations is presented in Appendix 7. The key findings of regulatory database search are summarised below. JPB’s default distance for commenting on features in the vicinity of the site is 250m with the exception of COMAH and landfills for which it is 1km.

Licence/Data Type	Distance from site measured to the registered location (i.e. centre of the site)	Operation
<b>Regulators</b>		
Contaminated Land Register Entries and Notices	None within 250m	-
Discharge Consents to Controlled Waters	1 within 250m	Forth Dry Dock Co 226m from site Location: Edinburgh dock, Leith docks Edinburgh Authority: SEPA Discharge type: Septic tank
Enforcement and Prohibition Notices	None within 250m	-
Integrated Pollution Controls	None within 250m	-
Integrated Pollution Prevention and Control	None within 250m	-
Local Authority Integrated Pollution Prevention and Control	None within 250m	-
Local Authority Pollution Prevention and Controls	2 within 250m	Dalton Demolition Located on site 52-66 Salamander Street, Leith, EH6 7LA Authority: SEPA Process type: Air pollution controls Description: mobile screening and crushing processes
Local Authority Pollution Prevention and Control Enforcements	None within 250m	-
Pollution Incidents to Water Environment	None within 250m	-
Prosecutions Relating to Authorised Processes	None within 250m	-
Prosecutions Relating to Water Environment	None within 250m	-
Registered Radioactive Substances	None within 250m	-
<b>Waste</b>		
BGS Recorded Landfill Sites	None within 1km	-
Integrated Pollution Control Registered Waste Sites	None within 250m	-
Licensed Waste Management Facilities (Landfill Boundaries)	None within 250m	-
Licensed Waste Management Facilities (Locations)	None within 250m	-
Local Authority Recorded Landfill Sites	2 within 1km	Edinburgh Dock, Leith, Leith Docks Authority: City of Edinburgh Council Distance from site: 203m Type of waste: inert  Sea Defences (Leith) Land Reclamation, Perimeter Shoreline Road, Leith Docks Authority: City of Edinburgh Council Distance from site: 680m Types of waste: inert
Potentially Infilled Land (Non-Water)	None within 250m	-
Potentially Infilled Land (Water)	None within 250m	-
Registered Landfill Sites	2 within 1km	Forth Ports Authority Location: Edinburgh Dock (part), Leith Docks, Edinburgh Distance from site: 126m Category: landfill



Licence/Data Type	Distance from site measured to the registered location (i.e. centre of the site)	Operation
		Forth Ports Authority Location: Sea Defences, Leith Dock, Leith, Edinburgh Distance from site: 972m from site Category: landfill
Registered Waste Transfer site	1 within 250m	Regenerate Scotland Ltd 26 Bath Road, Leith, Edinburgh, EH12 8HQ Distance from site: 61m Waste source: no known restriction on source of waste
Registered Waste Treatment or Disposal Sites	2 on site	Stephen G Dalton & son 52-66 Salamander Street, Leith, Edinburgh, Lothian, EH6 7LA Distance from site: on site Site category: end of life vehicles  S G Dalton 52-66 Salamander Street, Leith, Edinburgh, Lothian, EH6 7LA Distance from site: on site Site category: Scrapyard
<b>Hazardous Substances</b>		
Control of Major Accident Hazards Sites (COMAH)	2 within 1km	Whyte and Mackay Ltd 9/21 Salamander Place, Edinburgh, EH6 7JL Distance from site: 98m Type: lower tier Status: active  Kaneb Terminals Ltd Imperial Dock, Leith Docks, Edinburgh, EH6 7DR Distance from site: 787m Type: lower tier Status: record ceased to be supplied under COMAH regulations
Explosive Sites	None within 250m	-
Notification of Installations Handling Hazardous Substances (NIHHS)	None within 250m	-
Planning Hazardous Substance Consents	2 within 250m	Storage Services Ltd 29e Salamander Street, Leith, Edinburgh, EH8 7JZ Distance from site: 17m Authority: City of Edinburgh Council, Development Department Hazardous substance: Part B, Highly Reactive and Explosive Substance, Ammonium nitrate based products, where amount held is greater than or equal to 1000 tonnes.  JBB Plc 13-21 Salamander Street, Leith, Edinburgh EH Distance from site: 93m Authority: City of Edinburgh Council, City Development Department Hazardous substance: unknown at time of report
Planning Hazardous Substance Enforcements	None within 250m	-
<b>Industrial Land Use</b>		
Contemporary Trade Directory Entries	2 on site	Stephen G Dalton 52-66, Salamander Street, Edinburgh, EH6 7LA Distance from site: on site Classification: scrap metal merchants Status: inactive  Dalton Metal Recycling 52-66, Salamander Street, Edinburgh, EH6 7LA Distance from site: on site Classification: Scrap metal merchants Status: active
Fuel Station Entries	None within 250m	-
<b>Sensitive Land Use</b>		
Ancient Woodland	None within 250m	
Areas of Adopted Greenbelt	None within 250m	
Environmentally Sensitive Areas	None within 250m	
Forest Parks	None within 250m	
Local Nature Reserves	None within 250m	
Marine Nature Reserves	None within 250m	
National Nature Reserves	None within 250m	

Licence/Data Type	Distance from site measured to the registered location (i.e. centre of the site)	Operation
National Parks	None within 250m	
National Scenic Areas	None within 250m	
Nitrate Sensitive Areas	None within 250m	
Nitrate Vulnerable Zones	None within 250m	
Ramsar Sites	None within 250m	
Sites of Special Scientific Interest	None within 250m	
Special Areas of Conservation	None within 250m	
Special Protection Areas	None within 250m	
World Heritage Sites	None within 250m	
<i>Summary</i>	The database search has confirmed that while several industrial processes have been identified around the site, however, providing these are undertaken in accordance with the appropriate licenses, significant impact on the site is unlikely.	

## 7.2 Petroleum Officers Response

As fuel tanks and pumps were known to be present at the site, the Petroleum Officer was contacted, we are currently awaiting their response.

## 7.3 Unexploded Ordnance (UXO)

A Zetica Map has been obtained with regard to the assessment of any risks which may or may not be posed by Unexploded Ordnance (UXO) at the site. The map indicates the site to be in an area of low risk which are areas indicated as having 15 bombs per 1000acre or less. A copy of this map can be found in Appendix 9.

### **UXO Report**

As part of the study an Unexploded Ordnance Report was obtained from Zetica which is included in Appendix 9.

The main findings of the report are summarised below.

No records of bombing or military activity on the Site during World War One (WWI) have been found.

During World War Two (WWII) the main strategic targets in the vicinity of the Site were Leith docks, transport infrastructure and public utilities, industries important to the war effort including chemical and metal works, Military barracks, camps and training areas, anti-aircraft and anti-invasion defences.

During WWII the Site was located in the Large Burgh (LB) of Edinburgh, which officially recorded 47No. HE bombs with a bombing density of 1.5 bombs per 405 ha.

No records have been found indicating that the Site was bombed during WWII.

No records of significant post-WWII military activity on the Site have been found.

## 8.0 CHEMICAL CONTAMINATION AND GAS EMISSIONS

### 8.1 Chemical Contamination

Our researches have indicated that the site has been occupied by an abattoir, iron works, former reservoir and a scrap yard was present in the north west of the site. It is likely, therefore, that chemical contamination will be present on site.

JPB examined DoE Industry Profiles for the various site usages where appropriate. The typical contaminants associated with the historical and current land uses of the site are as follows.

Previous site uses including abattoir, iron works, former reservoir and a scrap yard	
<i>Metals and metalloids</i>	Toxic metals and metalloids including arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc.
<i>Inorganic</i>	Sulphides, sulphates, cyanides.
<i>Organics</i>	Petroleum hydrocarbons, PAHs, phenols, PCBs, sVOCs, VOCs, pesticides.
<i>Biological</i>	Anthrax,
<i>Others</i>	Asbestos.

### 8.2 Ground Gases

Previous site uses and the site visit indicate the potential for made ground beneath parts of the site, which could contain biodegradable material and could degrade to produce elevated levels of gas including methane, carbon dioxide, hydrogen sulphide and carbon monoxide. In addition the site is potentially underlain by peat/organic silts which could provide a source of ground gas emissions. This may cause a constraint to any future developments and further intrusive investigations are required to confirm ground gas conditions.

In addition there is the potential for hydrocarbons which may generate vapours.

#### *Off Site Source*

The site is adjacent to a backfilled reservoirs and the nature of the material used to infill these are unknown. Therefore potentially ground gases could migrate from this source towards the site; therefore, investigations are required to determine the level of risk posed by this off-site gas source.

#### *Deep Seated Gas*

The site lies out with a Coal Authority Coal Mining Reporting Area (CMRA) and the CL:AIRE publication, "Technical Note – good practice for risk assessment for mine gas emissions" recommends that further assessment of risks from a deeper gas source is not required.

#### *Radon*

Inspection of the BR 211 Appendix A radon map indicates that the site is within radon class 1.

Radon Class	Radon Affected Area	Estimated percentage band of dwellings exceeding the action Level	Radon Protective Measures (Scotland)
1	No	0-1	None
2	Yes	>1-<3	Basic
3	Yes	>3 to <5	Basic
4	Yes	>5 to <10	Basic
5	Yes	>10 to <30	Full
6	Yes	>30	Full

Based on this classification the site is not within an area requiring radon protection and, therefore, **no protective measures are required.**

## 8.6 Summary

Based on the proposed development of the site as **residential apartments/ commercial** development we envisage that there may be a constraint from chemical contamination and gas emissions and remedial measures may be required. The requirement for, and extent of, such works would be dependent upon the findings of Stage 2 intrusive investigations.

## 9.0 CONCEPTUAL SITE MODEL

### 9.1 Introduction

The Conceptual Site Model (CSM) describes how potential chemical sources at the site could contribute to increased levels of risk to potentially sensitive receptors. The CSM identifies the sources of contamination, the likely receptors and the potential pathways present which may link them. Where it appears that a pathway links a source to a receptor, this potential significant contaminant linkage should be the focus of site investigations.

The CSM is developed at an early stage and constantly reassessed in light of investigative findings. The first step in producing such a model is to identify whether there are potential hazards on site through desk top research together with the application of professional expertise and judgement. In addition, information regarding the site-specific environmental setting including geology, hydrogeology, hydrology etc., is gathered to identify the environmental resources which could be impacted by potential contaminants at the site. Within this context, a hazard is defined as a property that has the potential to cause harm to a receptor group.

### 9.2 Potential Contaminant Linkages

The first stage in developing an Initial Conceptual Site Model is to examine all of the contaminant linkages which may potentially be present at the site based on the information gathered in the desk study and during the site reconnaissance visit. A summary of these linkages is presented in the following table which summarises the linkages between individual sources, pathways and receptors considered to be potentially present.

SPR item	SPR item present based on desk study. (Yes/No)	Comment	
<b>Sources</b>			
S1 – Contamination from former land use	Yes	Site recorded to be formerly occupied by abattoir, iron works, former reservoir and a scrap yard and contaminated made ground anticipated.	
S2 – Contamination from adjacent land use	Yes	The adjacent area was historically used as a chemical works, ropery, reservoirs and multiple other industrial uses.	
S3 – Ground gas	Yes	Made ground and/or peat/organic silts beneath site could contain biodegradable material and could degrade to produce elevated levels of gas. A backfilled reservoir encroaches onto the site.	
S4 – Leachable contaminants	Yes	Some potential made ground contaminants may be leachable or mobile. Further investigations required.	
<b>Pathways</b>			
P1 – Contact with soil	Yes	Site is to be a flatted development and, therefore, there is the potential for site occupiers to come into contact with the soils.	
P2 – Ingestion of vegetables	No	The site is to be a flatted development with no private gardens, therefore, no potential for site occupiers to grow their own produce.	
P3 – Inhalation of dusts/vapours	Yes	Site residents may be exposed to dusts or vapours from any contaminants present.	
P4 – Ingestion of groundwater	Yes	Potential for contact with groundwater.	
P5 – Building contact with soil	Yes	Site is to be developed and, therefore, buildings will be present on site.	
P6 – Migration via services	Yes	Site is to be developed and, therefore, buildings and associated infrastructure will be present on site.	
P7 – Perched groundwater	Yes	Researches indicate the potential presence of contaminated made ground overlying cohesive soils, therefore, perched groundwater may be present.	
P8 – Vertical migration	Yes	Granular deposits may be present allowing vertical contaminant migration.	
P9 – Migration of gas	Yes	Potentially elevated levels of gas could migrate through granular soils or made ground.	
<b>Receptors</b>			
<i>Human Receptors</i>			
R1	Children & adults	Yes	Site is to be a flatted development and, therefore, there is the potential for site occupiers to come into contact with the soils.
R2	Workers & trespassers	Yes	The site is to be developed and, therefore, workers and potentially trespassers on site
R3	Adjacent land users	Yes	Adjacent developments include residential developments.

SPR item	SPR item present based on desk study. (Yes/No)	Comment
<i>Plant Receptors</i>		
R4 – Plants	Yes	Site is to be a flattened development and, therefore, there is the potential for plant growth.
<i>Buildings/services receptors</i>		
R5 – Buildings and infrastructure	Yes	The site is to be developed and, therefore, buildings will be present on site.
<i>Water environment – surface waters</i>		
R6 – Leith Docks	Yes	The Leith Docks are located 270m to the north of the site.
R7 – Minor River	No	There are no minor surface water features within influencing distance of the site.
<i>Water environment – groundwater abstraction</i>		
R8 – Shallow perched groundwater	No	Any perched water in the made ground on site is unlikely to meet the criteria outlined in the WAT-PS-10-01 (Assigning Groundwater Assessment Criteria for Pollutant Inputs) and UKTAG (i.e. that in order to qualify as a body of groundwater an aquifer must be capable of supplying 10m <sup>3</sup> /day or 50 people on a continuous basis). Therefore, in the absence of a receptor or water body no further assessment is required.
R9 – Continuous groundwater in soil	No	Groundwater abstractions were recorded with adjacent to the site, but these were for industrial purposes. It is not known if these are active but given that the sites they were located on have been demolished and re developed it is considered unlikely that these are viable wells.
R10 – Continuous groundwater in rock	No	Groundwater abstractions were recorded with adjacent to the site but these were for industrial purposes. It is not known if these are active but given that the sites they were located on have been demolished and re developed it is considered unlikely that these are viable wells.
<i>Water environment – groundwater resource</i>		
R8 – Shallow perched groundwater	No	Any perched water in the made ground on site is unlikely to meet the criteria outlined in the WAT-PS-10-01 (Assigning Groundwater Assessment Criteria for Pollutant Inputs) and UKTAG (i.e. that in order to qualify as a body of groundwater an aquifer must be capable of supplying 10m <sup>3</sup> /day or 50 people on a continuous basis). The perched water in the made ground is not considered to be a groundwater body and as such is not a receptor.
R9 – Continuous groundwater in soil	Yes	The natural superficial deposits are indicated to be granular and as such any water in the natural soils on site may meet the criteria outlined in the WAT-PS-10-01 (Assigning Groundwater Assessment Criteria for Pollutant Inputs) and UKTAG (i.e. that in order to qualify as a body of groundwater an aquifer must be capable of supplying 10m <sup>3</sup> /day or 50 people on a continuous basis). It is considered that there is a potential receptor present and further assessment is necessary with regard to the continuous groundwater in soils.
R10 – Continuous groundwater in rock	Yes	The rock strata are indicated to be sedimentary and are overlain by permeable superficial strata. As such any water in the deeper aquifer may meet the criteria outlined in the WAT-PS-10-01 (Assigning Groundwater Assessment Criteria for Pollutant Inputs) and UKTAG (i.e. that in order to qualify as a body of groundwater an aquifer must be capable of supplying 10m <sup>3</sup> /day or 50 people on a continuous basis). Further investigations are required to confirm the level of risk to this receptor.
<i>Water environment – groundwater dependent terrestrial ecosystem (GDTE or wetland)</i>		
R11 – GDTE/Wetland	No	None within 250m

## 10.0 STAGE 1 PRELIMINARY QUALITATIVE RISK ASSESSMENT

### 10.1 Methodology

Contaminants are likely to be present at the site and ground gases may be being generated, therefore risks posed by the site to receptors have been evaluated in accordance with the methodology given in the guidance document CIRIA C552. This methodology for risk evaluation is a qualitative method of interpreting the available data from the information gathering phase of the assessment. It involves the classification of the:

- magnitude of the probability (likelihood) of the risk occurring.
- magnitude of the potential consequence (severity) of risk occurring

The descriptions of the magnitudes of the consequences and likelihoods of risks occurring given in Tables 6.3 and 6.4 of CIRIA C552 have been used in this assessment.

Once the consequence and probability have been classified, a risk category, ranging from "very high risk" to "very low risk", can be assigned to each possible contaminant linkage. The table below summarises the consequence versus probability matrix with the assigned risk category and the actions corresponding with the classification.

Comparison of Consequences v Probability					
		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/ Low risk
	Likely	High Risk	Moderate Risk	Moderate/ Low risk	Low Risk
	Low likelihood	Moderate Risk	Moderate/ Low risk	Low Risk	Very Low Risk
	Unlikely	Moderate/ Low risk	Low Risk	Very Low Risk	Very Low Risk
Estimated Risks					
<b>Very High risk</b>		There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.			
<b>High risk</b>		Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present substantial liability. Urgent investigation (if not already undertaken) is required, and remedial works may be necessary in the short term and are likely over the longer term.			
<b>Moderate risk</b>		It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that harm would be severe, or if any harm were to occur, it is more likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.			
<b>Low risk</b>		It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.			
<b>Very Low Risk</b>		There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.			

### 10.2 Risks to Site Development

Exposure of sensitive residential receptors to contaminants				
Probability of risk being realised		Consequence of risk being realised		Consequence of risk being realised
<b>Highly Likely</b>	There is a contaminant linkage and circumstances, under which it is very likely an event will occur in the short term.  Circumstances are such that an event almost inevitable in the longer term.	<b>Medium</b>	Potential for chronic damage to human health likely to result in "significant harm".	<b>High</b>
Migration of soil gas/vapours to on site properties				

Probability of risk being realised		Consequence of risk being realised		Consequence of risk being realised
<b>Highly Likely</b>	<p>The site has a mining heritage and mining is also present locally. In addition, made ground deposits are likely to be present. There are potential gas linkages and circumstances, under which it is an event will occur in the short term.</p> <p>Circumstances are such that it must be assumed that an event almost inevitable in the longer term.</p>	<b>Severe</b>	Potential for chronic and/or acute damage to human health likely to result in "significant harm".	<b>High</b>
<b>Phytotoxic Risks</b>				
Probability of risk being realised		Consequence of risk being realised		Risk classification
<b>Highly Likely</b>	<p>There is a contaminant linkage and circumstances, under which it is very likely an event will occur in the short term.</p> <p>Circumstances are such that an event almost inevitable in the longer term.</p>	<b>Medium</b>	Affect to Plant Growth	<b>High</b>
<b>Groundwater contamination at the site due to the leaching of contaminants</b>				
Probability of risk being realised		Consequence of risk being realised		Risk classification
<b>Highly Likely</b>	<p>There is a potential contaminant linkage and circumstances, under which it is very likely an event will occur in the short term.</p> <p>Circumstances are such that an event almost inevitable in the longer term.</p>	<b>Medium</b>	Pollution of sensitive water environment	<b>High</b>
<b>Surface water contamination at the site due to contaminants migrating to local waters</b>				
Probability of risk being realised		Consequence of risk being realised		Risk classification
<b>Highly Likely</b>	<p>There is a contaminant linkage and circumstances, under which it is very likely an event will occur in the short term.</p> <p>Circumstances are such that an event almost inevitable in the longer term.</p>	<b>Medium</b>	Pollution of sensitive water environment	<b>High</b>
<b>Exposure of buildings and services to site contaminants</b>				
Probability of risk being realised		Consequence of risk being realised		Risk classification
<b>Likely</b>	<p>There is a potential contaminant linkage and circumstances, under which an event could occur are possible.</p> <p>However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term.</p>	<b>Medium</b>	Damage to integrity of concrete building elements and potable water supplies.	<b>Moderate</b>



## 11.0 PART 2A CONSIDERATIONS

### 11.1 Introduction

Site owners have specific obligations under Part 2A of the Environmental Protection Act (EPA) as amended by the Contaminated Land (Scotland) Regulations to address contamination issues at their sites. In addition, Part 2A of the Act requires that Local Authorities inspect their areas and prioritise sites for further action where required. The actions required may include further investigation or remedial actions and the local authority may, where appropriate, impose a remediation order requiring actions to be taken.

This section assesses the likely priority the site would have in terms of contaminated land legislation, based on its contaminative history and environmental setting. The risk assessment methodology used in this report follows the guidance given in the Department of the Environment Contaminated Land Review Report No. 6 (DOE CLR No.6) in terms of preliminary prioritisation of potentially contaminated sites.

### 11.2 Site Prioritisation Methodology

The initial assessment of the site was carried out using the JPB Site Evaluation and Risk Assessment Model (SERA). The SERA model has been developed to evaluate sites by determining the level of priority the site should be given based on the source-pathway-receptor model. The model is based on DOE Report CLR6 and Part 2A of the EPA but develops the principles further than CLR6 by determining the level of priority of a site more objectively and in more detail.

Numerical scores are given for the principal sources of contamination, pathways and receptors to derive individual contaminant linkage scores (PLSs), which may be combined to give an overall Site Assessment Value (SAV). The PLSs can be used in conjunction with the DOE CLR6 document to determine whether the site is likely to fall within the remit of contaminated land legislation and to inform any further intrusive investigation which may be required.

The SERA methodology and default parameters used are contained in the SERA model document which is freely available for inspection at the client's request. A description of CLR6 categories is given below.

#### *Priority Category 1*

This defines sites that are considered to be probably not suitable for the current end use and environmental setting. This is due to the assessment considering that there is a strong likelihood of contaminants at the site at such concentrations, together with suitable pathways, that there is a risk to adjacent receptors. Sites assessed as falling within Category 1 are considered to require immediate action to prevent pollution occurring. In this respect the procedure almost fits the contaminated land regime definition of causing significant harm and any sites that are placed within this category would almost definitely fall within the remit of the contaminated land legislation.

#### *Priority Category 2*

The condition of the site is such that possibly it may not be suitable for its present use and environmental setting, due to the possible presence of contaminants. The assessment of the site is that there is only a possibility of an impact and action may be required in the medium term. This category would also fall within the legislation under the "significant possibility" term.

#### *Priority Category 3*

A site that the assessment considers to be suitable for present use and environmental setting although there may be contamination present lies within this category. The assessment considers that the presence of contamination does not cause a concern, as there is a low risk to the possible receptors. The conclusion, if a site falls within this category, is that remedial work is unlikely to be required as long as the site is utilised for that end use. In this respect this category would not be assessed as contaminated land under the contaminated land legislation.

#### *Priority Category 4*

The fourth category is considered to be the lowest risk and would almost certainly be outwith the scope of the contaminated land legislation

### 11.3 SERA Assessment

The SERA output is more refined using more details about the hazards likely to be present, the pathways and receptors. Based on the available desk study information a SERA model assessment was carried out for the site in its current condition. The parameter input for each of the potential contaminant linkages and the SERA outputs are summarised in Appendix 9. Risks to human health, surface waters, groundwater, ecological and property receptors were individually assessed for each area. The CLR 6 categorisation is summarised below

Human Health	Surface Water	Ground Water	Ecological	Property	Overall
Category 3	Category 4	Category 3	Category 2	Category 2	Category 2

Based on the **current site conditions** the site falls within **Category 2** primarily due to the potential for contaminants to affect ecological and property receptors.

A priority **Category 2** indicates a site that the condition is such that possibly it may not be suitable for its present use and environmental setting, due to the possible presence of contaminants. The assessment of the site is that there is only a possibility of an impact and action may be required in the medium term. This category would also fall within the legislation under the “significant possibility” term.

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## 12.0 CONCLUSIONS AND RECOMMENDATIONS

### 12.1 General

Every effort has been made to conduct a thorough and complete examination of all available data pertaining to the site at Salamander Street, Edinburgh to create a concise and factual report. Stephen G Dalton & Son are considering the viability of the site for **residential apartments** development.

On the basis of the assessment, it is considered prudent to undertake an in-depth ground investigation at the site with the following objectives:

- To identify any chemical contamination constraints.
- To characterise the groundwater regime and identify any risks posed to water resources.
- To examine the ground gas regime and any constraints posed by gas emissions and radon.
- To determine a foundation horizon and potential foundation solution; and
- To identify any mining constraints.

Such an investigation would allow any issues of concern regarding protection of site workers, potential environmental liabilities associated with the site and any financial implications during redevelopment to be more fully assessed.

### 12.2 Chemical Contamination

Based on the proposed development of the site as **residential apartments** development we envisage that there may be a constraint from chemical contamination and gas emissions and remedial measures may be required. The requirement for, and extent of, such works would be dependent upon the findings of Stage 2 intrusive investigations.

#### *Stage 1 Preliminary Risk Assessment*

Risk	Risk classification
Exposure of sensitive residential receptors to contaminants	High
Migration of soil gas/vapours to on site properties	High
Phytotoxic Risks	High
Groundwater contamination at the site due to the leaching of contaminants	High
Surface water contamination at the site due to contaminants migrating to local waters	High
Exposure of buildings and services to site contaminants	Moderate

During any future site operations, potential risks to public safety and site personnel are considered at present to be **high** due to the potential for unknown contaminants associated with the made ground at the site. These risks could be minimised by ensuring all works are carried out in accordance with the Construction Industry Research and Information Association (CIRIA) Report 132 "A Guide for Safe Working on Contaminated Sites 1996".

#### *Contingent Liabilities*

With regard to any inherent liabilities on ownership, the liability relating to humans is considered to be **high**. In addition, the risk of pollution migrating off site is considered to be **high**. As such the related liability is considered to be **high**, primarily due to the historical land uses of the site.

Under the regulatory framework outlined in Section 2.1, the local authority has a duty to identify and enforce the remediation of "contaminated land", by serving a remediation notice on an appropriate person. The notice would only be served if, after a period of consultation with the site owner or the person causing the pollution, no works had been carried out. **Based on this it is assumed that the site will be Priority Category 2** indicates a site that the condition is such that possibly it may not be suitable for its present use and environmental setting, due to the possible presence of contaminants. The assessment of the site is that there is only a possibility of an impact and action may be required in the medium term. This category would also fall within the legislation under the "significant possibility" term.

**By undertaking an intrusive site investigation it would be possible to reassess this categorisation with actual site data.**

### 12.3 Gas Emissions

#### **Ground Gas Emissions**

Previous site uses and the site visit indicate the potential for made ground beneath parts of the site, which could contain biodegradable material and could degrade to produce elevated levels of gas including methane, carbon dioxide, hydrogen sulphide and carbon monoxide. In addition the site is potentially underlain by peat/organic silts

which could provide a source of ground gas emissions. This may cause a constraint to any future developments and further intrusive investigations are required to confirm ground gas conditions.

In addition there is the potential for hydrocarbons which may generate vapours.

#### Off Site Source

The site is adjacent to a backfilled reservoirs and the nature of the material used to infill these are unknown. Therefore potentially ground gases could migrate from this source towards the site, therefore, investigations are required to determine the level of risk posed by this off-site gas source.

#### Deep Seated Gas

The site lies out with a Coal Authority Coal Mining Reporting Area (CMRA) and the CL:AIRE publication, "Technical Note – good practice for risk assessment for mine gas emissions" recommends that further assessment of risks from a deeper gas source is not required.

#### Radon

Inspection of the BR 211 Appendix A radon map indicates that the site is within radon class 1.

Radon Class	Radon Affected Area	Estimated percentage band of dwellings exceeding the action Level	Radon Protective Measures (Scotland)
1	No	0-1	None
2	Yes	>1-<3	Basic
3	Yes	>3 to <5	Basic
4	Yes	>5 to <10	Basic
5	Yes	>10 to <30	Full
6	Yes	>30	Full

Based on this classification the site is not within an area requiring radon protection and, therefore, **no protective measures are required.**

### 12.4 Foundation Options

The desk study has indicated the site to likely be overlain by significant made ground. Due to the inherent variability of this material it is considered that this horizon would not be very suitable as a founding horizon in its present condition. Consideration of vibro-improvement or piling may be required.

However given that peat has been identified in the underlying raised marine deposits and it is probable that vibro improvement will not be suitable and piling maybe required.

In addition the site was a former iron works and there is the potential for slag deposits which may be expansive. This could also impact on the foundation solution for the site.

A detailed site investigation will be required to confirm the foundation solution.

### 12.5 Mining

Examination of historical records shows no evidence of underground mining within the vicinity of the site and there is no current mining within influencing distance. The Coal Authority indicates the property is not within an area that could be affected by past recorded underground workings. The geological maps, and memoirs, the mine plans catalogues and Department of the Environment Report "Mining Instability in Great Britain", 1991 and BGS record on non-coal mining plans contain have no records of any mineworkings or mine entries beneath the site. Therefore, based on our researches the risks relating to **mining are considered to be very low.**

### 12.6 Asbestos

It is considered possible that the current site buildings may contain asbestos containing materials. Under the Control of Asbestos Regulations 2012 the existing building must have an asbestos register and management plan in place which both identifies and manages any asbestos containing materials. This is the responsibility of the Dutyholder for the current building. Should an asbestos register and management plan not be available we would recommend that an Asbestos Management Survey is carried out as a minimum and an asbestos register and management plan should be prepared for the site. If the buildings are to be refurbished or demolished, then a Refurbishment/Demolition Asbestos Survey must be carried out and any asbestos containing materials removed and disposed of prior to demolition. The provisions of the Asbestos Regulations 2012 and other relevant asbestos regulations should be followed at all times.

## 12.7 Fuel Tanks

Information from the Petroleum Officer is currently outstanding but tanks were identified at during the walkover.

**Should any underground fuel tanks** be encountered at the site, then the recommendations given within HSE publication Guidance note CS 15, "The cleaning and gas freeing of tanks containing flammable residues" should be followed during works. **The current tanks should also be decommissioned as part of the works.** Tanks should be decommissioned and removed in accordance with SEPA document Installation, Decommissioning and Removal of Underground Storage Tanks: GPP 27 Version 1. August 2022 and Above Ground Oil Storage Tanks GPP 2.

Hydrocarbon impacted material associated with the tanks and in the vicinity of these areas should be either excavated and removed or bioremediated. Contaminated material should be removed to an appropriately licensed landfill site or "soil hospital" facility. Should excavation and removal be considered, any material encountered during excavation which is visibly contaminated by hydrocarbons should be excavated and removed to an appropriately licensed landfill site or "soil hospital" facility. Supervision of excavation of contaminated material identified during the site investigation should be carried out by a suitably qualified environmental scientist, in accordance with a suitable method statement prepared for the works, including remedial targets to be achieved in order to make the site suitable for its intended use.

## 12.8 Invasive Plant Survey

An invasive plant survey was carried out during the works prior to commencement of the investigation. The summary of the report is

No Japanese Knotweed, Giant Hogweed or Himalayan Balsam plants were identified during the walkover.

However, the ecologist noted the presence of some invasive or non-native species that may be of concern, including Buddleia during the visit. The report notes that the vegetation clearance should be undertaken in a controlled manner which ensures that no further spread of these invasive weeds results.



**APPENDICES**  
**Appendix 1 Drawings**



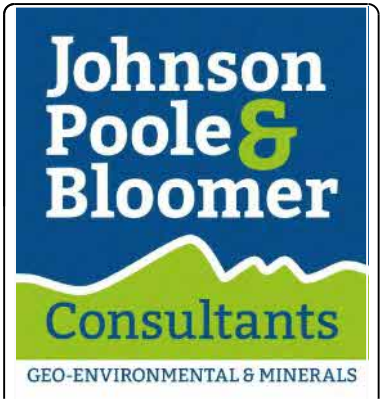
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CLIENT  
**ETIVE CONSULTING ENGINEERS LIMITED**

JOB TITLE  
**SALAMANDER STREET, EDINBURGH**

DRAWING TITLE  
**SITE LOCATION PLAN**



SCALES  
**1:20,000**

ORIG.DRG.SIZE  
**A4**

DATE  
**SEP 2023**


DRAWN BY  
**JV**

APPROVED BY  
**INITIALS**

DRAWING No.  
**XG240-XX/R/F/01**



LEGEND

 Site Boundary

NOTES

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LICENCE NUMBERS: CO9/007-CSL; CO9/008-LSCSL

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DATE	REVISION	No.

GEO-ENVIRONMENTAL & MINERALS

**Consultants**

**Johnson Poole & Bloomer**

CLIENT

**ETILE**

PROJECT TITLE

**SALAMANDER STREET, EDINBURGH**

DRAWING TITLE

**EXTRACT FROM BRITISH GEOLOGICAL SURVEY - DRIFT MAP**

DRAWN BY	JV	APPROVED BY	INITIALS
SCALE	1:10,000	ORIGINAL DRAWING SIZE	A3
DATE	OCT 2023	DRAWING No.	XG240-02/R/F/02

EXPLANATION

SYMBOLS

LEGEND

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DOCK 3

DOCK 4

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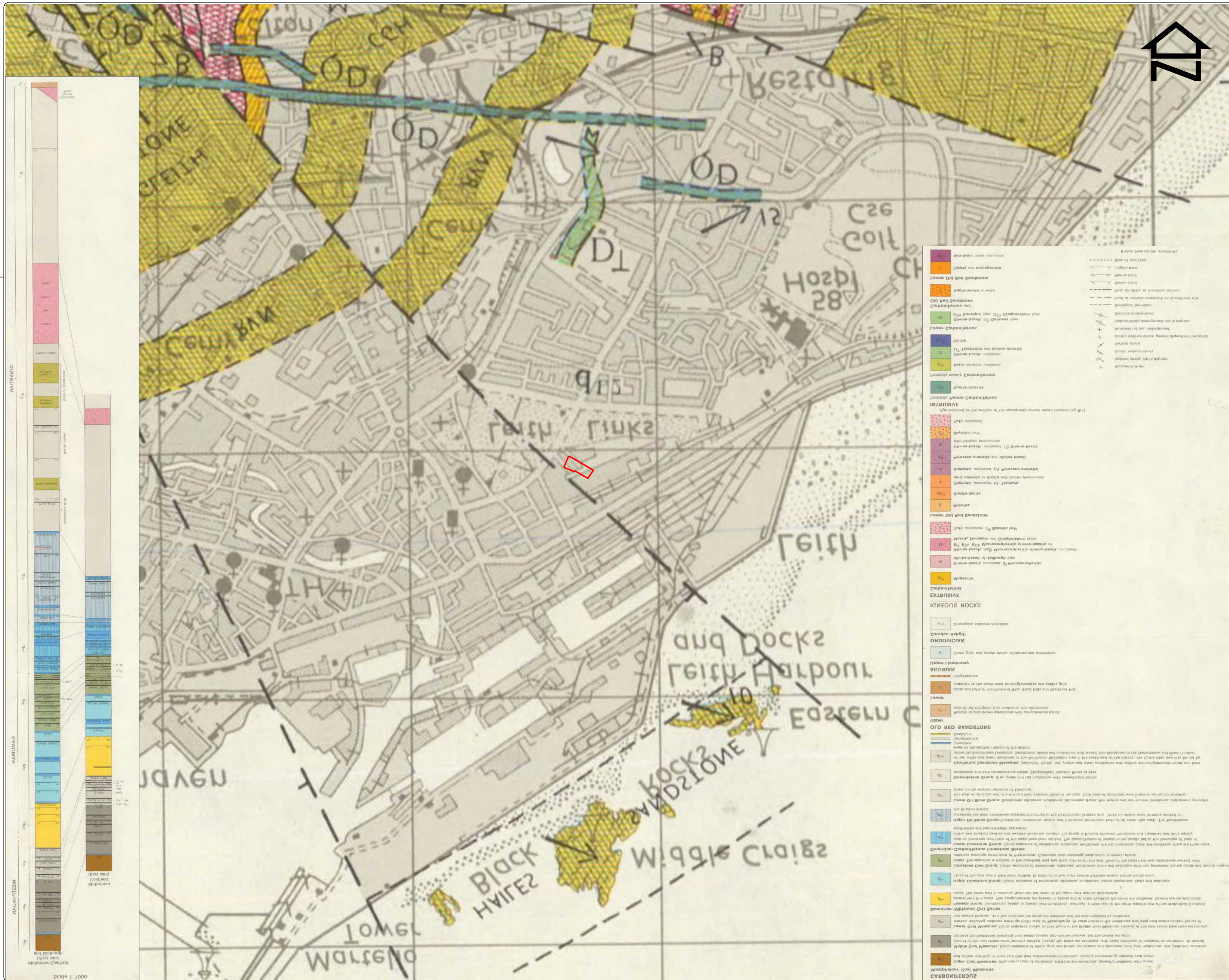
DOCK 97

DOCK 98

DOCK 99

DOCK 100





LEGEND

Site Boundary

NOTES

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DATE	REVISION	No.

ГЕО-ЕДИЛКОВИМЕНТАЛ & МИНЕРАЛС

**Consultants**

**Johnson Poole & Bloomer**

CLIENT

**ETILE**

PROJECT TITLE

**SALAMANDER STREET, EDINBURGH**

DRAWING TITLE

**EXTRACT FROM BRITISH GEOLOGICAL SURVEY - SOLID MAP**

DRAWN BY	JV	APPROVED BY	INITIALS
SCALES	1:10,000	ORIGINAL DRAWING SIZE	A2
DATE	OCT 2023	DRAWING No.	XG240-02/R/F/03



## **Appendix 2      Photographic Records**



**Plate 1:** Photo taken facing East, showing the entrance to site.



**Plate 2** Photo taken facing south-east inside the building which occupies the south-western corner of site, showing multiple empty tanks and associated scrap.



**Plate 3:** Photo facing the south-east corner of the building, containing stacks of tires and various car equipment/parts.



**Plate 4:** Photo facing north-east showing multiple cars.



**Plate 5:** Photo facing north-east, showing a petrol tank and multiple other storage container against the eastern boundary of site.



**Plate 6:** Close up photo of two of the containers against the southern boundary.



**Plate 7:** Photo facing north-west, showing multiple containers resting against the southern boundary.



**Plate 8:** View facing north-east, showing the pile of cars and various scrap metal piled along the northern boundary.



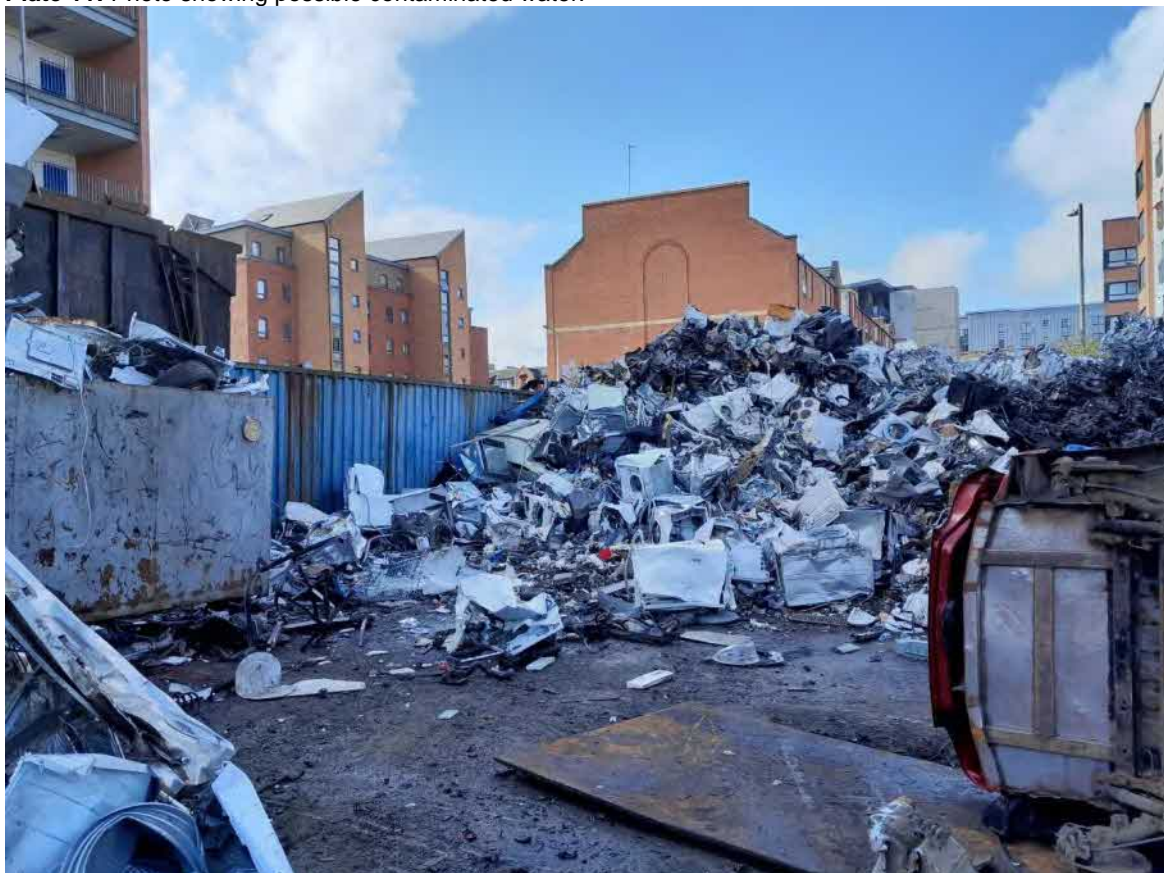
**Plate 9:** Photo showing the inside of one of the containers along the southern boundary, showing various car parts.



**Plate 10:** Photo showing multiple scrapped cars and their parts, against the southern boundary.



**Plate 11:** Photo showing possible contaminated water.



**Plate 12:** View facing into the western corner of site, showing a pile of scrapped washing machines and other kitchen appliances.





Plate 13: Photo in the north-west corner, showing a baler.

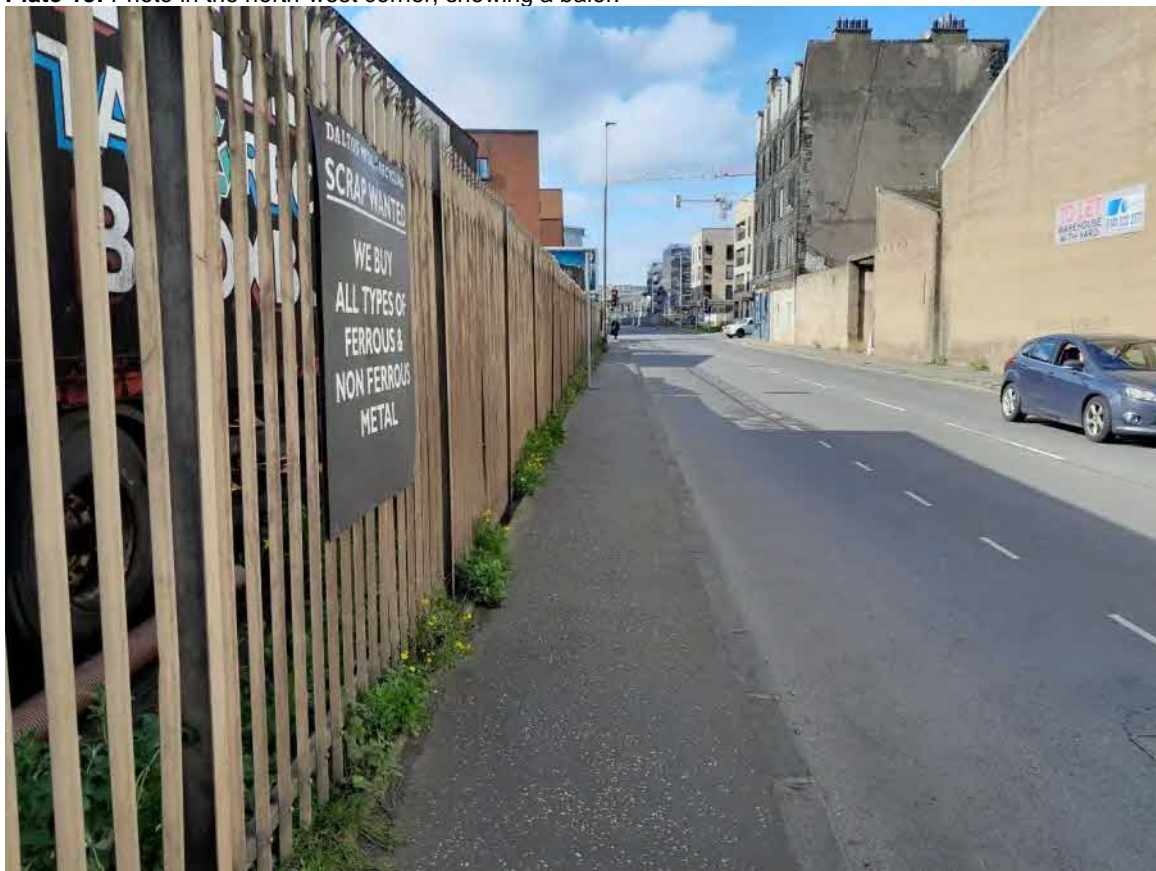


Plate 14: View along the road parallel to the northern boundary



## **Appendix 3      Invasive Plant Survey**

# KLEERKUT

Johnson Poole & Bloomer

---

Salamander Street, Leith, Edinburgh EH6 7LA

Job No: S4212

INVASIVE WEEDS SURVEY

Report Date: 29/09/2023



## CONTENTS

INVASIVE WEEDS SURVEY INFORMATION	3
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SURVEY FINDINGS – OTHER LEGISLATED SPECIES .....	4
SURVEY FINDINGS – PROBLEMATIC NON-LEGISLATED SPECIES.....	5
INVASIVE WEEDS SURVEY FINDINGS & RECOMMENDATIONS	6
ADDITIONAL INFORMATION	7
APPENDIX A – SURVEY LOCATION PLAN	
APPENDIX B – SURVEY PHOTOGRAPHS	

INVASIVE WEEDS SURVEY INFORMATION			
SALAMANDER STREET, LEITH, EDINBURGH EH6 7LA			REF: S4212
S1	FOR THE ATTENTION OF	Martin Keir	CLIENT Johnson Poole & Bloomer
	KLEERKUT SURVEYOR	Jade Chung	SURVEY DATE 25/09/2023
	REPORT PRODUCED BY	Tina Griffen Lloyd	REPORT DATE 29/09/2023
S2	SURVEY INFORMATION		
S2A	SEASON		
	Summer	All species should be visible unless under treatment, cut back or covered.	
S2B	GENERAL DESCRIPTION		
	The surveyed site consists of the grounds of the active Dalton Metal Recycling plant. This comprises of a hardstanding yard with a unit located to the southeast. Throughout the site is stockpiled scrap material, vehicles for scrap, and active machinery.		
S2C	CAVEATS RELEVANT TO THIS SURVEY		
	As this site is an active metal recycling plant access was limited to unstable stockpiles of scrap material, active machinery, and the associated safety risks.		
S2D	SURVEY EXPIRY DATE		
	This survey is valid for a period of 6 months from the date of this document. This is based on the site conditions remaining unchanged. Depending on scheduled works, we would recommend keeping the survey up to date.		

<b>S3</b>	<b>SURVEY FINDINGS – CONTROLLED PLANT SPECIES</b>		
	Controlled in Scotland under Schedule 9 of the Wildlife & Countryside (Scotland) Act 1981 since superseded by the Wildlife and Natural Environment (Scotland) Act 2011 (WANE).		

<b>S3A</b>	<b>JAPANESE KNOTWEED (<i>Reynoutria japonica</i>)</b>			
	REF	AREA AFFECTED (m or m <sup>2</sup> )		GENERAL DESCRIPTION
		WITHIN THE SITE	OUTWITH THE SITE	
	N/A	-	-	No visible evidence at the time of our inspection.
	<p>REPORTED SPECIES can be JAPANESE KNOTWEED (<i>Reynoutria japonica</i>), HYBRID KNOTWEED (<i>Reynoutria x bohemica</i>) or GIANT KNOTWEED (<i>Reynoutria sachalinensis</i>) or a combination of varieties. All varieties have the same impact and are managed in the same way.</p> <p>Note: Refer to S7 General Survey Notes, Terms &amp; Conditions</p>			

<b>S3B</b>	<b>GIANT HOGWEED (<i>Heracleum mantegazzianum</i>)</b>			
	REF	AREA AFFECTED (m or m <sup>2</sup> )		GENERAL DESCRIPTION
		WITHIN THE SITE	OUTWITH THE SITE	
	N/A	-	-	No visible evidence at the time of our inspection.
	Note: Refer to S7 General Survey Notes, Terms & Conditions			

<b>S3C</b>	<b>HIMALAYAN BALSAM (<i>Impatiens glandulifera</i>)</b>			
	REF	AREA AFFECTED (m or m <sup>2</sup> )		GENERAL DESCRIPTION
		WITHIN THE SITE	OUTWITH THE SITE	
	N/A	-	-	No visible evidence at the time of our inspection.
	Note: Refer to S7 General Survey Notes, Terms & Conditions			

<b>S4</b>	<b>SURVEY FINDINGS – OTHER LEGISLATED SPECIES</b>		
	Controlled in Scotland under Schedule 9 of the Wildlife & Countryside (Scotland) Act 1981 since superseded by the Wildlife and Natural Environment (Scotland) Act 2011 (WANE).		
	The area was inspected for other legislated species including Cotoneaster (selected varieties), Rhododendron, Japanese Rose, and Giant Rhubarb.		
	There was no evidence of these species during our inspection.		
	Note: Refer to S7 General Survey Notes, Terms & Conditions		
	While there are many species listed on Schedule 9 and encompassed by the WANE act. We have only recorded species which we have assessed to present a risk to the development, the developer, the environment, members of the public, workers etc.		

S5	<b>SURVEY FINDINGS – PROBLEMATIC NON-LEGISLATED SPECIES</b>
	Native plant species, not controlled by legislation, however often problematic in the construction industry. Highly invasive, persistent, and known to cause damage to infrastructure.
	In addition to Horsetail we also surveyed for Himalayan Knotweed and Buddleia.

S5A	<b>HORSETAIL (<i>Equisetum arvense</i>)</b>		
	REF	AREA AFFECTED (m or m <sup>2</sup> )	GENERAL DESCRIPTION
		WITHIN THE SITE      OUTWITH THE SITE	
	N/A	-                      -	No visible evidence at the time of our inspection.
	Caveat for Horsetail Findings		
	<p>While there was no evidence of Horsetail, we would caveat our findings on the basis that rhizomes may be present below ground which only become apparent once site works commence. Horsetail tends to emerge particularly in wet boggy ground once soils have been disturbed, so vigilance should be maintained during development.</p> <p>For new footpath constructions we would recommend you consider a further inspection prior to works in these areas to check for any Horsetail rhizomes.</p> <p>Note: Our survey/management is based on the plant material visible at the time of our inspection. There may be instances where Horsetail was not apparent at the time of our works/survey due to environmental factors, such as it being outwith the growing season, vegetation being cut, maintained with herbicide, or being managed in an agricultural capacity. Similarly, rhizomes may be located below existing infrastructure such as roads, footpaths etc. We cannot guarantee locations which were not apparent at the time of our inspection.</p>		
	Note: Refer to S7 General Survey Notes, Terms & Conditions		

S5B	<b>BUDDLEIA (<i>Buddleia davidii</i>)</b>		
	REF	AREA AFFECTED (m or m <sup>2</sup> )	GENERAL DESCRIPTION
		WITHIN THE SITE      OUTWITH THE SITE	
	BD1	Circa 250m <sup>2</sup> -	Multiple Buddleia plants were identified along the boundary, growing from the existing boundary wall and through hardstanding.
	Additional Information: Due to stockpiled scrap material, close inspection of the infestation was not possible.		
	Note: Refer to S7 General Survey Notes, Terms & Conditions		

**INVASIVE WEEDS SURVEY FINDINGS & RECOMMENDATIONS**

SALAMANDER STREET, LEITH, EDINBURGH EH6 7LA

REF: S4212

**S6A SURVEY FINDINGS & RECOMMENDATIONS**

At the time of survey, access was limited due to the active metal recycling plant and the associated health and safety concerns. This may have limited our findings.

There was no evidence of controlled species such as Japanese Knotweed, Giant Hogweed & Himalayan Balsam during this survey.

There was no visible evidence of the problematic native species Horsetail.

The problematic native species Buddleia was identified during this survey, located around the boundary.

Based on our findings there is no known risk from undertaking intrusive work, such as site investigation activities. Should there be any concern or queries when carrying out the work, KleerKut can be contacted for guidance.

No requirement for any further action



## ADDITIONAL INFORMATION

SALAMANDER STREET, LEITH, EDINBURGH EH6 7LA

REF: S4212

### S7 GENERAL SURVEY NOTES, TERMS & CONDITIONS

Our surveys are based on a visual inspection of the area. The purpose of the survey is to report the invasive weeds encountered during the inspection and appraise the risk to the user/developer. There is a risk that Invasive Species may be present but not evident, such as undergoing herbicide management, seeds or spores only, roots/rhizomes below ground with no visible vegetation and for this reason vigilance should be maintained by the developer at all times.

Our attached “Why Manage ....” Sheet/s will provide a basic overview of the constraints that you should be aware of.

Any sizes are approximate and based upon growth/evidence visible at the time of inspection. These measurements do not include the overall area affected by the rhizomes/roots and this can extend many metres from the main stands. The extent and depth of rhizomes will vary depending on ground and growing conditions.

Invasive weeds undergoing herbicide management can be difficult to find, KleerKut should be informed of any management being undertaken.

This report has been undertaken and written on behalf of Johnson Poole & Bloomer in the context of the purpose stated above and should not be used in any other context. In the event of any new information, change of legislation or working practice, we reserve the right to alter this report in whole or in part after its submission. In the event of any changes in circumstances or after the expiry of six months from the date of the report, it should be referred to us for reassessment and, if necessary, amendment.


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### S8 ABOUT KLEERKUT

We have specialised in the management of invasive weeds since 2006 and are now one of the UK leaders. We work with the NHS, various Local Authorities and many of the housebuilders and contractors. The success of our company in this area, is due to our understanding of invasive weeds and how they affect the construction industry. Our team includes engineers and project managers with extensive site experience who ensure that the operations side of the business always provides the best practical solution to the client.

We were invited to join the Property Care Association (PCA) where our directors sit on the UK's first Invasive Weeds Control Group. We have also been part of the Invasive Weed Education Strategy Group and examiners for the PCA's Certificated Surveyor of Japanese Knotweed (CSJK) accredited training programme.

Environment, Health and Safety, Quality Control – these are key areas of importance to us – which is why we achieved ISO 9001, 14001 & 18001. KleerKut are accredited members of SMAS Safe Systems in Procurement demonstrating our commitment to working safely in partnership with our clients and sub-contractors. We are also members of Constructionline currently working on improving our status from Silver to Gold. By being members of the PCA our works are Government endorsed through their Trustmark scheme, allowing us to provide RICS and lender approved solutions and Insurance Backed Guarantees.

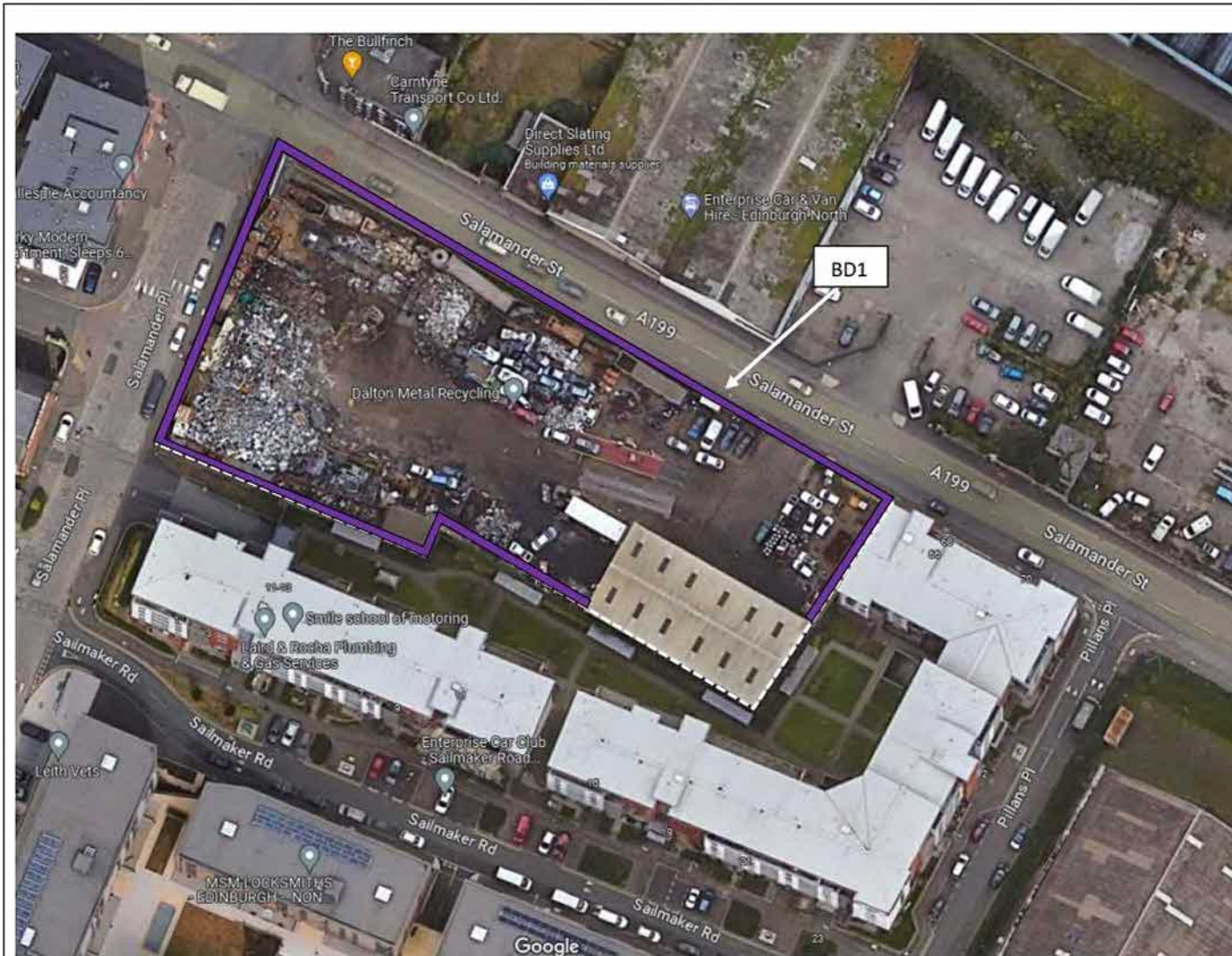
S9	SIGN OFF	
	<p>Report Written by: Tina Griffen Lloyd</p> <p>Signature: </p>	<p>Date: 29/09/2023</p>

**Appendices**

Appendix A – Survey Location Plan

Appendix B – Survey Photographs

APPENDIX A – SURVEY LOCATION PLAN



Notes

 Buddleia

 KleerKut Ltd  
 E: Info@kleerkut.co.uk  
 T: 0141 319 8210

Client	Johnson Poole & Bloomer	
Job	S4212 Salamander Street, Leith, Edinburgh EH6 7LA	
Title	Location Plan	
Date	25/09/2023	Rev

APPENDIX B – PHOTOGRAPHS FROM SURVEY



BD1 Buddleia



BD1 Buddleia



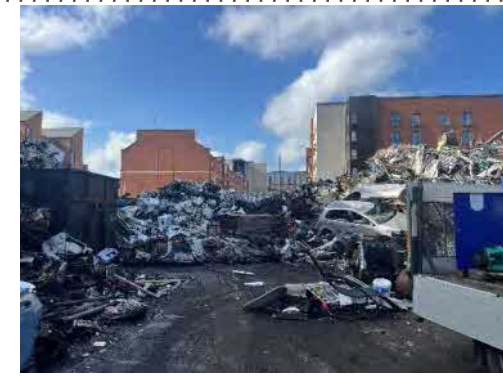
BD1 Buddleia



BD1 Buddleia



General Overview



General Overview

# Buddleia

(*Buddleja davidii*)



*Buddleja davidii*, also known as butterfly-bush, is a species of flowering plant native to central China and Japan. This plant is often used as an ornamental in gardens and provides nectar to various insects, hence the name butterfly-bush.

The deciduous shrub can grow up to 3m in height, with long arching shoots and pointed green-grey leaves which are up to 25cm in length. Leaves are shed in the late autumn months and are immediately replaced with a new set of smaller leaves.

From summer to autumn *Buddleia* bears dense sprays, around 30cm in length, of fragrant purple flowers.

Young stems are green, with older stems having peeling, grey-brown bark.

Seeds are small, lightweight, and double winged. Following flowering, each panicle of flowers can become several hundred seed capsules, each one containing twenty or more seeds.

## Identification Photos



Pink-purple flower sprays



Elongated, pointed leaves



Seed capsules, following flowers



Older, woody stem

# Why Manage Buddleia?

It has become increasingly clear that Buddleia is a highly invasive plant, producing many small, lightweight seeds which are easily spread. Buddleia can quickly become a problem to:

## Railways

It is very common to see Buddleia growing along and near railways in the UK. Network Rail has reported that Buddleia has potential to interfere with overhead powerlines and obscure signals, with valuable time and resources being used to control the species.

## Property

Buddleia can grow in any cracks in the masonry of buildings, with the potential to cause structural damage. The species also holds potential to create damp problems for property owners if the plant is growing against or near an external wall.

## Biodiversity

If left uncontrolled, Buddleia can quickly takeover habitats and outcompete other native species, having a negative effect on our ecosystems.



Buddleia along the railway lines



Buddleia growing from a building



## **Appendix 4      Historical Map Extracts**



GEO-ENVIRONMENTAL & MINERALS

## Edinburghshire

Published 1853

### Source map scale - 1:1,056

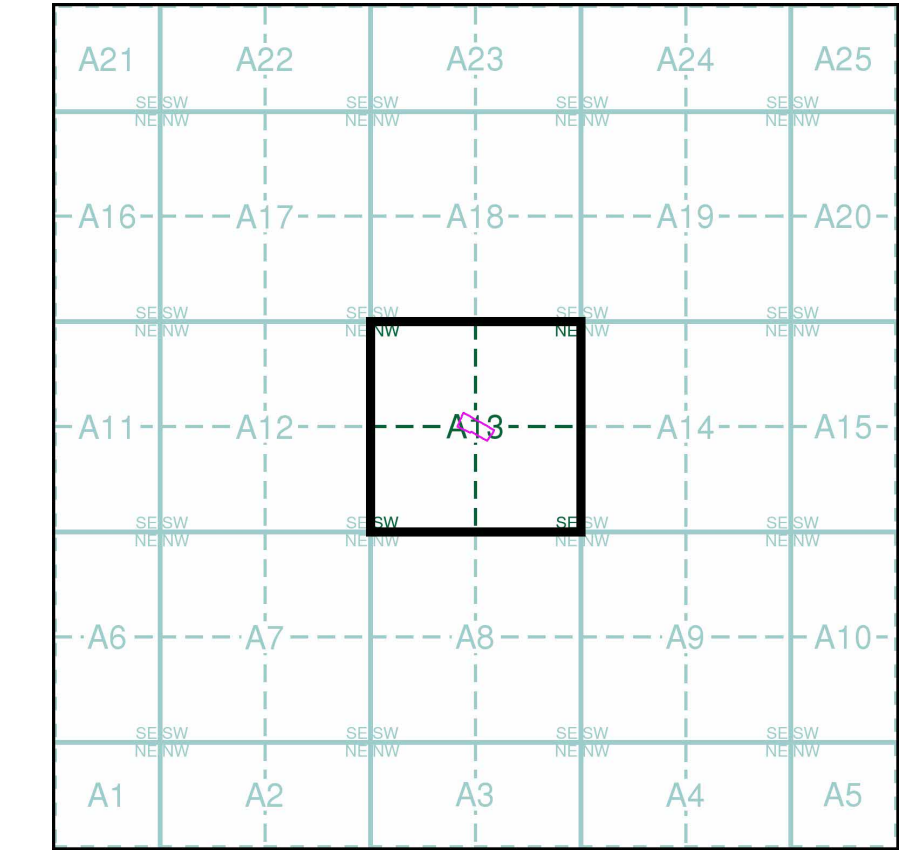
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

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

000_00_013	1853	1:1,056	
000_00_017	1853	1:1,056	000_00_018
			1853
			1:1,056

### Historical Town Plan - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 0

### Site Details

Salamander Street, Edinburgh



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





GEO-ENVIRONMENTAL & MINERALS

## Edinburghshire

Published 1876 - 1878

Source map scale - 1:1,056

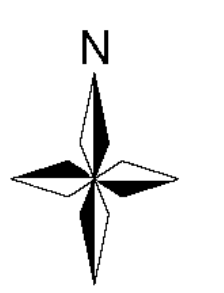
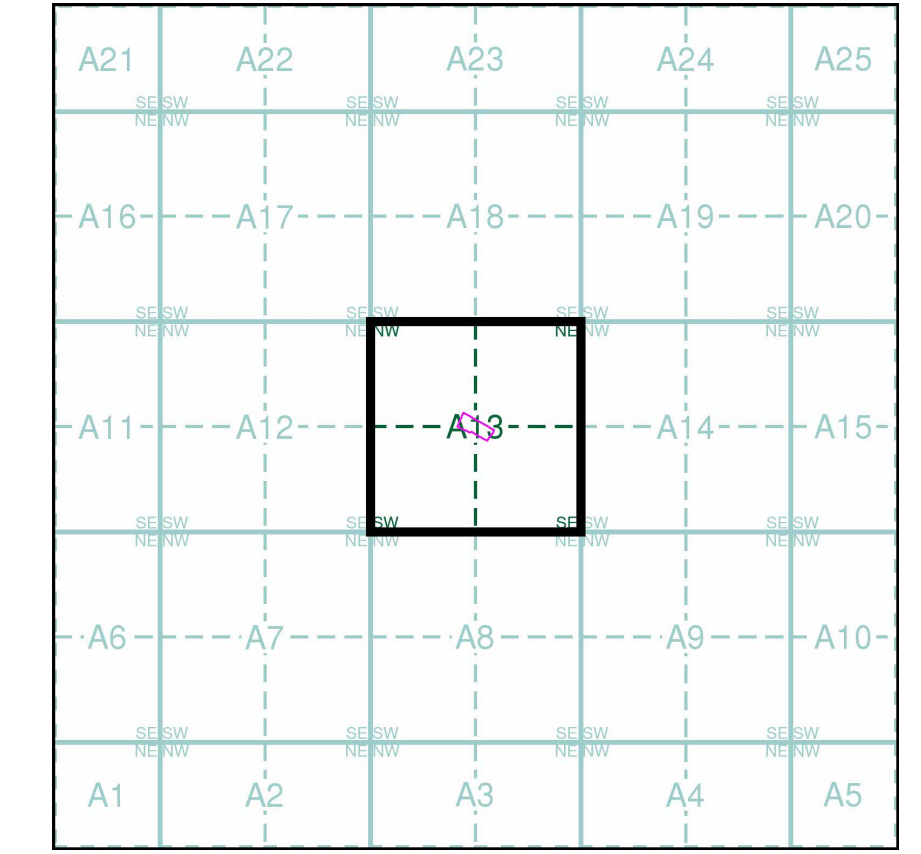
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

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

000_00_013 1876 1:1,056	000_00_213 1878 1:1,056
000_00_017 1876 1:1,056	000_00_018 1877 1:1,056

### Historical Town Plan - Segment A13



### Order Details

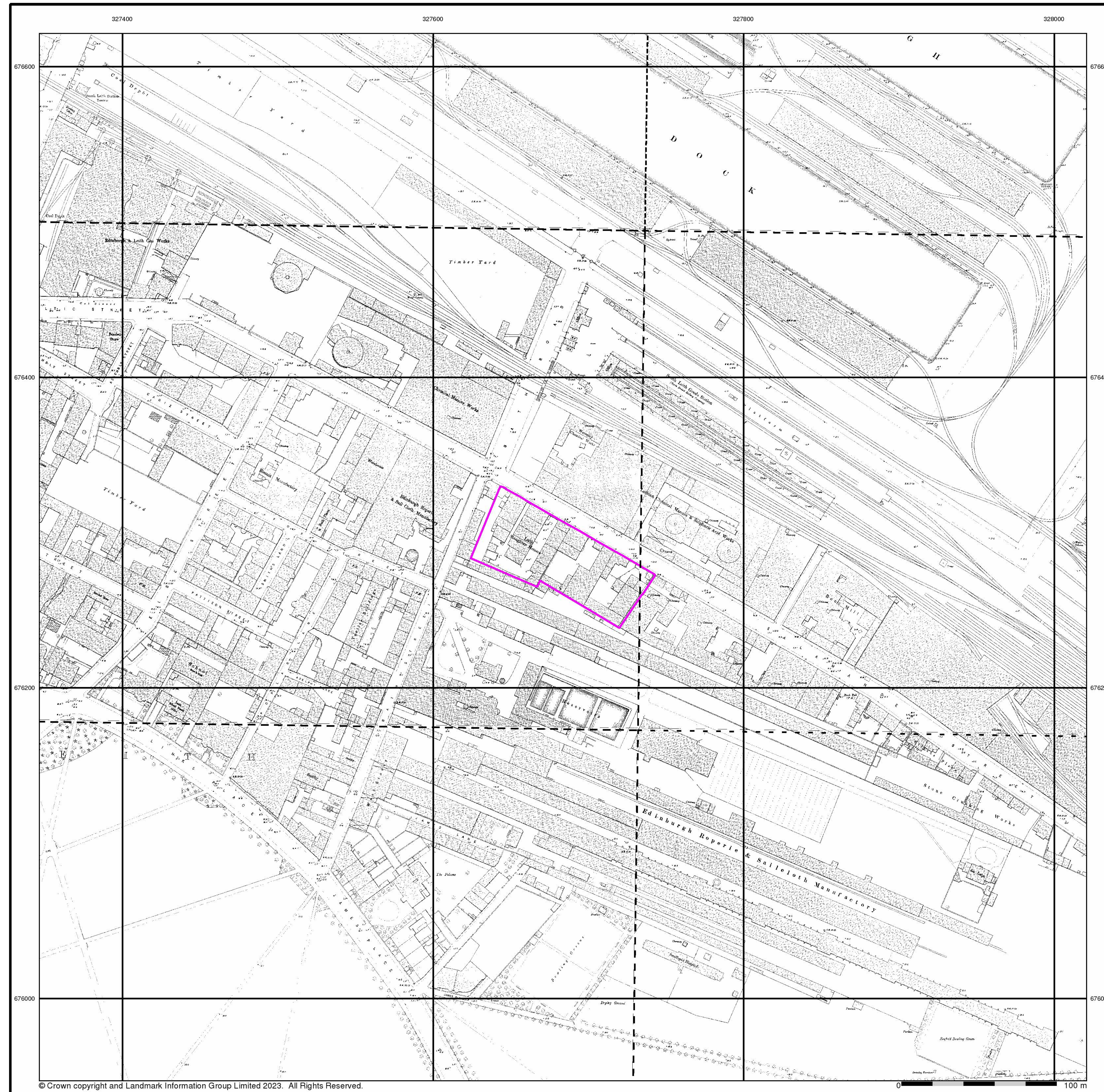
Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 0

### Site Details

Salamander Street, Edinburgh



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



GEO-ENVIRONMENTAL & MINERALS

**Edinburghshire**

**Published 1895**

**Source map scale - 1:500**

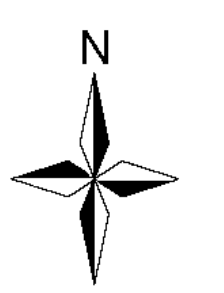
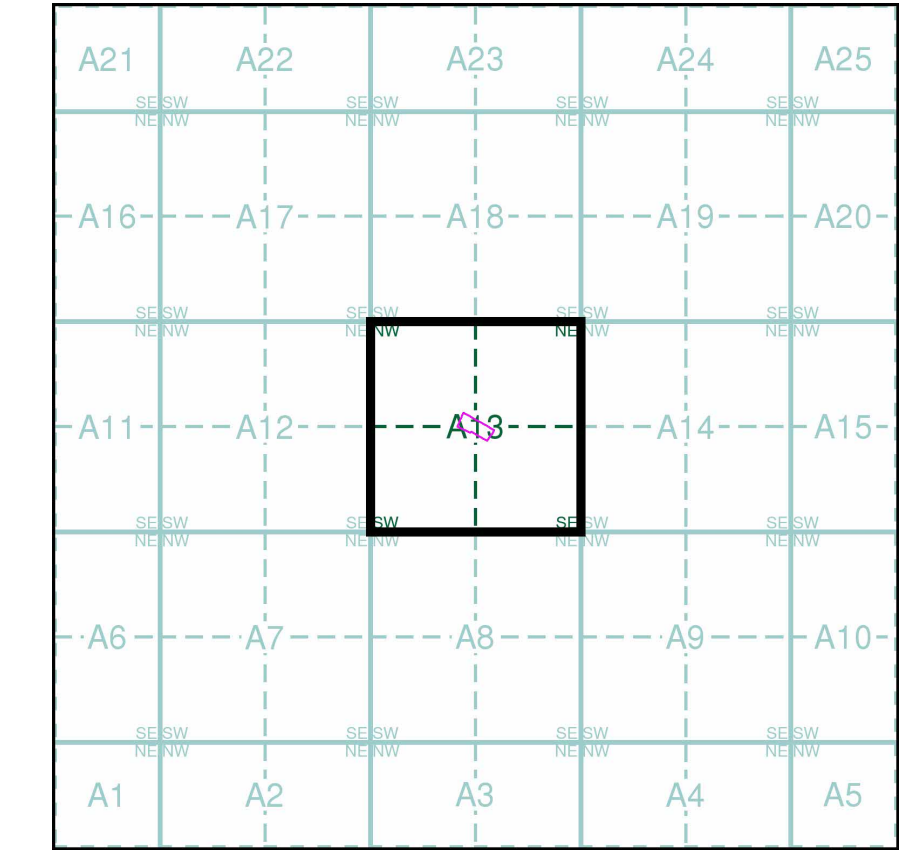
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to complement the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped more than once at this scale, and none have been since 1910. The 1:500 scale gives particular emphasis to such features as lamp posts, man holes, arched passages and minor building projections. Also often featured are divisions between tenements, interior ground floor layouts of public buildings, and on earlier plans, the functions of the various parts of larger industrial premises are also indicated. Content of the plans does vary however, from one town to the next in terms of, for example, the completeness of railway tracks and the coverage of public buildings.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

**Map Name(s) and Date(s)**

001_16_019	001_16_020
1895	1895
1:500	1:500
001_16_024	001_16_025
1895	1895
1:500	1:500
003_04_004	003_04_005
1895	1895
1:500	1:500

**Historical Town Plan - Segment A13**



**Order Details**

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 0

**Site Details**

Salamander Street, Edinburgh



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

# Historical Mapping Legends

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

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

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

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

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

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

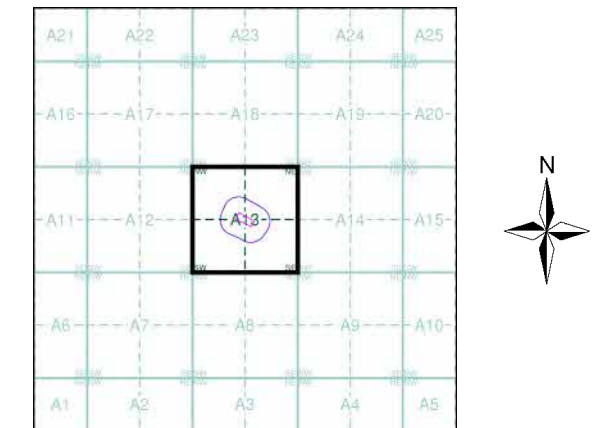


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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Edinburghshire	1:2,500	1896	2
Edinburghshire	1:2,500	1908	3
Edinburghshire	1:2,500	1914	4
Edinburghshire	1:2,500	1931 - 1932	5
Ordnance Survey Plan	1:1,250	1945 - 1946	6
Ordnance Survey Plan	1:2,500	1948	7
Additional SIMs	1:2,500	1949	8
Ordnance Survey Plan	1:1,250	1952 - 1967	9
Ordnance Survey Plan	1:2,500	1956 - 1969	10
Ordnance Survey Plan	1:1,250	1959 - 1979	11
Additional SIMs	1:1,250	1967 - 1991	12
Ordnance Survey Plan	1:1,250	1970 - 1985	13
Ordnance Survey Plan	1:2,500	1971	14
Additional SIMs	1:1,250	1985 - 1991	15
Additional SIMs	1:1,250	1989 - 1991	16
Large-Scale National Grid Data	1:1,250	1992	17
Large-Scale National Grid Data	1:1,250	1993 - 1994	18
Large-Scale National Grid Data	1:1,250	1996	19
Historical Aerial Photography	1:2,500	2009	20

## Historical Map - Segment A13



## Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

## Site Details

Salamander Street, Edinburgh



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



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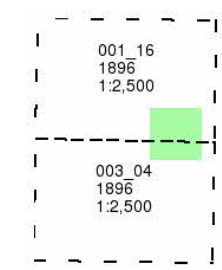
**Edinburghshire**

**Published 1896**

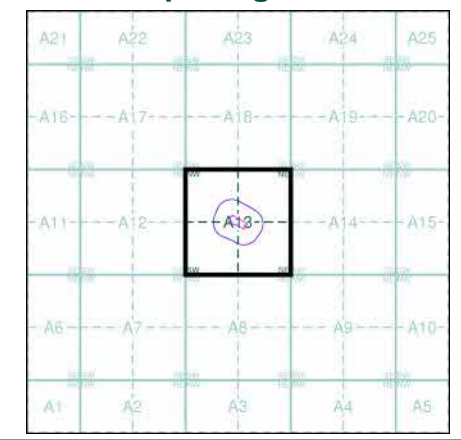
**Source map scale - 1:2,500**

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

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**



**Order Details**

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
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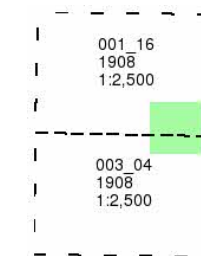
Edinburghshire

Published 1908

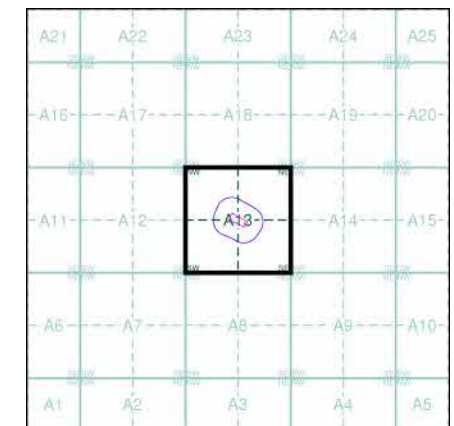
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

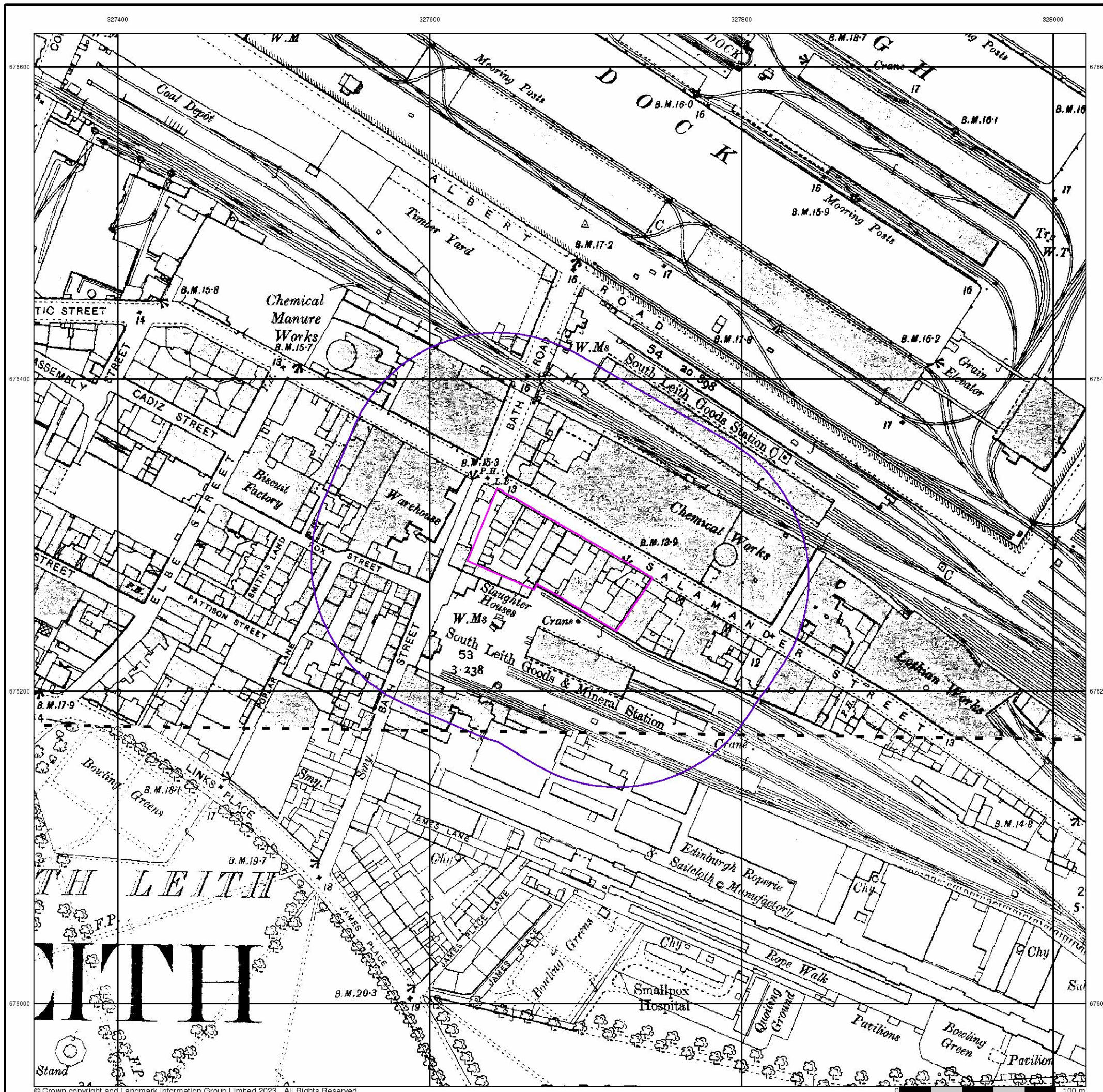
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Customer Ref: XG240
National Grid Reference: 327680, 676280
Slice: A
Site Area (Ha): 0.49
Search Buffer (m): 100

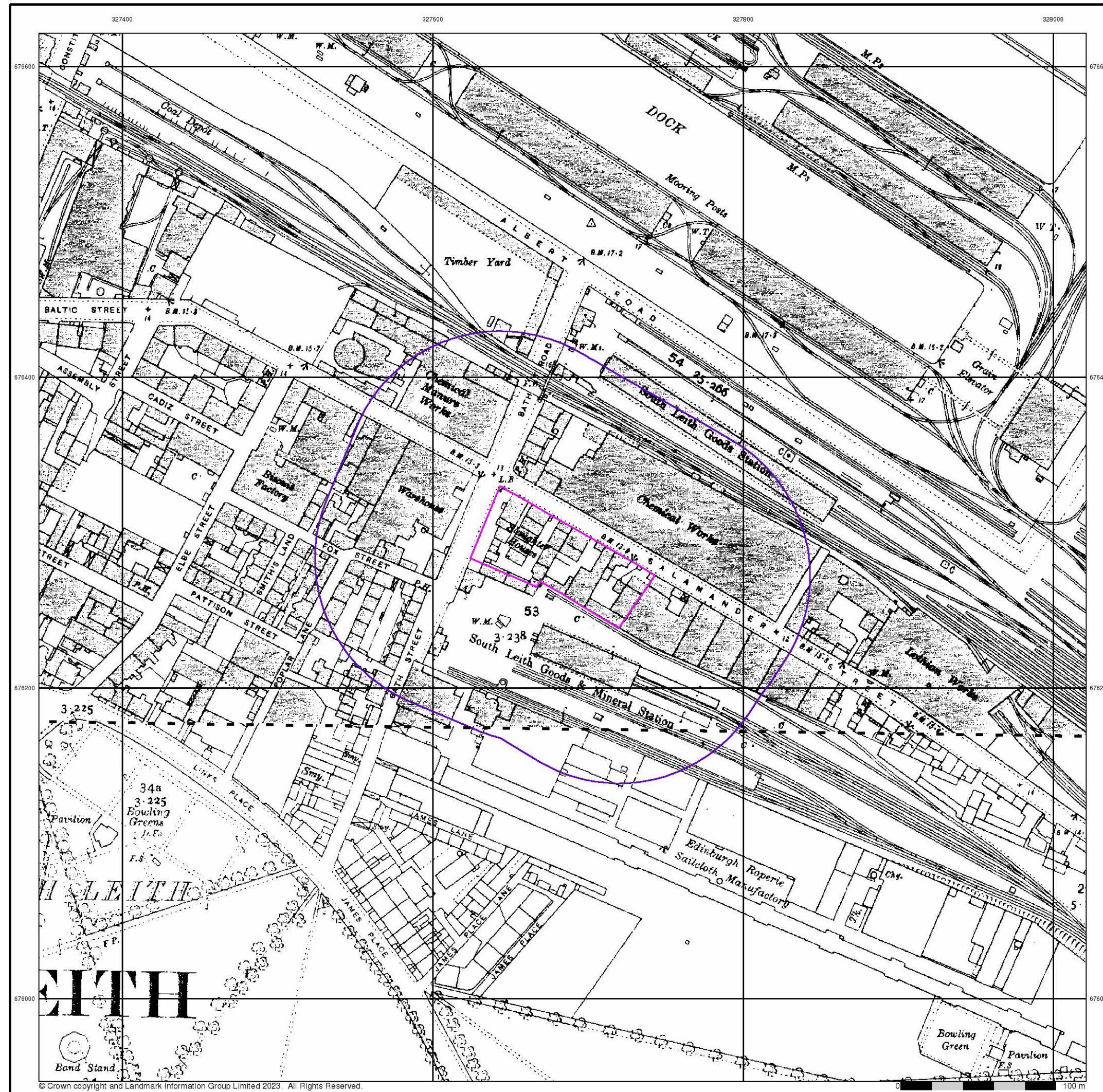
Site Details

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GEO-ENVIRONMENTAL & MINERALS

**Edinburghshire**

**Published 1914**

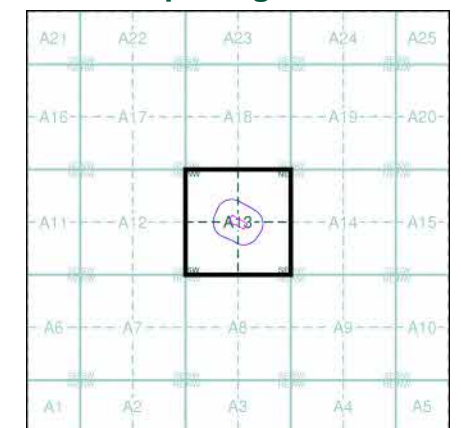
**Source map scale - 1:2,500**

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

**Map Name(s) and Date(s)**

001_16	1914	1:2,500
003_04	1914	1:2,500

**Historical Map - Segment A13**



**Order Details**

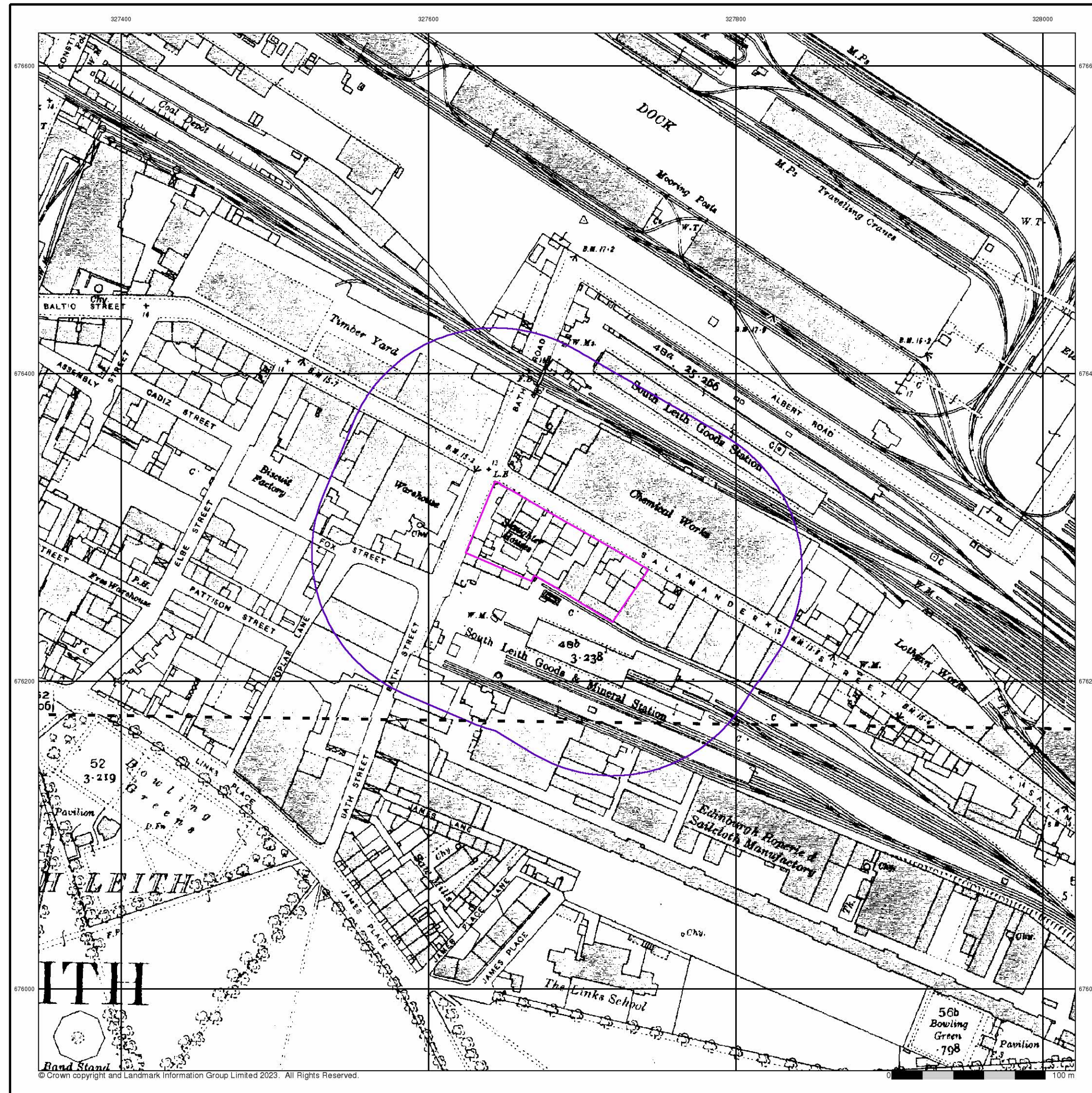
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 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

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**Edinburghshire**

**Published 1931 - 1932**

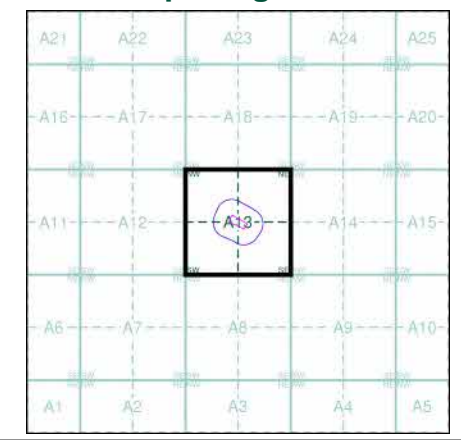
**Source map scale - 1:2,500**

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

**Map Name(s) and Date(s)**

001_16
1932
1:2,500
003_04
1931
1:2,500

**Historical Map - Segment A13**



**Order Details**

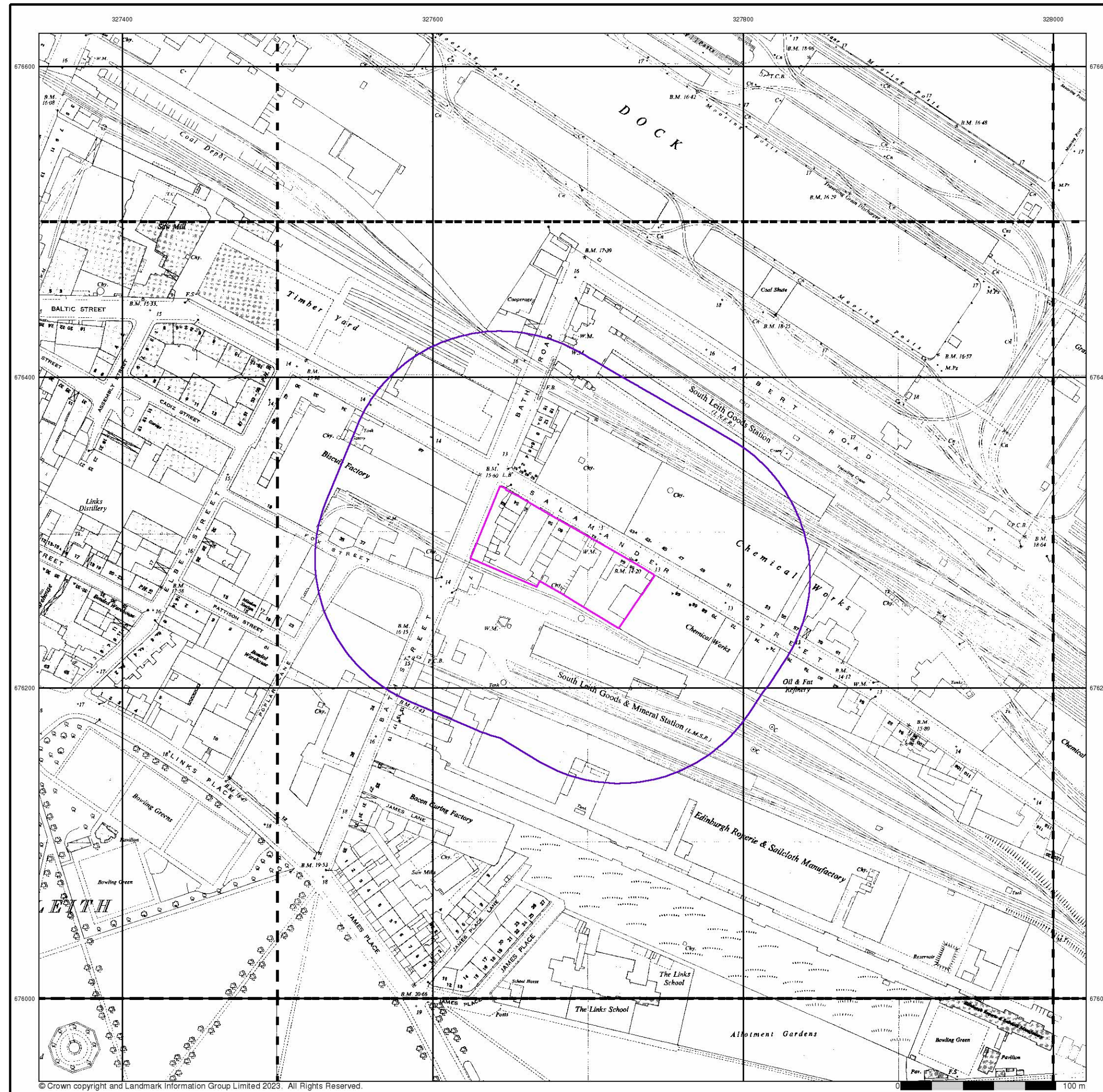
Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

**Site Details**

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GEO-ENVIRONMENTAL & MINERALS

## Ordnance Survey Plan

Published 1945 - 1946

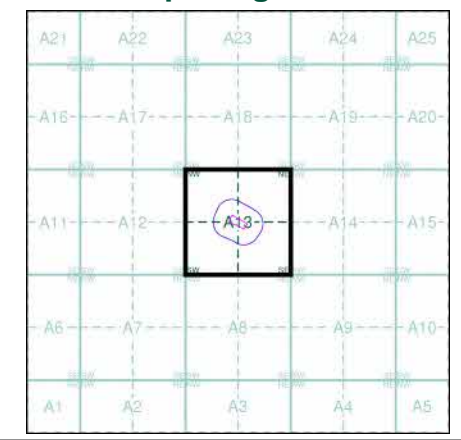
Source map scale - 1:1,250

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

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

NT2776NW	NT2776NE	NT2876NW
1946	1945	1945
1:1,250	1:1,250	1:1,250
NT2776SW	NT2776SE	NT2876SW
1946	1946	1946
1:1,250	1:1,250	1:1,250
NT2775NW	NT2775NE	NT2875NW
1946	1946	1946
1:1,250	1:1,250	1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

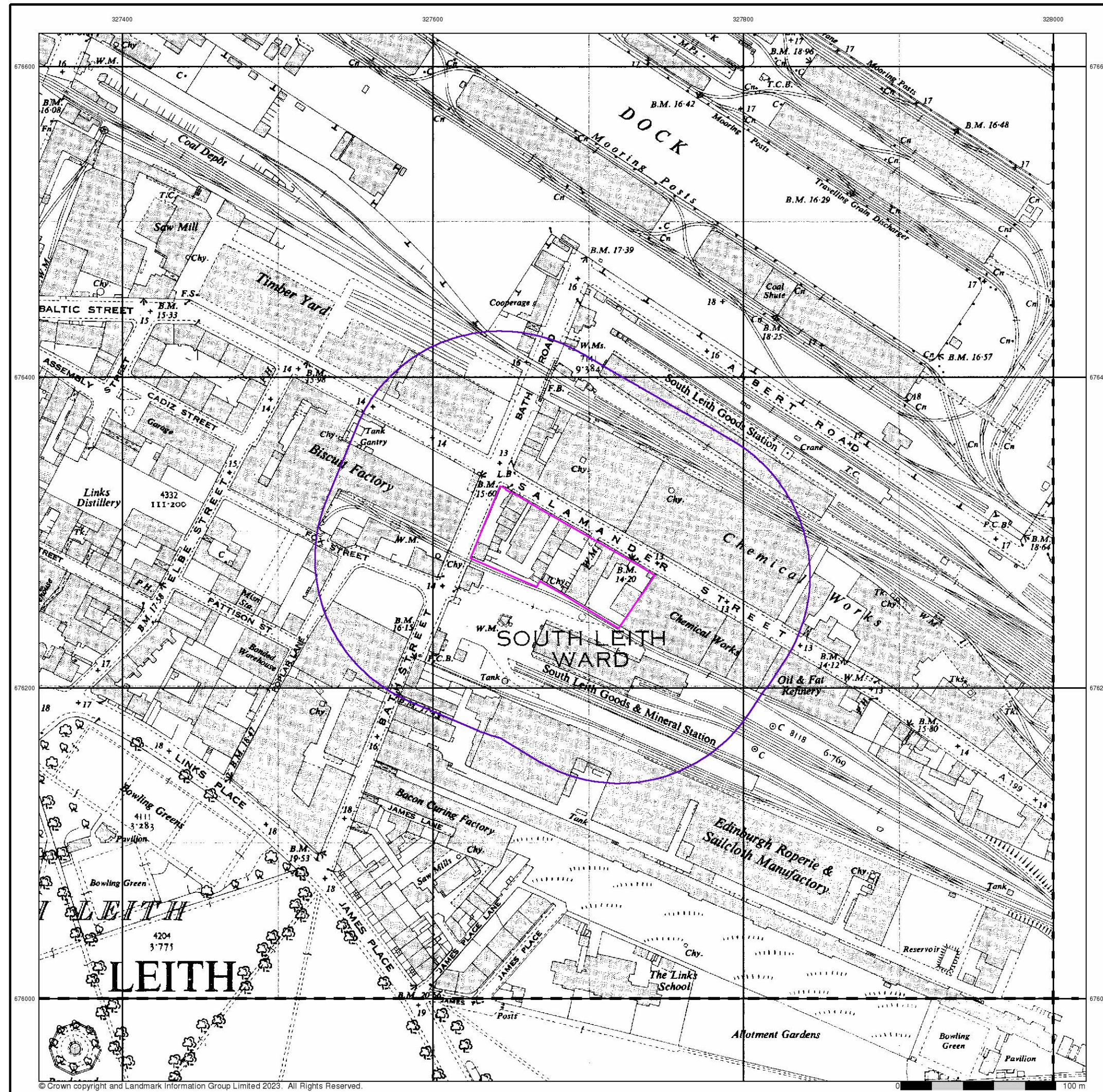
### Site Details

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





GEO-ENVIRONMENTAL & MINERALS

## Ordnance Survey Plan

Published 1948

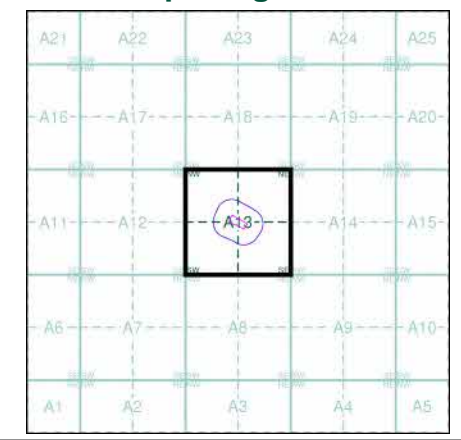
Source map scale - 1:2,500

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

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

NT2776 1948 1:2,500	NT2875 1948 1:2,500
---------------------------	---------------------------

### Historical Map - Segment A13



### Order Details

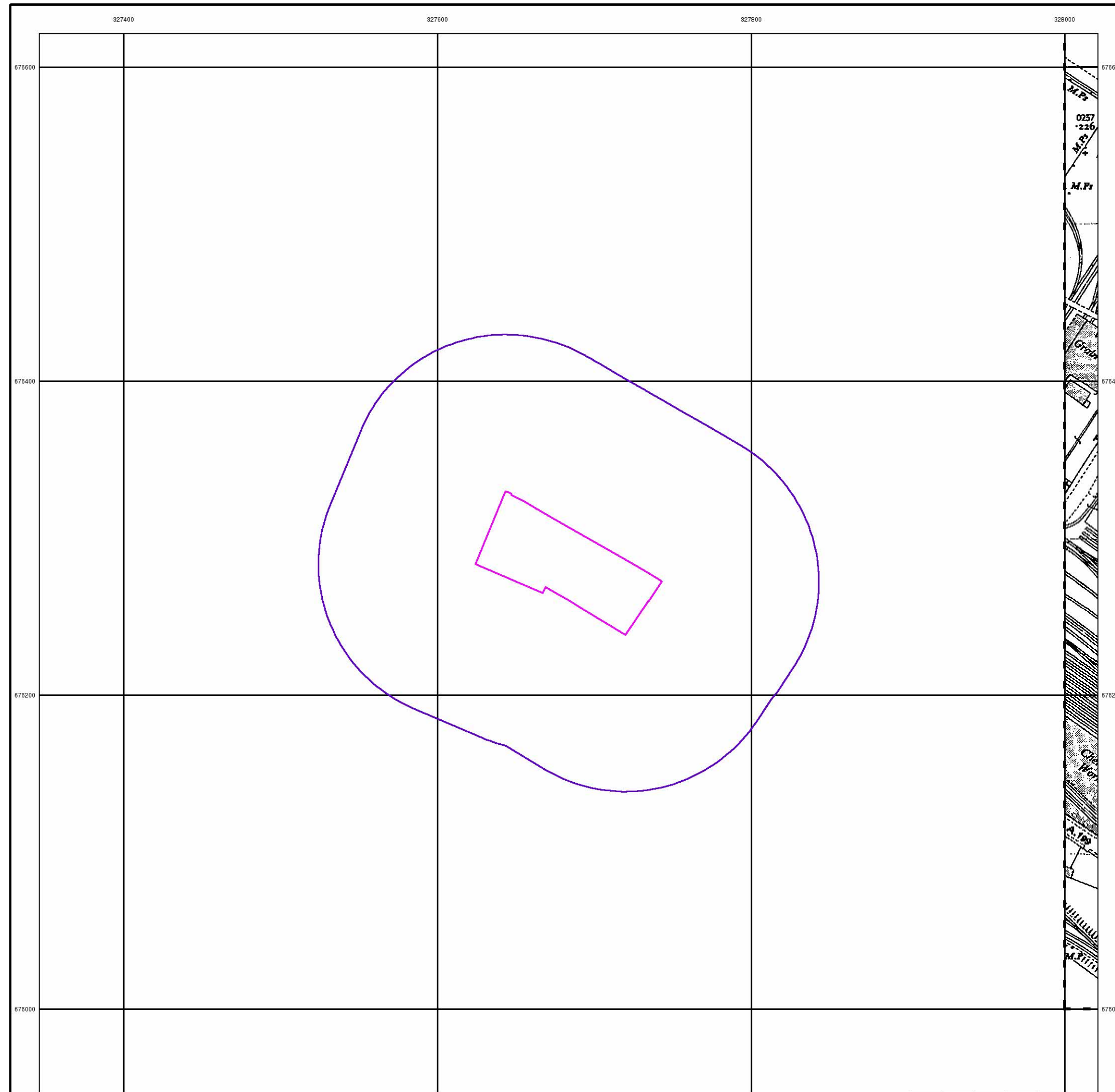
Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

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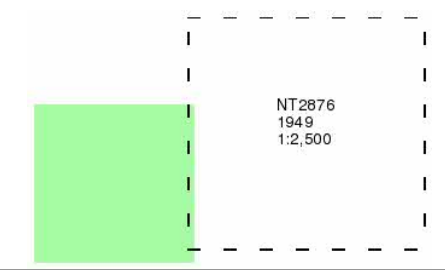
**Additional SIMs**

**Published 1949**

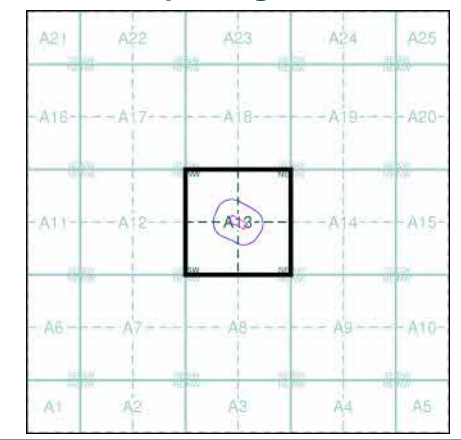
**Source map scale - 1:2,500**

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

**Map Name(s) and Date(s)**



**Historical Map - Segment A13**



**Order Details**

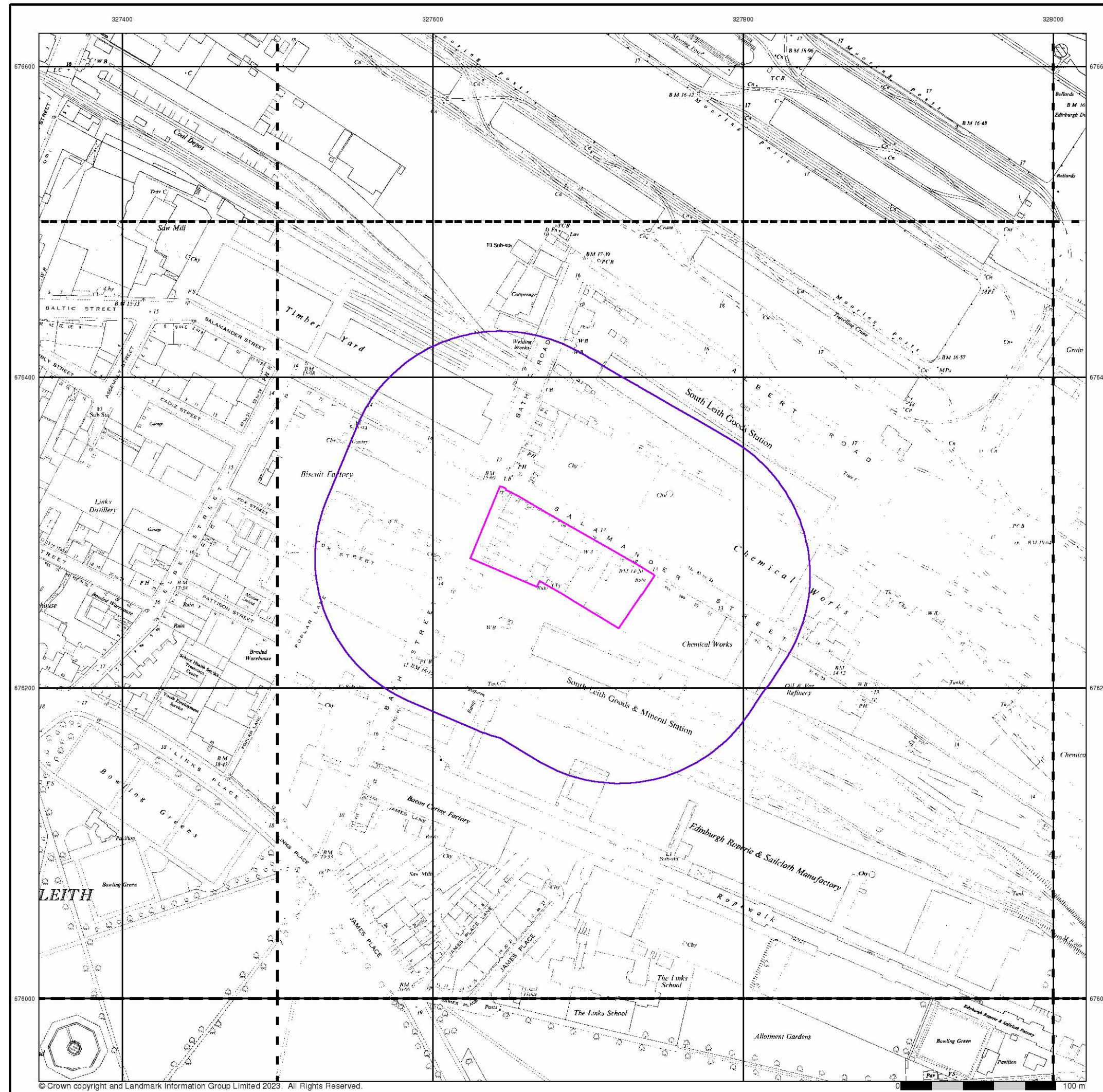
Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

**Site Details**

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GEO-ENVIRONMENTAL & MINERALS

## Ordnance Survey Plan

Published 1952 - 1967

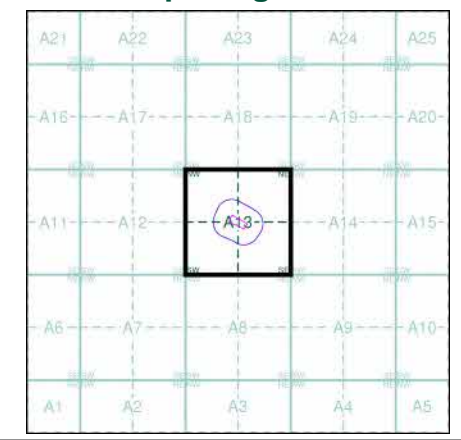
Source map scale - 1:1,250

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

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

NT2776NW	NT2776NE	NT2876NW
1953	1958	1967
1:1,250	1:1,250	1:1,250
NT2776SW	NT2776SE	NT2876SW
1953	1952	1953
1:1,250	1:1,250	1:1,250
NT2775NW	NT2775NE	NT2875NW
1957	1952	1953
1:1,250	1:1,250	1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

### Site Details

Salamander Street, Edinburgh



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GEO-ENVIRONMENTAL & MINERALS

### Ordnance Survey Plan

Published 1956 - 1969

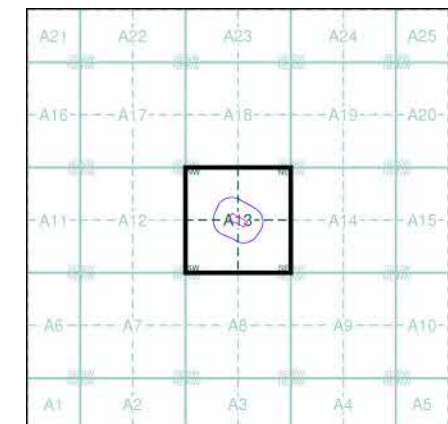
Source map scale - 1:2,500

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

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

NT2776 1960 1:2,500	NT2876 1969 1:2,500
NT2775 1969 1:2,500	NT2875 1956 1:2,500

### Historical Map - Segment A13



### Order Details

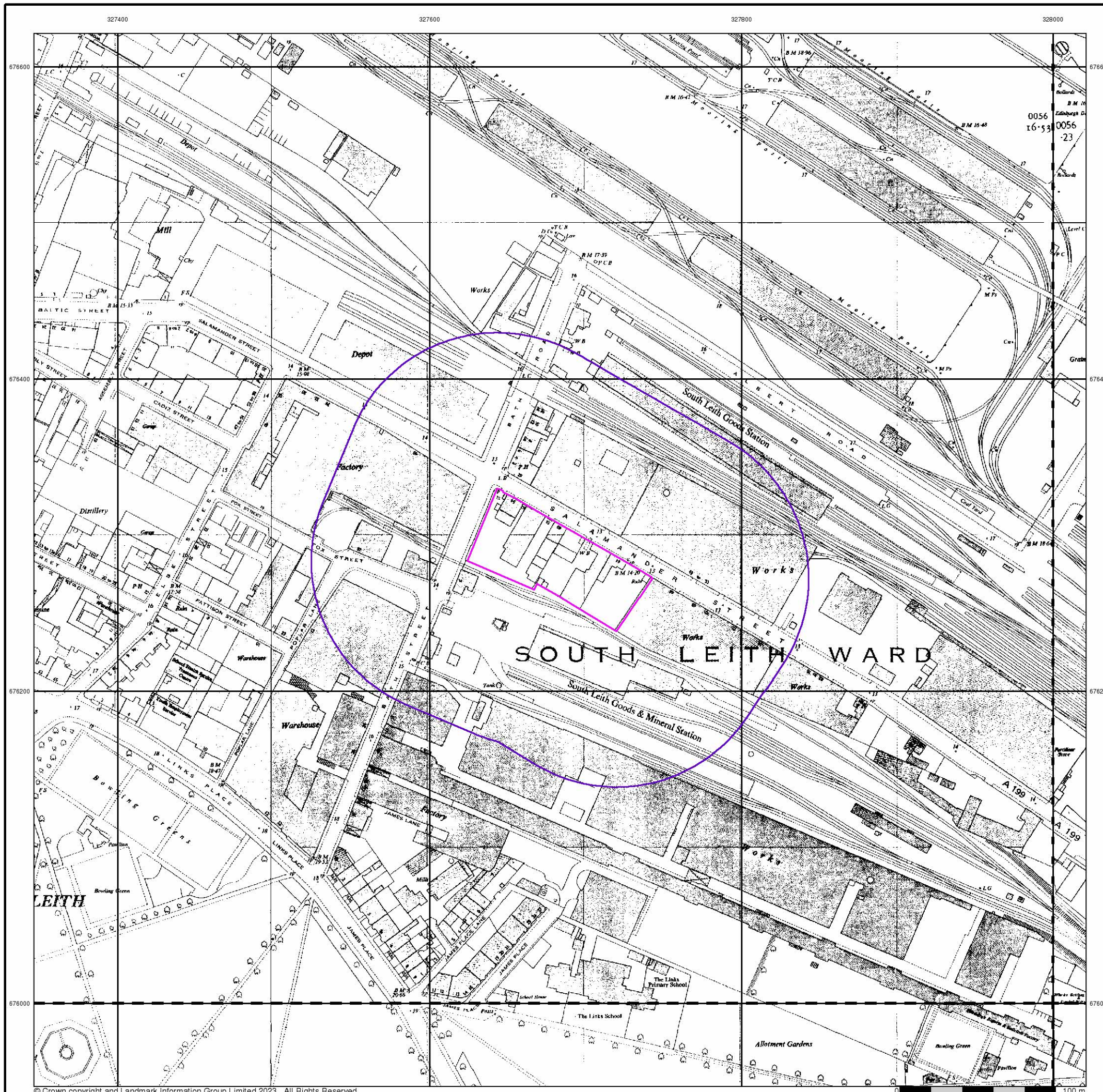
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 Customer Ref: XG240  
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 Site Area (Ha): 0.49  
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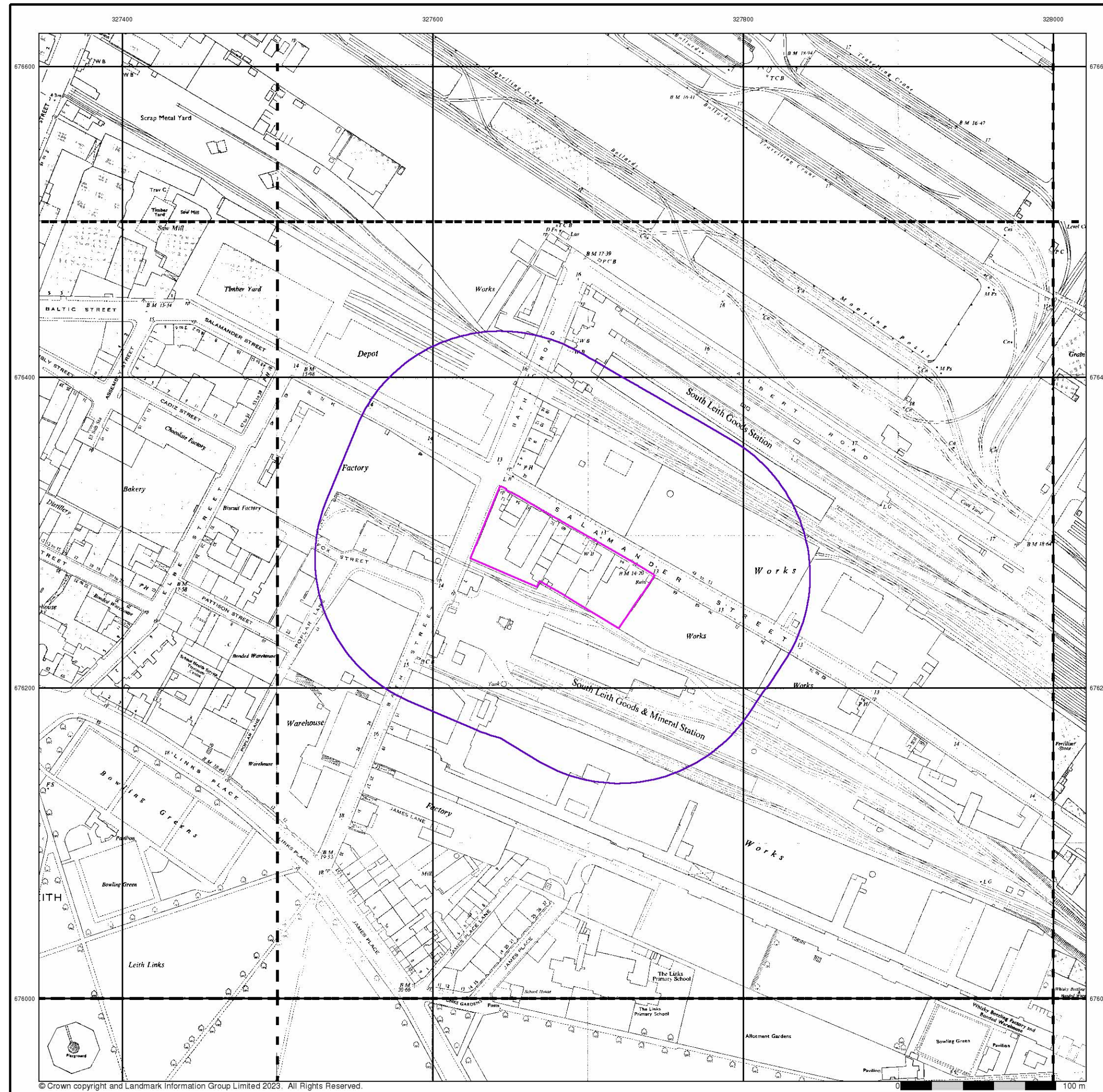
### Site Details

Salamander Street, Edinburgh



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 Fax: 0844 844 9951  
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GEO-ENVIRONMENTAL & MINERALS

### Ordnance Survey Plan

Published 1959 - 1979

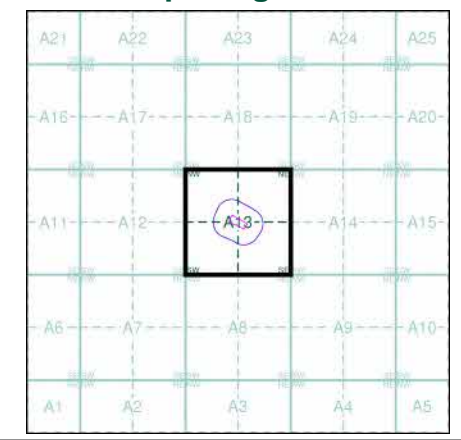
Source map scale - 1:1,250

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

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

NT2776NW	NT2776NE	
1970	1969	
:1,250	:1,250	
NT2776SW	NT2776SE	NT2876SW
1968	1959	1967
:1,250	:1,250	:1,250
NT2775NW	NT2775NE	NT2875NW
1979	1972	1959
:1,250	:1,250	:1,250

#### Historical Map - Segment A13



#### Order Details

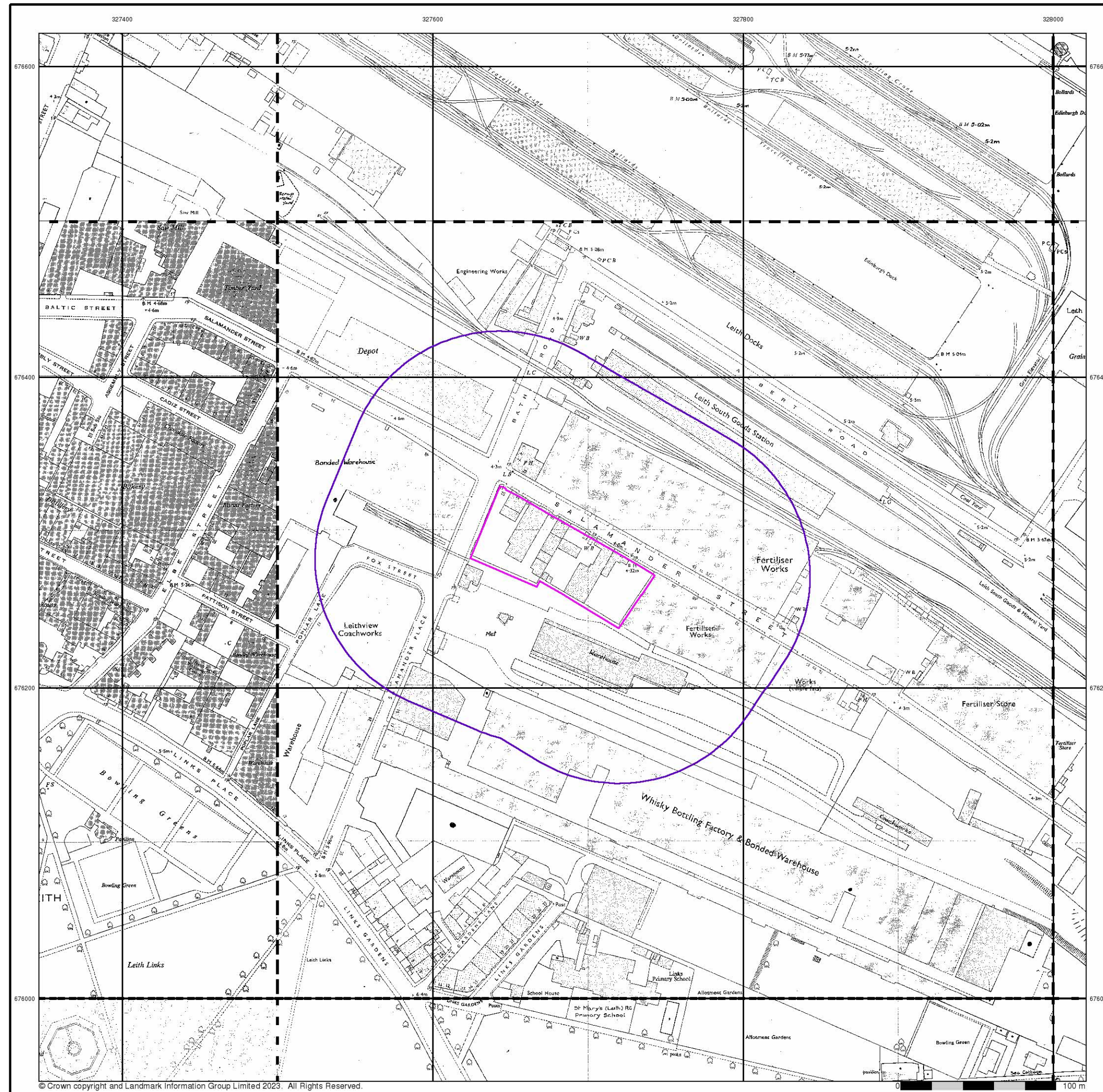
Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

#### Site Details

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### Additional SIMs

Published 1967 - 1991

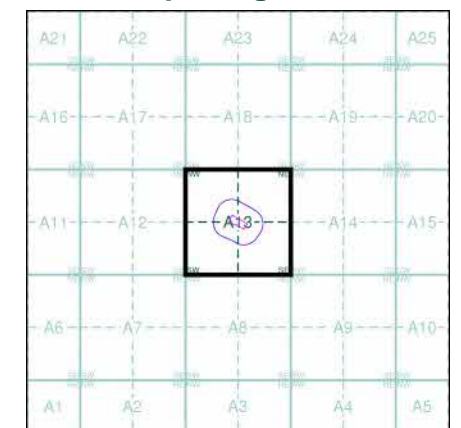
Source map scale - 1:1,250

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

IT2776NW	1987	1:1,250
IT2776NE	1978	1:1,250
IT2776SE	1967	1:1,250
IT2776SW	1968	1:1,250
IT2776S	1978	1:1,250
IT2776E	1987	1:1,250
IT2775NW	1977	1:1,250
IT2775NE	1991	1:1,250
IT2775SE	1987	1:1,250
IT2775SW	1987	1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

### Site Details

Salamander Street, Edinburgh



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



GEO-ENVIRONMENTAL & MINERALS

### Ordnance Survey Plan

Published 1970 - 1985

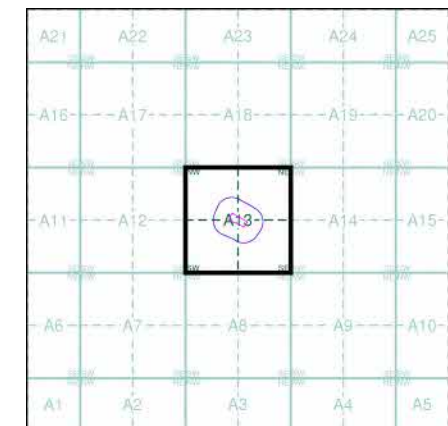
Source map scale - 1:1,250

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

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

NT2776NE	1985	1:1,250
NT2776SE	1970	1:1,250
NT2876SW	1976	1:1,250
NT2875NW	1972	1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

### Site Details

Salamander Street, Edinburgh



Tel: 0844 844 9952  
 Fax: 0844 844 9951  
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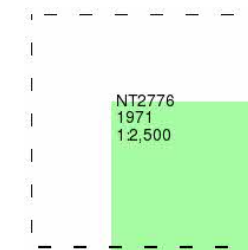
### Ordnance Survey Plan

Published 1971

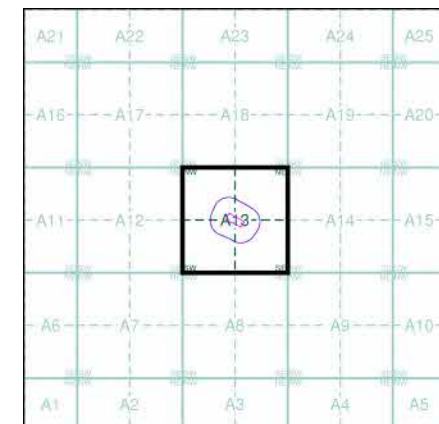
Source map scale - 1:2,500

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

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



### Historical Map - Segment A13



### Order Details

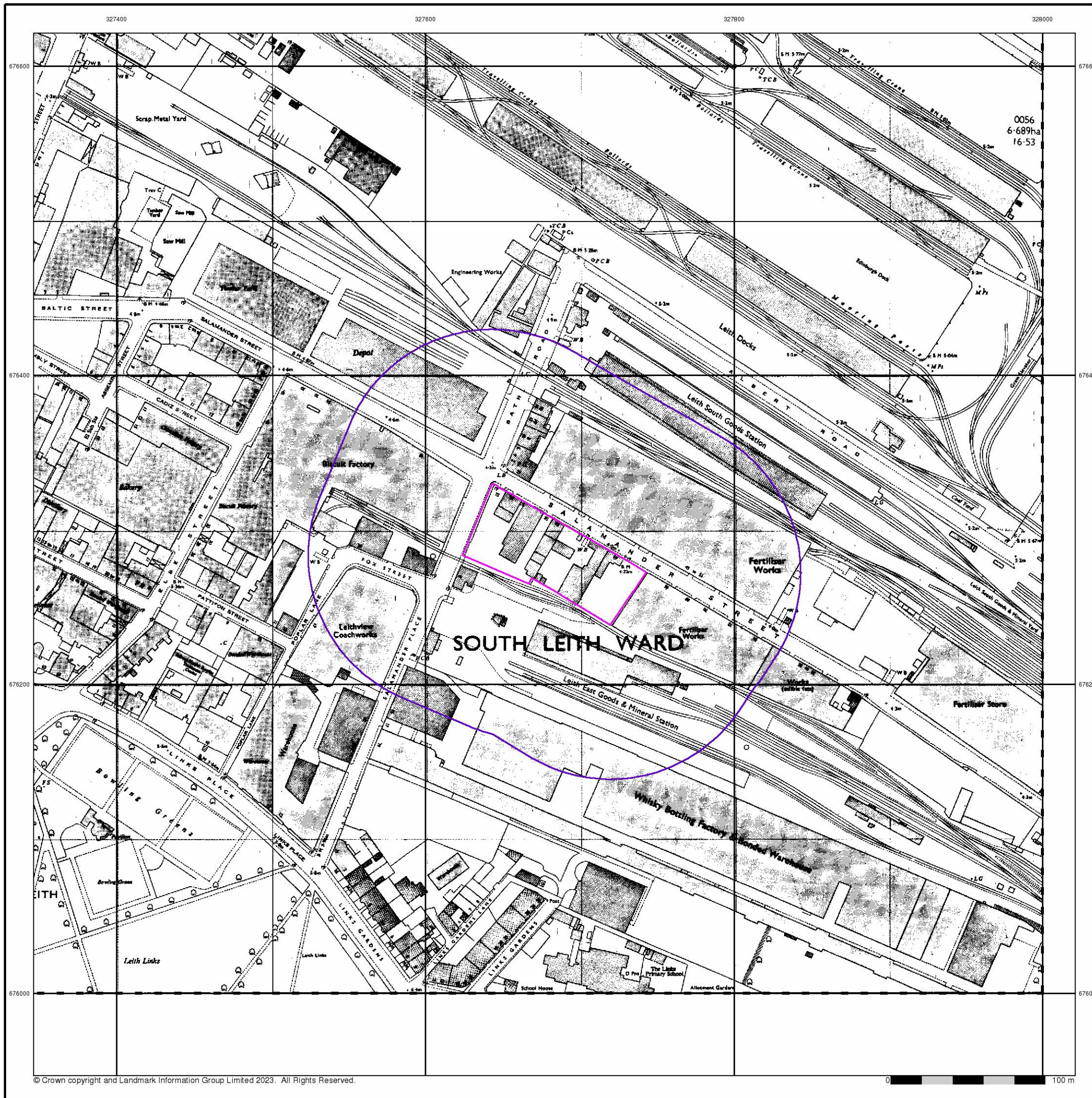
Order Number: 316705814\_1\_1  
Customer Ref: XG240  
National Grid Reference: 327680, 676280  
Slice: A  
Site Area (Ha): 0.49  
Search Buffer (m): 100

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### Additional SIMs

Published 1985 - 1991

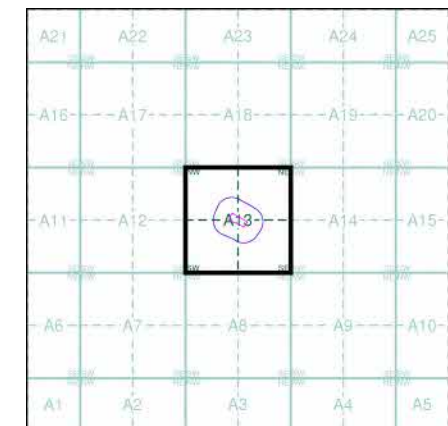
Source map scale - 1:1,250

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

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

UT2776NW	1985	1:1,250
UT2776NE	1985	1:1,250
UT2776SW	1989	1:1,250
UT2776SE	1989	1:1,250
UT2775NW	1986	1:1,250
UT2875NW	1991	1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 316705814\_1\_1  
 Customer Ref: XG240  
 National Grid Reference: 327680, 676280  
 Slice: A  
 Site Area (Ha): 0.49  
 Search Buffer (m): 100

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