

51-51A Great Underbank, Stockport

## Phase 1 Preliminary Risk Assessment

**Job Number:** LKC 23 1319  
**Date:** November 2023  
**Client:** Kion Developments Ltd



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## DOCUMENT QUALITY ASSURANCE

<b>Site Address</b>	51-51a Great Underbank, Stockport, SK1 1NE
<b>Report Title</b>	Phase 1 Preliminary Risk Assessment
<b>Job Number</b>	LKC 23 1319
<b>Client</b>	Kion Developments Ltd

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<b>Written By</b>	Elena Francis		
<b>Approved By</b>	Hannah Moss		

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## 1. Introduction

LK Consult Ltd (LKC) has been commissioned to carry out a Phase 1 Preliminary Risk Assessment (PRA) for Kion Developments Ltd.

In accordance with current guidance (including LCRM<sup>1</sup> and the National Planning Policy Framework (NPPF)<sup>2</sup>), the PRA will include a site reconnaissance, site history, geology, hydrogeology, hydrology, mineral search, and a landfill search. Information gathered from the desk study and site reconnaissance will be used to develop a contamination conceptual model for the site.

Based on the findings of this report, an appropriate site investigation can be derived, if required.

A summary of the site details is presented in Table 1-1. Figure 1 indicates the site location and boundary plan. Figure 2 indicates the proposed development as a client supplied drawing

<b>Location</b>	51- 51a Great Underbank, located in central Stockport. Centred at National Grid Reference 389570E 390470N.
<b>Area</b>	400m <sup>2</sup> .
<b>Topography</b>	Site slopes steeply north-south from approximately 42m above ordnance datum (AOD) to 51m at the southern boundary.
<b>Current Site Use</b>	Three-storey building with basement in central and northern area of site, car park in south of site. Ground floor currently used as clothing store. First and second floor vacant.
<b>Proposed Development</b>	Residential development including converting existing floors into 4no. apartments and addition of 2no. townhouses. First floor to remain as commercial.

Table 1-1: Summary of site details.

## 2. Historical Review

In compiling the site history, LKC consulted Envirocheck historical mapping (Appendix A) and other public domain maps / aerial photography.

Site Features	Location on Site	Dates Present		Comments
		From	To	
Unreferenced Buildings	S	1848	1960	Likely residential properties. No longer present by 1965 mapping.
Public House	N	1895	1972	No longer present by 1979 mapping.
Car Park	S	1979	2023	
Commercial building	N	1979	2023	Ground floor used as clothing shop, rest of building vacant.

Table 2-1: Summary of site features. Dates are based on available historical map editions.

Surrounding Area Features	Distance (m)	Direction	Dates Present		Comments
			From	To	
Inland River	80	NW	1848	2023	River Mersey. Shopping centre built over section of river to north of site in 1970.
Saw Mill	50	N	1934	1959	Becomes ruin in 1959, then a car park in 1972.
Car Park	10	W	1960	2023	

Table 2-2: Summary of potentially contaminative features within 50m and potentially infilled features within 250m. Dates are based on available historical map editions.

### 3. Environmental Setting

A summary of environmental settings is presented in Table 3-1, based on a review of available environmental data.

Categories <sup>(data sources)</sup>		Details
Geology <sup>1,2</sup>	Artificial Ground	No BGS recorded artificial ground.
	Superficial Deposits	River Terrace Deposits- sand and gravel.
	Bedrock	Chester Formation- sandstone, pebbly (gravelly).
	BGS Logs (100m)	BH Ref: SJ89SE52 (Robinson Tobacco Factory, Petersgate) 81m SE: gravel and sand to 2.2m, red sandstone to 15m.
Hydro-geology <sup>1</sup>	Aquifer Designation	Superficial Bedrock Secondary A Aquifer. Principal Aquifer.
	Source Protection Zone (SPZ)	Site not within an SPZ.
	Groundwater Abstractions (100m)	None.
Hydrology <sup>1</sup>	Surface Watercourses (100m)	None.
	Flooding Risk <sup>1,3</sup>	Flood Zone 2.
	Surface Water Abstractions (100m)	None.
	Discharge Consents (onsite)	None.
	Pollution Incidents (onsite)	None.
Minerals & Mining <sup>1,4</sup>	Coal Mining	Not within a Coal Reporting Area. Not within a Development High Risk Area.
	Surface Mineral Extractions (250m)	None.
	Non-Coal Mining Area	No Hazard.
Ground Stability <sup>1</sup>	Collapsible Ground	Very low hazard.
	Compressible Ground	No hazard.
	Ground Dissolution	No hazard.
	Landslide	Very low hazard.
	Running Sand	Very low hazard.
	Shrinking / Swelling Clay	No hazard.
Landfill Sites (250m) <sup>1</sup>	Known / Registered	None.
	Potentially Infilled Land (non-water and water), based on Envirocheck Report	1no. feature: 82m NW, Unknown Filled Ground (water).
	Potentially Infilled Sites, based on LKC historical review	None.

Table 3-1: Summary of the environmental setting.

**Notes:** Distance in brackets is the distance from site that features are included. Where no distance given, features relate to onsite only.

**Data Sources:**

1 Envirocheck Report (Appendix A & B).

2 <http://mapapps2.bgs.ac.uk/geoindex/home.html>

3 <https://flood-map-for-planning.service.gov.uk/location>

4 The Coal Authority Web Mapping Services (WMS) / <http://coal.decc.gov.uk/en/coal/cms/publications/data/map/map.aspx>.

5 Zetica UXO Unexploded Bomb Risk Map (Appendix D).

Categories <sup>(data sources)</sup>		Details
Radon Potential <sup>1</sup>		<1% of homes above Action Level. No protective measures are necessary in the construction of new dwellings or extensions.
Designated Sites (50m) <sup>1</sup>		None.
Contemporary Trade Directory (50m) <sup>1</sup>		31m NE, dry cleaners. Inactive. 32m N, digital printing. Inactive. 32m N, photographic processors. Inactive. 36m SE, commercial cleaning service. Inactive. 36m N, jewellery manufacturers and cleaners. Inactive. 41m SE, T-shirts. Inactive.
Fuel Station Entries (50m) <sup>1</sup>		None.
Unexploded Ordnance Risk (UXO) – Zetica Risk Map	Zetica Risk Map <sup>5</sup>	Bomb Risk: Low. Strategic Targets: None identified within 100m.

Table 3-2 (continued): Summary of the environmental setting.

**Notes:** Distance in brackets is the distance from site that features are included. Where no distance given, features relate to onsite only.

**Data Sources:**

**1** Envirocheck Report (Appendix A & B).

**5** Zetica UXO Unexploded Bomb Risk Map (Appendix D).

## 4. Site Reconnaissance

A site reconnaissance was carried out on 20<sup>th</sup> October 2023.

Relevant features identified on site are summarised below:

- Site comprises a 3-storey red brick building with basement in the central and northern part of site and a small car park in the south.
- The northern wall of the building forms the northern site boundary, which is adjacent to the pavement of Great Underbank.
- The ground floor of the building is currently a clothing shop. Access to the first and second floors of the building is via a door at the front of the building, next to the entrance to the clothing store.
- The first floor of the building is vacant with evidence of the flooring, roof tiles and all fixtures having been removed. Several windows are boarded up.
- LKC did not access the second floor however it is understood that the second floor is also vacant. The second floor spans the northern half of the building only.
- A small basement is situated beneath the northern part of the building. Access to the basement is via the clothing store. The basement is currently used for storage of stock and an electricity cupboard is present.
- A potential former boiler house is situated above the second floor of the building (refer to Photograph 5).
- The rear of the building is accessed via Pickford's Brow.
- A small car park is located to the north of Pickford's Brow. The groundcover comprises tarmac with areas of concrete. The surface was uneven in areas with surface water pooling.
- The car park is relatively level.
- No evidence of spillages / leakages of petroleum hydrocarbons / stains of the car park surface were identified.
- A metal fence and pedestrian gate are present at the north of the car park, with steps leading down to the flat roof of the first floor of the building.
- A red brick retaining wall runs along the south-eastern site boundary adjacent to the car park. A small car park is situated adjacent east at a higher level to site. The level difference is approximately 0.40m.
- A red brick retaining wall forms part of the southern site boundary adjacent to the pavement of Pickford's Brow. Pickford's Brow slopes steeply down to the west, and the pavement of Pickford's Brow is situated at a lower level to site. The level difference is between 0.40-1.00m and is greatest at the south -western corner of site.
- A red brick retaining wall is present along the south-western site boundary. A car park is present adjacent to the south-west of site and is situated at a lower level. The level difference between the car park on site and the car park to the west is between 1.80-2.00m.

The surrounding area comprises:

- North: Great Underbank and multi-storey car park / commercial buildings.
- East: Vacant building, car park and commercial buildings.
- South: Pickford's Brow and car park.

- West: Nationwide Bank and car park.

Site photographs are provided in Table 4-2.

	
<p><b>Photograph 1:</b> View of front of building from Great Underbank.</p>	<p><b>Photograph 2:</b> First floor of building vacant.</p>
	
<p><b>Photograph 3:</b> Access to car park in south of site off Pickford's Brow.</p>	<p><b>Photograph 4:</b> Steps from northern end of car park down to flat roof of first floor of building.</p>
	
<p><b>Photograph 5:</b> View of building from car park, looking north. Potential former boiler house visible at top of building.</p>	<p><b>Photograph 6:</b> Level difference between south-western part of car park and land adjacent south-west.</p>



**Photograph 7:** Level difference between pavement of Pickford's Brow and site car park, looking west.



**Photograph 8:** Level difference between site car park down to ground floor roof of building.

Table 4-1: Site photographs.

Site features are also shown on Plate 4-1.



Plate 4-1: Plan showing relevant site features.

## 5. Preliminary Conceptual Model

### 5.1. Introduction

The aim of the conceptual model is to provide a preliminary assessment of the likelihood of a pollutant linkage for each potential combination of contaminant, pathway, and receptor. A conceptual model can be used to make an informed decision on the contamination risks associated with the site and whether further site investigation work is required.

The sections below are therefore divided into potential contaminant, potential pathway and potential receptor as described in LCRM<sup>3</sup>, on the premise that, if there is no pollutant linkage, then there will be no risk to the receptor. The final section provides an assessment of the potential pollutant linkages that may still be present on the site if redevelopment were to occur.

### 5.2. Potential Contaminants

Potential viable contamination sources are detailed in Table 5-1. These are split into onsite sources, offsite sources and underlying geology.

Potential Source	Contaminants
<b>On site</b>	
Unknown depth of made ground below some or all of the site (e.g., potential former cellars,)	Demolition rubble, ash, and clinker: asbestos, heavy metals, sulphates, PAHs <sup>4</sup> . Other fill material sources: unknown organic / inorganic compounds. If organic / putrescible material: hazardous gas (principally carbon dioxide and methane). Presence of basement may limit risk of hazardous gas.
Demolished buildings	Asbestos containing materials (ACM).
Car park	No significant contamination source anticipated.
Existing commercial / public building (pre 1960s)	Assuming a boiler house is / has been present: petroleum hydrocarbons (fuel / oils) and heavy metals, sulphates, PAHs <sup>5</sup> (waste ash and clinker). Anecdotal evidence possible boiler house is present on 3 <sup>rd</sup> floor, therefore risk expected to be minimal as significant downward migration of any contaminants not expected, and as feature likely to be removed.
<b>Surrounding Area</b>	
Surrounding industrial land uses (saw mill, )	Not expected to be a significant source due to distance from site and age of feature.
Landfills / offsite potentially infilled features within 250m	Given size, distance and age of features, there is not considered to be a significant source of hazardous gas.
<b>Underlying Geology</b>	
Radon Affected Area	<1% of homes above Action Level. No protective measures are necessary in the construction of new dwellings or extensions. No further consideration required.
Superficial / Bedrock	Chester Formation- sandstone and pebble with River Terrace Deposits - sand and gravel. No significant contamination sources identified.

Table 5-1: Potential contamination sources.

### 5.3. Potential Receptors

Potential receptors are detailed in Table 5-2.

Receptors	
Human health	Future site users (including residents, visitors, and site workers). Offsite land users.
Controlled waters	Brook beneath site. Principal Bedrock Aquifer. Secondary A Aquifer.
Buildings.	
Potable water pipes.	

Table 5-2: Potential receptors.

#### 5.4. Potential Pathways

Potential pathways are detailed in Table 5-3.

Pathways		
Soil	Human health <sup>6</sup> (Mixed use: residential and commercial land use: apartments, town houses and commercial ground floor, no soft landscaping)	Inhalation of vapours outside. Inhalation of vapours inside.  Omitted as no private gardens: Ingestion of soil, ingestion of soil-derived dust, dermal contact with soil, dermal contact with soil derived indoor dust, inhalation of soil-derived outdoor dust, inhalation of soil-derived indoor dust, ingestion of contaminated home-grown produce and ingestion of soil attached to home-grown produce.
Surface water	Surface run-off over impermeable surface.	
Groundwater	Infiltration into the ground, through potentially contaminated material (contamination possibly going into solution).	
Groundwater and gas	Migration through potentially permeable strata and preferential pathways. Superficial (sand and gravel) is likely to be relatively permeable. Bedrock (sandstone) likely to be relatively permeable. Preferential pathways: brook onsite, services.	
Gas	Migration into buildings (e.g., via services) and accumulation of gases in confined spaces (potentially causing explosion if methane is present).	

Table 5-3: Potential pathways.

#### 5.5. Preliminary Contamination Conceptual Model

The Preliminary Contamination Conceptual Model is illustrated in Table 5-4.

Generic potential pollutant linkages are described along with an assessment of the risk based upon guidance on probabilities and consequences outlined in CIRIA C552<sup>7</sup>.

In order to assess the potential risk for each pollutant linkage, an assessment of the magnitude of the potential consequence (severity) of the risk occurring and the magnitude of the probability (likelihood) of the risk occurring has been considered and classified. This is based on the guidance provided in CIRIA C552 and further details including a risk matrix is provided in Appendix E.

The probability is based on the site history, site reconnaissance, environmental setting, pathways, and receptors.

Reasonable worst-case consequence has been assumed at this stage.

Where LKC identified a low to very low risk, targeted or low-density intrusive investigation work, a watching brief (during construction work) or no investigation work will be recommended. This will be dependent on the nature of the site and the proposed development.

Where the risk falls into the moderate/low risk, LKC will undertake an assessment to establish what further work will be required.

Where LKC identifies a moderate or higher risk, intrusive investigation work or precautionary remediation is recommended.

Recommendations are discussed further in Section 7.

Due to the minor consequence associated with the phytotoxic effect to flora (i.e., loss of plants in a landscaping scheme), the overall risk for the majority of sites will be very low to low. Where soils contain significant concentrations of heavy metals, in general there will other pollutant linkages (i.e., the risk to human health) that will trigger the requirement for remediation (e.g., a clean environmental cover system). As such the risk to flora associated with phytotoxic contaminants will not be considered further.

The risk to buildings associated with elevated sulphate will be considered as part of the geotechnical assessment and will not be included in the contamination risk assessment.

It should be noted that there may be risk from short term exposure from contaminated soil to site workers. The Preliminary Contamination Conceptual Model deals with long term exposure to key receptors. Acute risks can be easily mitigated by good environmental management of the site during site works. Standard health and safety precautions (as per HSE guidance<sup>8</sup>) should be adopted by all workers involved with site enabling and construction works. Therefore, this receptor is not considered in the contamination conceptual model.

PL	Contaminants of Concern (source)	Pathway	Receptor	Probability	Consequence	Risk
1	Asbestos, PAHs, heavy metals, sulphates, petroleum hydrocarbons, naphthalene, other fill material sources: unknown organic/inorganic compounds (possible deep made ground, residential buildings, possible boiler house)	No viable pathways (dermal contact, inhalation, ingestion).	Future site users. Offsite receptors.	-	-	-
2	Petroleum hydrocarbons, naphthalene (unknown depth of made ground, residential buildings, possible boiler house)	Inhalation of vapours. Migration via permeable strata and preferential pathways.	Future site users	Low Likelihood	Medium	Moderate / Low
3	Ground gas: methane, carbon dioxide (unknown depth of made ground)	Migration via permeable strata and preferential pathways. Inhalation of gas. Explosion in confined spaces.	Future site users. Buildings.	Low Likelihood	Severe	Moderate
4	Petroleum hydrocarbons, PAHs, heavy metals, naphthalene (unknown depth of made ground, residential buildings, possible boiler house)	Surface run-off. Migration via permeable strata and preferential pathways. Perched waters migration.	Groundwater Surface water	Low Likelihood	Medium	Moderate / Low
5	Petroleum hydrocarbons, naphthalene (unknown depth of made ground, residential buildings, possible boiler house)	Ingestion of tainted water supply.	Future site users. Water pipes.	Low Likelihood	Medium	Moderate / Low

Table 5-4: Preliminary Contamination Conceptual Model.

**Notes:** PL = Pollutant Linkage. Contaminant of Concern (CoC) - See Table 5-1 for contamination sources. See Section 7 for recommendations.

## 6. Preliminary Geotechnical Risk Assessment

Table 6-1 summarises the possible geotechnical constraints of the site, based on the site history, environmental settings and site reconnaissance. Investigation work will be required to confirm the risks and provide a detailed geotechnical assessment and foundation design.

<b>Coal Mining</b>	Site is not within a Development High Risk Area. No further assessment required.
<b>Envirocheck Ground Stability Hazards</b>	No to very low hazard identified. No further action required.
<b>Made Ground</b>	Unknown depth and constituent of made ground across the site. Possible in-ground structures from previous developments. Unlikely to be a suitable founding stratum unless engineering work is undertaken.
<b>Superficial</b>	Unknown strength of soils for foundation design. Sand and gravel anticipated below the site. Strata may be variable giving differential settlement.
<b>Bedrock</b>	Strength and extent of bedrock weathering unknown. Unknown depth to bedrock.
<b>Groundwater</b>	Unknown depth and variability of groundwater. Shallow / fluctuating groundwater can affect the strength of the soil, particularly in granular ground. Shallow groundwater can also affect construction works.
<b>Plasticity</b>	No clay recorded on site.
<b>Sulphate</b>	Unknown sulphate content of the made ground and natural.
<b>Road / Pavement Design</b>	Unknown CBR values for footpath and road design.
<b>Existing Foundations</b>	Foundations of existing buildings should be confirmed.

Table 6-1: Summary of geotechnical constraints.

## 7. Summary Conclusions and Recommendations

### 7.1. Summary Conclusions

Table 7-1 summarises the site details, historical review, environmental settings and site reconnaissance.

<b>Current Site Use &amp; Pertinent Features</b>	Three-storey building with basement in central and northern area of site, car park in south of site. Ground floor currently used as clothing store. First and second floor vacant.
<b>Proposed Development</b>	Residential development including 4no. apartments and 2no. townhouses. First floor to remain as commercial. No soft landscaping proposed.
<b>Main Historical Features</b>	Onsite: Public house, residential buildings, commercial stores, car park, vacant building. Surrounding Area: Residential buildings, commercial buildings, saw mill, car parks, warehouses.
<b>Geology / Hydrogeology</b>	Artificial: No BGS recorded artificial ground. Superficial: River Terrace Deposits- sand and gravel. Bedrock: Chester Formation- sandstone, pebbly (gravelly).
<b>Landfills / Infilled ground</b>	No recorded landfills. Potentially infilled ground identified.

Table 7-1: Summary of site details, historical review, environmental settings and site reconnaissance.

A preliminary contamination conceptual model has been produced by LKC, which is summarised in Table 7-2.

Pollutant Linkage	Contaminants	Risk
<b>PL1:</b> Contaminants posing a risk to receptors via dermal contact, ingestion and inhalation (of soil, dust, fibres and home-grown produce).	-	-
<b>PL2:</b> Volatile contaminants posing a risk to receptors via the inhalation of vapours.	Petroleum hydrocarbons, naphthalene	Moderate / Low
<b>PL3:</b> Gas posing a risk to buildings and receptors via the migration of gas into building causing explosion and asphyxiation.	Hazardous Gas	Moderate
<b>PL4:</b> Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Petroleum hydrocarbons, PAHs, heavy metals, naphthalene	Moderate / Low
<b>PL5:</b> Organic contaminants posing a risk to receptors.	Petroleum hydrocarbons, naphthalene	Moderate / Low

Table 7-2: Summary risk table.

A preliminary geotechnical assessment has been carried out by LKC. Table 7-3 summarises the geotechnical constraints.

<b>Coal Mining</b>	Site is not within a Development High Risk Area. No further assessment required.
<b>Made Ground</b>	Unknown depth and constituent of made ground across the site.
<b>Superficial</b>	Unknown strength of soils for foundation design.
<b>Bedrock</b>	Unknown depth to bedrock.
<b>Groundwater</b>	Unknown depth and variability of groundwater.
<b>Plasticity</b>	No clay recorded onsite.

<b>Sulphate</b>	Unknown sulphate content of the made ground and natural.
<b>Road / Pavement Design</b>	Unknown CBR values for footpath and road design should be calculated.
<b>Existing Foundations</b>	Existing foundations of building should be confirmed.

Table 7-3: Summary of geotechnical constraints.

Based upon the available information, LKC conclude there is a viable contamination and geotechnical risk and therefore further assessment is recommended.

## 7.2. Recommendations

Recommendations are provided in Table 7-4.

<b>Further Assessment Recommendations</b>	Phase 2 intrusive investigation required. Phase 2 investigation to be carried out in line with current guidance, including BS10175 <sup>9</sup> , BS5930 <sup>10</sup> CIRIA C665 <sup>11</sup> , RB17 <sup>12</sup> and BS8485 <sup>13</sup> . 'Exploratory investigation': 1 sample per 25-50m square centres. To be agreed with the local authority.
<b>Type of Investigation Work</b>	Boreholes, with supplementary hand dug pits.
<b>PL 2, 5</b>	Limited intrusive investigation work recommended to confirm ground conditions across the site. Testing of contaminants of concern based on preliminary conceptual model and field observations (PID tests and visual / olfactory evidence).
<b>PL 3</b>	Intrusive investigation to confirm ground conditions. If significant gas source and pathway identified, gas monitoring or gas protection measures required.
<b>PL 4</b>	Groundwater sampling, subject to ground conditions encountered. Groundwater samples to be collected from monitoring wells and tested for contaminants of concern based on preliminary conceptual model and ground conditions encountered.
<b>Reporting</b>	Information from the above can be used to carry out a contamination and geotechnical assessment and provide a remediation strategy for the site.

Table 7-4: Recommendations.

Further considerations are summarised in Table 7-5.

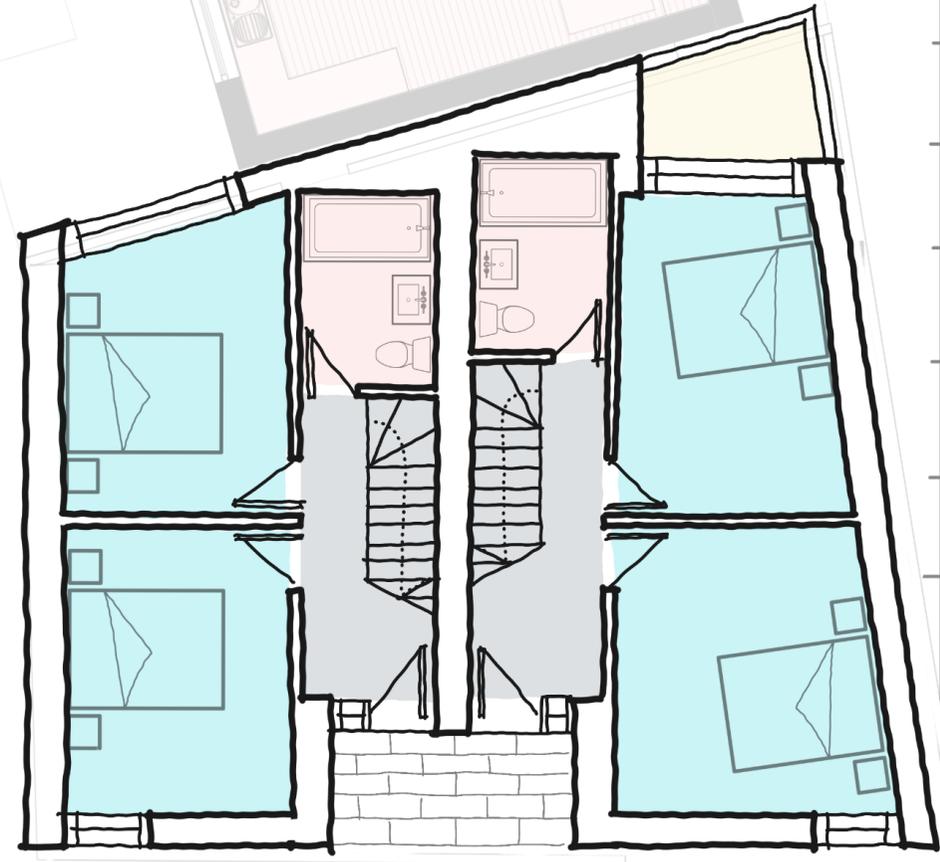
<b>Flood Risk / Sustainable Drainage</b>	As the site is in Flood Risk Zone 2 a Flood Risk Assessment (FRA) is required. NPPF <sup>14</sup> requires that an FRA is undertaken to assess the impact of the site on the local drainage system and to assess potential for Sustainable Drainage Systems (SuDS) techniques. LKC have a Flood Risk assessor who would be happy to advise on the requirements of the Flood Risk Assessment.
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Table 7-5: Further considerations.

## Figures



Client: <b>Kion Developments Ltd</b>				Title: <b>Site Location &amp; Boundary Plan</b>					
Site: <b>51-51a Great Underbank, Stockport</b>				Scale (see scale bar): <b>1:25,000 &amp; 1:1250 @ A4</b>				Figure: <b>1</b>	
Job No.: <b>LKC 23 1319</b>		Drawn By: <b>EF</b>	Checked By: <b>HM</b>	Drawn: <b>Oct 2023</b>				Revision:	



TH 1	TH 2	
		LIVING
	3.5	OUTDOOR AMENITY
4.6	4.6	BATHROOM/UTILITY
22.6	25.1	BEDROOM/STUDY
7.1	7.7	CIRCULATION



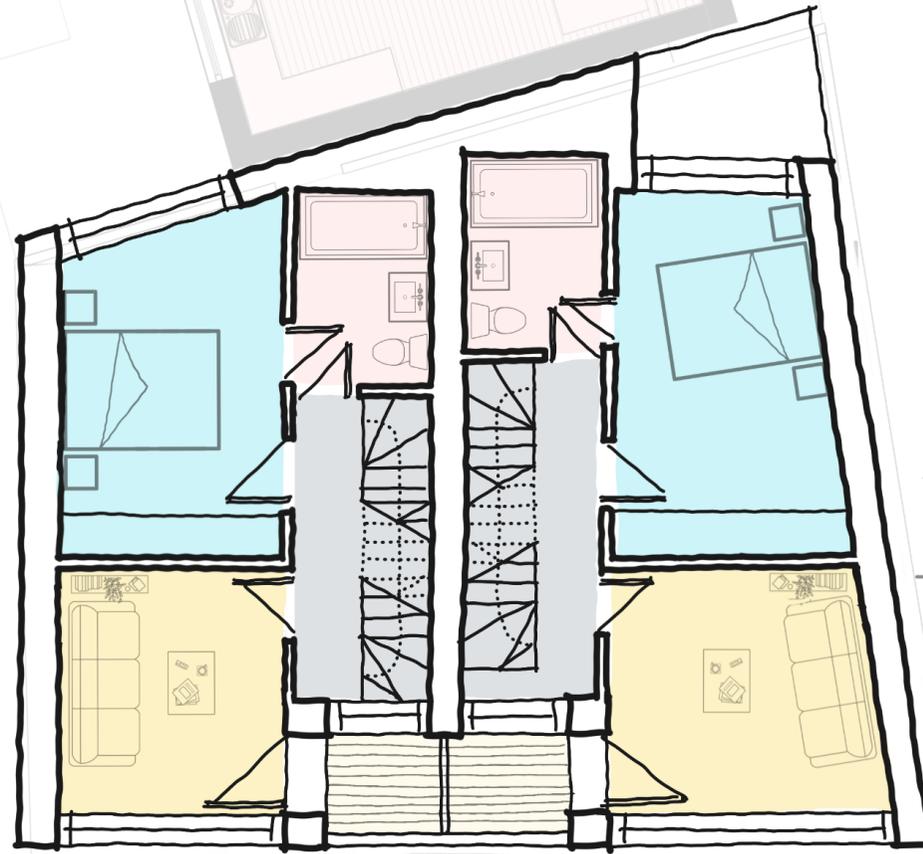
**SK01**

Townhouse - Ground floor

*Proposed Level 03 Phase 2*

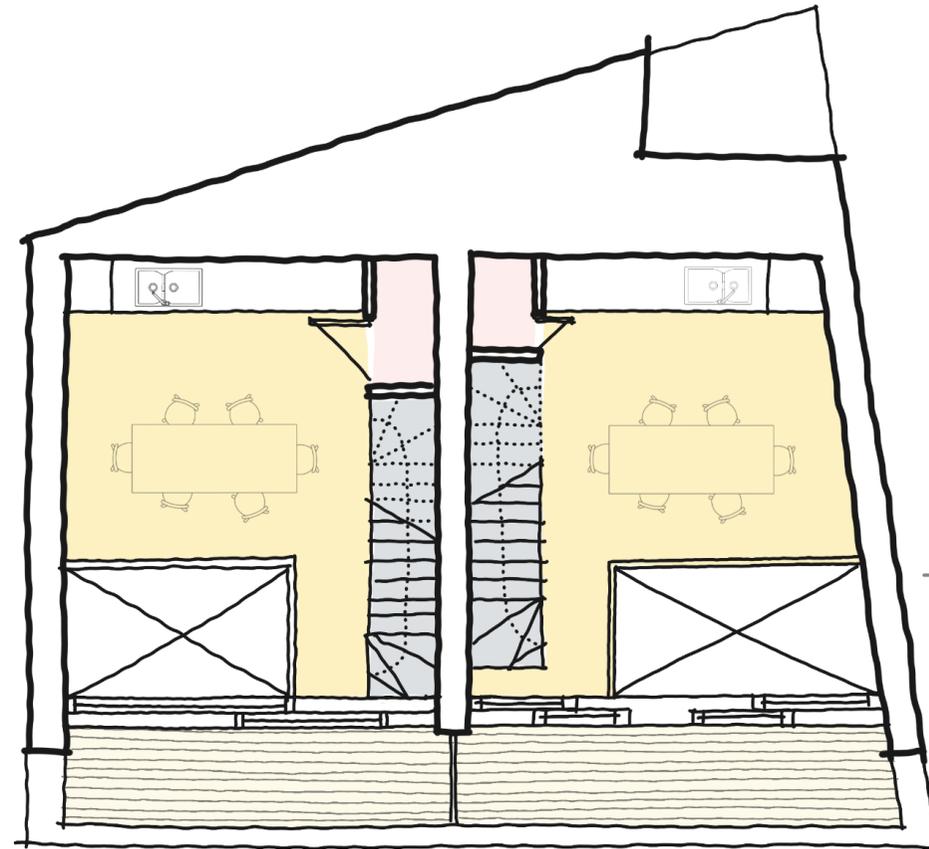
Kelsall Architects  
26 Oct 2023





TH 1	TH 2	
9.4	11.3	LIVING
1.9	1.9	OUTDOOR AMENITY
4.6	4.6	BATHROOM/UTILITY
12.9	13.4	BEDROOM/STUDY
7.5	7.5	CIRCULATION



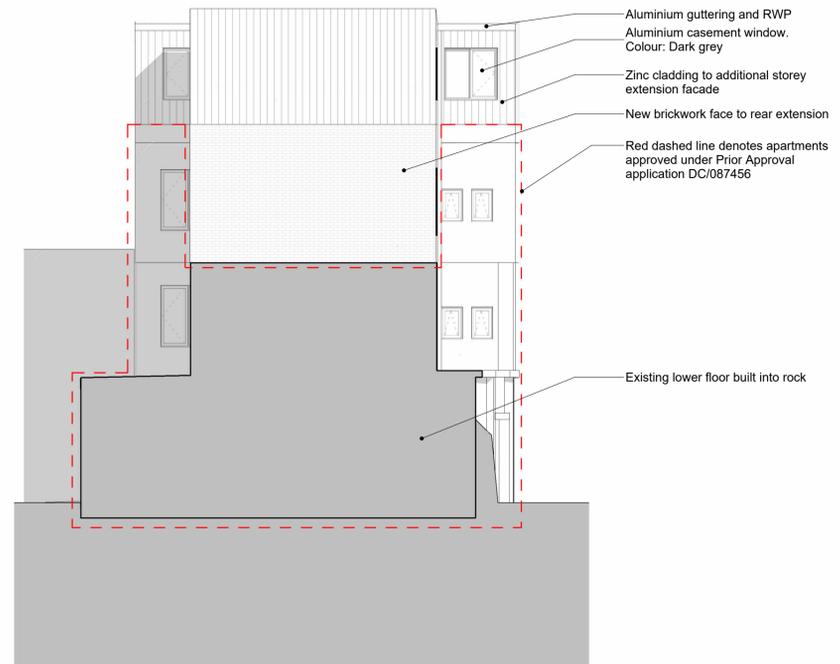


TH 1	TH 2	
14.8	15.2	LIVING
6.6	7.5	OUTDOOR AMENITY
1.3	1.0	BATHROOM/UTILITY
		BEDROOM/STUDY
3.5	3.5	CIRCULATION

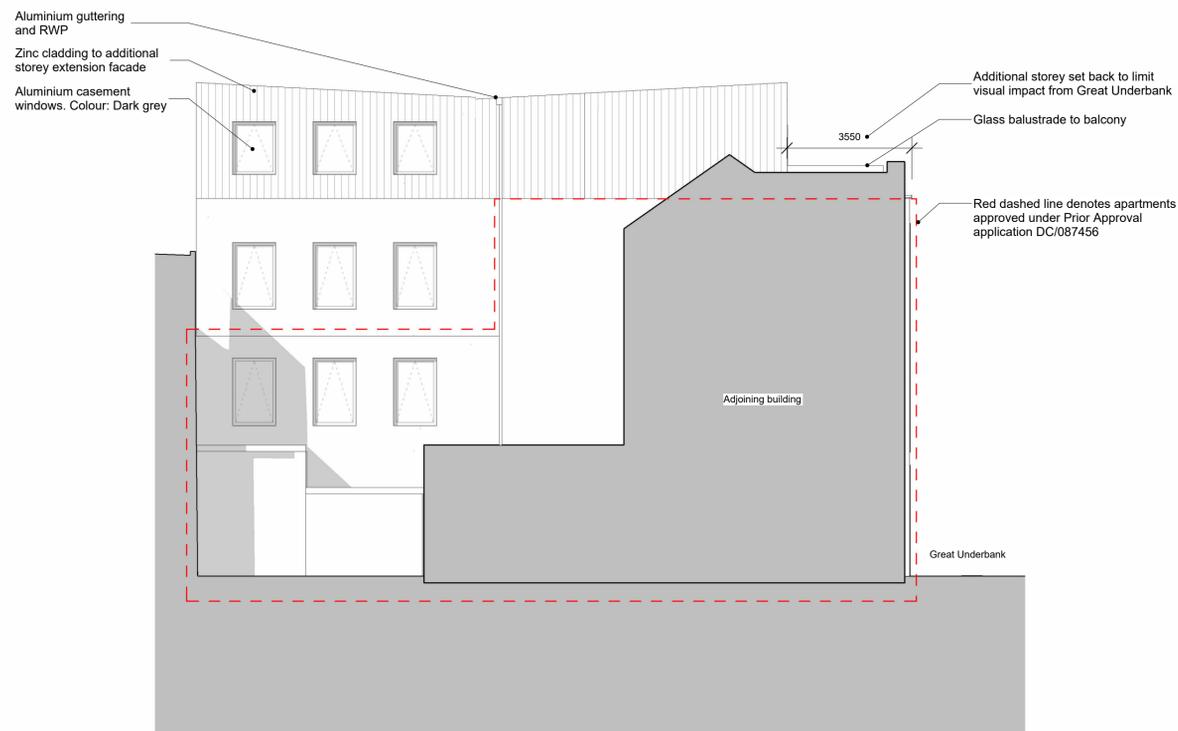




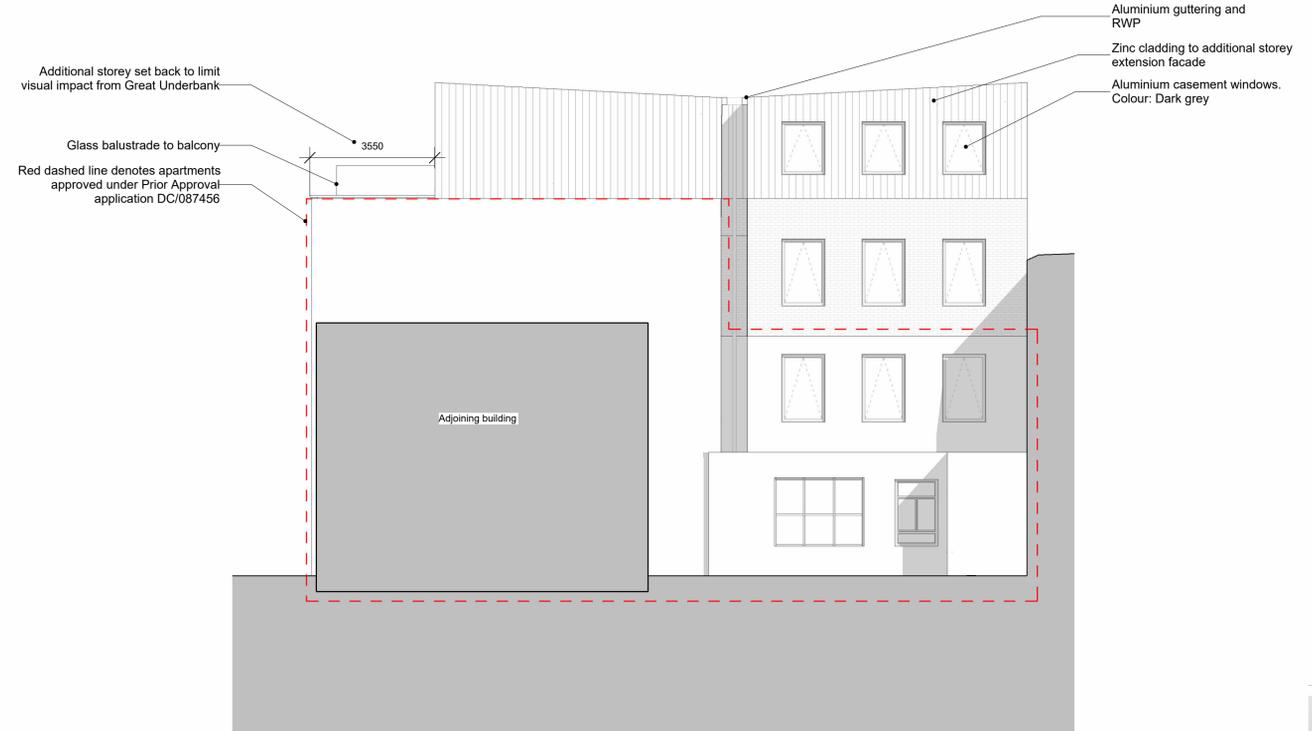
**1** ELV - Proposed Apartments North West Elevation  
scale: 1 : 100



**2** ELV - Proposed Apartments South East Elevation  
scale: 1 : 100



**3** ELV - Proposed Apartments North East Elevation  
scale: 1 : 100



**4** ELV - Proposed Apartments South West Elevation  
scale: 1 : 100



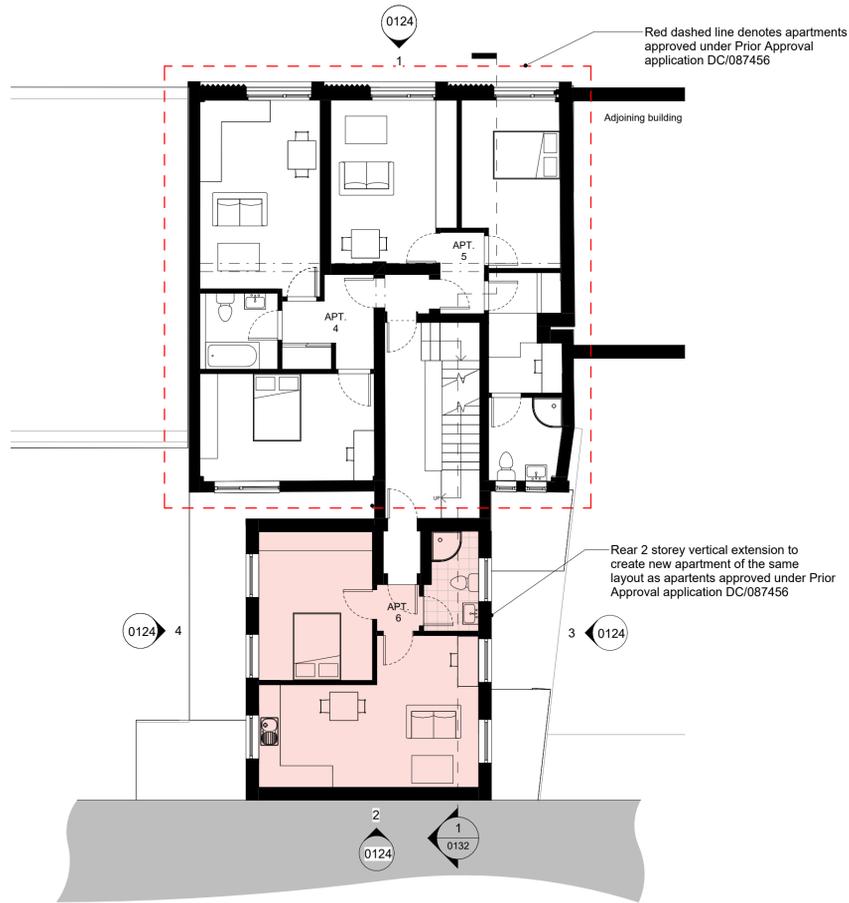
51 Great Underbank **DRAFT**

GA Elevation  
Proposed Apartment Elevations

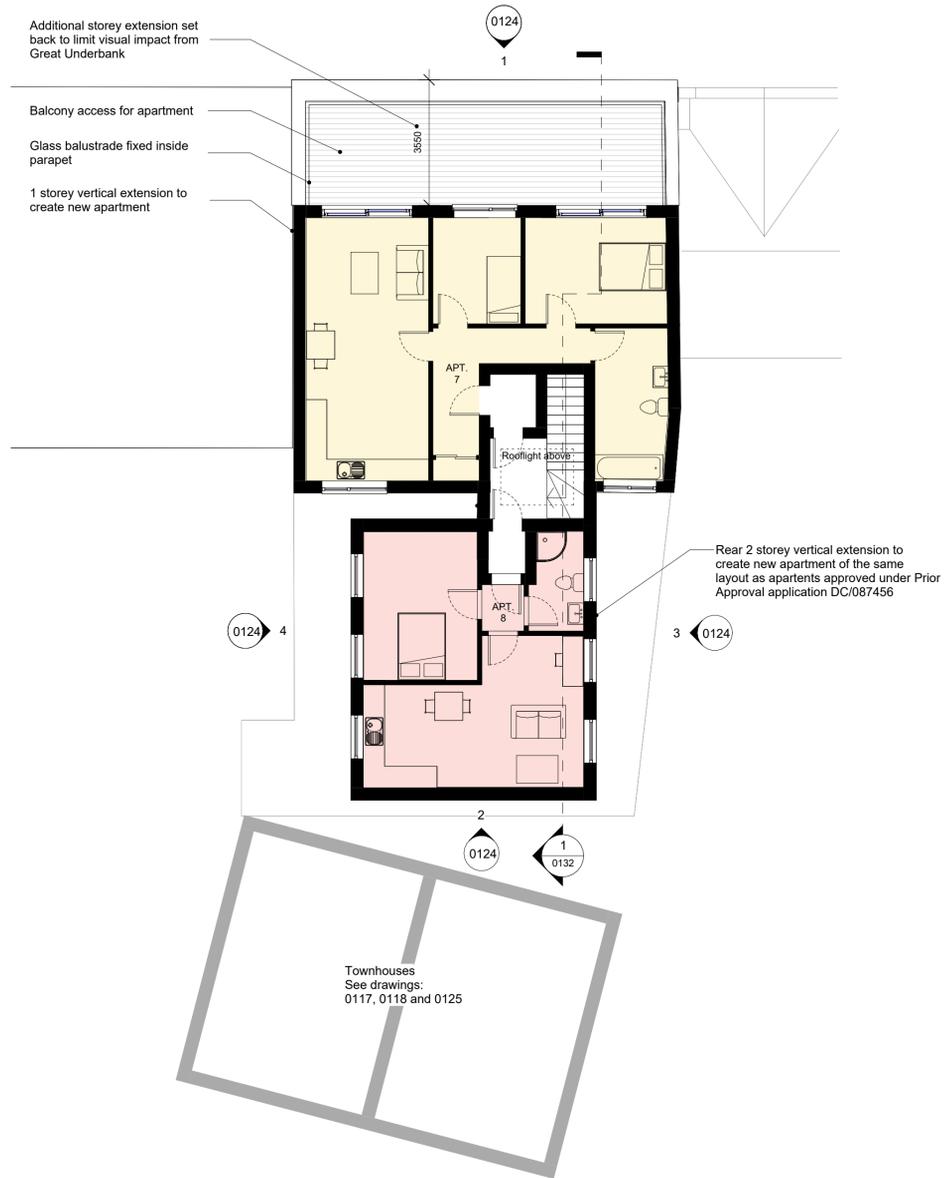
Client Name	Project Address	Project Name	Scale
Kion Developments	51/51A Great Underbank Skopje	PLANNING	1:100 @ A1
	SK1 1NE	SAAs PCK	18.10.23

0091-KA-XX-ZZ-DR-A-0124 **1**

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**1** PLN - Proposed Apartments Level 02 Plan  
scale: 1 : 100



**2** PLN - Proposed Apartments Level 03 Plan  
scale: 1 : 100

## Appendix A – Historical Maps

# Historical Mapping Legends

## Ordnance Survey County Series 1:10,560

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

## Ordnance Survey Plan 1:10,000

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

## 1:10,000 Raster Mapping

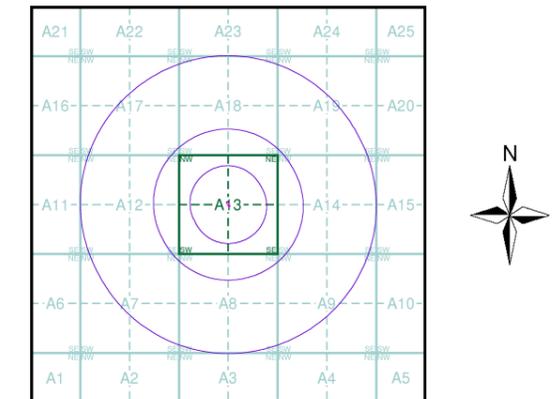
- Gravel Pit
- Rock
- Boulders
- Shingle
- Sand
- Slopes
- General detail
- Overhead detail
- Multi-track railway
- County boundary (England only)
- District, Unitary, Metropolitan, London Borough boundary
- Refuse tip or slag heap
- Rock (scattered)
- Boulders (scattered)
- Mud
- Sand Pit
- Top of cliff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



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1895	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1910 - 1911	7
Cheshire	1:10,560	1911	8
Lancashire And Furness	1:10,560	1923	9
Lancashire And Furness	1:10,560	1934	10
Cheshire	1:10,560	1938	11
Lancashire And Furness	1:10,560	1938	12
Ordnance Survey Plan	1:10,000	1954 - 1955	13
Ordnance Survey Plan	1:10,000	1965 - 1969	14
Ordnance Survey Plan	1:10,000	1971 - 1978	15
Manchester	1:25,000	1975	16
Ordnance Survey Plan	1:10,000	1980 - 1985	17
Ordnance Survey Plan	1:10,000	1989	18
Ordnance Survey Plan	1:10,000	1990 - 1995	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2023	22

## Historical Map - Slice A



## Order Details

Order Number: 321316062\_1\_1  
 Customer Ref: LKC 23 1319  
 National Grid Reference: 389560, 390460  
 Slice: A  
 Site Area (Ha): 0.04  
 Search Buffer (m): 1000

## Site Details

51a, Great Underbank, Stockport, SK1 1NE



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

# Russian Military Mapping Legends

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

a. Not drawn to scale    b. Drawn to scale

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

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

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

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

## 1:25,000 mapping

a. Not drawn to scale    b. Drawn to scale

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

## Key to Numbers on Mapping

### SJ88\_Manchester

No.	Description
192	Railway Station

### SJ89\_Manchester

No.	Description
68	Factory (Gas)
220	Factory (Use Unknown)
237	Factory (Textiles)

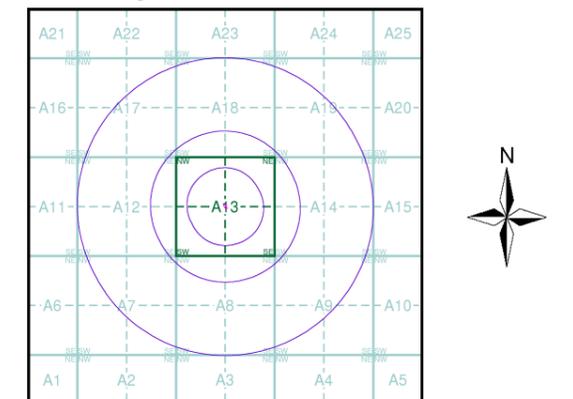


GROUP

Historical Mapping & Photography included:

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Cheshire	1:10,560	1882	4
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Lancashire And Furness	1:10,560	1910 - 1911	7
Cheshire	1:10,560	1911	8
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10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2023	22

## Russian Map - Slice A



## Order Details

Order Number: 321316062\_1\_1  
 Customer Ref: LKC 23 1319  
 National Grid Reference: 389560, 390460  
 Slice: A  
 Site Area (Ha): 0.04  
 Search Buffer (m): 1000

## Site Details

51a, Great Underbank, Stockport, SK1 1NE

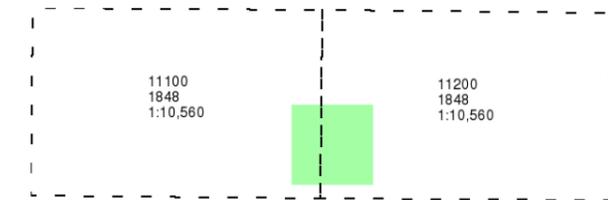


Tel: 0844 844 9952  
 Fax: 0844 844 9951  
 Web: www.envirocheck.co.uk

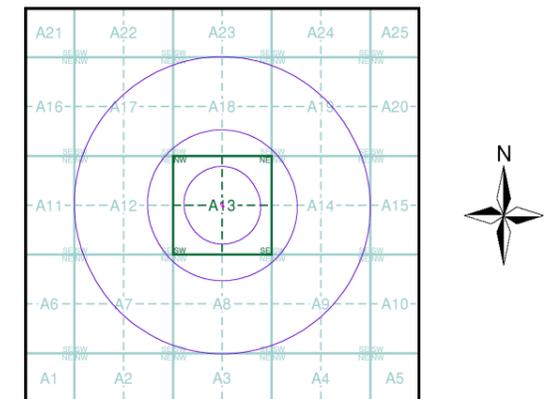
**Published 1848**  
**Source map scale - 1:10,560**

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

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



**Historical Map - Slice A**



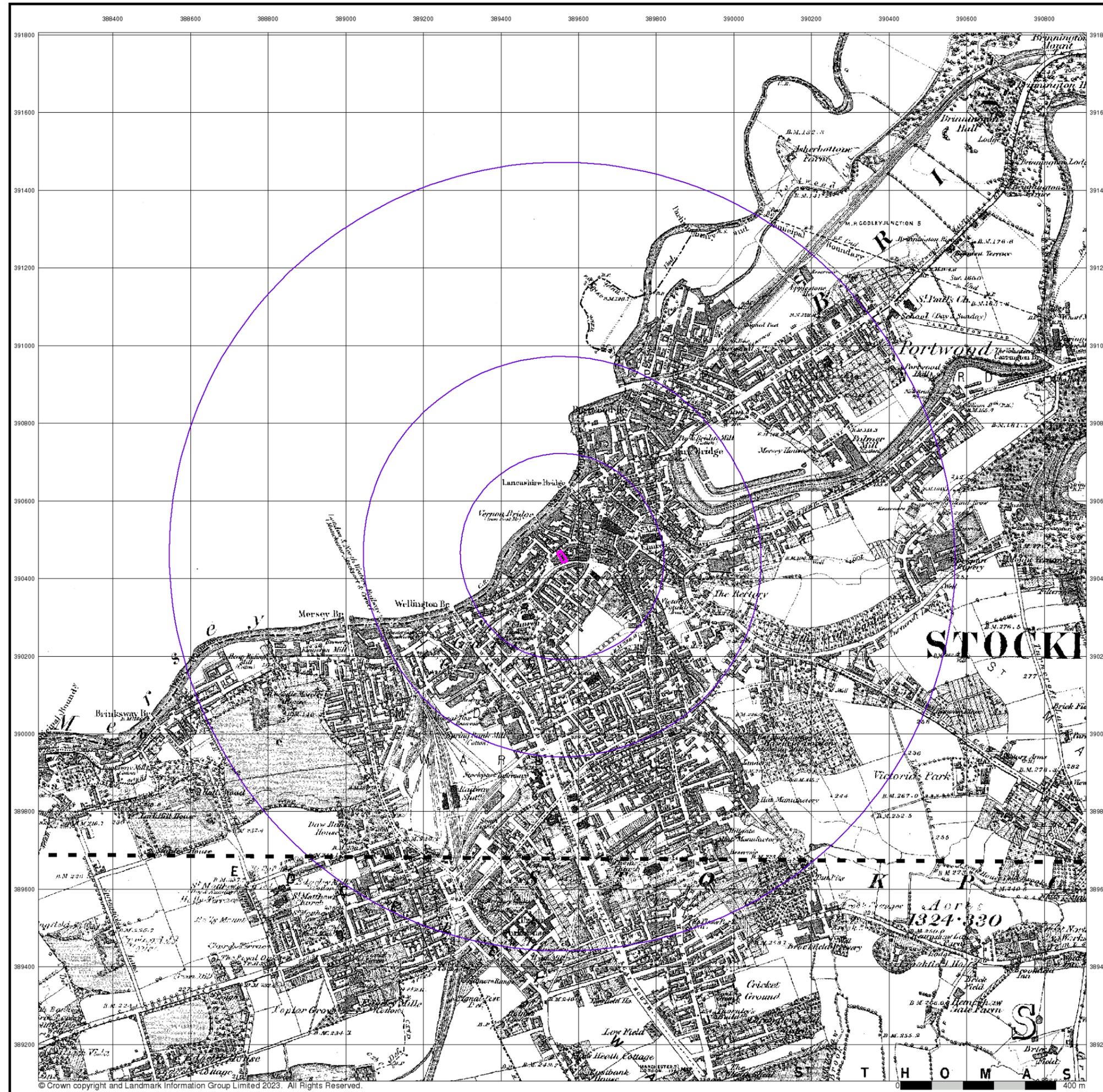
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 Site Area (Ha): 0.04  
 Search Buffer (m): 1000

**Site Details**

51a, Great Underbank, Stockport, SK1 1NE





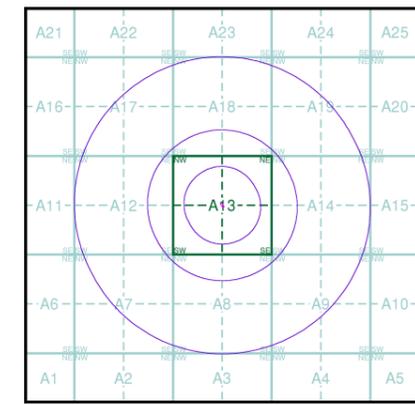
Published 1882  
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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

01000	1882	1:10,560
01900	1882	1:10,560

**Historical Map - Slice A**



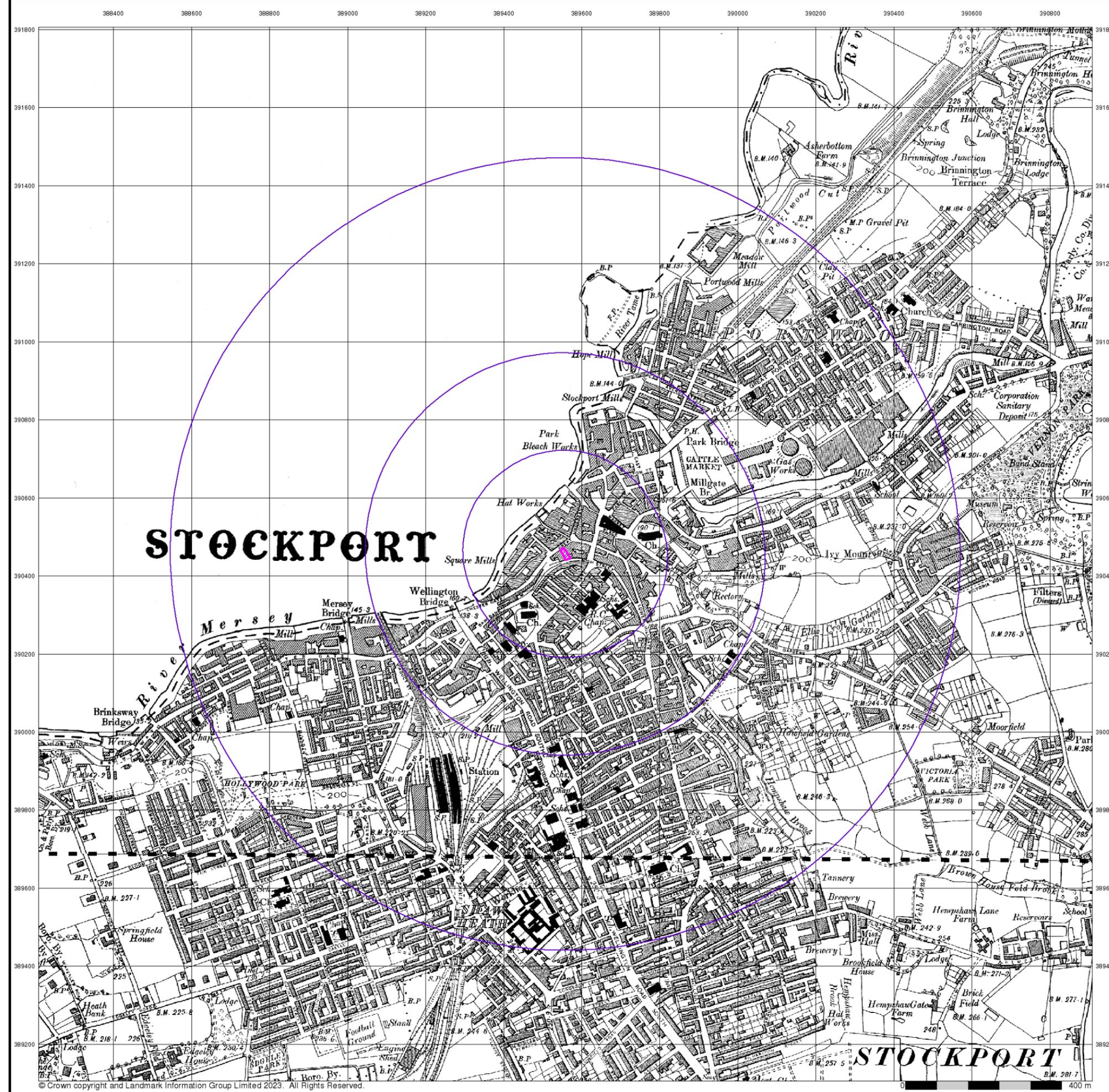
**Order Details**

Order Number: 321316062\_1\_1  
Customer Ref: LKC 23 1319  
National Grid Reference: 389560, 390460  
Slice: A  
Site Area (Ha): 0.04  
Search Buffer (m): 1000

**Site Details**

51a, Great Underbank, Stockport, SK1 1NE



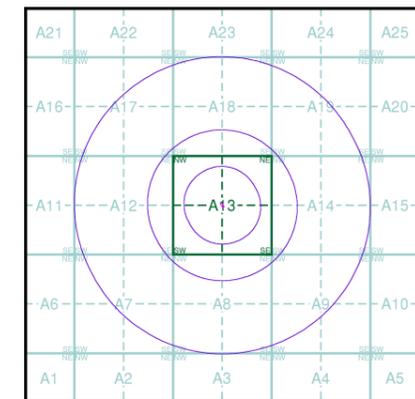


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

010SE	1899	1:10,560
019NE	1899	1:10,560

Historical Map - Slice A



Order Details

Order Number: 321316062\_1\_1  
 Customer Ref: LKC 23 1319  
 National Grid Reference: 389560, 390460  
 Slice: A  
 Site Area (Ha): 0.04  
 Search Buffer (m): 1000

Site Details

51a, Great Underbank, Stockport, SK1 1NE