

Report type:	Phase I Site Appraisal (Desk Study)
Site:	New China Town, Liverpool
Client:	Chinatown Developments Ltd
Ref:	GRM/P7076/DS.1
Date:	July 2015

GRM Development Solutions
Laurus House
First Avenue
Centrum 100
Burton upon Trent
Staffordshire, DE14 2WH
www.grm-uk.com

t. 01283 551249
f. 01283 211968
e. info@grm-uk.com



NEW CHINA TOWN, LIVERPOOL

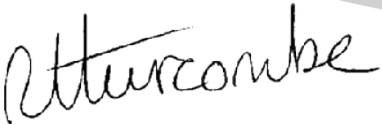
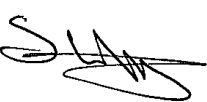

PHASE I SITE APPRAISAL FOR CHINATOWN DEVELOPMENTS LTD

Project Ref:
P7076

Date:
July 2015

Prepared for:
Chinatown Developments Ltd
2nd Floor
Edward Pavillion
Albert Dock
Liverpool
L3 4AF

This report has been prepared in accordance with GRM's Accredited Quality Procedures

Prepared by:	Reviewed by:	Approved by:
Russell Hurcombe MGeol FGS (Assistant Geologist)  russell.hurcombe@grm-uk.com	Simon Coffey BSc MSc FGS (Principal Environmental Scientist)  simon.coffey@grm-uk.com	Chris Jerram FGS CGeol (Director)  chris.jerram@grm-uk.com
When required in-house geological, geotechnical, environmental, structural and civil staff helped to produce this document.		



info@grm-uk.com

www.grm-uk.com

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	PHASE I DESK STUDY AND SITE OBSERVATIONS	2
3	PHASE I CONCEPTUAL MODEL	10
4	CONTAMINATION/REMEDIATION RECOMMENDATIONS	12
5	PRELIMINARY GEOTECHNICAL ASSESSMENT.....	12
6	FURTHER INVESTIGATION	13
7	DETAILED INVESTIGATION PROPOSALS	13
8	CONCLUSIONS.....	14

APPENDICES

Data Sources, Standard Limitations	Appendix A
Proposed Development Plan	Appendix B
Site Location and Boundary Plan	Appendix C
Site Features Plan / General Site Photographs	Appendix D
Historical OS Maps	Appendix E
BGS Borehole Record	Appendix F
Environmental Data Report	Appendix G
Proposed Exploratory Hole Plan	Appendix H
Breakdown Of Analysis Suites	Appendix I

1 INTRODUCTION

1.1 PREAMBLE

GRM Development Solutions Limited (GRM) has been appointed by Chinatown Developments Ltd (Client) to undertake a Phase I Site Appraisal (desk study). The desk study and site inspection form Phase I of the assessment and allow the geotechnical and geo-environmental setting of the site to be determined and the identification of areas of particular concern that require targeted investigation.

This site appraisal is intended to provide information that will assist decision making by identifying potential ground engineering and contamination issues.

GRM Standard Limitations of Reporting are provided in Appendix A of this report.

The Client proposes to develop the site with multi-storey residential dwellings and associated infrastructure including two storey basements in places. The proposed end use includes soft landscaping. The outline development proposals provided by the Client are presented in Appendix B.

The Client has supplied GRM with a Geoenvironmental Appraisal (Ref: C1488/2) produced by Sirius Geotechnical & Environmental Ltd (Sirius) in November 2007. This report was produced for the southern area of the site, and included a summary Phase I Desk Study, intrusive investigation, chemical analysis, geotechnical testing, risk assessment and recommendations. The findings of this report will be referred to in this report, where applicable.

1.2 OBJECTIVES OF THE SITE APPRAISAL

The principal aims of the Phase I Site Appraisal (desk study) are as follows:

- a) Obtain information, from easily accessible sources, about the soil and groundwater conditions within the area of the site.
- b) Determine the possible ground related geotechnical and contamination hazards within the site boundaries that may affect the proposed development.
- c) Provide preliminary development recommendations.
- d) Provide advice on further works required for the cost-effective reduction of risks to the development and procedures likely to satisfy regulators.

Whilst every effort has been made to pre-empt the likely requirements of the Local Authority and the Environment Agency, they are likely to have specific requirements that will need to be discussed and addressed at a later date.

2 PHASE I DESK STUDY AND SITE OBSERVATIONS

2.1 INFORMATION SOURCES

In addition to the general sources of information listed in Appendix A (i) the client has supplied the following information that has been used in the assessment of the site:

- The location of the site.
- Proposed development layout.
- Previous Sirius Geoenvironmental Appraisal.

2.2 SITE DESCRIPTION

2.2.1 Geographical Setting

The site is located approximately 1.7km south east of Liverpool city centre. The National Grid Reference (NGR) for the approximate centre of the site is SJ 3514 8938. A Site Location and Boundary Plan is presented in Appendix C.

The site is presently open dis-used land covered with grass, and locally buildings, and covers an area of approximately 2.1 hectares. The northern boundary is formed by Hardy Street, the western boundary by Duncan Street, Upper Pitt Street and Cookson Street, the southern boundary by St. James Street and the eastern boundary by Great George Street.

2.2.2 Site Inspection Observations

The Site Features Plan/General Site Photographs presented in Appendix D illustrate the salient observations made during a site inspection on 24th June 2015.

The site generally slopes gently down to the west south/west, although the levels are slightly undulating in the southern area.

The site is fairly elongate in shape and runs along the west of Great George Street (trending north - south), and is formed by three roughly triangular sections, which will be referred to as the northern, central and southern sections in the following text. The boundaries of each section are illustrated on the Site Boundary Plan in Appendix C.

The northern section is the smallest at approximately 50m by 90m and is sparsely grassed with a surface comprised of demolition rubble.

The central section measures approximately 90m by 130m. Raffle Street enters this section from the west and the land north of it is covered by coarse grass. A row of four 3-storey residential properties, forming an L shape, are located directly south of Raffle Street, and are vacant and boarded, presumably awaiting demolition. An electricity substation and tunnel ventilation shaft are present inside of the eastern site boundary.

The southern section is roughly the same size as the central section. A building site, fronting onto Duncan Street, is currently active along the western boundary of this section. The eastern part of this area, which runs alongside Great George Street, is covered by demolition rubble and sparse vegetation. The southernmost part of this area comprises three commercial buildings (one having a chimney) with areas of grassed wasteland and hardstanding between. It is understood that two of the buildings are to be demolished, and the easternmost building called 'The Wedding House' (a 4-storey building) is to be retained. The site levels along/close to the southern boundary are variable, with potentially areas of raised and cut ground. The area of wasteland to the west of 'The Wedding House' is surrounded by palisade fencing, with locked gates in the eastern corner which were blocked by vehicles during the visit.

A number of trees are located around the site, particular at the boundaries between the individual sections or along road margins and generally comprise sycamore trees up to 10m in height.

There was generally no evidence of buried services within the individual sections, although it is expected that some may exist feeding the buildings awaiting demolition as well as in the area of the sub-station and along the internal footpaths (feeding street lights). Overhead telecoms cables exist close to the residential properties in the central section.

Significant Features identified during site inspection:
--

Buried/overhead services – require disconnection/diversion, hazard for plant.

Adjacent tunnel and associated shaft – possible constraints on the proposed development.
--

Existing buildings – deepened foundations, buried sub-structures.

Made ground (including raised areas) – potential source of contamination and ground gas, deepened foundations.
--

Trees – deepened foundations if shrinkable strata are present.
--

2.3 HISTORICAL DEVELOPMENT OF THE SITE

A review of the available historical Ordnance Survey (OS) maps and the previous Sirius report gives an insight into the development of the site and can highlight potential hazards. Extracts of the maps reviewed are provided in Appendix E.

The earliest map reviewed (1847) shows all sections within the site boundary to be developed with residential properties and associated infrastructure with the exception of a hall in the northern section and several public houses in the central and southern sections. Two ventilation shafts associated with an adjacent tunnel are located in the central section along the eastern boundary. Other than the addition of a cinema and bank in the southern section, the site remains unchanged until the map for 1953. At this point many of the residential properties are no longer shown (although some remain), an orthopaedic appliance factory is shown in the north section, an engineering works in the centre section, and a warehouse and printing works in the southern section. There are also several 'ruins' within the site boundaries. The 1967 map shows the site to be redeveloped into residential terraced housing in the centre and northern sections with the southern section remaining as a warehouse and bank.

There is an added electricity sub-station shown on the map for 1997, located at the end of Raffles Street near the centre of the site. The most recent map (2010) shows the site to be unchanged; however a recent site walkover has shown that the site is mostly open grassed land suggesting the houses have since been demolished in preparation for the future development. Only the northern ventilation shaft remains, suggesting the other above ground structure associated with the air shaft has been demolished and potentially backfilled.

Whilst not readily apparent from the historical OS maps, the Sirius report states that the southern corner of the site was historically a fuelling station with several below ground and above ground tanks. The associated buildings and tanks have reportedly been removed.

The site's immediate surroundings have largely comprised residential properties and associated infrastructure throughout its recent history. The wider area has seen phases of residential and industrial development, the industrial land uses including mills, timber yards, various manufacturing works, garages and printers.

The hazards identified are summarised in the table below.

Significant Features identified on OS Maps:
Former structures – deepened foundations, possible buried substructures (including old cellars).
Ventilation shaft and adjacent tunnel – possible development constraint.
Former ventilation shaft – possible need for treatment.
Ruins and clearance of residential properties after war time – possible risk of unexploded ordnance.
Made ground associated with the demolition of former structures and development of the site – potential source of contamination and ground gas, deepened foundations.
Site use as an engineering works, orthopaedic appliance factory, printers and garage – potential source of contamination.
Industrial heritage of the local area – potential source of contamination (low risk).

2.4 ANTICIPATED GEOLOGY

The BGS Geological Sheet for this area shows the site to be underlain by a solid geology of Tarporley Siltstone Formation, with Helsby Sandstone Formation encroaching into the eastern and western fringes of the site. The Tarporley Siltstone Formation generally comprises interlaminated and interbedded siltstones, mudstones and sandstones in approximately whereas the Helsby Sandstone Formation comprises fine to medium grained, locally micaceous, cross-bedded and flat-bedded sandstones. Superficial deposits of Glacial Till are reported to be present along the south western fringe of the site.

The BGS holds borehole records close to the site copies of which are presented in Appendix F. The BGS boreholes suggest superficial deposits (gravelly clay) to about 4.47m depth overlying Tarporley Siltstone Formation (red brown and grey mudstone and sandstone).

Investigation works undertaken by Sirius in the southern section of the site revealed made ground (generally between 1.5m and 3m in thickness), containing obstructions such as foundations, basement walls and floor slabs.

The made ground was found to be underlain by natural sands and clays (Glacial Till), over weathered sandstone (sand) and then sandstone bedrock, which was encountered at a depth of between 2.7m and 7.2m. Based on the history of the remainder of the site, similar ground conditions are expected.

A north-south trending fault runs through the eastern part of the site. There is no information with regard to the dip of the solid geology.

Significant Features identified from geological data:
--

<p>Variable strata (Glacial Till) – Deepened foundations.</p> <p>Cohesive strata – deepened foundations due to trees.</p> <p>Made ground (deep in some areas) – potential source of contamination and ground gas, deepened foundations.</p> <p>Buried substructures and obstructions – hazard for foundation construction.</p> <p>Helsby Sandstone Formation and Tarporley Siltstone Formation – known aquifers.</p>
--

2.5 HYDROGEOLOGICAL INFORMATION

No detailed information regarding the depths to groundwater is available; however, the Sirius investigation (confined to the southern section of the site) did encounter cells of groundwater within the rock quality strata at depths of between 7.5m and 20.5m below existing ground level. The groundwater level is likely to be subject to seasonal variations.

The Environment Agency has classified the underlying Tarporley Siltstone Formation as Secondary B aquifer and the Helsby Sandstone Formation as a Principal aquifer. Whilst some cohesive Glacial Till is expected above the solid strata, it is likely to be sporadic and unlikely to mitigate against the migration of potential contaminants in the water bearing horizons.

There are ten recorded groundwater abstraction licenses within 500m of the site, which relate to two groundwater abstraction points located 231m and 279m to the south. The water is being abstracted from the solid strata and used for a variety of purposes including drinking, cooking and washing. The site is not recorded to be within a groundwater Source Protection Zone.

The site is recorded to be in an area susceptible to groundwater flooding (clearwater), although this will be considered during the Flood Risk Assessment (FRA) and drainage strategy for the site.

Significant Features identified from hydrogeological data:

<p>Principal and Secondary B aquifers – potential receptors.</p> <p>Groundwater abstraction licenses – potential receptors.</p> <p>Potential for groundwater flooding – to be considered during FRA.</p>
--

2.6 HYDROLOGICAL INFORMATION

There are no significant surface water features within 250m of the site.

The site is not within an indicative fluvial floodplain and the Environment Agency's Internet based flood risk maps suggest there is no risk from river flooding. However, due to the site's size a flood risk assessment will be required.

There are three recorded pollution incidents to controlled waters within 250m of the site which relate to vehicles/vehicle parts, asbestos and demolition wastes. These only had a significant impact on soils and, as they are over 200m from the site, it is considered that are unlikely to have affected it.

There are no surface water abstraction licenses within 250m of the site.

Significant Features identified from hydrological data:
--

Site over 1ha in size – Flood Risk Assessment required.

2.7 MINING AND QUARRYING

The site is not in area affected by coal mining activity.

There is no evidence of any non-coal mineral extraction having taken place within, or close to, the site area.

Potential Mining Hazards:

None.

2.8 ENVIRONMENTAL INFORMATION

An Environmental Report has been acquired for the site, the full report is presented in Appendix G. A summary of the relevant information not included elsewhere in this report is presented below:

- There are no recorded historical or existing landfill sites within 500m of the site.
- There are twenty six records of waste treatment, transfer or disposal sites within 250m of the site. These relate to eight scrap yards, the closest of which 80m from the site. It is considered unlikely that these have had an impact on the site.
- There are fifty eight records of potential contaminative land uses within 250m of the site. Three of these are on site and comprise a warehouse, a sub-station and printers. The remainder are off site and include a variety of land uses including vehicle servicing/repair, warehouses, engineering works, sub-stations and printers. Due to their distance from the site, it is considered unlikely that the off- site sources have impacted the site.
- There are no current fuelling stations within 250m of the site.

Significant Features identified from Environmental data:

On site printers and sub-station – potential sources of contamination.
--

2.9 ARCHAEOLOGY

Archaeological information has not been sought as part of this desk study and has not been identified as an issue by the Client. Some Local Authorities require at least an initial archaeological appraisal for development sites. GRM can undertake such appraisals if required. Archaeological investigations occasionally reveal ground-related problems from ancient times (prior to the 1st Edition OS maps) and can occasionally cause foundation and contamination development hazards.

Archaeological Hazards:

Not researched.

2.10 INVASIVE PLANT SPECIES/ECOLOGY

GRM is not a specialist in this topic and has not conducted such a survey; however, we will endeavour to report easily recognisable issues such as Japanese Knotweed, Giant Hogweed, badger sets etc, when seen on site. No such issues were observed during the walkover; however, a survey by an ecological specialist will be required to confirm this.

Invasive Plant Species/Ecological Hazards:

None observed.

2.11 RADON ASSESSMENT

The site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings' (BR211 2007). The site is not within an area recorded to require radon protection measures.

Radon Hazard:

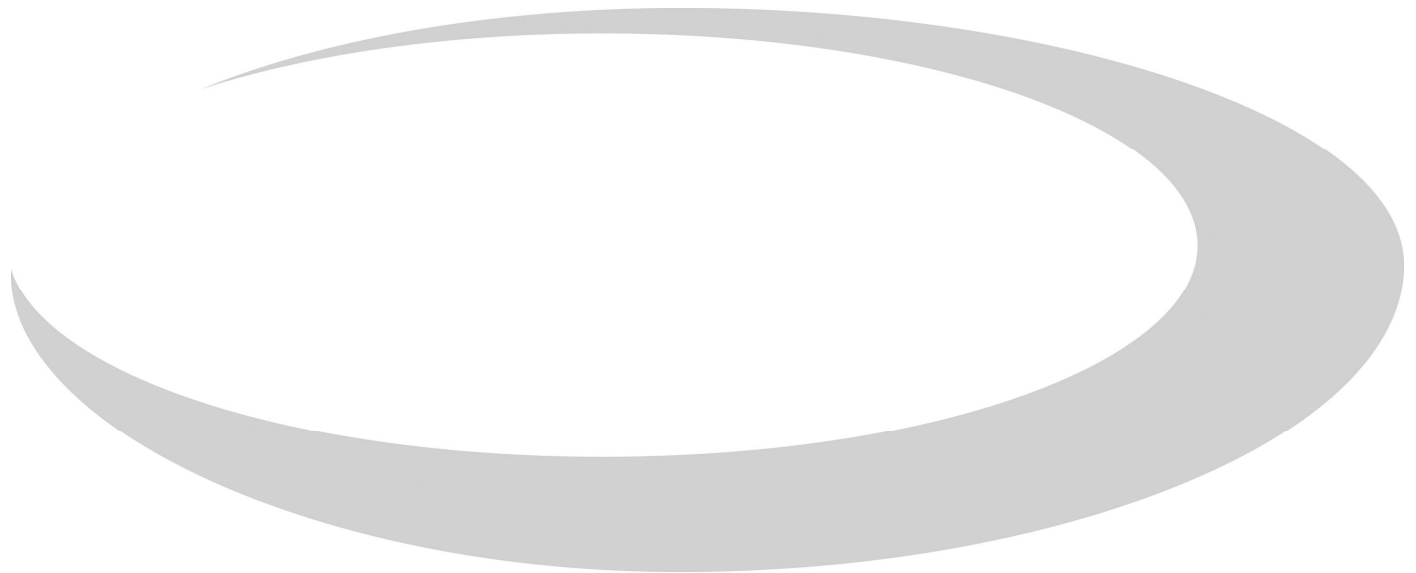
None required.

2.12 CONTAMINANTS OF CONCERN

In addition to the general contaminants listed in Appendix A (ii), the following site specific contaminants have been identified:

- Hydrocarbons associated with former fuel filling station in the southern section of the site.
- PCBs associated with electricity substation.
- Asbestos associated with demolition of former buildings.

It should be noted that the previous Sirius investigation (limited to the southern section of the site) identified localised elevated concentrations of arsenic and PAHs, but most contaminants were below the assessment criteria used. The made ground was also found to contain elevated leachable concentrations of various metals. No investigation was undertaken in the area of the former fuelling station by Sirius.



2.13 SUMMARY OF POTENTIAL GEOTECHNICAL/GENERAL HAZARDS

Potential geotechnical/general hazards have been identified in earlier sections and are summarised below.

Potential Hazard	Potential Consequence	Action
Live buried and overhead services.	Danger to personnel, hazard for plant.	Inform relevant parties for disconnection / diversion.
Existing/previous buildings.	Deepened foundations/buried structures.	Ground investigation.
Made ground, deep in some areas.	Deepened foundations.	Ground investigation.
Variable strata.	Deepened foundations.	Ground investigation.
Shrinkable clay/trees.	Deepened foundations.	Ground investigation plasticity testing.
Existing tunnel and ventilation shaft.	Possible development constraints.	Check with Local Authority and Network Rail.
Former ventilation shaft.	Possible need for treatment.	Ground Investigation.
Ruins and clearance of residential properties after war times.	Potential risk from UXO.	Specialist Desk Study required.
Site >1Ha in size.	Flood Risk Assessment required.	Flood Risk Assessment required.

Potential sources, pathways and receptors are summarised in the Phase I conceptual model in Section 3.

3 PHASE I CONCEPTUAL MODEL

The conceptual model has been drafted following the current relevant guidance the principles of which are set out in Appendix A (iii).

3.1 POTENTIAL SOURCE – PATHWAY – RECEPTOR

The historical OS maps show that the site was initially developed with residential properties and associated infrastructure and a few public houses. It generally remained unchanged until circa. 1953 when approximately 75% of the residential properties were cleared and an engineering works, orthopaedic appliance factory and a printers were constructed on parts of the site. The site was then developed with a new phase of residential properties in circa 1997 and a sub-station and garage were constructed on it. Nearly all of the structures have since been demolished. The surrounding area has had a residential and industrial heritage.

The made ground and the site's use as an engineering works, orthopaedic appliance factory, printers, sub-station and garage are potential sources of contamination. The made ground is also a potential source of ground gas. The existing buildings may contain potential asbestos containing materials.

The Client proposes to develop the site with multi-storey residential dwellings and associated infrastructure with a two storey basement. The proposed end use includes soft landscaping.

The primary human health receptors are end users of the completed development and construction workers (demolition, construction and maintenance phases). The primary pathways of concern include indoor and outdoor inhalation of soil dust, asbestos fibres, hydrocarbon vapours and ground gases, ingestion of, and dermal contact with, contaminated soil/soil dust.

For controlled waters, the primary receptors for the site are the Principal and Secondary B aquifers. The primary pathways of concern are leaching of contaminants and vertical migration to the groundwater.

For construction materials, the primary receptors are water pipes and buried concrete. The primary pathways of concern are the migration of contamination leading to degradation of pipe materials and sulphate and/or acid attack on buried concrete.

The pollutant linkage model is illustrated in detail on the following page.

3.2 PHASE I CONCEPTUAL SITE MODEL

HUMAN HEALTH			
Source	Pathway	Receptor	Solution
Made ground and the site's former potential contaminative land uses.	Indoor and outdoor inhalation of soil dust, asbestos fibres and hydrocarbon vapours, the ingestion of, and dermal contact with, contaminated soil and soil dust.	End users and construction workers.	Soil capping layer or removal of contaminated soils.
The potential made ground is a potential source of ground gas (carbon dioxide and methane).	Inhalation.	End users.	May require gas protection measures.
The existing buildings may contain potential asbestos containing materials.	Inhalation.	Demolition workers.	Asbestos survey and the removal of any identified material.
CONTROLLED WATERS			
Made ground and the site's former potential contaminative land uses.	Infiltration and groundwater transport.	Principal and Secondary B aquifers.	More detailed assessment and/or remediation may be required.
CONSTRUCTION MATERIALS			
Made ground and the site's former potential contaminative land uses.	Migration of contamination through leaks and joints, degradation of pipe materials.	Water pipes.	Upgraded water pipes/clean backfill material.
Elevated levels of sulphate and/or acidic ground conditions.	Direct contact.	Buried concrete.	Appropriate concrete specification.

4 CONTAMINATION/REMEDIATION RECOMMENDATIONS

The risk of ground contamination is considered moderate to high; however, prior to development a ground investigation will be required, the scope of which is outlined in Section 6; However, at this stage based on the desk study information available it is considered that allowance be made for the following:

- 600mm capping in all soft landscaped areas.
- Possible source removal in the area of the former fuelling station.
- Upgraded water pipes (protecta line or similar).
- Gas protection measures may be required. Allow for a low permeability gas membrane and vented sub-floor void.

5 PRELIMINARY GEOTECHNICAL ASSESSMENT

It should be noted that the following comments and recommendations are based on the findings of this desk study which may not give a true indication of a soils actual engineering properties (i.e. stability, mass structure etc). Prior to development a ground investigation will be required to confirm the initial recommendations outlined below, the scope of which is outlined in Section 6. However, at this stage based on the desk based information available it is considered:

- The ground conditions are likely to comprise varying thicknesses of made ground over variable Glacial Till over the strata of the Tarporley Siltstone and Helsby Sandstone Formations. Rock is locally expected to be present at relatively shallow depth.
- Due to the likely depth of the made ground and the loads applied by the proposed buildings, it is likely that piled foundations will be used.
- As the proposed foundations are likely to be piled, they will not require deepening for trees. However, the action of heave will need to be considered in the design of the piles and ring beams. The adjacent tunnel will need to be considered when choosing the pile type.
- At this stage an allowance should be made for the use of beam and block floors.
- It is possible that buried concrete may require upgrading due to elevated sulphate concentrations.
- Soakaways are unlikely to be suitable for the site.

6 FURTHER INVESTIGATION

A Phase II ground investigation is recommended to determine more accurately the effect of the identified hazards on the development. Initially, this should include:

- A window sampling, trial pits and rotary borehole investigation to confirm ground conditions and collect samples for analysis.
- Chemical analysis of soils followed by risk assessment so that the risk to human health and controlled waters can be determined.
- Gas monitoring to assess the risk posed by ground gases.
- Geotechnical soils testing of the founding strata to assess its strength and suitable grades of buried concrete.
- An asbestos survey of the existing buildings followed by the removal of any identified materials.
- A Flood Risk Assessment is required due to the site's size.
- A detailed UXO Desk Study is required to determine the risk from this hazard.
- Discussion with the Local Authority and Network Rail with regard to the air shaft and tunnel to determine whether there will be any development constraints.

7 DETAILED INVESTIGATION PROPOSALS

The proposed development is to be constructed in phases, more details of which are illustrated on the Proposed Development Plan in Appendix B. At this stage it is proposed to undertake detailed investigation works for Phase 1 and some limited investigation (purely to determine the depth to rock head) in Phase 2. More details of the proposals are presented below.

Phase I

It is currently proposed to undertake six trial pits, to a minimum depth of 3m below existing ground level (begl) and four window samples boreholes to rock head (expected at depths of between 4m and 7m begl). The holes have been positioned on a 20m grid and the proposed positions of them are illustrated on the Proposed Exploratory Hole Plans presented in Appendix H. The positions of the exploratory holes lend themselves to targeting the positions of the former residential properties and the orthopaedic appliance factory (as can be seen on the Exploratory Hole Plans).

In addition to the above, two rotary cored boreholes are proposed to a depth of at least 15m begl. The proposed positions of these are also illustrated on the Proposed Exploratory Hole Plan.

It is proposed to install four gas/groundwater monitoring wells in the window sample boreholes, with the response zones targeting the made ground. At this stage, it is proposed to undertake six monitoring visits over a period of three months.

It is proposed to analysis eight samples of made ground for a general suite of contaminants (i.e. metals, inorganics, speciated PAHs and asbestos). A full breakdown of this analysis suite is presented in Appendix I. Asbestos quantifications are to be undertaken if any asbestos is identified.

Two samples of made ground are to be leached and the soil leachates analysed for a general suite of contaminants (i.e. metals, inorganics and PAHs), a breakdown of this suite also being presented in Appendix I. Analysis for hydrocarbons, BTEX, VOCs and/or SVOCs is to be undertaken if any evidence of such contamination is identified.

Geotechnical testing such as plasticity index, pH/water soluble sulphate, CBR, point load and UCS is also proposed.

Phase II

It is only proposed to undertake limited investigation in Phase II at this stage, comprising at least four window samples boreholes to rock head (expected at depths of between 4m and 7m begl). These works are designed to determine the depth to rock and head and no analysis/testing is proposed at this stage.

Following your review of this document, a copy of it should be submitted to the Planning Department of the Local Authority for comment and approval prior to any ground investigation works being undertaken, as this is often a condition of planning.

8 CONCLUSIONS

This Phase I Site Appraisal has shown the site is should be suitable for the proposed development, assuming compliance with all the recommendations contained within this report.



A P P E N D I X A

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com

GENERAL APPRAISAL COMMENTS

i INFORMATION SOURCES

Where available the following sources have been used for the identification and assessment of potential ground hazards:

Relevant British Standards
 British Geological Survey (BGS) Geology Map Scale 1:10,000 for local area
 British Geological Survey (BGS) Geology Map Scale 1:50,000/1:63,320
 BGS Memoir
 BGS Borehole Records
 Environment Agency Groundwater Vulnerability Maps
 Historical Ordnance Survey (OS) Maps
 Environmental Data Report
 Environment Agency Website: <http://www.environment-agency.gov.uk/>
 Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UKWIR, 2010.
 Coal Authority Records / Coal Mining Report
 DEFRA/Environment Agency Contaminated Land publications and DoE Industry Profiles
 BRE Guide BR211 (2007), 'Radon: Guidance on protective measures for new buildings'
 HPA-RPD-033 (2007), 'Indicative Atlas of Radon in England and Wales'
 NRPB Publication W26 (2002), 'Radon Atlas of England and Wales'
 CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings'
 Other technical references used throughout this document are detailed in the text.

ii CONTAMINANTS OF CONCERN

The DoE Industry Profiles are normally used to assess likely contaminants from past land use and potential nearby industrial sources. For land uses where no profile is available, likely contaminants of concern are selected by GRM based on past experience of similar sites, a general screening suite of contaminants covered by CLEA and common contaminants from the Industry Profiles.

Arsenic	Copper	Water soluble sulphate
Cadmium	Nickel	PAH (polycyclic aromatic hydrocarbons)
Chromium	Zinc	
Lead	Phenols	
Mercury	cyanide (total)	
Selenium	pH	

Asbestos and PCBs are listed in the vast majority of profiles. PCBs are listed as the profiles expect electricity substations and switch boxes on all industrial sites. There is the potential for asbestos containing material to be mixed up with made ground, following any demolition works.

iii CONCEPTUAL MODEL METHODOLOGY

The consideration of contamination is based upon the principles of risk assessment, using the 'source-pathway-receptor' model in order to establish the presence, or potential presence, of a pollutant linkage.

To create a risk, contamination must have the potential to cause harm to susceptible targets or receptors such as humans, the water environment or the built environment. The potential for harm to occur requires three conditions to be satisfied to form a pollutant linkage:

The presence of substances that may cause harm (SOURCE).

The presence of a target which may be harmed (RECEPTOR).

The existence of a plausible migration route between the source and the receptor (PATHWAY).

In the absence of a plausible pollutant linkage there is no risk. Where a potential linkage is identified in order for it not to pose a risk to the identified receptor it must be broken.

iv INTRUSIVE INVESTIGATION SAMPLING METHODOLOGY

The ground investigation (including fieldwork, sampling, monitoring and laboratory analyses) has been designed to identify and assess potential ground related problems and to allow cost effective solutions to be advised. It has been planned on the basis of the desk study, site inspection and the proposed development layout (where available). All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned and advanced to depths to determine the general ground/groundwater/gas conditions below the site. A general grid pattern has been adopted, where possible, to provide sufficient information based on the current proposed layout scheme. Some holes have been targeted at particular hazards identified in the Phase I assessment. The resultant exploratory hole density is considered to be commensurate with the complexity of the site conditions and detail of information required for this phase of the investigation.

v GROUND GAS RISK ASSESSMENT METHODOLOGY

Gas monitoring programmes undertaken by GRM are designed to broadly comply with the recommendations outlined in CIRIA Report C665 'Assessing risks posed by hazardous ground gas to buildings' (2007).

To assess the risks posed by ground gases such as radon, carbon dioxide and methane, the relevant current guidance has been used. For radon the site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings (BR211: 2007)'. For methane and carbon dioxide the primary guidance document used to determine if protection measures are required is CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' (2007). This uses Gas Screening Values (GSVs), which are gas concentrations multiplied by borehole flow rate, along with additional limiting factors (such as maximum methane concentrations) to classify the gas regime of a site.

The guidance document includes two methods of characterising a site. The main method 'Situation A' is based on work by Wilson and Card and is used for all types of development except low rise housing that meets the assumptions of 'Situation B'. The 'Situation B' method proposed by Boyle and Witherington for the NHBC assumes all properties have pre-cast suspended floors (beam and block) with ventilated underfloor voids.

Where flow is not recorded during the monitoring a default flow rate of 0.1l/hr will be used in the assessment to produce a positive result.

vi HUMAN HEALTH RISK ASSESSMENT METHODOLOGY

Guidance contained in the Environment Agency's CLEA Report has been used to assess the risks posed to human health.

For residential developments that include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land with plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered including the consumption of home-grown vegetables.

For residential developments that do not include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land without plant uptake' are used, i.e. a female with a start age class of

one and an end age class of six. All pathways are considered except the consumption of home-grown vegetables.

For commercial/industrial developments the default Tier 1 Assessment Criteria (TAC) for 'commercial/industrial' are used, i.e. a female with a start age class of sixteen and an end age class of eighteen. All pathways are considered except the consumption of home-grown vegetables.

The TAC used by GRM include Soil Guideline Values (SGV) published by the EA, values calculated by GRM using the CLEA v1.06 risk assessment and values and chemical data developed by LQM/CIEH. The TAC used in the assessment are selected based on the lowest site specific SOM values returned as part of the chemical analysis.

Where soil chemical analysis results are found to exceed the TAC, Site-Specific Risk Assessments may be undertaken using the CLEA v1.06 risk assessment software using the age classes and pathways described above.

vii RISK TO SITE WORKERS – GENERAL COMMENTS

The risks to site workers are similar to those posed to site end users, although likely to be less severe due to the site workers' shorter exposure to the identified contamination. However, site workers (particularly groundworkers) are more likely to come into direct contact with contaminated soils due to the nature of their work. On this basis ground and construction workers should be provided with basic Personal Protective Equipment based on the site's general health and safety risk assessment, but including as a minimum safety footwear, gloves and overalls.

A site specific risk assessment should be carried out for all hazards identified within the ground investigation in accordance with current health and safety legislation. This assessment should identify any measures required to further reduce risks i.e. providing further Personal Protective Equipment, welfare facilities and if necessary preventing access to certain areas.

Demolition and dismantling of existing structures on the site must be carried out to a safe and acceptable standard, in accordance with current UK guidance and best practice. Whilst not ground related, asbestos and hazardous substances surveys should be conducted prior to any demolition.

Any unusual colours, odours and suspicious ground should be reported immediately to site management and then GRM.

Whilst this appraisal has considered the long-term effects of contamination, GRM can also help during the formulation of Health and Safety documentation, if required.

viii CONTROLLED WATERS RISK ASSESSMENT METHODOLOGY

Where the desk study and fieldwork do not reveal a potential source of contamination no leachate or groundwater testing will be performed. Where a potential source is identified the testing will comprise leachate testing on the material considered most likely to pose a risk, groundwater testing will be undertaken if water is present at shallow depth.

The UK Drinking Water Standards (UKDWS) or Environmental Quality Standards (EQS) are usually adopted for comparison with the leachate/groundwater test results. When the most sensitive receptor is considered to be the an aquifer (groundwater) UKDWS will be adopted as the Initial Tier 1 screening values. Where the most sensitive receptor is a surface water feature the EQS values will be used as Initial Tier I Screening values.

ix CONSTRUCTION MATERIALS RISK ASSESSMENT METHODOLOGY

The 'screening levels' adopted for the assessment of risk to construction materials are taken from the following documents:

UK Water Industry Research (UKWIR) Contamination thresholds for sub-surface water pipes, for the protection of buried pipes.

Building Research Establishment (BRE) Special Digest SD1 (2005), 'Concrete in Aggressive Ground', for the protection of buried concrete.

WASTE DISPOSAL AND SITE WASTE MANAGEMENT PLANS

Under current Waste Management Regulations, waste soil materials produced from the site will require characterisation to enable it to be disposed of correctly.

The chemical analysis results included in this report should be provided to the relevant landfill operators to establish the characterisation of the waste, confirm its suitability for landfill disposal and provide estimated costings. If material is classified as hazardous, then the site will need to be registered with the Environment Agency prior to the movement of the waste. Depending on the receiving landfill's current permit, further chemical analysis, incorporating Waste Acceptance Criteria (WAC) leachate analysis, may be required.

All materials removed from the site will be classified as 'waste' and therefore must be removed by a suitably licensed carrier of waste. This applies whether or not the waste is contaminated. All waste removed to landfill will attract Landfill Tax.

The developer/builder is likely to be classed as the waste producer and therefore, has a duty of care to ensure that all waste is disposed of appropriately. This includes ensuring the waste carrier is licensed and disposes of the waste to a suitably licensed landfill site. They are also required to keep a paper trail from 'cradle to grave' including copies of the waste disposal tickets.

Efficient materials management on site is recommended as it can lead to significant cost savings when compared to the traditional side casting or single stockpile of arisings. Likewise making the site as volume neutral as possible will reduce the costs of development.

Site Waste Management Plans allow better waste management practices, help to reduce the amount of waste produced and identify best environmental disposal options. Implementing a Site Waste Management Plan (SWMP) can reduce costs (increasing business profits) and maximise resource efficiency.

SWMPs are a legal requirement for all projects with an overall development cost of over £300k. GRM can assist in the production of SWMPs which comply with the Code of Practice and identify best environmental disposal options when dealing with waste.

xi

GEOTECHNICAL ASSESSMENT GENERAL COMMENTS

Where finished floor levels of proposed structures have not been provided by the Client, then for the purposes of initial assessment, GRM will assume that finished levels will not vary appreciably from the existing ground levels. If the depths of any underground engineering works (i.e. sewers, pumping stations etc.) are unknown they will not be taken in to account in the assessment and it will be assumed that any such works will not compromise foundation or ground stability.

Should the development proposals or finished levels be different from these assumptions then the comments/recommendations in the Geotechnical Assessment may require revising.

It should be noted that the results of window sampling and/or cable percussive boreholes may not give a true indication of a soils actual engineering properties (i.e. stability, mass structure etc). GRM consider that that prior to development trial pitting should be undertaken to confirm the recommendations in the Geotechnical Assessment.

xii

GEOTECHNICAL ASSESSMENT – ENGINEERING GROUND TREATMENT

Near surface soils have the potential to be disturbed by weathering and site traffic. Precautions should always be taken to avoid this, as excessive disturbance may lead to more onerous floor slab designs, road cap thickness and increased amounts of off site disposal etc.

Near surface soils may need treatment or reinforcing to allow safe movement of construction plant and labour. An assessment by the contractor should be undertaken once the type of machinery/plant needed to complete the development is known.

GEOTECHNICAL ASSESSMENT – EXCAVATIONS

Excavation instability (over-break) can result in damage to existing services or structures (e.g. foundations, roads or boundary walls/fences) both on and off-site, as well as increased foundation concrete costs. In order to minimise this, all excavations deeper than 1.2m deep (or any excavation within 1.5m of any existing structure or service) should be supported. Full support should be provided to the full depth of all near vertically sided excavations in made ground, soft and very soft clays and granular soils. A reduction to intermediate support should be acceptable within firm and stiffer natural clays.

Wherever possible, man entry into excavations should be prevented; however, where this is not possible, entry to, and time spent in, excavations should be kept to a minimum.

The build program should be tailored to reflect the impact that deep excavations through potentially unstable strata can have on adjacent properties, so that they are not undermined.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times. Reference should be made to HSE construction information sheet No. 8 (Revision 1) 'Safety in Excavations'.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

If contaminated water enters excavations it should be removed and transported to an appropriate treatment facility by a suitably licensed carrier before construction begins.

xiv GEOTECHNICAL ASSESSMENT – SUBSTRUCTURES

Where practicable, existing buried construction should be fully removed; however, if this is not practicable all new foundations should be carried down to fully penetrate it and it should be broken well away from all new structures.

There may be existing structures and/or infrastructure in close proximity to the proposed development. New build foundations may be constructed next to pavements with existing underground services beneath them, or excavations may be required near existing footings associated with adjacent properties. These potential hazards need to be taken into consideration when designing foundations and the groundworker needs to be made aware of their potential impact during the redevelopment works. Foundations close to existing underground services or buildings may require alternative foundation techniques (such as piling) to protect the integrity of these structures.

The contractor for the works should carry them out in such a fashion so as to not cause excessive overbreak, concrete usage or undermine existing buildings/roads/ services that are to be retained.

xv GEOTECHNICAL ASSESSMENT – SOAKAWAYS

Soakaway testing in trial pits by GRM is broadly carried out in accordance with BRE 365 (1991). The testing comprises the excavation of a test pit to a suitable depth, and the placement of water into the pit. The level of water present is then monitored over time. For borehole installations, the permeability testing (falling head/rising head) is undertaken in accordance with BS5930.

If it is decided to proceed with the use of soakaway drainage, then the following general points should be noted:

Soakaways should not be placed so that water can be discharged through potentially contaminated made ground.

The Environment Agency may require soakaways to be sealed systems such that only roof run off falls to soakaway.

Interceptors are likely to be required for soakaways for highway drainage. The adopting authority for the highways should be consulted at the earliest opportunity regarding the use of soakaways for highways drainage.

Consideration of site levels and slopes should be taken into account during the design.

The construction of all soakaways should be in accordance with the current building regulations.

Soakaways should not be placed within 5m of a proposed building.

Placement of soakaways needs to be considered so as to avoid ponding of water down slope.

The base of a soakaway should not be below the highest recorded water level.

The Environment Agency prefer 1m of dry soil to be present between the base of a soakaway and the water table to provide attenuation for contamination.

xvi GEOTECHNICAL ASSESSMENT – FOUNDATIONS

If soft or hard spots are encountered during foundation excavation then they should be replaced with suitably compacted material or the footings deepened to suitable strata, to avoid differential settlement.

If strata of differing bearing character (e.g. sand and clay) are encountered at foundation levels within the excavations for a single plot then the excavation depths should be altered as appropriate to ensure the foundations rest on a single stratum, or strata that will not induce differential settlement. Where this is impractical then GRM should be contacted to assess a reinforced concrete detail or an alternative foundation solution (e.g. piles or vibro-replacement).



NOTES ON LIMITATIONS**General**

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

GRM Development Solutions Limited accepts no responsibility or liability for:

- a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and
- b) the consequences of this document being used by any third party with whom an agreement has not been executed.

Phase I Environmental Audits/ Desk Studies

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, GRM Development Solutions Limited reserves the right to review such information and as considered necessary and appropriate to modify the opinions accordingly. It should be noted that any risks identified in a Phase 1 report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits (Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, and controlled waters.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as provisional only and must, in any event, be confirmed by a commercial adviser.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. Whilst exploratory testing is intended to gain an accurate representation of the site, the very nature of sampling and testing is such that it cannot ensure that all localised conditions are detected.

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

Phase II Geo-environmental Investigations (Combined Geotechnical and Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environment risks together with engineering and development implications. If costs have been included in relation to site development a commercial adviser must confirm these.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site for each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time the site work was conducted. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects. The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.



A P P E N D I X B

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



P1

P2

P3

P4

P2



DEVELOPED MASTERPLAN

DO NOT SCALE

NOTES:



GRM Development Solutions Ltd

Laurus House, First Ave, Centrum 100,

Burton-on-Trent, Staffordshire

Tel: 01283 551 249 Fax: 01283 211 968

mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Proposed Development Plan

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© GRM Development Solutions Ltd

© Crown Copyright. AL 100014100



A P P E N D I X C

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

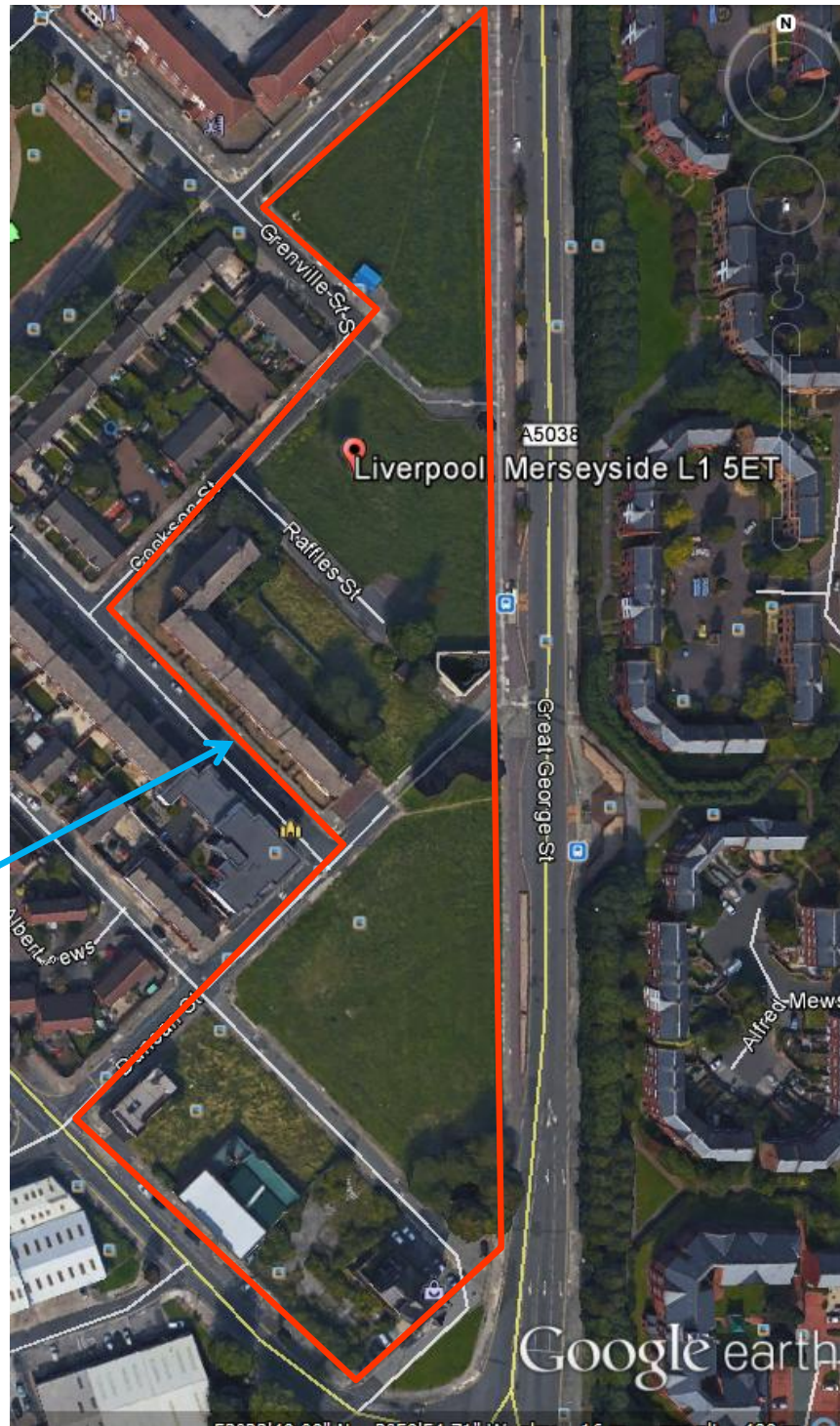
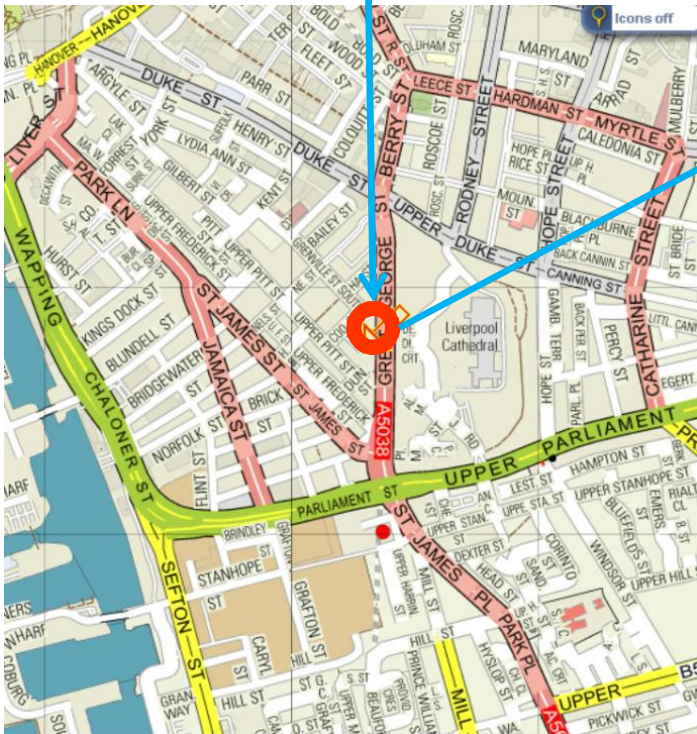
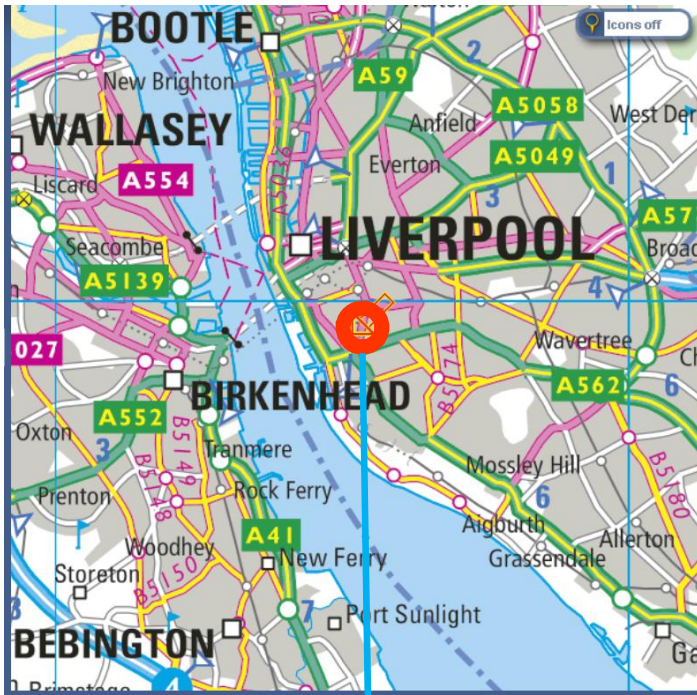
- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



DO NOT SCALE

NOTES:



GRM Development Solutions Ltd
 Laurus House, First Ave, Centrum 100,
 Burton-on-Trent, Staffordshire
 Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Site Location Plan

SCALE@SIZE:

NTS

ISSUE:

FINAL

DESIGN/DRAWN:

AS

DATE:

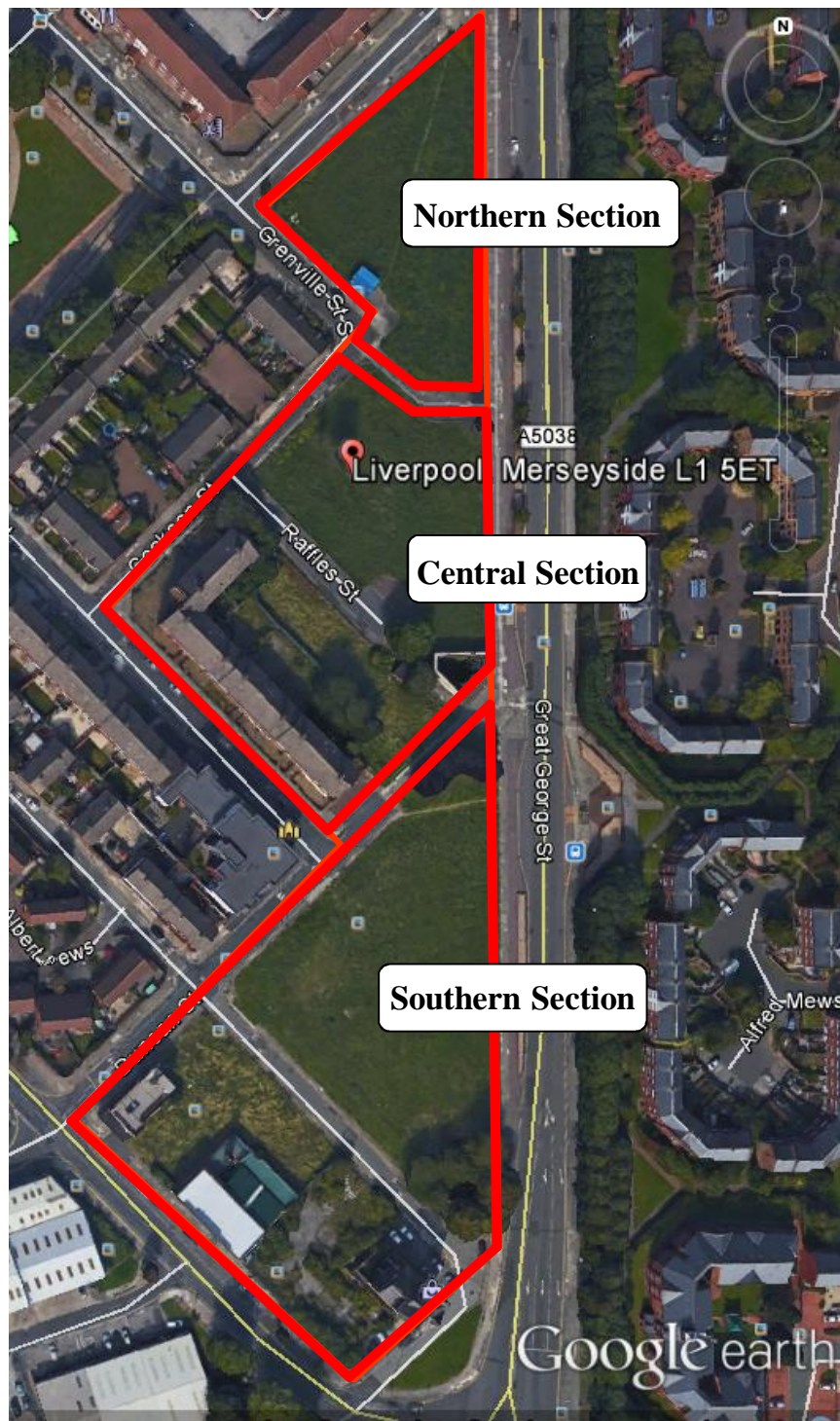
07/2015

PROJECT No:

P7076

DRAWING No:

© GRM Development Solutions Ltd
 © Crown Copyright. AL 100014100



DO NOT SCALE

NOTES:



GRM Development Solutions Ltd

Laurus House, First Ave, Centrum 100,

Burton-on-Trent, Staffordshire

Tel: 01283 551 249 Fax: 01283 211 968

mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Site Boundary Plan

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© GRM Development Solutions Ltd

© Crown Copyright. AL 100014100



A P P E N D I X D

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

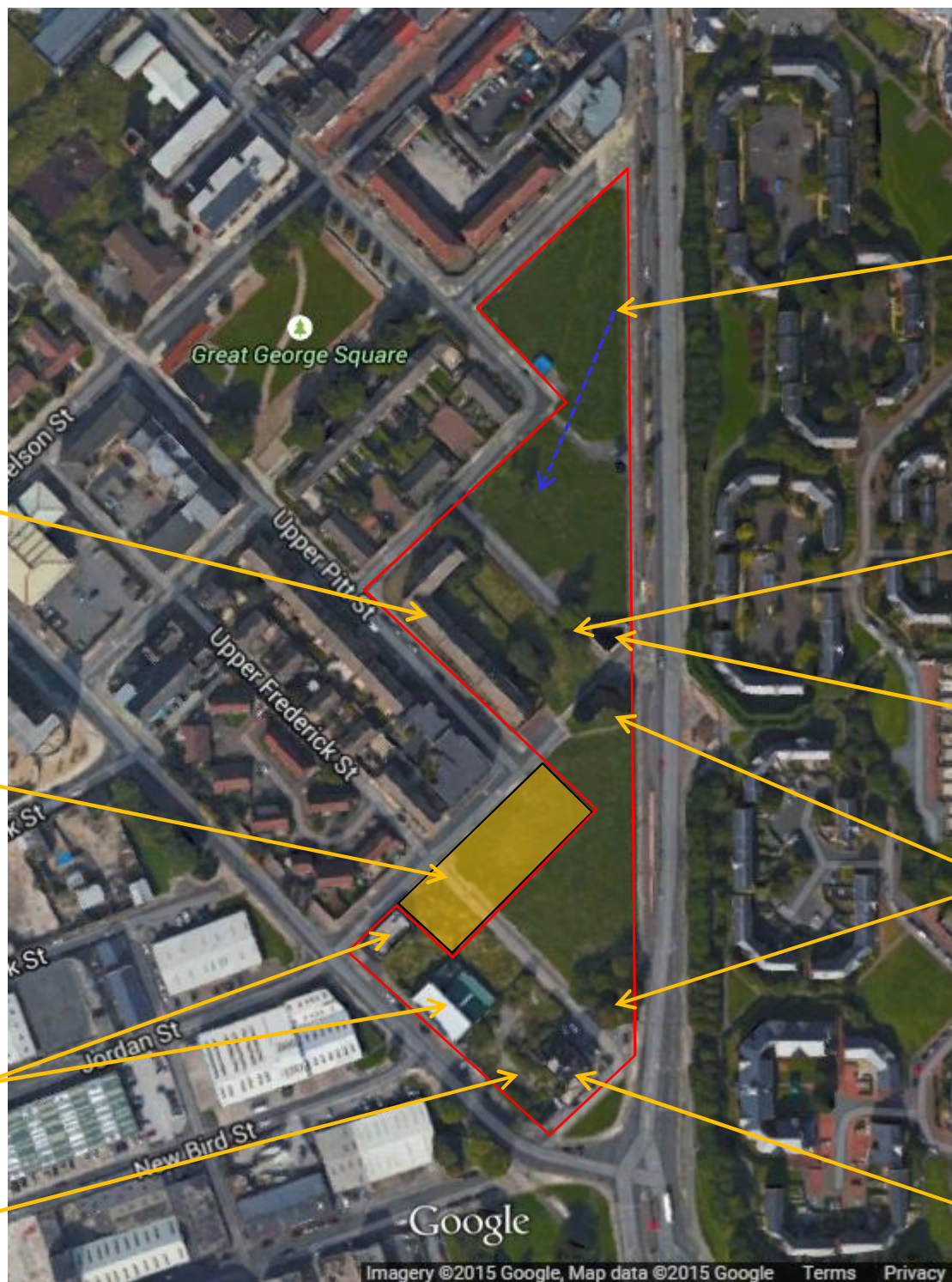
- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



DO NOT SCALE
NOTES:

Slope approx 1:15

Vacant 3-storey
residential
properties to be
demolished.

Electricity
Substation

Current residential
development site.

Tunnel ventilation
shaft.

Sycamore Trees
approx 10m high.

Existing commercial
buildings to be
demolished.

Area of wasteland
fenced off

Existing building
(The Wedding
House) retained.



GRM Development Solutions Ltd

Laurus House, First Ave, Centrum 100,
Burton-on-Trent, Staffordshire

Tel: 01283 551 249 Fax: 01283 211 968

mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Site Features Plan

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© GRM Development Solutions Ltd

© Crown Copyright. AL 100014100



DO NOT SCALE

NOTES:



GRM Development Solutions Ltd

Laurus House, First Ave, Centrum 100,

Burton-on-Trent, Staffordshire

Tel: 01283 551 249 Fax: 01283 211 968

mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

General Site Photographs

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© GRM Development Solutions Ltd

© Crown Copyright. AL 100014100



A – Existing buildings awaiting demolition.



B – Open land at northern end of the site.



C – Electricity sub station.



D – Ventilation shaft for adjacent railway tunnel.

DO NOT SCALE

NOTES:



GRM Development Solutions Ltd
 Laurus House, First Ave, Centrum 100,
 Burton-on-Trent, Staffordshire
 Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:	
Chinatown Developments Ltd	
PROJECT:	
New Chinatown, Liverpool	
TITLE:	
General Site Photographs	
SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
AS	07/2015
PROJECT No:	DRAWING No:
P7076	
© GRM Development Solutions Ltd © Crown Copyright. AL 100014100	



E – Current residential development



F – Open land at southern section of the site.



G – Sloping grassed area between commercial buildings at southern extent of site.



H – Fenced of area of wasteland with remnant hardstanding.

DO NOT SCALE
NOTES:



GRM Development Solutions Ltd
Laurus House, First Ave, Centrum 100,
Burton-on-Trent, Staffordshire
Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

General Site Photographs

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© **GRM Development Solutions Ltd**
© Crown Copyright. AL 100014100



A P P E N D I X E

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

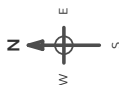
Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: 1056 Scale Town Plan

Map Date: 1837

Scale: 1:1,056

Printed at: 1:5056



Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



Produced by: Groundsure
www.groundsure.com

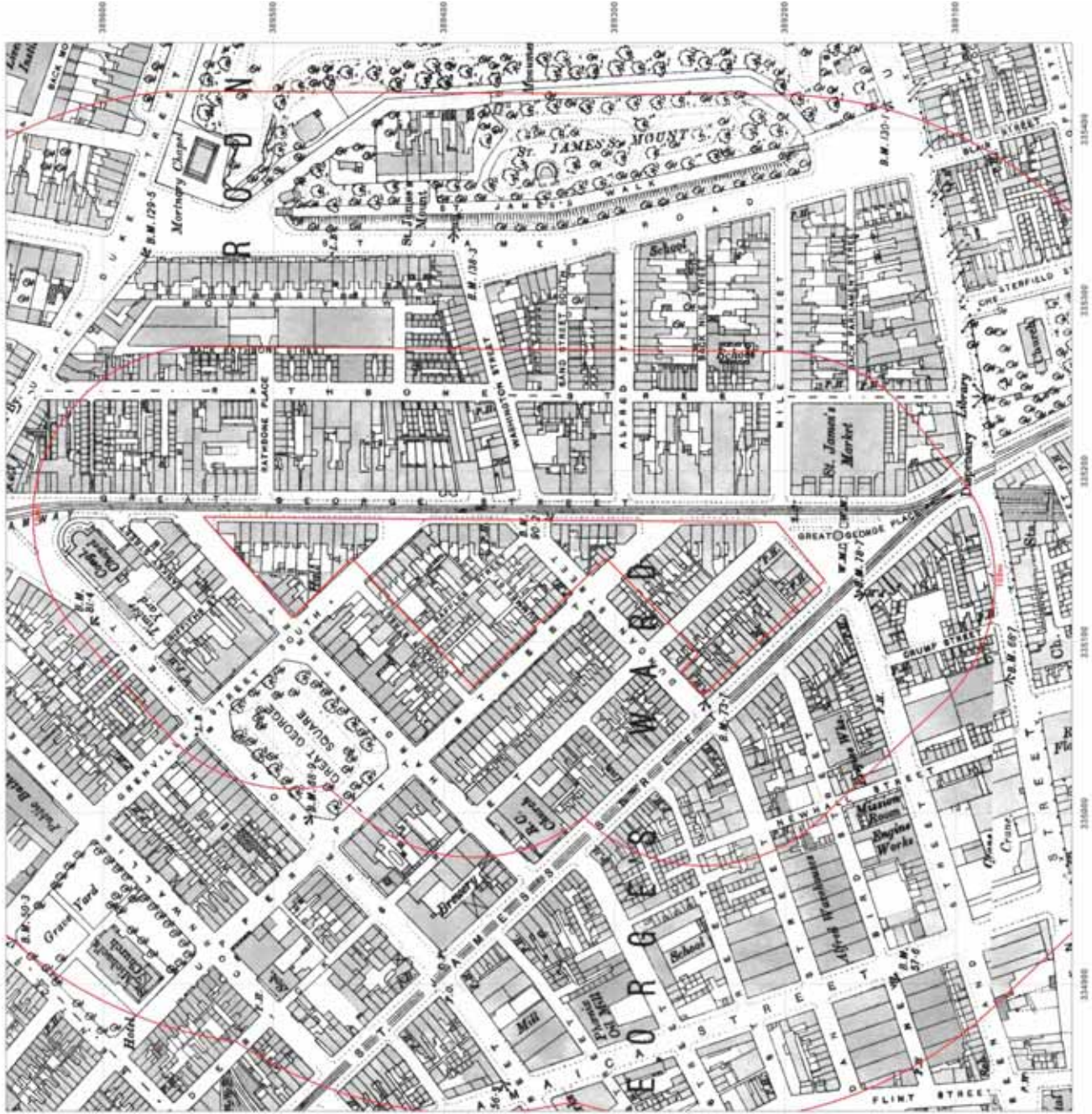


Supplied by: emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 0000352075

Production Date: 03 July 2015

To view Snap Legend, click on legend



emapsite™

Site Details:

New Chinatown, Great George
Street, Liverpool L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: County Series

Map Date: 1893

Scale: 1:2,500

Printed at: 1:500

Groundsure

Produced by

Groundsure Insights

www.groundsure.com

Supplied by

www.emapsite.com

sales@emapsite.com

© Crown Copyright and database rights. Ordnance Survey 000352075

Production Date: 03 July 2015

SiteDetails:S

S New Chinatown, Great George
S Street, Liverpool, L1 5ET
C

ClientRef: \$ EMS_312700_421708
ReportRef: \$ EMS-312700_421708
GridRef: \$ 335138, 389344

MapName: \$ County Series

Map Date: 1998

Scale: \$5 1:2,500

Printed at: \$1:2500



Surveyed 1908
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1908	
Revised 1908	
Edition N/A	
Copyright N/A	
Levelled N/A	

Produced by
Groundsure Insights
www.groundsure.com

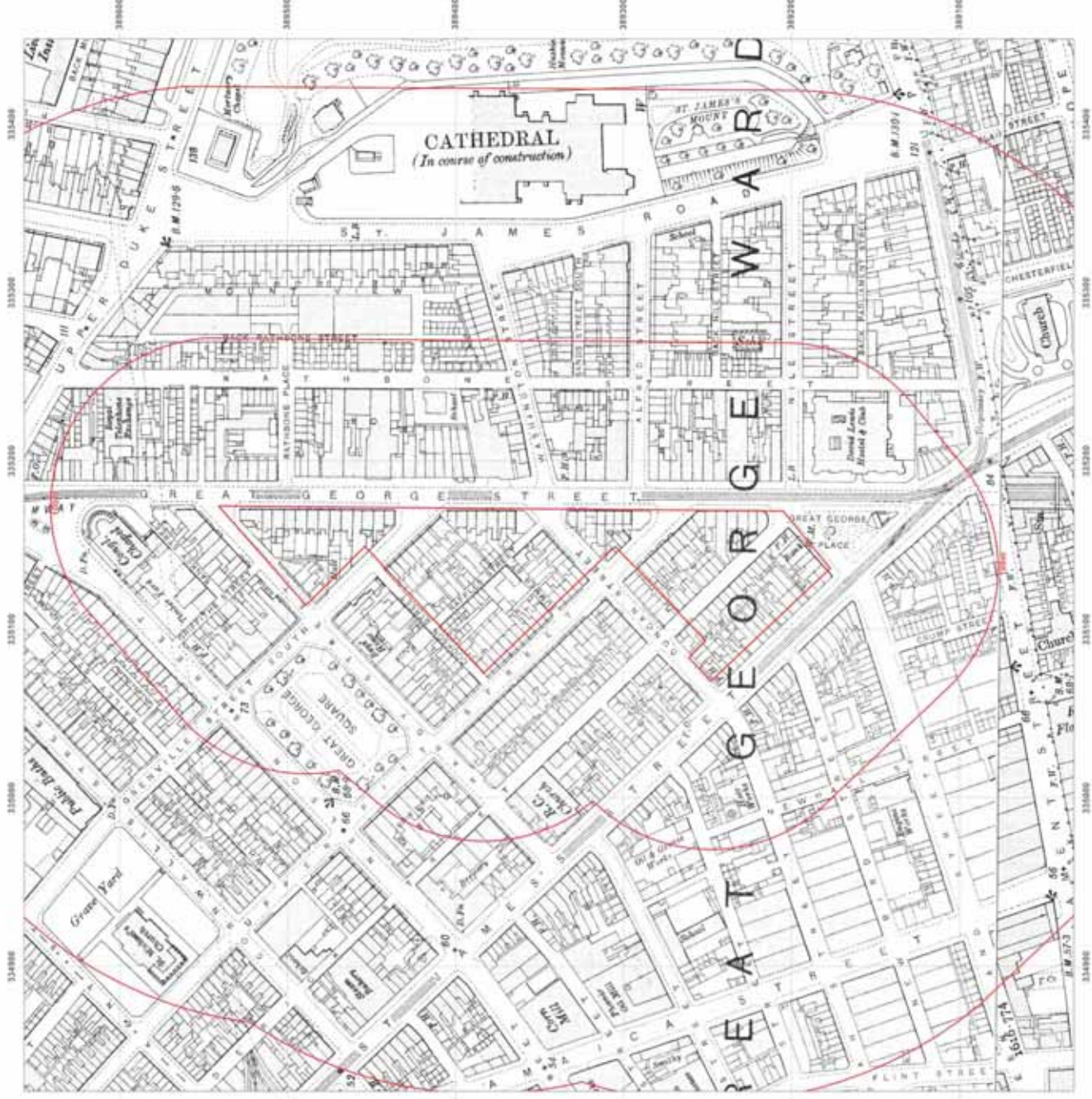
Ordnance Survey
Licensed Partner

S
Supplied by: S
www.emapsite.com S
sales@emapsite.com S

© Crown Copyright and Database Rights 2015 Ordnance Survey 100035207S

Production Slate: **S** 03 July 2015

S To view Snap Legends, click **Legend**.



100



Site Details:
New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: County Series
Map Date: 1937
Scale: 1:2,500
Printed at: 1:500

Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

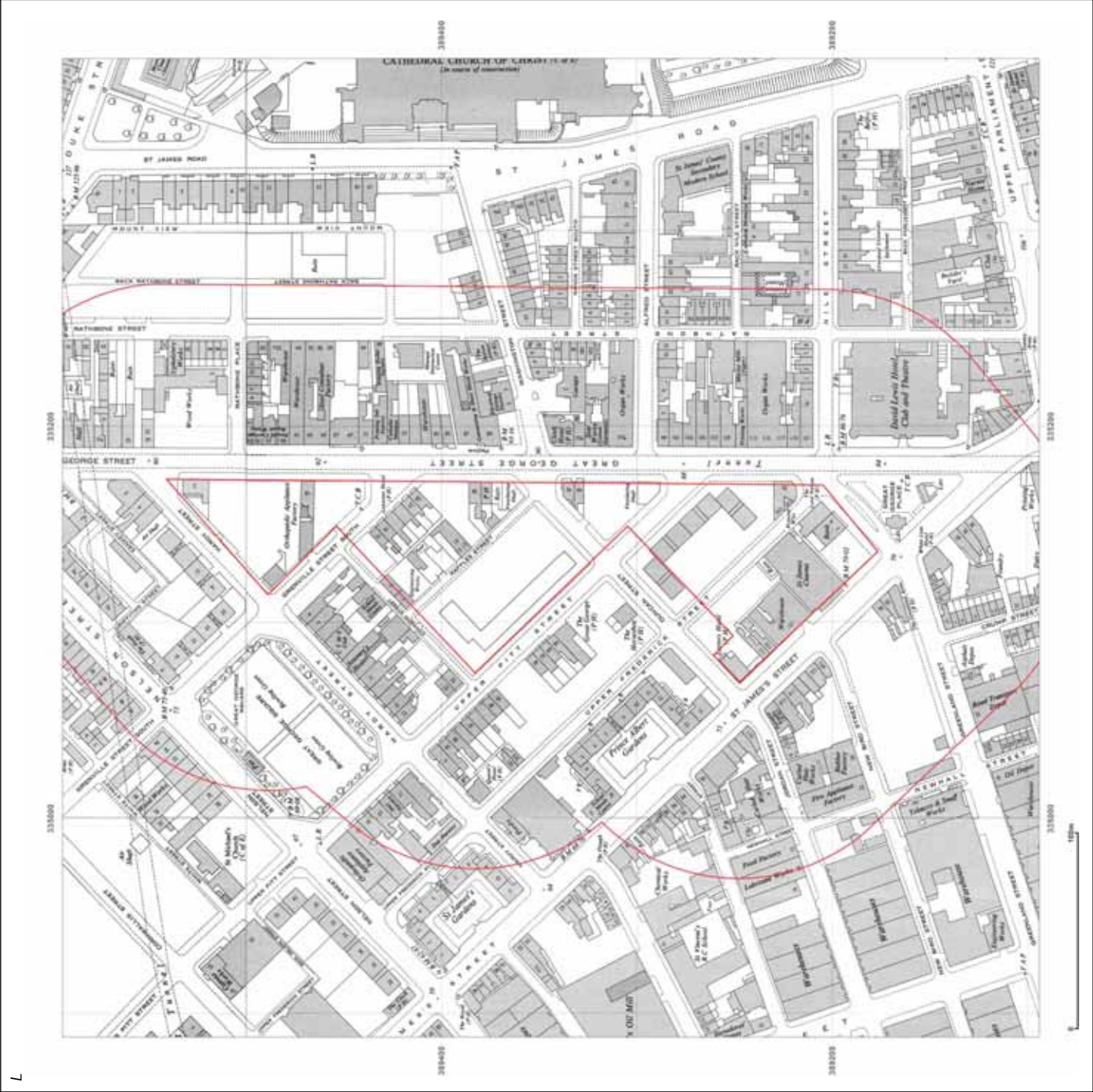
Produced by: Groundsure
www.groundsure.com
Supplied by: emapsite.com
sales@emapsite.com

Groundsure
Ordnance Survey
Licensed Partner

© Crown Copyright and database rights 2015 Ordnance Survey 000352075
Production Date: 03 July 2015
To view Snap Legend, click here

Legend

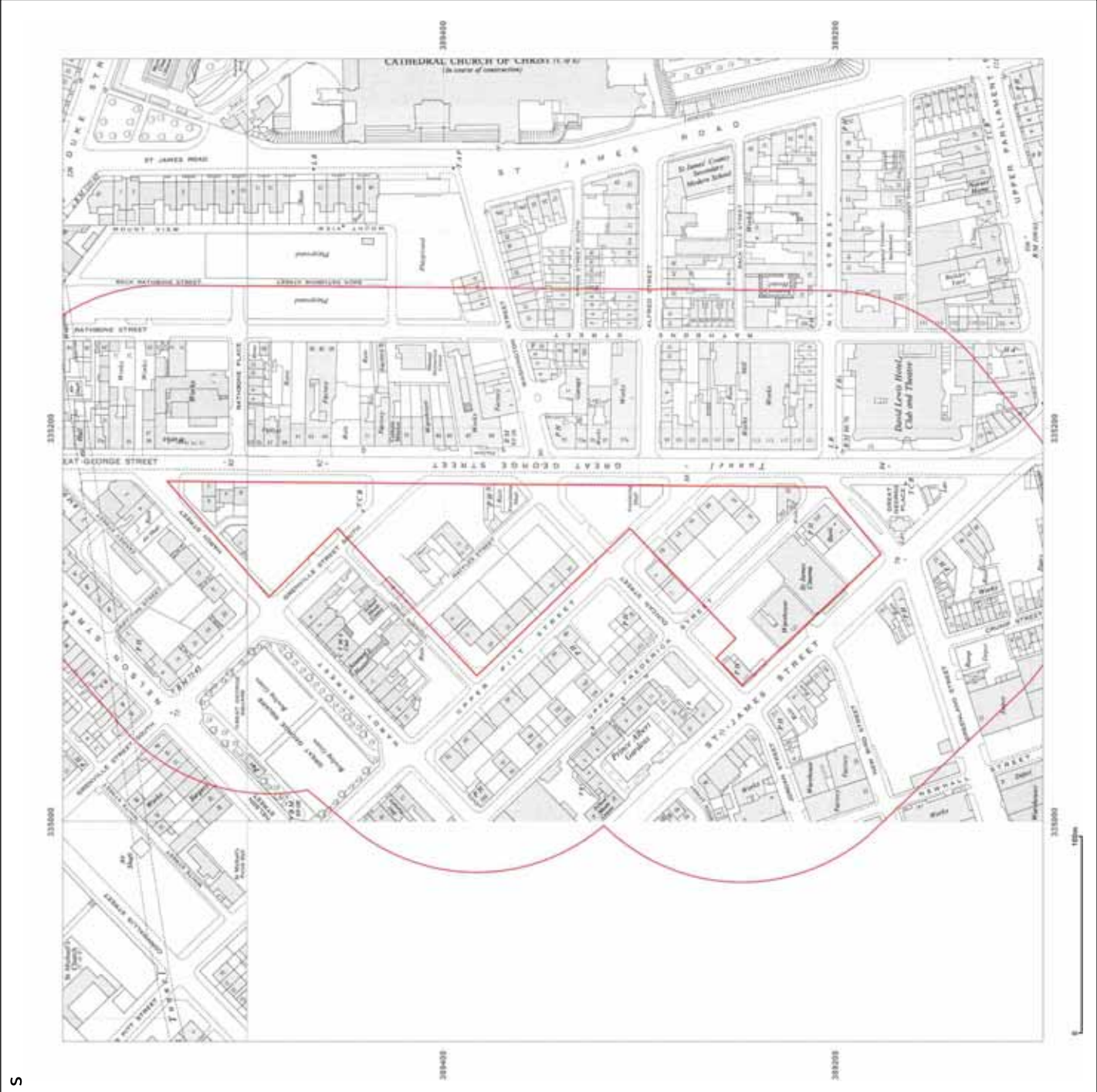
L



Site Details: New Chinatown, Great George Street, Liverpool, L1 5ET	
Client Ref: EMS-312700-421708	
Report Ref: EMS-312700-421708	
Grid Ref: 335138, 389344	
Map Name: National Grid	S 5 L
Map Date: 1953	
Scale: 1:1,250	
Printed at: 1:5000	
<div><div><div>Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1947</div><div>Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1947</div></div><div><div>Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1947</div><div>Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1947</div></div></div>	

Groundsure
Produced by: Groundsure
www.groundsure.com

Ordnance Survey
Supplied by: Ordnance Survey
www.ordnancesurvey.co.uk



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1959-1962

Scale: 1:1,250

Printed at: 1:5000

Surveyed 1953
Revised 1961
Edition N/A
Copyright 1962
Levelled 1960

Surveyed 1953
Revised 1958
Edition N/A
Copyright 1959
Levelled 1947

Produced by: Groundsure
www.groundsure.com

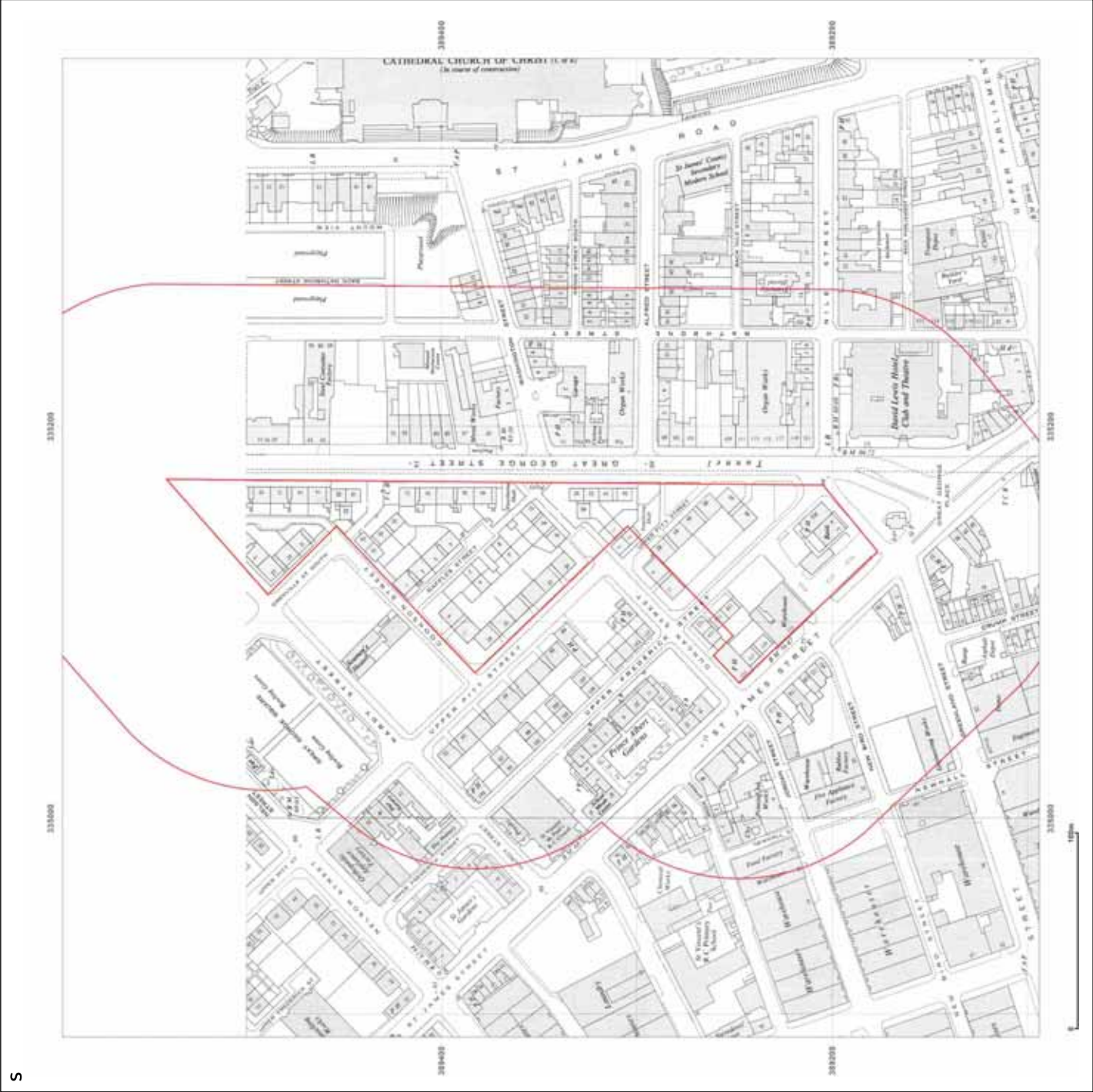
Supplied by: emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 0000352075

Production Date: 03 July 2015

To view Snap Legend, click here

S



Site Details: New Chinatown, Great George Street, Liverpool, L1 5ET	
Client Ref: EMS-312700-421708	
Report Ref: EMS-312700-421708	
Grid Ref: 335138, 389344	
Map Name: National Grid	S
Map Date: 1965	S
Scale: 1:1,250	S
Printed at: 1:5000	S
<div><div>Surveyed 1953 Revised 1964 Edition N/A Copyright 1965 Levelled 1960</div><div>Surveyed 1953 Revised 1964 Edition N/A Copyright 1965 Levelled 1960</div></div>	
<div><div>Surveyed 1953 Revised 1964 Edition N/A Copyright 1965 Levelled 1960</div><div>Surveyed 1953 Revised 1964 Edition N/A Copyright 1965 Levelled 1960</div></div>	

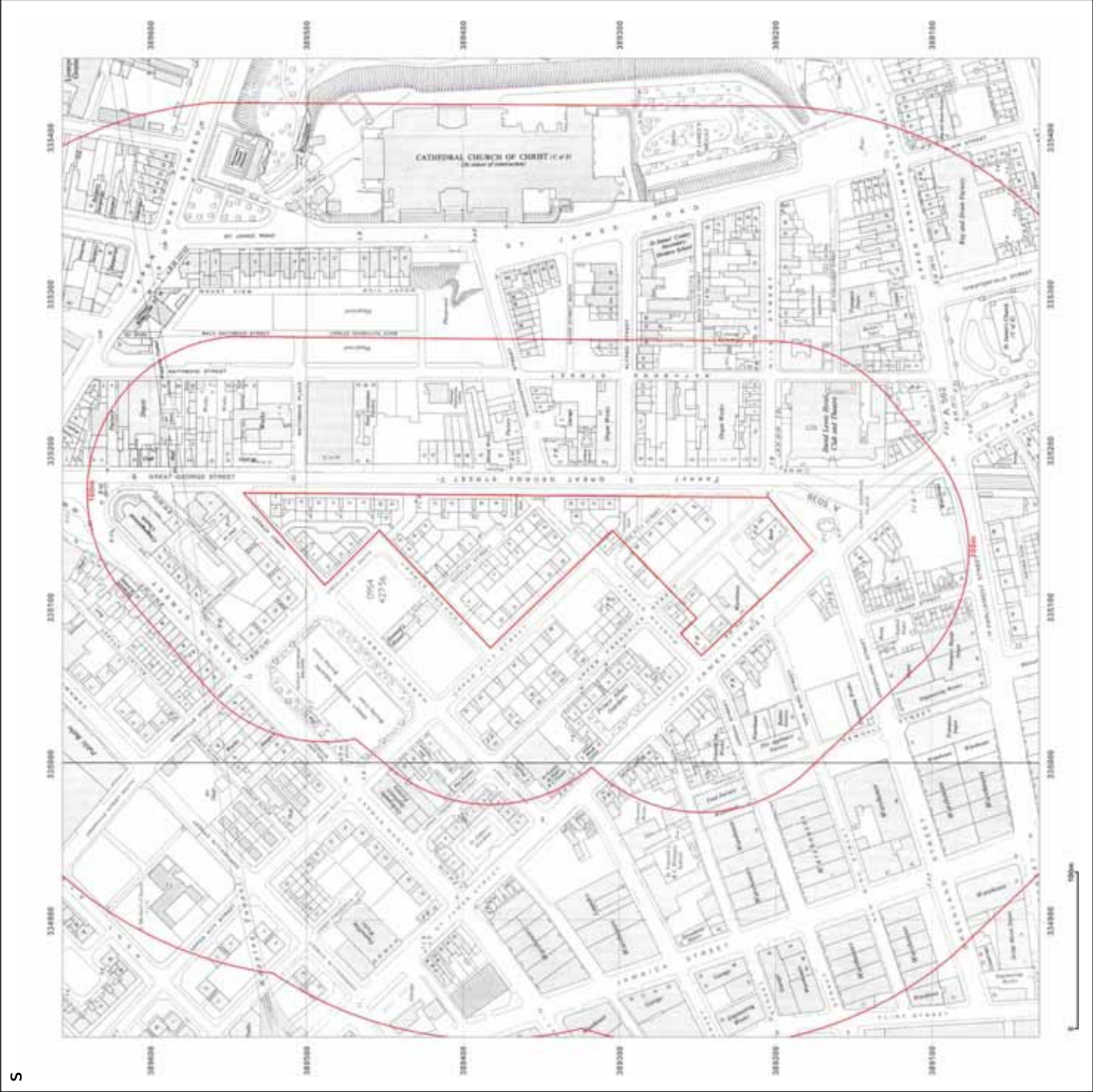
Groundsure
Produced by:
Groundsure Insights
www.groundsure.com

Ordnance Survey
Licensed Partner
Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 000035207 S

Production Date: 03 July 2015

To view Snap Legend, click here [Legend](#)



Site Details: New Chinatown, Great George Street, Liverpool, L1 5ET	
Client Ref: EMS-312700-421708	
Report Ref: EMS-312700-421708	
Grid Ref: 335138, 389344	
Map Name: National Grid	
Map Date: 1967	
Scale: 1:2,500	
Printed at: 1:500	
<div>Surveyed 1967 Revised 1967 Edition N/A Copyright 1969 Levelled 1960</div>	

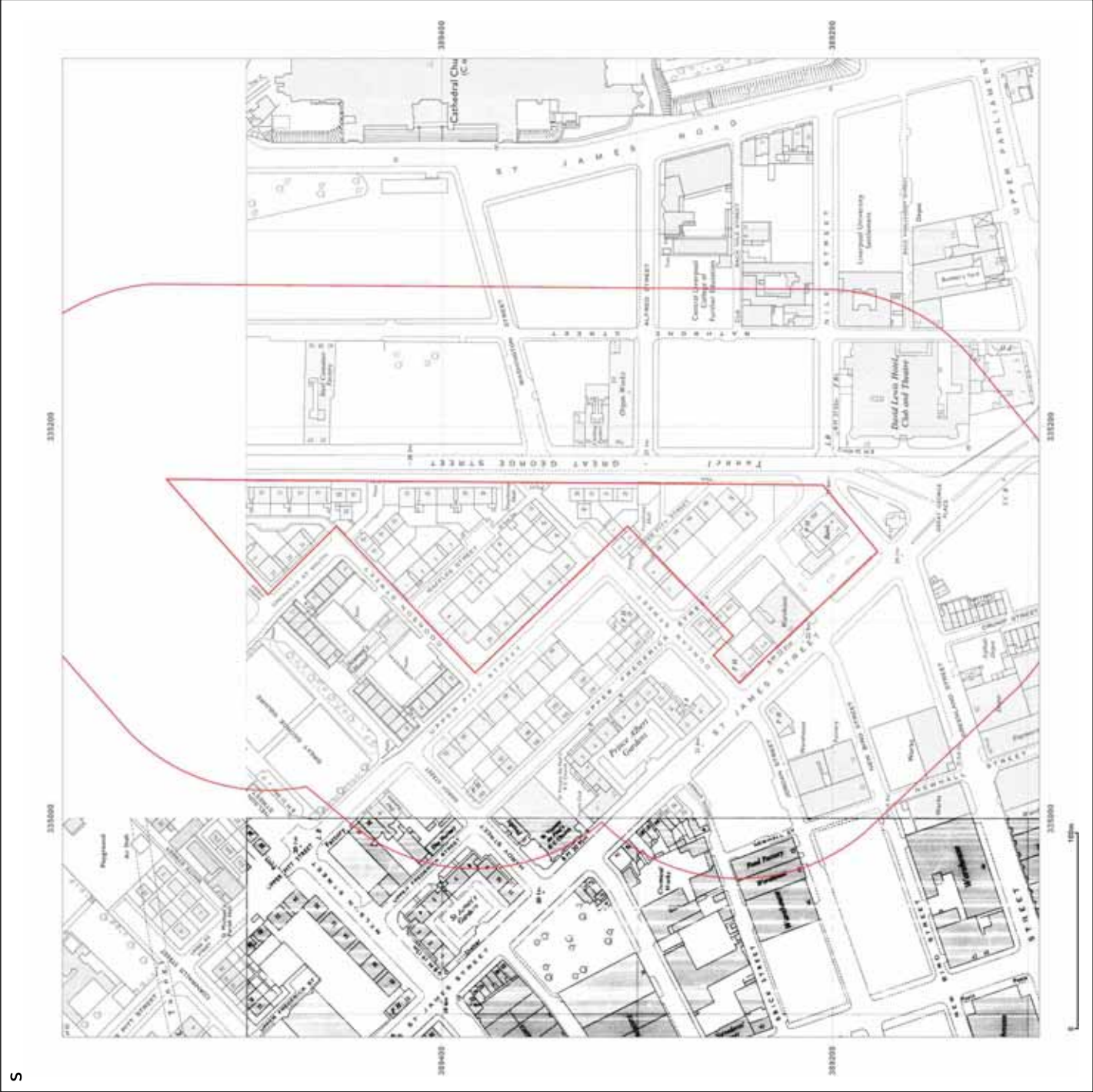
Produced by Groundsure
www.groundsure.com

Supplied by
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 0000352075

Production Date: 03 July 2015

To view Snap Legend, click here



Site Details: New Chinatown, Great George Street, Liverpool, L1 5ET	
Client Ref: EMS-312700-421708	
Report Ref: EMS-312700-421708	
Grid Ref: 335138, 389344	
Map Name: National Grid	
Map Date: 1993-1977	
Scale: 1:1,250	
Printed at: 1:5000	
<div><div>Surveyed 1953 Revised 1972 Edition N/A Copyright 1973 Levelled 1960</div><div>Surveyed 1953 Revised 1976 Edition N/A Copyright 1977 Levelled 1960</div></div>	
<div><div>Surveyed 1953 Revised 1972 Edition N/A Copyright 1973 Levelled 1960</div><div>Surveyed 1953 Revised 1976 Edition N/A Copyright 1977 Levelled 1960</div></div>	

Groundsure
Produced by:
Groundsure Insights
www.groundsure.com

Ordnance Survey
Licensed Partner
Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 0000352075
Production Date: 03 July 2015
To view Snap Legend, click here



emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1983-1986

Scale: 1:1,250

Printed at: 1:5000

Surveyed 1960
Revised 1986
Edition N/A
Copyright 1986
Levelled 1960

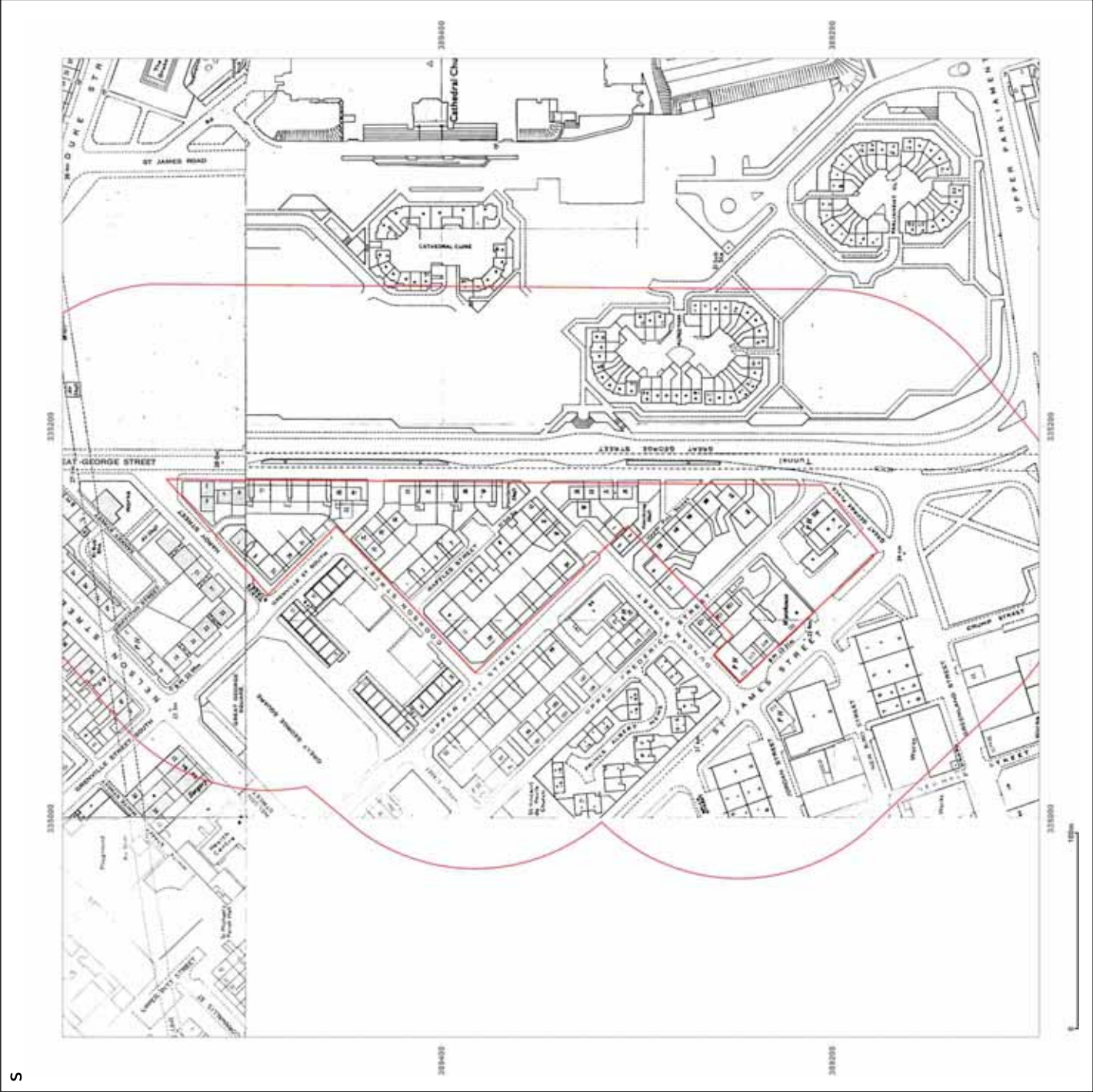
Surveyed 1960
Revised 1983
Edition N/A
Copyright 1983
Levelled 1960

Surveyed 1960
Revised 1986
Edition N/A
Copyright 1986
Levelled 1960

Surveyed 1960
Revised 1983
Edition N/A
Copyright 1983
Levelled 1960

Surveyed 1960
Revised 1986
Edition N/A
Copyright 1986
Levelled 1960

Surveyed 1960
Revised 1983
Edition N/A
Copyright 1983
Levelled 1960



S

emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1984-1988

Scale: 1:1,250

Printed at: 1:5000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1988
Levelled 1960

Surveyed 1960
Revised 1987
Edition N/A
Copyright 1987
Levelled 1960



Groundsure

Produced by:
Groundsure Insights
www.groundsure.com

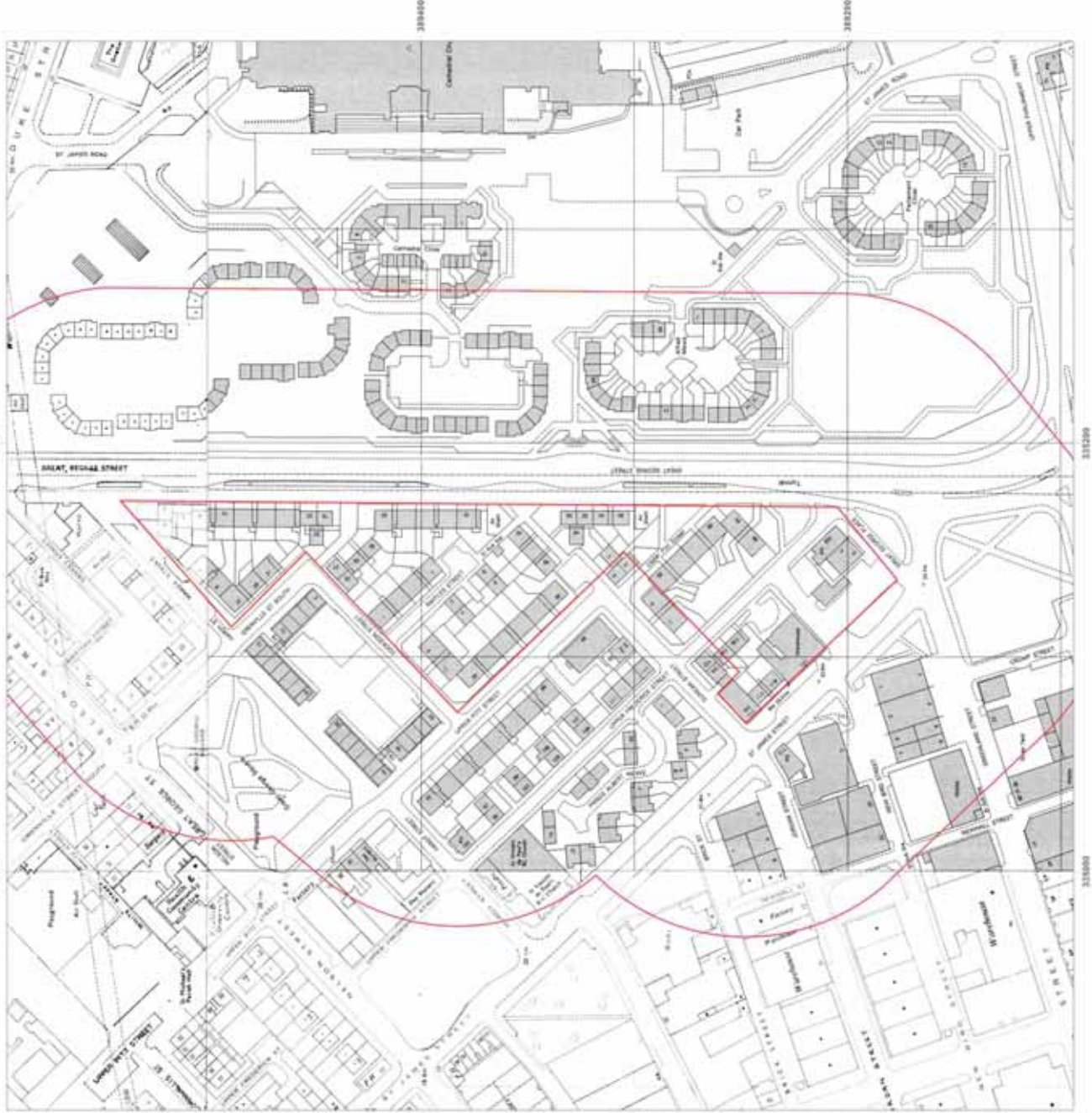
Ordnance Survey
Licensed Partner

Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 000035207 S

Production Date: 03 July 2015

To view Snap Legend, click here



Site Details:

New Chinatown, Great George
Street, Liverpool, L1 5ET

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1989-1991

Scale: 1:1,250

Printed at: 1:5000

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

S

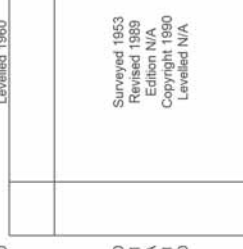
S

S

S

Surveyed 1960
Revised 1989
Edition N/A
Copyright 1989
Levelled 1960

Surveyed 1960
Revised 1989
Edition N/A
Copyright 1989
Levelled 1960



Produced by:
Groundsure Insights
www.groundsure.com



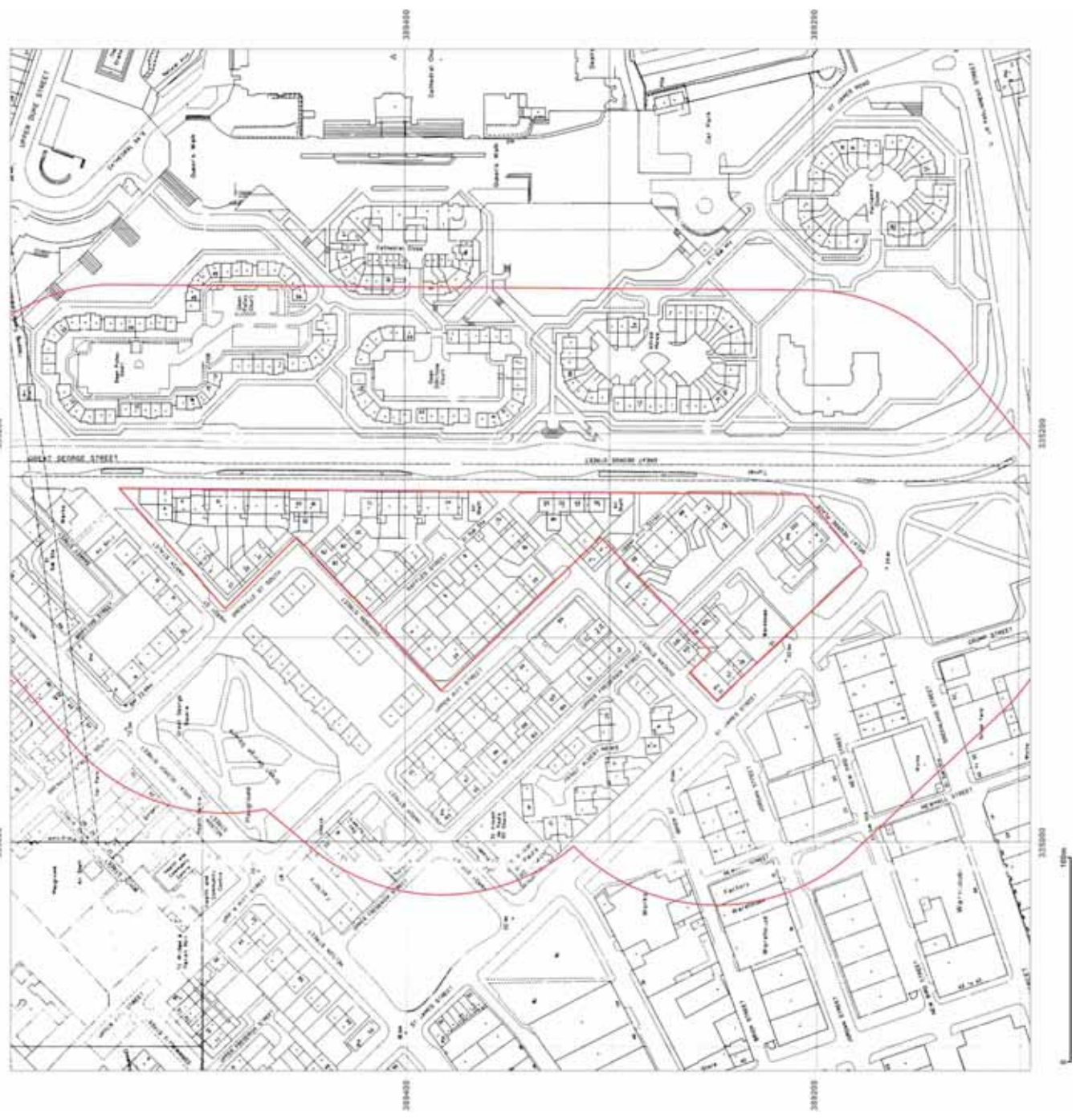
Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights. Ordnance Survey 000352075

Production Date: 03 July 2015

To view Snap Legend, click here

[Legend](#)

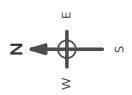


Site Details:

New Chinatown, Great George
Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid
Map Date: 1991-1993
Scale: 1:1,250
Printed at: 1:5000



Surveyed N/A	Surveyed N/A
Revised N/A	Revised N/A
Edition N/A	Edition N/A
Copyright 1993	Copyright 1993
Levelled N/A	Levelled N/A



Produced by:
Groundsure
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1992-1993

Scale: 1:1,250

Printed at: 1:5000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A



Groundsure

Produced by:
Groundsure Insights
www.groundsure.com

Ordnance Survey
Licensed Partner

Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 000035207 S

Production Date: 03 July 2015

To view Snap Legend, click here: [Legend](#)



Site Details:

New Chinatown, Great George Street, Liverpool L1 5ET

Client Ref: EMS-312700_421708

Report Ref: EMS-312700_421708

Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1993

Scale: 1:1,250

Printed at: 1:5000

Surveyed N/A

Revised N/A

Edition N/A

Copyright 1993

Levelled N/A

Surveyed 1993

Revised 1993

Edition N/A

Copyright 1993

Levelled N/A

North Arrow

Scale Bar



Groundsure

Produced by

Groundsure Insights

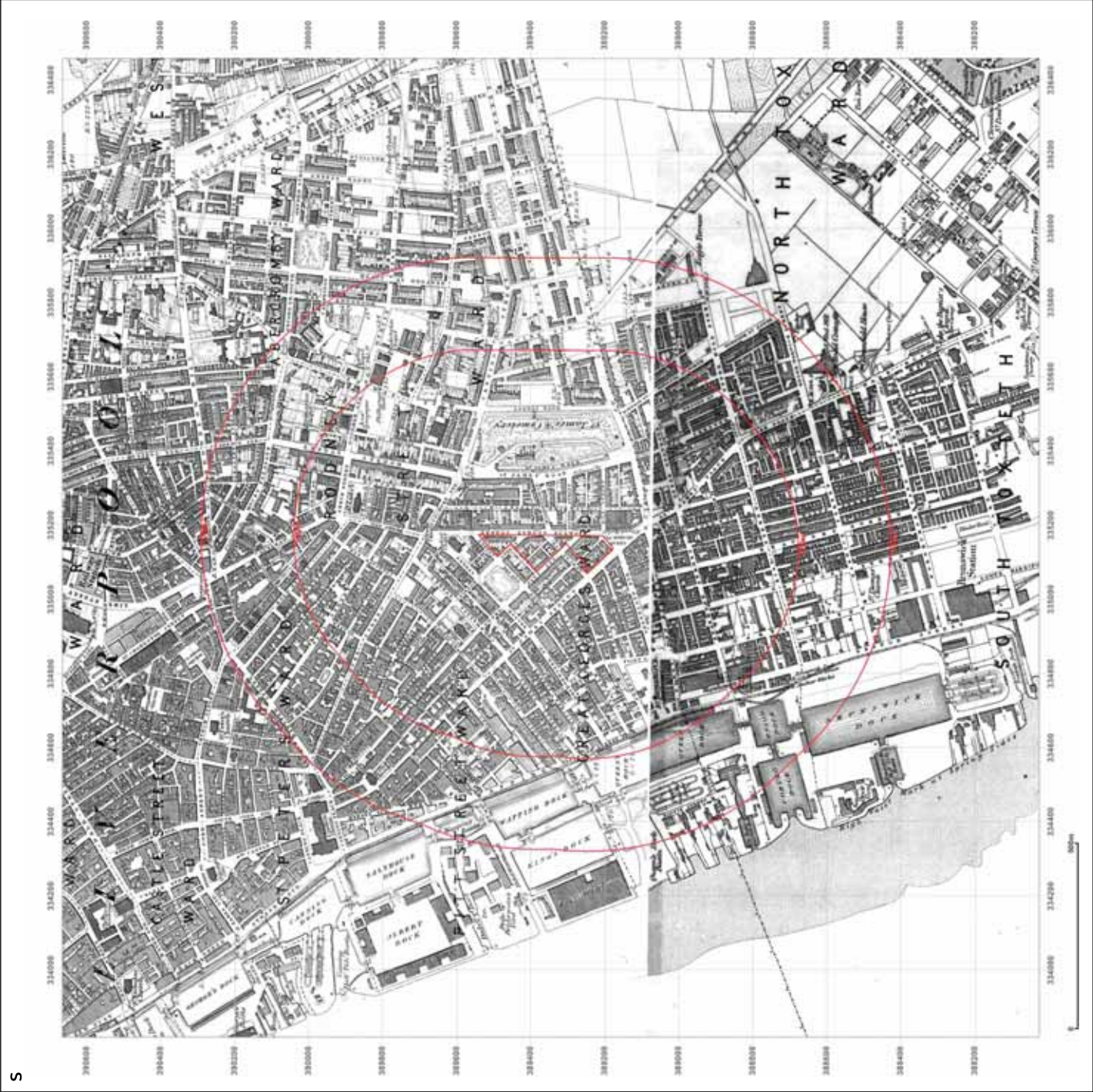
www.groundsure.com

Ordnance Survey

Supplied by

www.emapsite.com

sales@emapsite.com



emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: County Series

Map Date: 1851

Scale: 1:10,560

Printed: 1:10,560

Map Name: County Series

Map Date: 1851

Scale: 1:10,560

Printed: 1:10,560

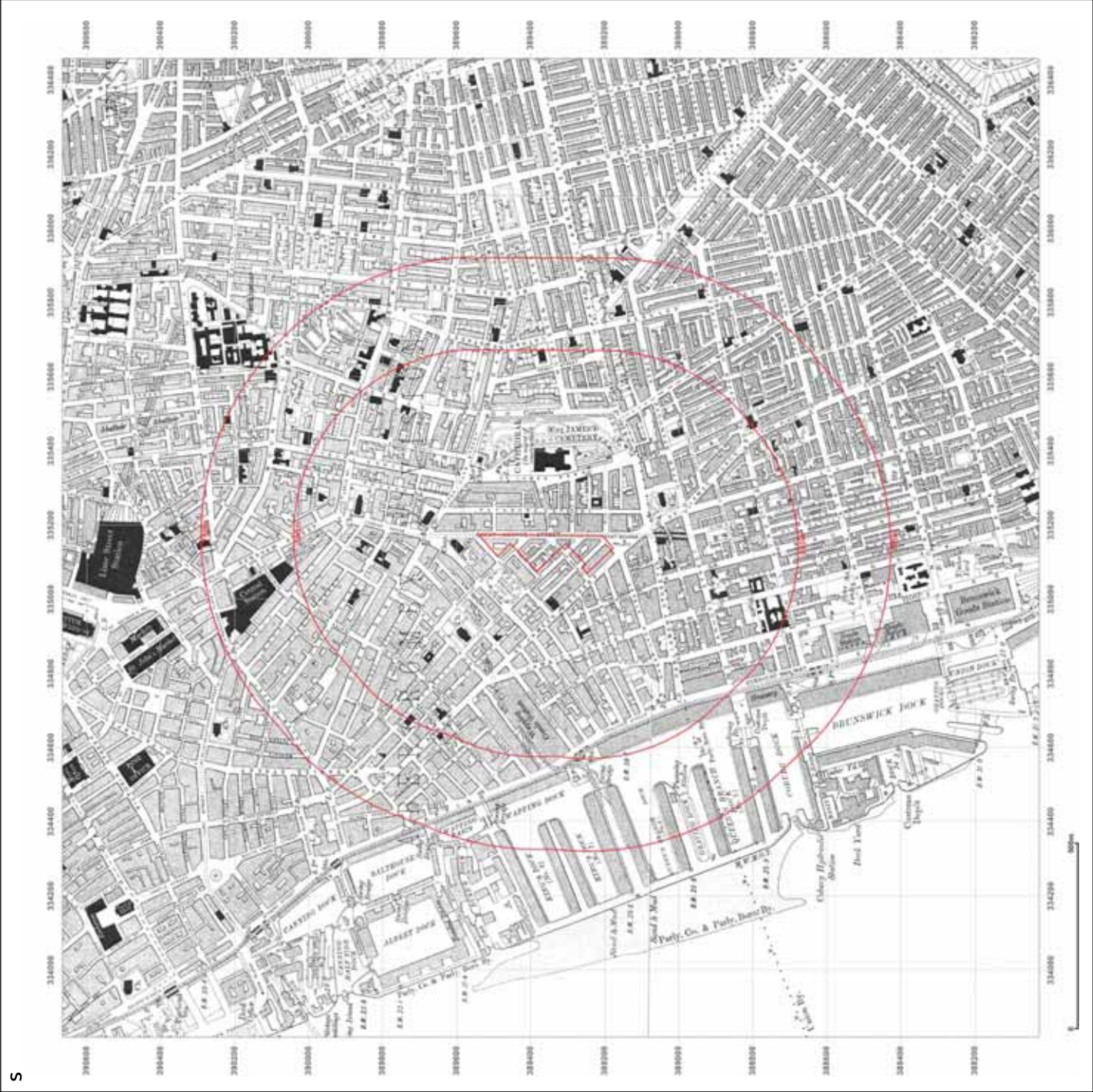
Surveyed 1849
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Groundsure
Produced by Groundsure
www.groundsure.com

Ordnance Survey
Licensed Partner
www.ordnancesurvey.co.uk

emapsite
Supplied by
www.emapsite.com
sales@emapsite.com



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: County Series

Map State: 1995-1906

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1848
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

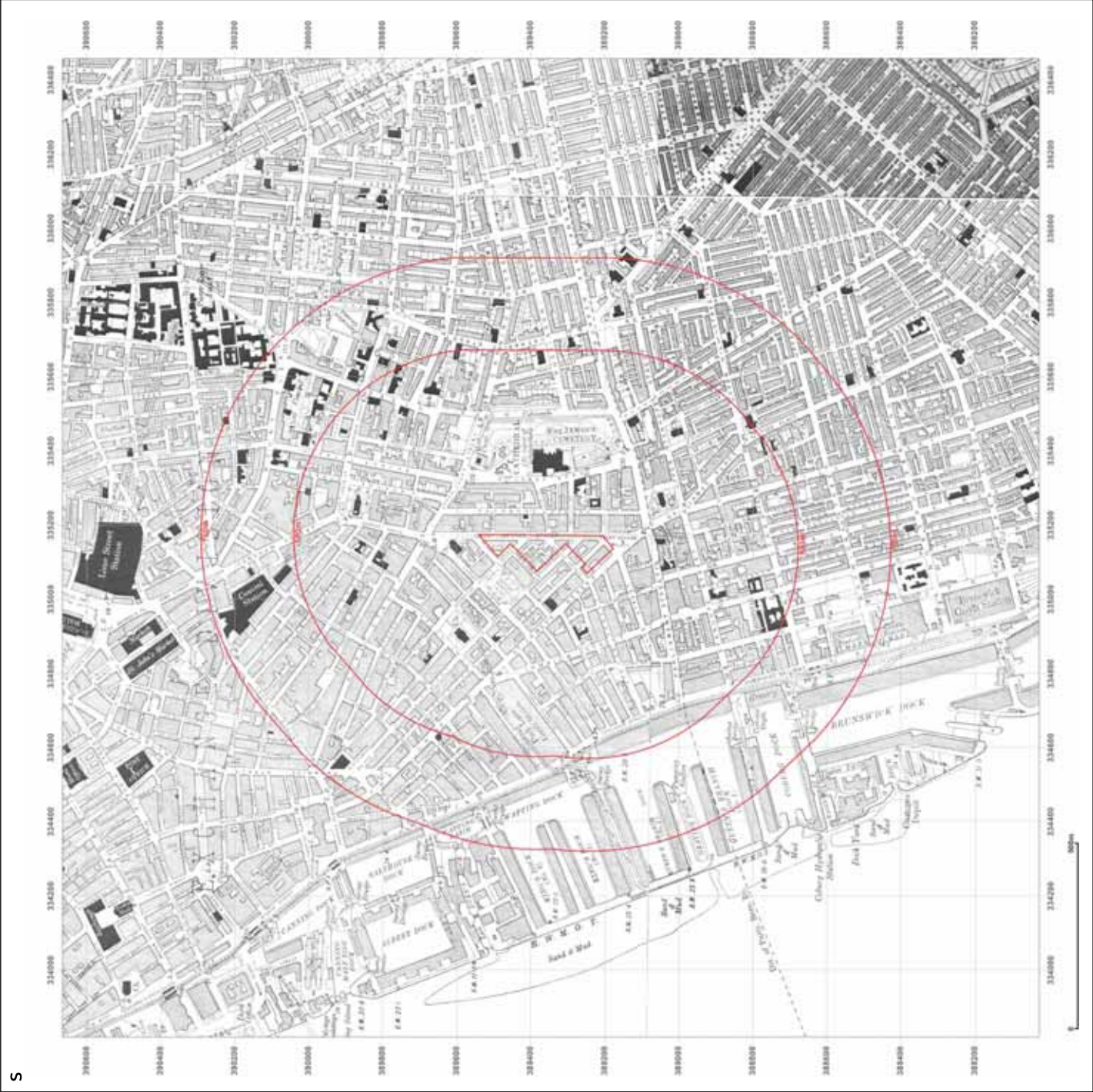
Surveyed 1848
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A



emapsite™

Site Details:

New Chinatown, Great George
Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: County Series

Map State: 1934-1928

Scale: 1:10,560

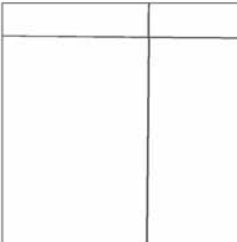
Printed at: 1:10,560



C

Surveyed 1849
Revised 1928
Edition 1928
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1848
Revised 1924
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

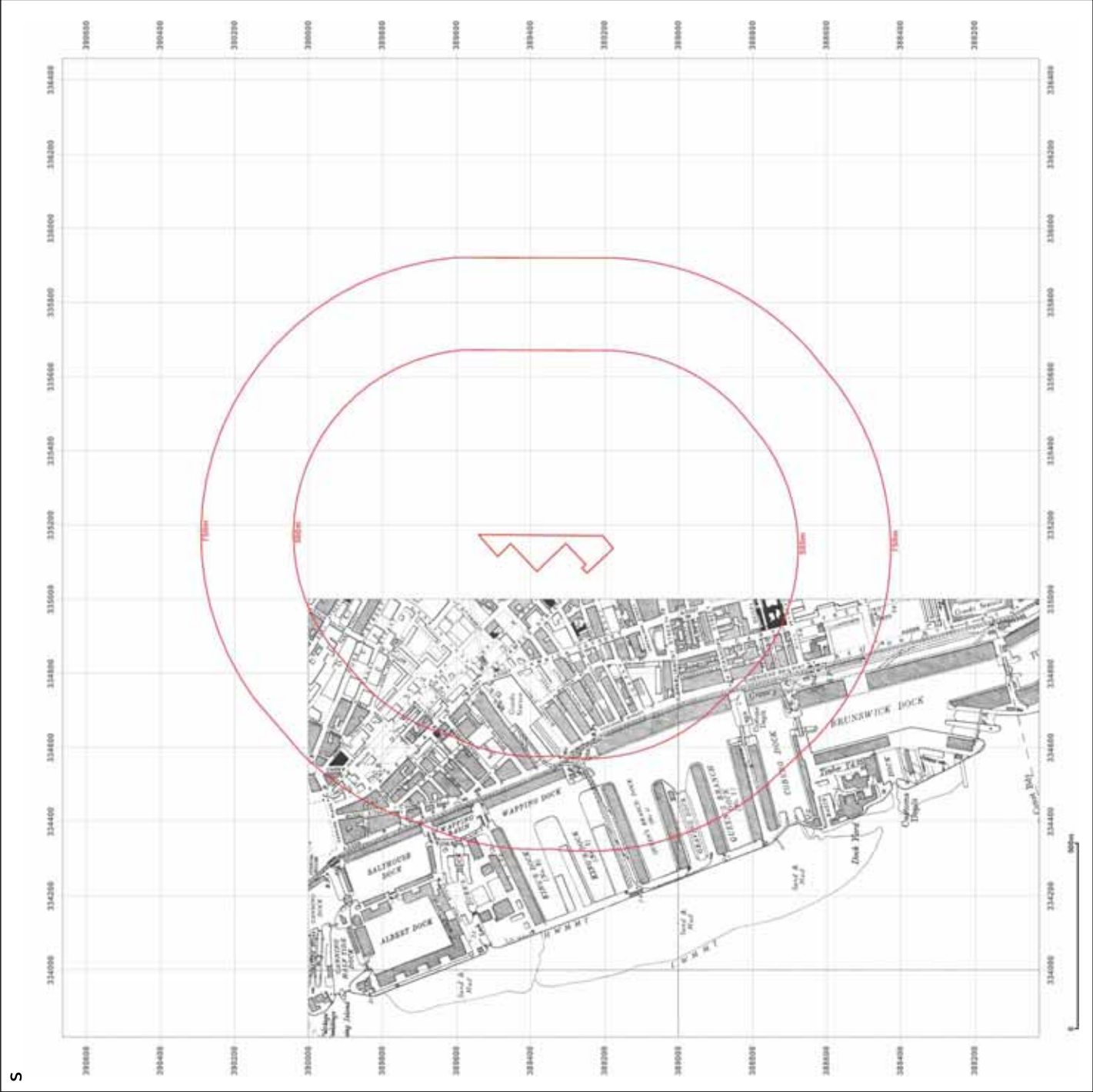
Groundsure
Produced by Groundsure
www.groundsure.com
Supplied by emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 1000352075

Production Date: 03 July 2015

To view Snap Legend, click on the legend

S



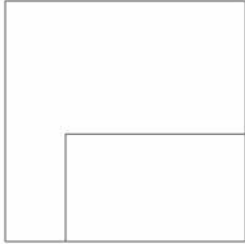
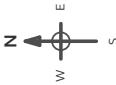
emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: Provisional
Map Date: 1989
Scale: 1:10,560
Printed At: 1:10,560



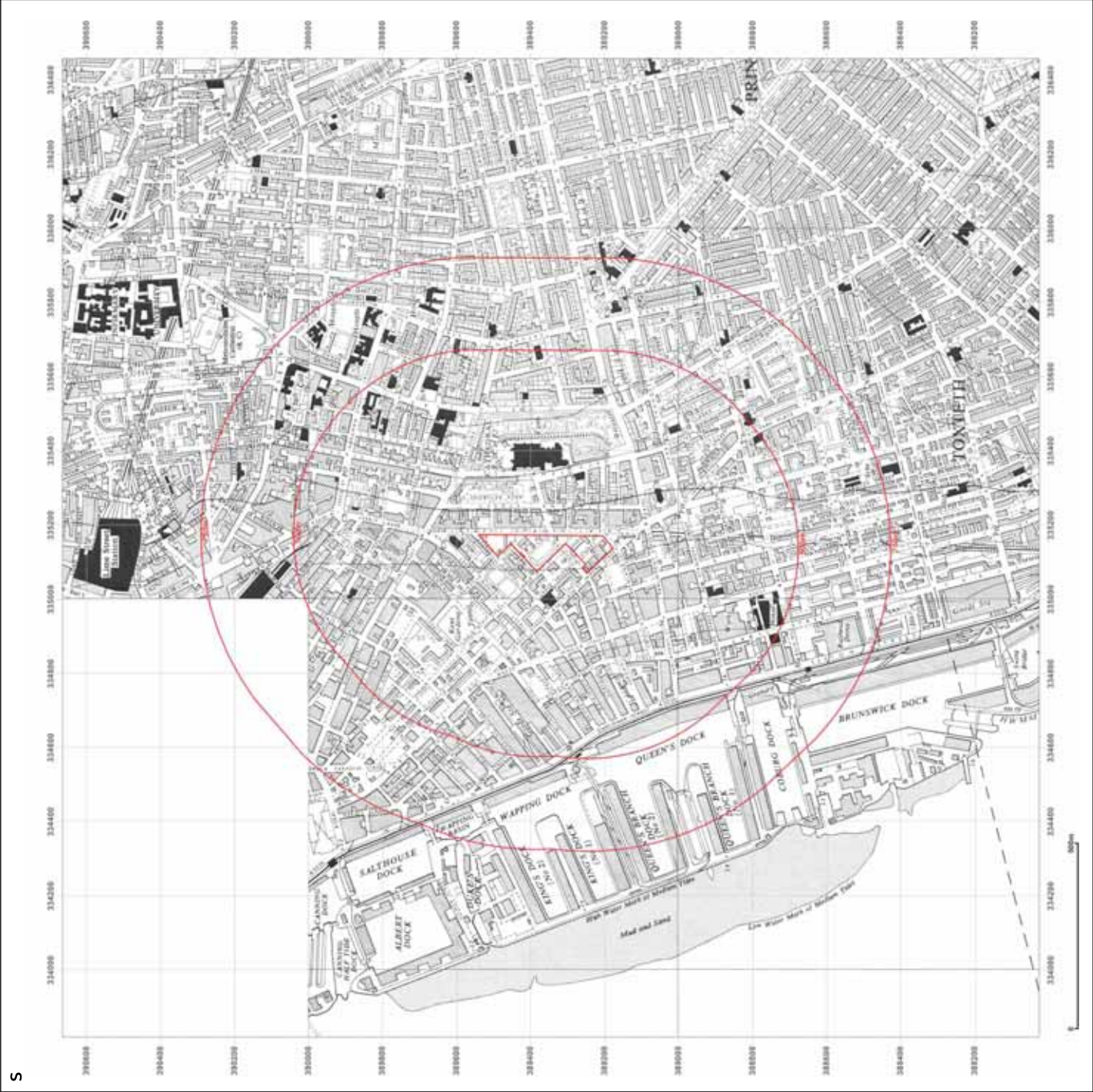
Surveyed 1949
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

Groundsure
Produced by Groundsure
www.groundsure.com
Ordnance Survey
Licensed Partner
Supplied by emapsite.com
sales@emapsite.com

© Crown Copyright and Ordnance Survey 000352075

Production Date: 03 July 2015

To view Snap Legend, click here



emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708

Report Ref: EMS-312700-421708

Grid Ref: 335138, 389344

Map Name: Provisional

Map Date: 1956-1957

Scale: 1:10,560

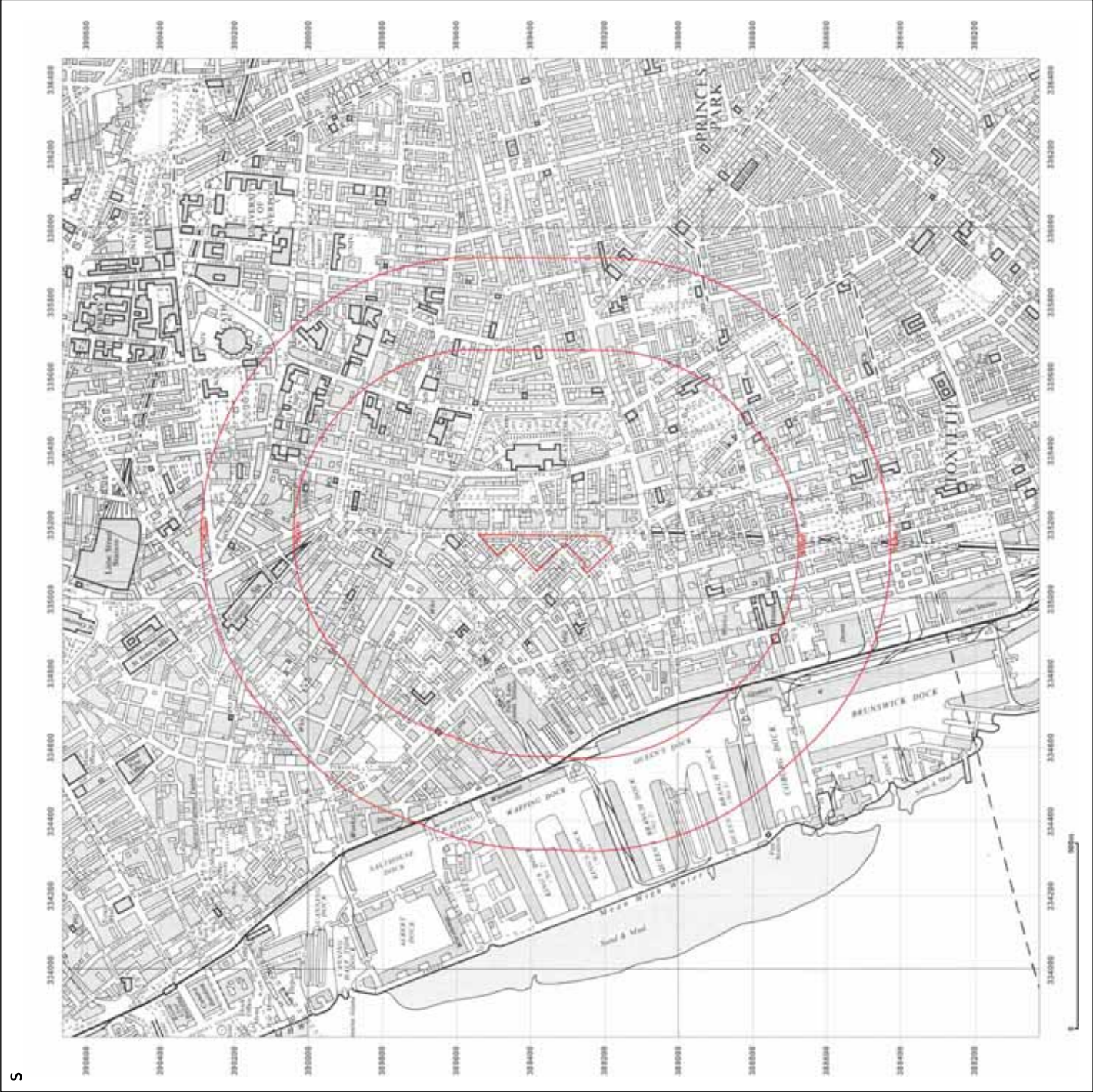
Printed at: 1:10,560

Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1956
Revised 1956
Edition N/A
Copyright N/A
Levelled N/A

Produced by: Groundsure
Groundsure Insights
www.groundsure.com

Supplied by: emapsite.com
sales@emapsite.com



Site Details:
New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: Provisional
Map Date: 1966-1968
Scale: 1:10,560
Printed at: 1:10,560

Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1967
Levelled N/A

Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

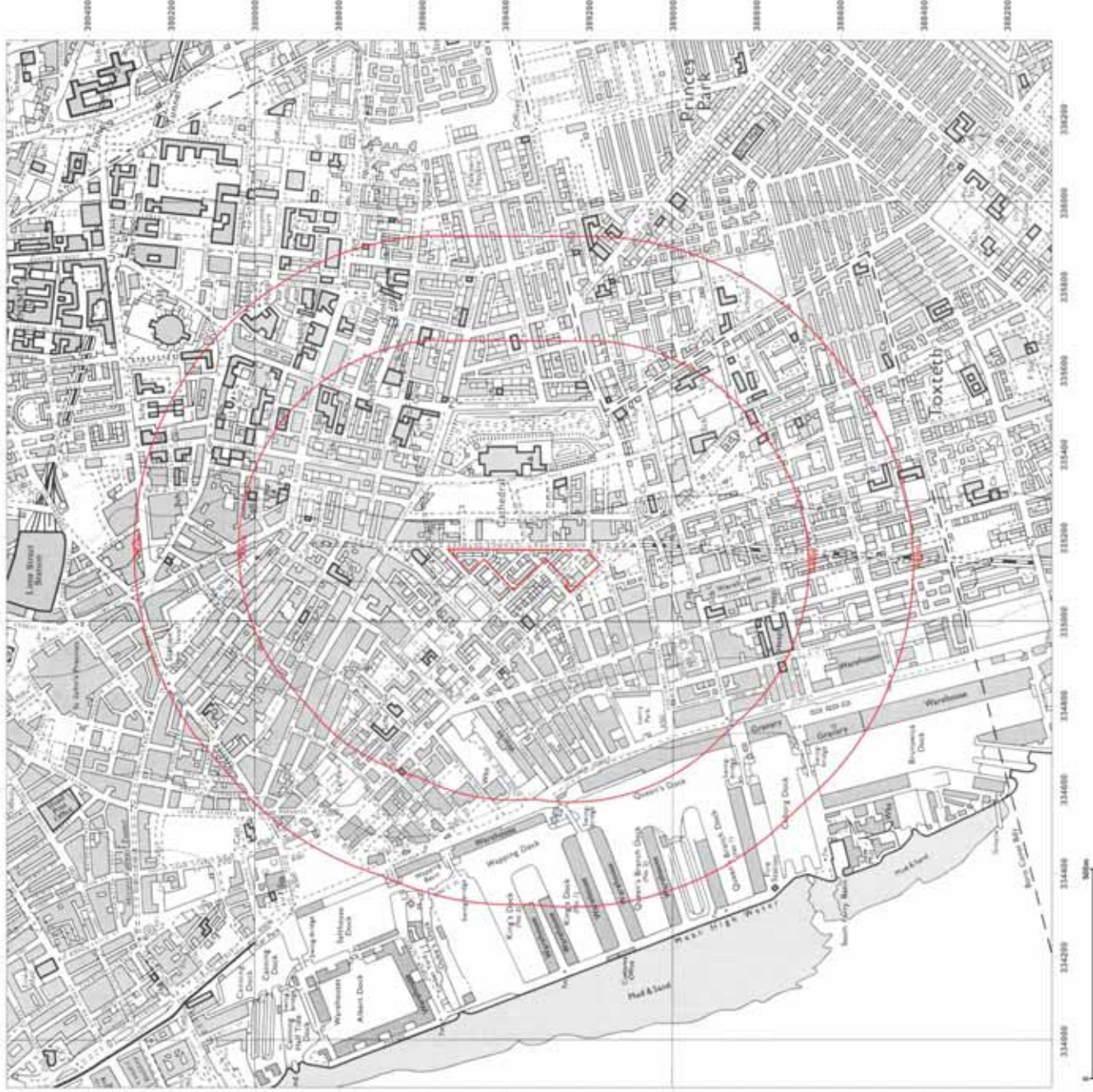
Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1967
Levelled N/A

Groundsure
Produced by:
Groundsure Insights
www.groundsure.com
Supplied by:
www.emapsite.com
sales@emapsite.com

Ordnance Survey
Licensed Partner

© Crown Copyright and database rights 2015 Ordnance Survey 1000352075
Production Date: 03 July 2015
To view Snap Legend click here



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid

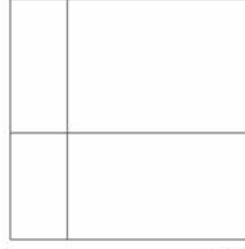
Map Scale: 1993-1978

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1973
Revised 1973
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1974
Revised 1975
Edition N/A
Copyright N/A
Levelled N/A



Produced by:
Groundsure Insights
www.groundsure.com



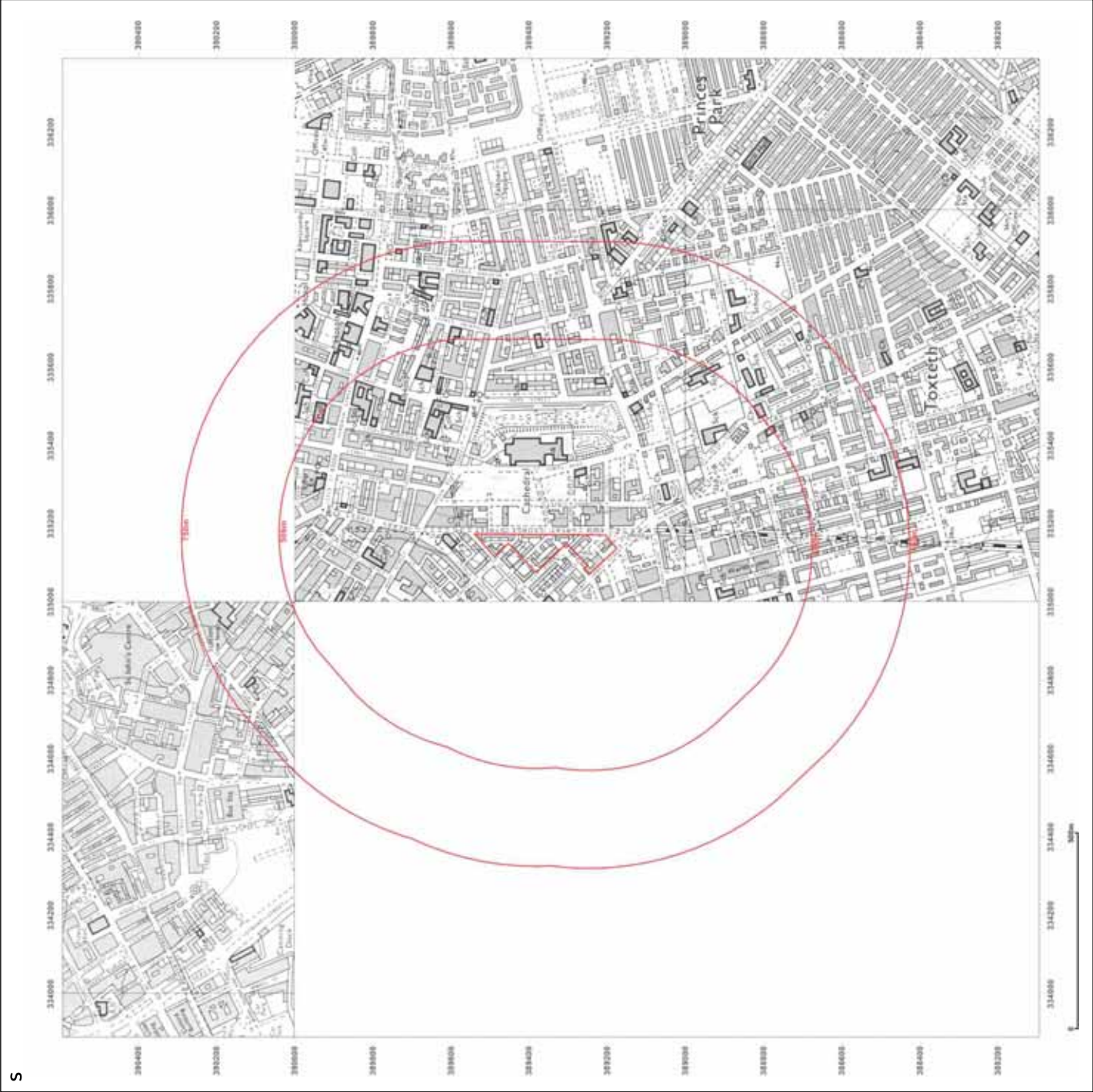
Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 1000352075


Production Date: 03 July 2015

To view Snap Legend, click on the legend


S



Site Details: S New Chinatown, Great George S Street, Liverpool, L1 5ET S S S S S S		Client Ref: S EMS-312700-421708 Report Ref: S EMS-312700-421708 Grid Ref: S 335138, 389344	
Map Name: S National Grid	S	Map Date: S 1982-1987	S
Scale: S 1:10,000	S	Printed At: S 1:10,000	S
Surveyed 1981 Revised 1982 Edition N/A Copyright N/A Levelled N/A		Surveyed 1975 Revised 1975 Edition N/A Copyright 1987 Levelled N/A	

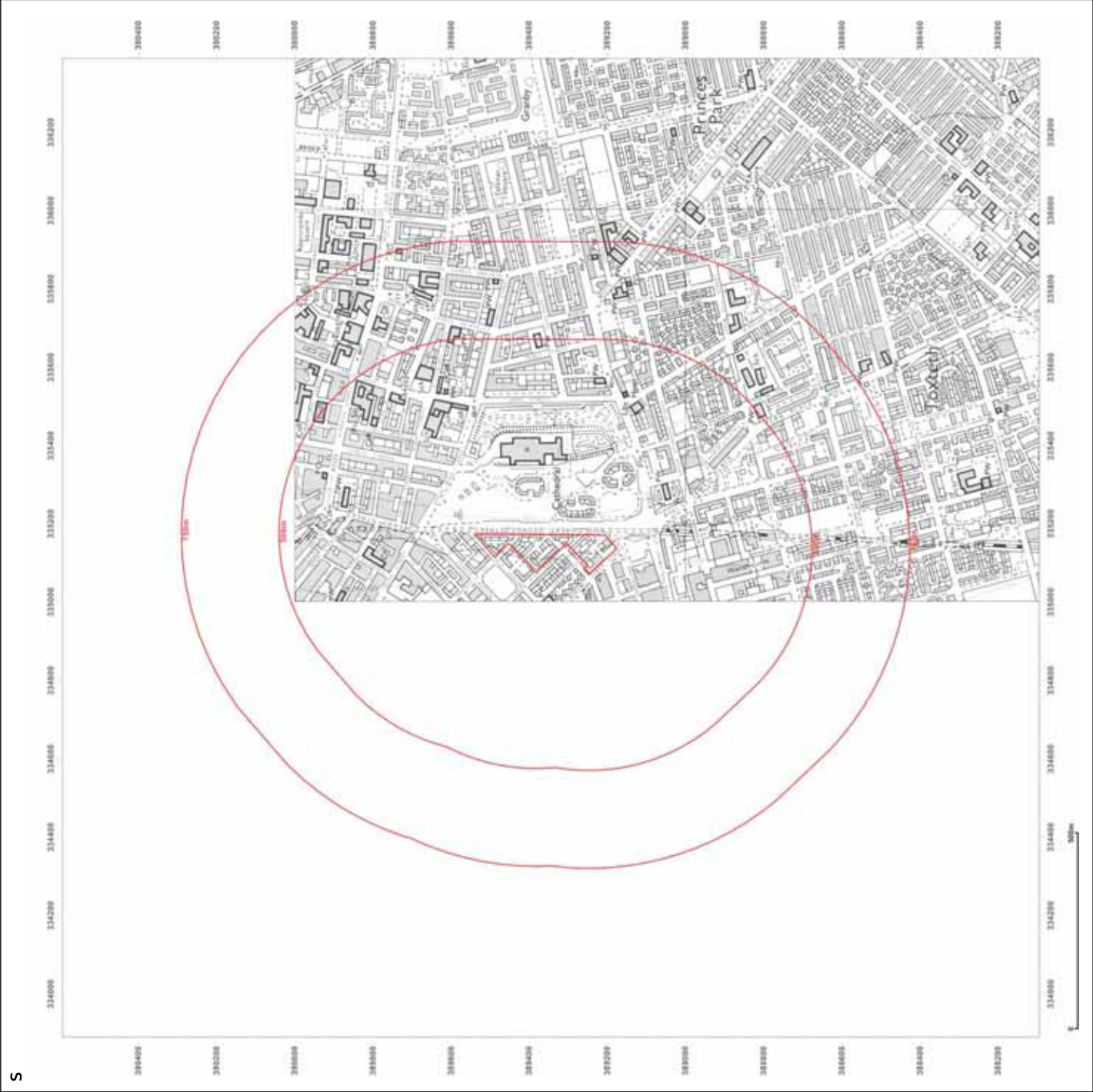


Produced by:
Groundsure
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and Ordnance Survey 000352075
Production Date: 03 July 2015
To view Snap Legend click here [Legend](#)



emapsite™

Site Details:

New Chinatown, Great George
Street, Liverpool, L1 5ET

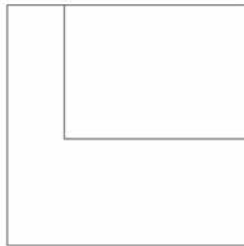
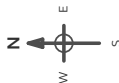
Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1989

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1985
Revised 1988
Edition N/A
Copyright 1989
Levelled N/A

Groundsure
outlets

Produced by:
Groundsure Insights
www.groundsure.com

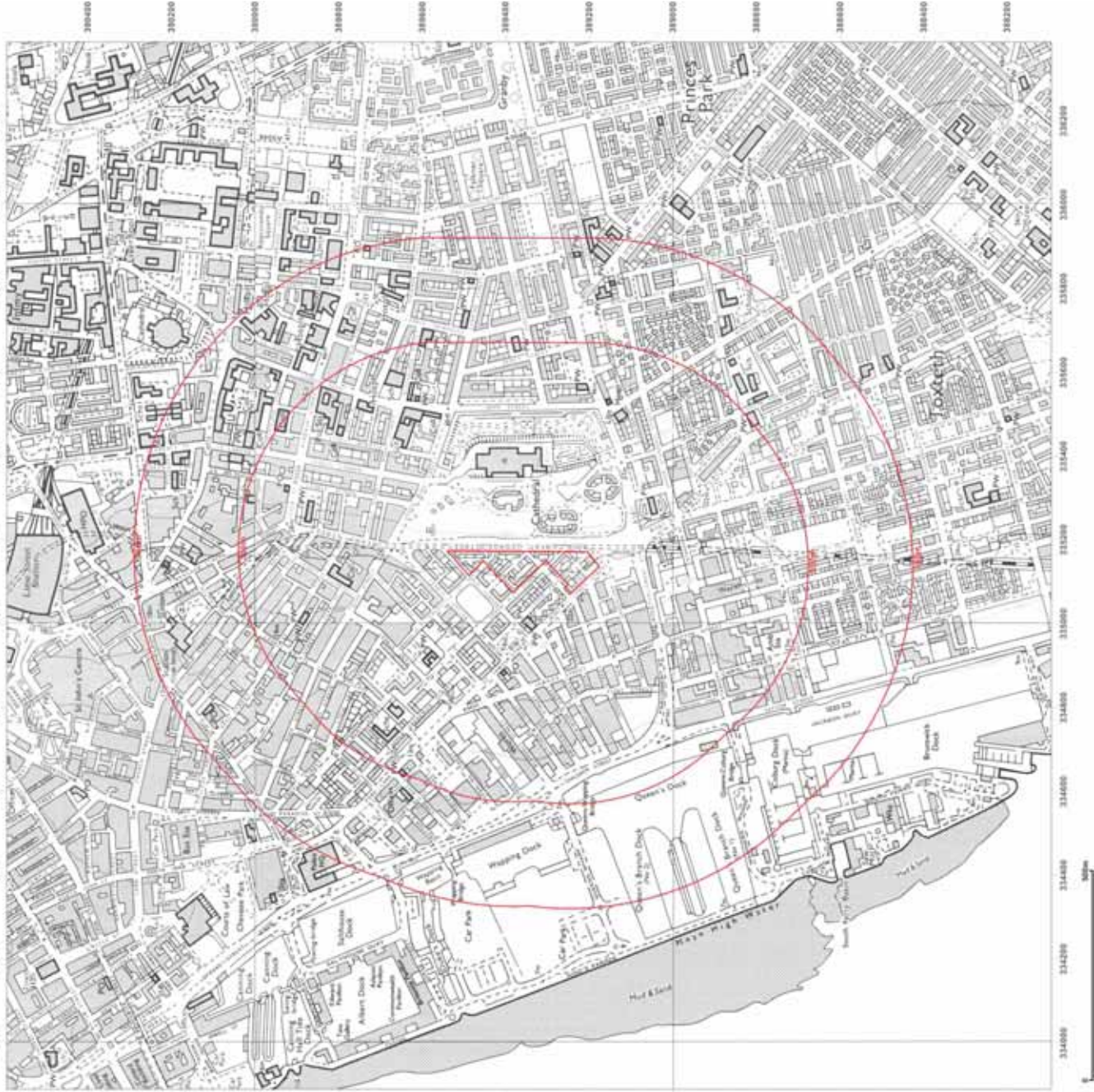
Ordnance Survey
Licensed Partner

Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 1000352075

Production Date: 03 July 2015

To view Snap Legend, click on the legend



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid

Map Date: 1989-1991

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1989
Revised 1990
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1987
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1989
Revised 1991
Edition N/A
Copyright N/A
Levelled N/A

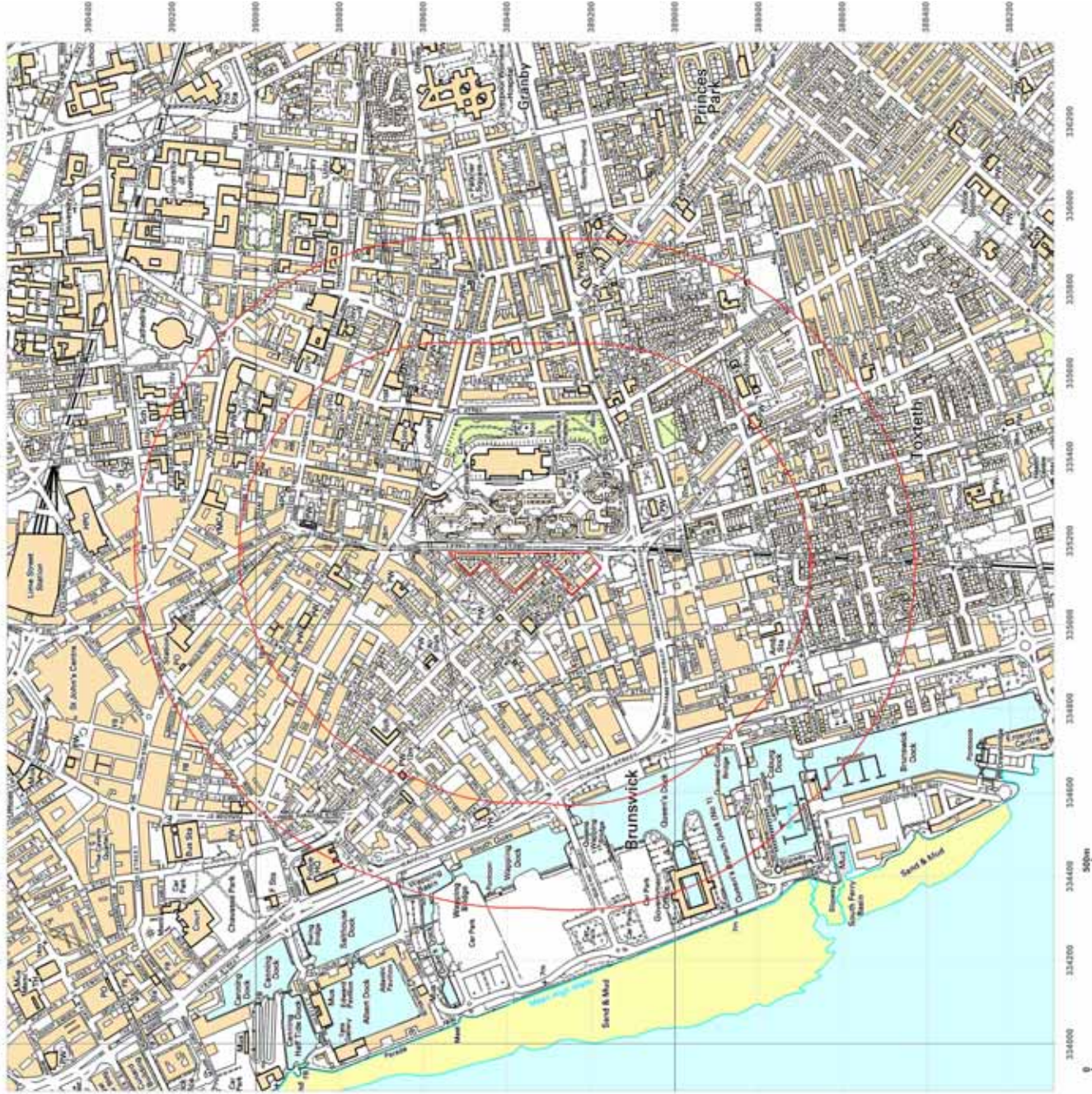
Surveyed 1985
Revised 1988
Edition N/A
Copyright 1989
Levelled N/A



Produced by:
Groundsure
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com



Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

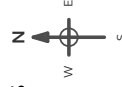
Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: 1:10,000 Master S

Map Date: 2002 S

Scale: 1:10,000 S

Printed at: 1:10,000 S



2002



Produced by: Groundsure
www.groundsure.com

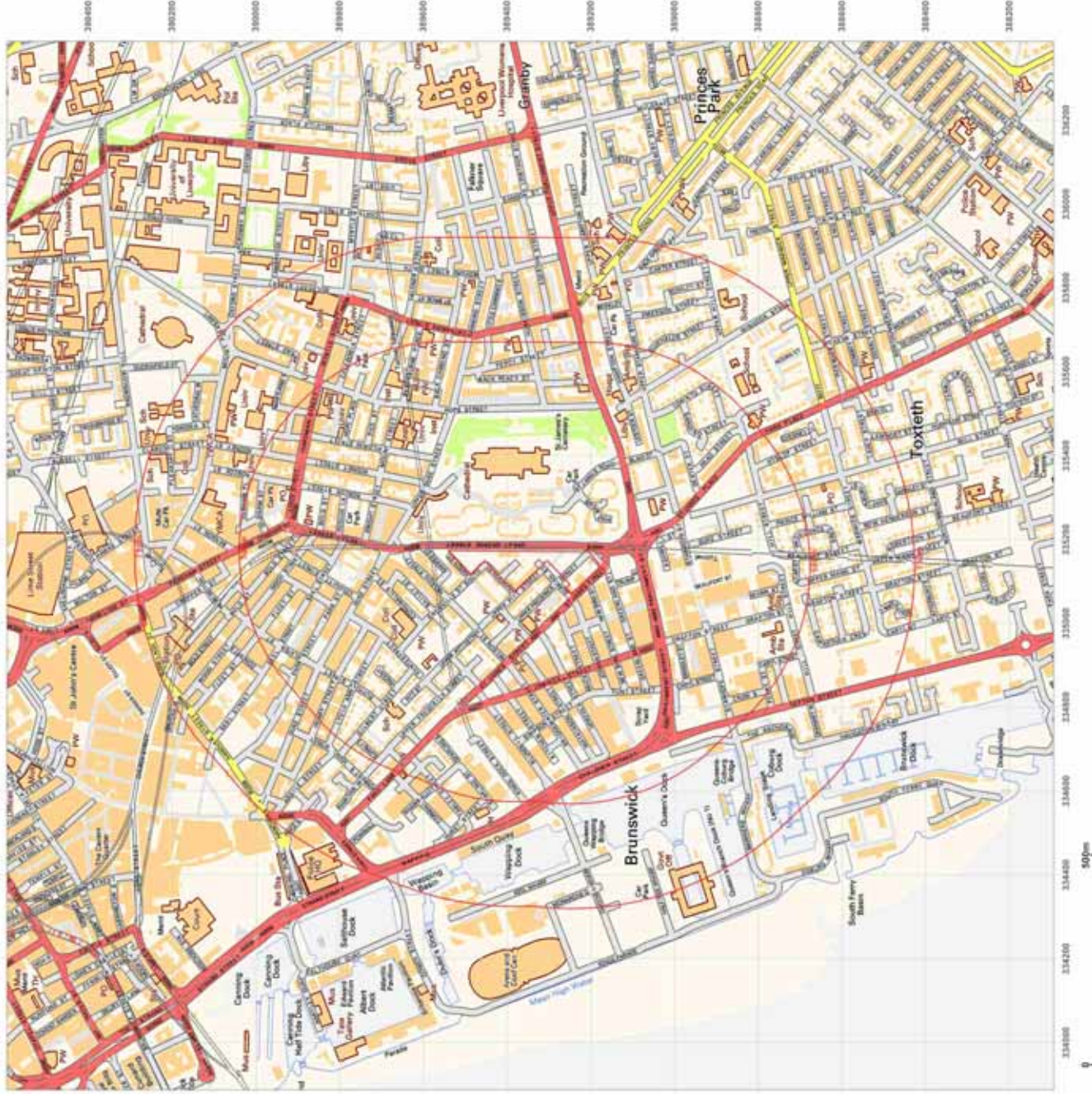


Supplied by: emapsite.com
sales@emapsite.com

© Crown Copyright and database rights. Ordnance Survey 000352075

Production Date: 03 July 2015

To view Snap Legend, click on legend



emapsite™

Site Details:

New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid
Map Date: 2010

Scale: 1:10,000
Printed at: 1:10,000



2010

Groundsure

Produced by: Groundsure

www.groundsure.com

Ordnance Survey
Licensed Partner

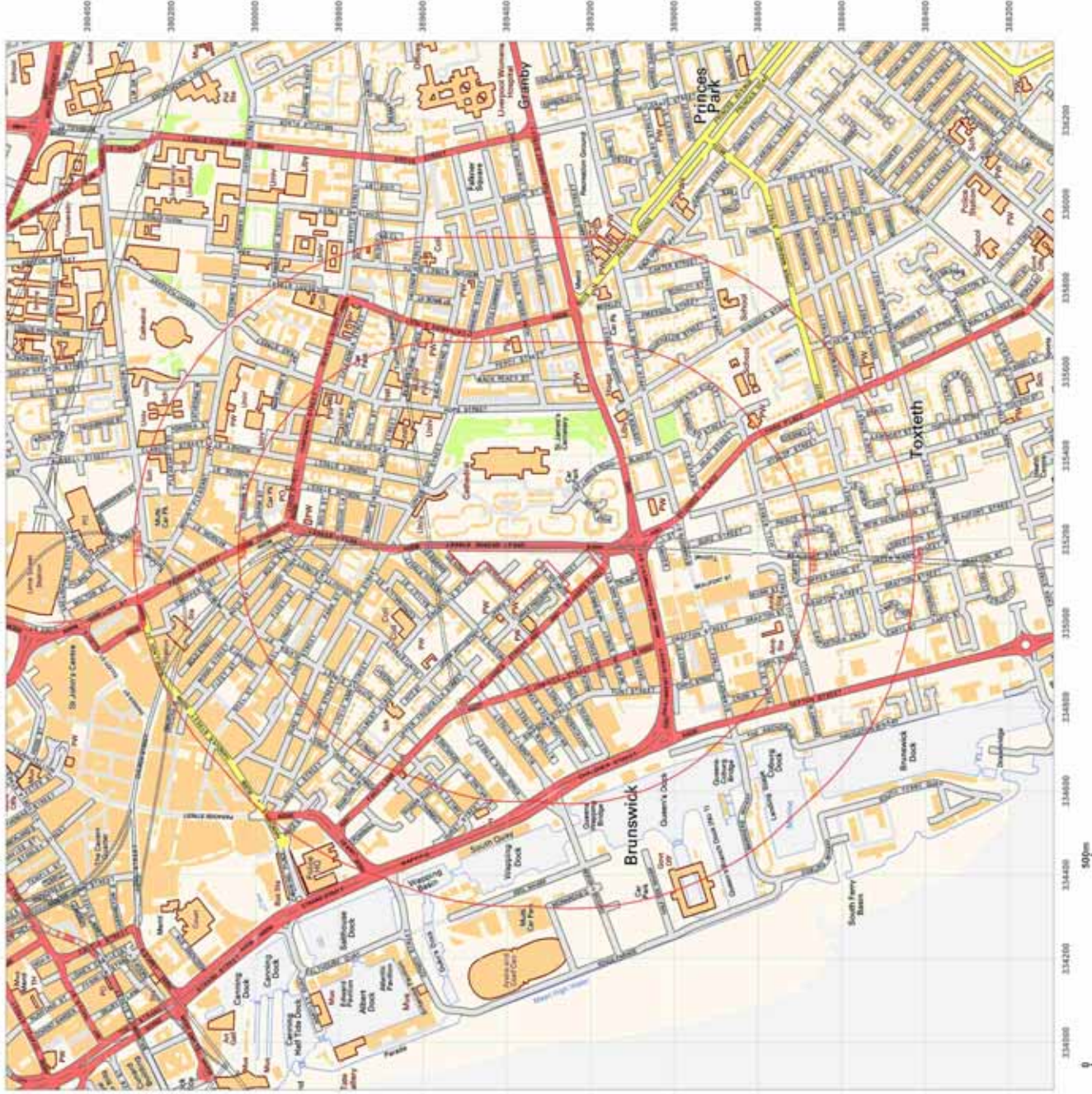
Supplied by: emapsite.com

sales@emapsite.com

© Crown Copyright and database rights. Ordnance Survey 000352075

Production Date: 03 July 2015

To view Snap Legend, click here



emapsite™

Site Details:

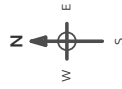
New Chinatown, Great George Street, Liverpool, L1 5ET

Client Ref: EMS-312700-421708
Report Ref: EMS-312700-421708
Grid Ref: 335138, 389344

Map Name: National Grid
Map Date: 2014

Scale: 1:10,000

Printed at: 1:10,000



Groundsure

Produced by:
Groundsure Insights
www.groundsure.com



Supplied by:
www.emapsite.com
sales@emapsite.com

© Crown Copyright and database rights 2015 Ordnance Survey 1000352075

Production Date: 03 July 2015

To view Snap Legend, click here



A P P E N D I X F

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com

BOREHOLE TITLE




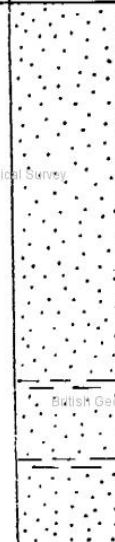
GREENLAND STREET, LIVERPOOL

SJ38/8

BOREHOLE DETAILS

SJ38NE13

WRB No - SJ38/84. Grid Ref. - SJ3512 8913. OD Level of ground (manhole cover) - 24.09maOD. Datum level for WL measurements (flange) - 23.76maOD. Drilling commenced 8.1.96, completed 12.1.96. Contractor - BB Drilling. Drilling Rig - Dando 250 rotary. Casing - 200mm id steel to 10.70mbg. Hole diameter - 200mm. Total depth - 100m.

DESCRIPTION	GRAPHIC LOG	DEPTH BELOW GROUND LEVEL	REMARKS
0-1.02m MADE GROUND. Topsoil, brick rubble			
1.02-4.47m BOULDER CLAY ✓ Firm brown sandy silty clay with small pebbles.			Rockhead at 4.47m
4.47-29.30m TARPORLEY SILTSTONE FORMATION ✓ (Keuper Waterstones)		10m 20m	During drilling, water was struck at 11.0m, just below the base of the permanent casing. This water is within a sandy section of the Tarporley Siltstone Formation. Following completion of the bore the water continued to cascade into the hole.
4.47-11.0m Hard red-brown and grey shaley mudstone.			
11.0-14.0m Hard red-brown shaley mudstone and hard dark brown very fine grained micaceous sandstone.			
14.0-24.0 Hard grey shaley mudstone.			
24.0-29.3m Soft ochreous yellow mudstone with yellow very fine grained sandstone.			On completion the WL stood at 24.70mbg.
SHERWOOD SANDSTONE GROUP ORMSKIRK SANDSTONE (Keuper Sandstone-Basement Beds)		30m 40m 50m	
Red-brown, yellow and white moderately hard and hard sandstone. Fine to medium and medium to coarse grained beds. Some well rounded grains. The finer grained beds tend to be harder and white/yellow in colour. Some red-brown, yellow and white mudstone beds.			



A P P E N D I X G

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



EmapSite
Masdar House, ,
Eversley, RG27 ORP

Groundsure EMS-312700_421710
Reference:

Your Reference: EMS_312700_421710

Report Date 3 Jul 2015

Report Delivery Email - pdf
Method:

Groundsure Enviroinsight

Address: New Chinatown, Great George Street, Liverpool, L1 5ET,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviroinsight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.

Groundsure Enviroinsight



Groundsure Envirosight

Address: New Chinatown, Great George Street, Liverpool, L1 5ET,
Date: 3 Jul 2015
Reference: EMS-312700_421710
Client: EmapSite

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 24-Jun-2009
Grid Reference: 335138,389344
Site Size: 1.93ha

Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	16
1.3 Additional Information – Historical Energy Features Database	18
1.4 Additional Information – Historical Petrol and Fuel Site Database	22
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	22
1.6 Potentially Infilled Land	25
2. Environmental Permits, Incidents and Registers Map	28
2. Environmental Permits, Incidents and Registers	29
2.1 Industrial Sites Holding Licences and/or Authorisations	29
2.1.1 Records of historic IPC Authorisations within 500m of the study site	29
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	29
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	29
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	29
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	29
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	30
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	30
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	30
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	31
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	31
2.2 Dangerous or Hazardous Sites	31
2.3 Environment Agency Recorded Pollution Incidents	31
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	31
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	32
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	33
3. Landfill and Other Waste Sites Map	34
3. Landfill and Other Waste Sites	35
3.1 Landfill Sites	35
3.1.1 Records from Environment Agency landfill data within 1000m of the study site	35
3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site	35
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	36
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	37
3.2 Other Waste Sites	37
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	37
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site	40
4. Current Land Use Map	42
4. Current Land Uses	43
4.1 Current Industrial Data	43
4.2 Petrol and Fuel Sites	45
4.3 National Grid High Voltage Underground Electricity Transmission Cables	46
4.4 National Grid High Pressure Gas Transmission Pipelines	46
5. Geology	47

5.1 Artificial Ground and Made Ground.....	47
5.2 Superficial Ground and Drift Geology	47
5.3 Bedrock and Solid Geology	47
6 Hydrogeology and Hydrology	48
6a. Aquifer Within Superficial Geology	48
6b. Aquifer Within Bedrock Geology and Abstraction Licences	49
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences	50
6d. Hydrogeology – Source Protection Zones within confined aquifer	51
6e. Hydrology – Detailed River Network and River Quality	52
6. Hydrogeology and Hydrology	53
6.1 Aquifer within Superficial Deposits.....	53
6.2 Aquifer within Bedrock Deposits.....	53
6.3 Groundwater Abstraction Licences.....	54
6.4 Surface Water Abstraction Licences.....	57
6.5 Potable Water Abstraction Licences.....	57
6.6 Source Protection Zones.....	58
6.7 Source Protection Zones within Confined Aquifer.....	58
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	58
6.9 River Quality.....	59
6.9.1 Biological Quality:.....	59
6.9.2 Chemical Quality:.....	59
6.10 Detailed River Network.....	59
6.11 Surface Water Features.....	59
7a. Environment Agency Flood Map for Planning (from rivers and the sea)	60
7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map	61
7 Flooding	62
7.1 River and Coastal Zone 2 Flooding.....	62
7.2 River and Coastal Zone 3 Flooding.....	62
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	62
7.4 Flood Defences.....	62
7.5 Areas benefiting from Flood Defences.....	62
7.6 Areas benefiting from Flood Storage.....	63
7.7 Groundwater Flooding Susceptibility Areas.....	63
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes.....	63
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?.....	63
7.8 Groundwater Flooding Confidence Areas.....	63
8. Designated Environmentally Sensitive Sites Map	64
8. Designated Environmentally Sensitive Sites	65
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	65
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	65
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	65
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	65
8.5 Records of Ramsar sites within 2000m of the study site:.....	65
8.6 Records of Ancient Woodland within 2000m of the study site:	66
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	66
8.8 Records of World Heritage Sites within 2000m of the study site:.....	66
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:	66
8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:	66
8.11 Records of National Parks (NP) within 2000m of the study site:	66

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	67
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	67
8.14 Records of Green Belt land within 2000m of the study site:.....	67
9. Natural Hazards Findings.....	68
9.1 Detailed BGS GeoSure Data.....	68
9.1.1 Shrink Swell.....	68
9.1.2 Landslides.....	68
9.1.3 Soluble Rocks.....	68
9.1.4 Compressible Ground.....	69
9.1.5 Collapsible Rocks.....	69
9.1.6 Running Sand.....	69
9.2 Radon.....	69
9.2.1 Radon Affected Areas.....	69
9.2.2 Radon Protection.....	70
10. Mining.....	71
10.1 Coal Mining.....	71
10.2 Non-Coal Mining.....	71
10.3 Brine Affected Areas	71
Contact Details.....	72
Standard Terms and Conditions.....	74

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	3	8	36	134
1.2 Additional Information – Historical Tank Database	0	0	12	95
1.3 Additional Information – Historical Energy Features Database	7	7	44	97
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	8	51	89
1.6 Potentially Infilled Land	3	10	25*	38
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	4
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
2.1.9 Records of Water Industry Referrals	0	0	0	1
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	3	7
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-5000
3.1 Landfill Sites						
3.1.1 Environment Agency Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency Historic Landfill Sites	0	0	0	0	5	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	26	10	Not searched	Not searched
3.2.2 Environment Agency Licensed Waste Sites	0	0	1	0	0	4

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	3	3	52	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?				Yes		
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?				Yes		
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	4	6	0	13
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	1	2	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched
	On-site	0-50m	51-250	251-500	501-1000	1000-1500

Section 6: Hydrogeology and Hydrology

0-500m

6.9 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site?	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	1	0	0	1	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?

Very Low

9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?

Very Low

9.1.2 What is the maximum Landslides hazard rating identified on the study site?

Very Low

9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?

Negligible

9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?

Negligible

9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?

Very Low

9.1.6 What is the maximum Running Sand hazard rating identified on the study site?

Very Low

9.2 Radon

9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?

No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?

No

10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?

No

10.3 Are there any brine affected areas within 75m of the study site?

No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

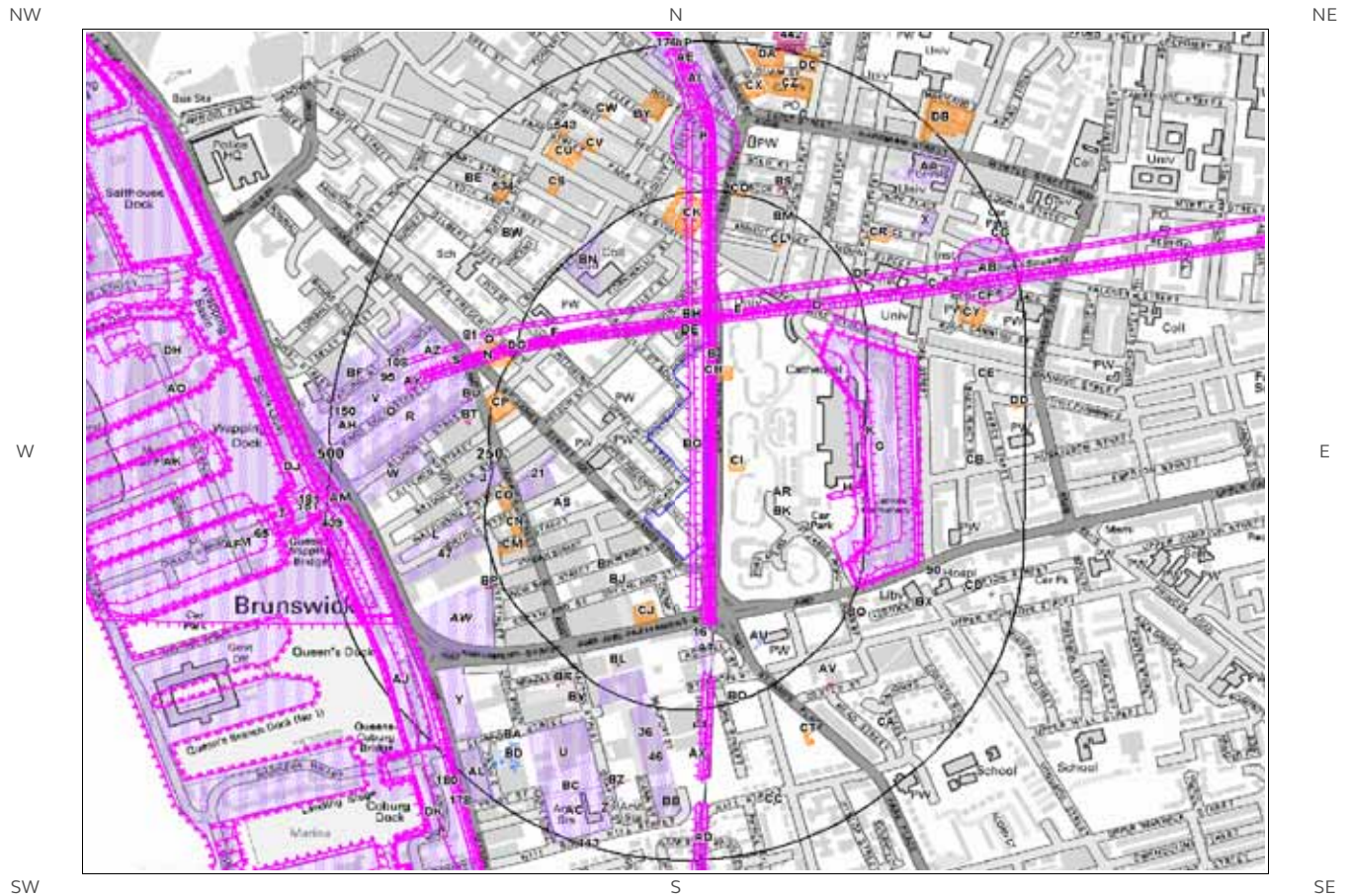
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015. Ordnance Survey license 100035207.



1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 181

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Tunnel	1906
2A	0	On Site	Tunnel	1938
3DE	0	On Site	Tunnel	1928
4B	4	E	Tunnel	1967
5B	4	E	Tunnel	1987
6B	4	E	Tunnel	1989
7CH	6	E	Tunnel	1956
8D	28	N	Tunnel	1906
9C	33	N	Tunnel	1967
10C	33	N	Tunnel	1956
11D	38	N	Tunnel	1938
12E	61	NE	Unspecified Shaft	1987
13E	61	NE	Unspecified Shaft	1967
14E	61	NE	Unspecified Shaft	1989
15DF	65	N	Tunnel	1928
16	112	S	Railway Station	1890
17AT	115	S	Railway Station	1906
18DG	131	NW	Tunnel	1966
19F	134	NW	Tunnel	1956
20F	134	NW	Tunnel	1949
21	135	W	Unspecified Mill	1966
22F	156	W	Tunnel	1938
23F	156	W	Tunnel	1925
24F	156	W	Tunnel	1909
25K	162	E	Cemetery	1928
26G	175	E	Cemetery	1906
27G	175	E	Cemetery	1938
28BN	177	NW	Unspecified Works	1966
29G	179	E	Cemetery	1890
30G	179	E	Cemetery	1851
31H	190	E	Unspecified Ground Workings	1956
32H	191	E	Unspecified Tank	1928
33I	194	S	Tunnel	1938
34I	194	S	Tunnel	1906
35I	194	S	Tunnel	1924
36	194	S	Unspecified Warehouses	1989

37I	201	S	Tunnel	1967
38I	201	S	Tunnel	1956
39I	201	S	Tunnel	1989
40I	201	S	Tunnel	1987
41H	213	E	Unspecified Tank	1928
42G	225	E	Cemetery	1967
43G	225	E	Cemetery	1956
44J	232	W	Unspecified Commercial/Industrial	1978
45J	232	W	Unspecified Works	1966
46	245	S	Unspecified Warehouses	1987
47	250	W	Unspecified Works	1966
48K	262	E	Unspecified Tank	1928
49AW	262	SW	Unspecified Mill	1966
50L	265	W	Unspecified Commercial/Industrial	1978
51L	265	W	Unspecified Factory	1966
52N	265	NW	Railway Sidings	1906
53M	268	NW	Railway Sidings	1925
54M	268	NW	Railway Sidings	1938
55N	268	NW	Railway Sidings	1949
56O	275	W	Railway Building	1966
57O	275	W	Railway Building	1956
58Q	277	W	Unspecified Commercial/Industrial	1890
59P	280	N	Unspecified Shaft	1987
60P	280	N	Unspecified Shaft	1989
61Q	281	W	Unspecified Works	1991
62R	281	W	Unspecified Works	1978
63O	283	W	Railway Building	1949
64R	283	W	Goods Station	1966
65	283	W	Railway Sidings	1966
66Q	285	W	Goods Station	1909
67Q	285	W	Goods Station	1938
68Q	285	W	Goods Station	1925
69S	285	NW	Tunnel	1938
70S	285	NW	Tunnel	1925
71S	285	NW	Tunnel	1909
72T	288	W	Railway Sidings	1949
73T	288	W	Railway Sidings	1956
74Q	288	W	Goods Station	1949
75Q	288	W	Goods Station	1956
76S	289	NW	Tunnel	1949
77S	289	NW	Tunnel	1956
78G	289	E	Unspecified Tank	1851
79R	291	W	Goods Station	1938
80R	291	W	Goods Station	1906
81	302	W	Railway Sidings	1928
82U	307	SW	Unspecified Works	1966

83U	307	SW	Unspecified Commercial/Industrial	1978
84U	307	SW	Unspecified Works	1956
85V	310	NW	Terminus	1851
86V	321	W	Goods Station	1928
87AZ	327	NW	Tunnel	1928
88W	343	W	Unspecified Warehouse	1966
89W	343	W	Unspecified Commercial/Industrial	1978
90	352	E	Hospital	1989
91T	360	W	Railway Sidings	1909
92BC	363	SW	Timber Yards	1851
93AI	365	N	Unspecified Commercial/Industrial	1890
94AY	366	W	Railway Sidings	1906
95	371	W	Railway Sidings	1851
96X	373	NE	Hospital	1987
97X	373	NE	Hospital	1967
98X	373	NE	Hospital	1989
99Y	379	SW	Warehouses	1851
100Y	379	SW	Unspecified Warehouses	1938
101Y	379	SW	Unspecified Warehouses	1925
102Y	379	SW	Unspecified Warehouses	1909
103Z	390	S	Hospital	1987
104Z	390	S	Hospital	1967
105Z	398	S	Ambulance Station	1991
106AA	398	NE	Police Station	1987
107AA	398	NE	Police Station	1989
108	399	W	Railway Sidings	1928
109AB	401	E	Unspecified Shaft	1987
110AB	401	E	Unspecified Shaft	1989
111AC	401	S	Hospital	1966
112AC	401	S	Hospital	1978
113AC	401	S	Hospital	1949
114AC	401	S	Hospital	1956
115AC	404	S	Hospital	1924
116AC	404	S	Hospital	1906
117AC	404	S	Hospital	1938
118AD	407	S	Tunnel	1989
119AD	407	S	Tunnel	1967
120AD	407	S	Tunnel	1987
121AD	407	S	Tunnel	1956
122AD	407	S	Tunnel	1906
123AD	407	S	Tunnel	1938
124AD	407	S	Tunnel	1924
125AE	409	N	Railway Sidings	1890
126AE	411	N	Railway Sidings	1906
127AH	412	W	Railway Sidings	1890
128AF	413	W	Docks	1966

129AF	413	W	Docks	1956
130AF	413	W	Docks	1991
131AF	413	W	Docks	1978
132T	414	W	Railway Sidings	1938
133T	414	W	Railway Sidings	1906
134AC	417	SW	Hospital	1909
135AC	417	SW	Hospital	1938
136AC	417	SW	Hospital	1925
137AE	419	N	Railway Sidings	1938
138AG	420	W	Docks	1909
139AG	420	W	Docks	1938
140AG	420	W	Docks	1925
141AH	420	W	Railway Sidings	1851
142DH	424	SW	Dock	1938
143AO	425	W	Docks	1906
144AI	426	N	Railway Building	1890
145AJ	428	SW	Dock	1924
146AJ	428	SW	Dock	1906
147AJ	428	SW	Dock	1938
148AJ	429	SW	Unspecified Depot	1851
149AI	436	N	Railway Building	1890
150	441	W	Unspecified Works	1978
151	446	W	Railway Sidings	1928
152AK	446	W	Docks	1928
153AK	446	W	Docks	1928
154AN	446	N	Railway Sidings	1928
155AL	447	SW	Warehouses	1851
156DI	449	W	Dock	1851
157AB	450	E	Unspecified Shaft	1967
158AL	451	SW	Unspecified Works	1925
159AL	451	SW	Unspecified Works	1938
160AM	457	W	Railway Station	1909
161AM	457	W	Railway Station	1925
162AM	457	W	Railway Station	1938
163DJ	459	SW	Dock	1851
164AN	459	N	Tunnel	1989
165AM	459	W	Railway Station	1949
166AP	460	N	Railway Sidings	1968
167AM	464	W	Railway Station	1906
168AO	470	W	Docks	1890
169AG	471	SW	Customs Depot	1949
170AP	474	N	Tunnel	1975
171AE	478	N	Railway Building	1906
172AQ	482	SW	Railway Sidings	1966
173AQ	482	SW	Railway Sidings	1956
174AM	483	W	Railway Station	1938
175AM	484	W	Railway Station	1956
176	487	N	Railway Building	1938

177DK	487	SW	Dock	1949
178	487	SW	Railway Sidings	1949
179AM	487	W	Railway Station	1928
180	498	SW	Engine Works	1851
181	500	W	Railway Sidings	1851

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

107

ID	Distance (m)	Direction	Use	Date
182AR	116	E	Unspecified Tank	1983
183AR	117	E	Unspecified Tank	1977
184AS	125	W	Tanks	1927
185AS	125	W	Tanks	1927
186AT	164	S	Unspecified Tank	1927
187AT	164	S	Unspecified Tank	1908
188AU	164	SE	Tanks	1983
189AU	164	SE	Tanks	1987
190AU	165	SE	Unspecified Tank	1927
191AU	165	SE	Unspecified Tank	1908
192AU	181	SE	Unspecified Tank	1927
193AU	181	SE	Unspecified Tank	1908
194AV	285	SE	Unspecified Tank	1958
195AV	285	SE	Unspecified Tank	1953
196AV	286	SE	Unspecified Tank	1953
197AV	286	SE	Unspecified Tank	1958
198AW	312	SW	Unspecified Tank	1953
199AW	312	SW	Unspecified Tank	1953
200AW	312	SW	Unspecified Tank	1953
201AW	313	SW	Unspecified Tank	1965
202AW	320	SW	Unspecified Tank	1953
203AW	320	SW	Unspecified Tank	1967
204AW	320	SW	Unspecified Tank	1967
205AW	320	SW	Unspecified Tank	1953
206AW	320	SW	Unspecified Tank	1953
207AW	320	SW	Unspecified Tank	1965
208AX	326	S	Unspecified Tank	1997
209AX	326	S	Unspecified Tank	1999
210AX	326	S	Unspecified Tank	1992
211AY	364	W	Unspecified Tank	1908
212AZ	369	NW	Tanks	1994
213AZ	369	NW	Tanks	1997

214AZ	369	NW	Tanks	1996
215AZ	377	NW	Tanks	1994
216AZ	377	NW	Tanks	1997
217AZ	377	NW	Tanks	1996
218AZ	378	NW	Tanks	1989
219AZ	378	NW	Tanks	1992
220AZ	395	NW	Unspecified Tank	1997
221AZ	395	NW	Unspecified Tank	1994
222AZ	395	NW	Unspecified Tank	1996
223AZ	397	NW	Unspecified Tank	1989
224AZ	397	NW	Unspecified Tank	1992
225BA	400	SW	Tanks	1994
226BA	400	SW	Tanks	1996
227BA	400	SW	Tanks	1998
228BA	400	SW	Tanks	1993
229BA	403	SW	Tanks	1952
230BA	403	SW	Tanks	1968
231BA	403	SW	Tanks	1952
232BA	404	SW	Tanks	1952
233BA	404	SW	Tanks	1965
234BB	408	S	Unspecified Tank	1987
235BB	408	S	Unspecified Tank	1992
236BB	408	S	Unspecified Tank	1987
237BB	408	S	Unspecified Tank	1985
238BB	408	S	Unspecified Tank	1977
239Z	408	S	Unspecified Tank	1987
240Z	408	S	Unspecified Tank	1985
241Z	408	S	Unspecified Tank	1977
242BB	409	S	Unspecified Tank	1997
243BB	409	S	Unspecified Tank	1999
244BA	410	SW	Tanks	1952
245BC	412	SW	Unspecified Tank	1952
246BC	412	SW	Unspecified Tank	1952
247BA	414	SW	Unspecified Tank	1893
248BA	414	SW	Unspecified Tank	1908
249BA	418	SW	Unspecified Tank	1908
250BA	418	SW	Unspecified Tank	1927
251BA	418	SW	Unspecified Tank	1893
252BC	421	SW	Unspecified Tank	1927
253BC	421	SW	Unspecified Tank	1908
254BD	423	SW	Tanks	1952
255BD	423	SW	Tanks	1952
256BD	423	SW	Tanks	1952
257BD	425	SW	Tanks	1952
258BD	428	SW	Unspecified Tank	1927
259BD	428	SW	Unspecified Tank	1908
260BD	430	SW	Unspecified Tank	1908
261BD	430	SW	Unspecified Tank	1893

262BD	430	SW	Unspecified Tank	1908
263BD	434	SW	Tanks	1952
264BD	436	SW	Unspecified Tank	1893
265BD	442	SW	Tanks	1952
266BD	442	SW	Tanks	1994
267BD	442	SW	Tanks	1996
268BD	442	SW	Tanks	1998
269BD	442	SW	Tanks	1993
270BD	442	SW	Tanks	1965
271BD	442	SW	Tanks	1952
272BD	442	SW	Tanks	1983
273BD	443	SW	Tanks	1968
274BE	445	NW	Unspecified Tank	1908
275BE	445	NW	Unspecified Tank	1927
276BE	445	NW	Unspecified Tank	1927
277AL	448	SW	Tanks	1952
278AL	449	SW	Tanks	1965
279AL	449	SW	Tanks	1952
280AL	449	SW	Tanks	1983
281AL	451	SW	Tanks	1968
282AL	452	SW	Tanks	1996
283AL	452	SW	Tanks	1994
284AL	452	SW	Tanks	1998
285AL	452	SW	Tanks	1993
286BF	470	W	Unspecified Tank	1983
287BF	470	W	Unspecified Tank	1984
288BF	470	W	Unspecified Tank	1991

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

155

ID	Distance (m)	Direction	Use	Date
289BG	0	On Site	Electricity Substation	1983
290BG	0	On Site	Electricity Substation	1987
291BG	0	On Site	Electricity Substation	1993
292BG	0	On Site	Electricity Substation	1994
293BG	0	On Site	Electricity Substation	1996
294BG	0	On Site	Electricity Substation	1977
295BG	0	On Site	Electricity Substation	1990
296BH	45	NW	Electricity Substation	1993
297BH	47	NW	Electricity Substation	1996
298BH	47	NW	Electricity Substation	1993
299BH	47	NW	Electricity Substation	1989

300BH	47	NW	Electricity Substation	1984
301BH	47	NW	Electricity Substation	1984
302BH	47	NW	Electricity Substation	1984
303BH	58	NW	Electricity Substation	1998
304BI	100	SW	Electricity Substation	1996
305BI	100	SW	Electricity Substation	1993
306BI	100	SW	Electricity Substation	1994
307BI	100	SW	Electricity Substation	1987
308BI	100	SW	Electricity Substation	1983
309BI	101	SW	Electricity Substation	1990
310BI	101	SW	Electricity Substation	1977
311BJ	103	SW	Electricity Substation	1990
312BJ	103	SW	Electricity Substation	1977
313BJ	103	SW	Electricity Substation	1994
314BJ	103	SW	Electricity Substation	1996
315BJ	103	SW	Electricity Substation	1993
316BJ	104	SW	Electricity Substation	1986
317BJ	104	SW	Electricity Substation	1983
318BJ	104	SW	Electricity Substation	1987
319BK	116	E	Electricity Substation	1990
320BK	116	E	Electricity Substation	1993
321BK	116	E	Electricity Substation	1996
322BK	116	E	Electricity Substation	1994
323BK	117	E	Electricity Substation	1986
324BK	117	E	Electricity Substation	1987
325BL	199	SW	Electricity Substation	1953
326BL	199	SW	Electricity Substation	1953
327BM	233	NE	Electricity Substation	1984
328BM	233	NE	Electricity Substation	1989
329BM	233	NE	Electricity Substation	1984
330BM	233	NE	Electricity Substation	1984
331BM	234	NE	Electricity Substation	1996
332BM	234	NE	Electricity Substation	1993
333BM	234	NE	Electricity Substation	1998
334BM	234	NE	Electricity Substation	1993
335BN	235	NW	Electricity Substation	1996
336BN	235	NW	Electricity Substation	1994
337BN	235	NW	Electricity Substation	1997
338BN	235	NW	Electricity Substation	1989
339BN	235	NW	Electricity Substation	1992
340BO	245	S	Electricity Substation	1992
341BO	245	S	Electricity Substation	1985
342BO	245	S	Electricity Substation	1987
343BO	245	S	Electricity Substation	1987
344BO	246	S	Electricity Substation	1977
345BO	246	S	Electricity Substation	1997
346BO	246	S	Electricity Substation	1999
347BP	261	SW	Electricity Substation	1953

348BP	261	SW	Electricity Substation	1953
349BP	261	SW	Electricity Substation	1953
350BQ	263	SE	Electricity Substation	1996
351BQ	264	SE	Electricity Substation	1986
352BQ	264	SE	Electricity Substation	1987
353BQ	264	SE	Electricity Substation	1983
354BQ	264	SE	Electricity Substation	1977
355BQ	264	SE	Electricity Substation	1990
356BQ	265	SE	Electricity Substation	1993
357BR	272	SW	Electricity Substation	1996
358BR	272	SW	Electricity Substation	1994
359BR	272	SW	Electricity Substation	1993
360BS	278	NE	Electricity Substation	1953
361BT	278	W	Electricity Substation	1965
362BS	278	NE	Electricity Substation	1953
363BS	278	NE	Electricity Substation	1998
364BT	279	W	Electricity Substation	1983
365BT	279	W	Electricity Substation	1984
366BT	279	W	Electricity Substation	1991
367BU	282	W	Electricity Substation	1953
368BU	282	W	Electricity Substation	1953
369BU	282	W	Electricity Substation	1953
370BR	287	SW	Electricity Substation	1998
371BV	288	SW	Electricity Substation	1998
372BV	288	SW	Electricity Substation	1996
373BV	288	SW	Electricity Substation	1994
374BV	288	SW	Electricity Substation	1993
375BV	289	SW	Electricity Substation	1983
376AV	303	SE	Electricity Substation	1987
377AV	303	SE	Electricity Substation	1985
378AV	303	SE	Electricity Substation	1992
379AV	303	SE	Electricity Substation	1977
380AV	304	SE	Electricity Substation	1997
381AV	304	SE	Electricity Substation	1999
382BW	337	NW	Electricity Substation	1996
383BW	337	NW	Electricity Substation	1994
384BW	337	NW	Electricity Substation	1997
385BW	338	NW	Electricity Substation	1973
386BW	339	NW	Electricity Substation	1989
387BW	339	NW	Electricity Substation	1988
388BW	339	NW	Electricity Substation	1992
389BW	340	NW	Electricity Substation	1986
390BX	354	E	Electricity Substation	1990
391BX	357	E	Electricity Substation	1996
392BX	357	E	Electricity Substation	1994
393BX	357	E	Electricity Substation	1987
394BX	357	E	Electricity Substation	1984
395BY	381	N	Electricity Substation	1984

396BY	381	N	Electricity Substation	1989
397BY	381	N	Electricity Substation	1984
398BY	381	N	Electricity Substation	1984
399BZ	381	S	Electricity Substation	1997
400BZ	381	S	Electricity Substation	1999
401BZ	384	S	Electricity Substation	1977
402BZ	384	S	Electricity Substation	1985
403BZ	384	S	Electricity Substation	1987
404BZ	384	S	Electricity Substation	1992
405BY	389	N	Electricity Substation	1996
406BY	389	N	Electricity Substation	1998
407BY	389	N	Electricity Substation	1993
408BY	389	N	Electricity Substation	1993
409CA	413	SE	Electricity Substation	1985
410CA	414	SE	Electricity Substation	1977
411CB	419	E	Electricity Substation	1990
412CB	419	E	Electricity Substation	1968
413CB	420	E	Electricity Substation	1996
414CB	420	E	Electricity Substation	1994
415CB	420	E	Electricity Substation	1984
416CB	420	E	Electricity Substation	1987
417CB	420	E	Electricity Substation	1967
418CB	420	E	Electricity Substation	1967
419CC	425	S	Electricity Substation	1992
420CC	425	S	Electricity Substation	1985
421CC	425	S	Electricity Substation	1987
422CD	425	E	Electricity Substation	1987
423CD	426	E	Electricity Substation	1990
424CD	426	E	Electricity Substation	1996
425CD	426	E	Electricity Substation	1994
426CC	428	S	Electricity Substation	1999
427CC	428	S	Electricity Substation	1997
428CE	436	E	Electricity Substation	1990
429CE	436	E	Electricity Substation	1994
430CE	436	E	Electricity Substation	1996
431CE	436	E	Electricity Substation	1984
432CE	436	E	Electricity Substation	1987
433CF	436	E	Electricity Substation	1999
434CF	436	E	Electricity Substation	1993
435CD	455	E	Electricity Substation	1984
436CG	486	E	Electricity Substation	1977
437CG	488	E	Electricity Substation	1980
438CG	488	E	Electricity Substation	1989
439	489	W	Electricity Substation	1991
440CG	489	E	Electricity Substation	1993
441CG	489	E	Electricity Substation	1999
442	495	N	Electrical Supply Works	1908
443	500	S	Electricity Substation	1983

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

148

ID	Distance (m)	Direction	Use	Date
444CH	18	E	Invalid Carriage Repair Works	1953
445CH	18	E	Invalid Carriage Repair Works	1953
446CI	36	E	Garage	1965
447CI	36	E	Garage	1959
448CI	36	E	Garage	1953
449CI	36	E	Garage	1953
450CI	36	E	Garage	1967
451CI	36	E	Garage	1967
452CJ	87	SW	Transport Repair Depot	1967
453CJ	87	SW	Transport Repair Depot	1967
454CJ	88	SW	Transport Repair Depot	1977
455CJ	88	SW	Transport Repair Depot	1965
456CK	173	N	Garage	1998
457CK	173	N	Garage	1996
458CK	173	N	Garage	1993
459CK	173	N	Garage	1993
460CK	175	N	Garage	1962
461CK	175	N	Garage	1953
462CK	176	N	Garage	1967
463CK	176	N	Garage	1953
464CK	177	N	Garage	1984
465CK	177	N	Garage	1984
466CK	177	N	Garage	1984
467CK	177	N	Garage	1989
468CL	188	NE	Garage	1953
469CL	188	NE	Garage	1953
470CM	192	W	Garage	1953

471CM	192	W	Garage	1967
472CM	192	W	Garage	1967
473CM	192	W	Garage	1953
474CM	192	W	Garage	1965
475CN	195	W	Garage	1965
476CN	195	W	Garage	1965
477CN	195	W	Garage	1953
478CN	195	W	Garage	1953
479CN	195	W	Garage	1953
480CN	195	W	Garage	1967
481CN	195	W	Garage	1967
482CN	196	W	Garage	1983
483CN	196	W	Garage	1984
484CK	204	N	Police Garage	1967
485CO	208	W	Garage	1953
486CO	208	W	Garage	1967
487CO	208	W	Garage	1953
488CO	208	W	Garage	1953
489CO	208	W	Garage	1967
490CO	208	W	Garage	1965
491CK	209	N	Police Garage	1953
492CK	209	N	Police Garage	1962
493CP	212	W	Garage	1967
494CP	212	W	Garage	1983
495CP	212	W	Garage	1984
496CP	212	W	Garage	1991
497CK	213	N	Police Garage	1953
498CP	214	W	Garage	1965
499CP	214	W	Garage	1965
500N	246	NW	Motor Engineering Works	1973
501CQ	246	N	Garage	1962
502CQ	246	N	Garage	1967
503CR	304	NE	Garage	1962
504CR	304	NE	Garage	1967
505CT	329	SE	Garage	1968
506CS	344	NW	Garage	1997
507CS	344	NW	Garage	1994
508CS	344	NW	Garage	1996
509CS	344	NW	Garage	1967
510CS	344	NW	Garage	1962
511CS	344	NW	Garage	1973
512CS	345	NW	Garage	1989
513CS	345	NW	Garage	1986
514CS	345	NW	Garage	1992
515CT	350	SE	Garage	1977
516CT	350	SE	Garage	1968
517CT	350	SE	Garage	1953
518CT	350	SE	Garage	1958

519CT	350	SE	Garage	1958
520CT	350	SE	Garage	1953
521CU	359	NW	Garage	1986
522CU	359	NW	Garage	1988
523CU	359	NW	Garage	1988
524CV	361	NW	Garage	1994
525CV	361	NW	Garage	1996
526CV	361	NW	Garage	1997
527CU	364	NW	Garage	1973
528CV	369	NW	Garage	1962
529CV	370	NW	Garage	1992
530CV	370	NW	Garage	1989
531CU	370	NW	Garage	1967
532BY	374	N	Garage	1962
533BY	375	N	Garage	1967
534	389	NW	Motor Repair Works	1973
535CY	395	E	Garage	1980
536CW	404	NW	Garage	1953
537CW	404	NW	Garage	1962
538CW	404	NW	Garage	1953
539CW	404	NW	Garage	1967
540CX	406	N	Garage	1993
541CX	406	N	Garage	1998
542CX	406	N	Garage	1996
543	410	NW	Motor Repair Works	1973
544CX	411	N	Garage	1993
545CX	412	N	Garage	1953
546CX	412	N	Garage	1962
547CX	412	N	Garage	1989
548CX	412	N	Garage	1984
549CX	412	N	Garage	1984
550CX	412	N	Garage	1984
551CX	412	N	Garage	1967
552CX	412	N	Garage	1953
553CY	417	E	Garage	1953
554CY	417	E	Garage	1953
555CY	418	E	Garage	1968
556CY	418	E	Garage	1953
557CY	418	E	Garage	1967
558CY	422	E	Garage	1977
559CZ	424	N	Motor Body Works and Garage	1953
560CZ	424	N	Works and Garage	1962
561CZ	425	N	Works and Garage	1967
562CZ	425	N	Motor Body Works and Garage	1953
563DA	466	N	Garage	1962
564DA	466	N	Garage	1953
565DA	466	N	Garage	1970

566DA	466	N	Garage	1953
567DA	466	N	Garage	1953
568DA	466	N	Garage	1979
569DA	466	N	Garage	1984
570DA	467	N	Garage	1984
571DA	467	N	Garage	1962
572DA	469	N	Garage	1967
573DB	474	NE	Garage	1977
574DB	474	NE	Garage	1953
575DB	474	NE	Garage	1968
576DB	474	NE	Garage	1953
577DB	475	NE	Garage	1980
578DB	475	NE	Garage	1953
579DB	475	NE	Garage	1967
580DC	476	N	Garage	1984
581DC	476	N	Garage	1962
582DC	477	N	Garage	1967
583DC	481	N	Garage	1970
584DC	481	N	Garage	1962
585DC	481	N	Garage	1953
586DD	481	E	Garage	1953
587DD	481	E	Garage	1953
588DC	481	N	Garage	1979
589DC	481	N	Garage	1984
590DC	482	N	Garage	1953
591DC	482	N	Garage	1953

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site:

76

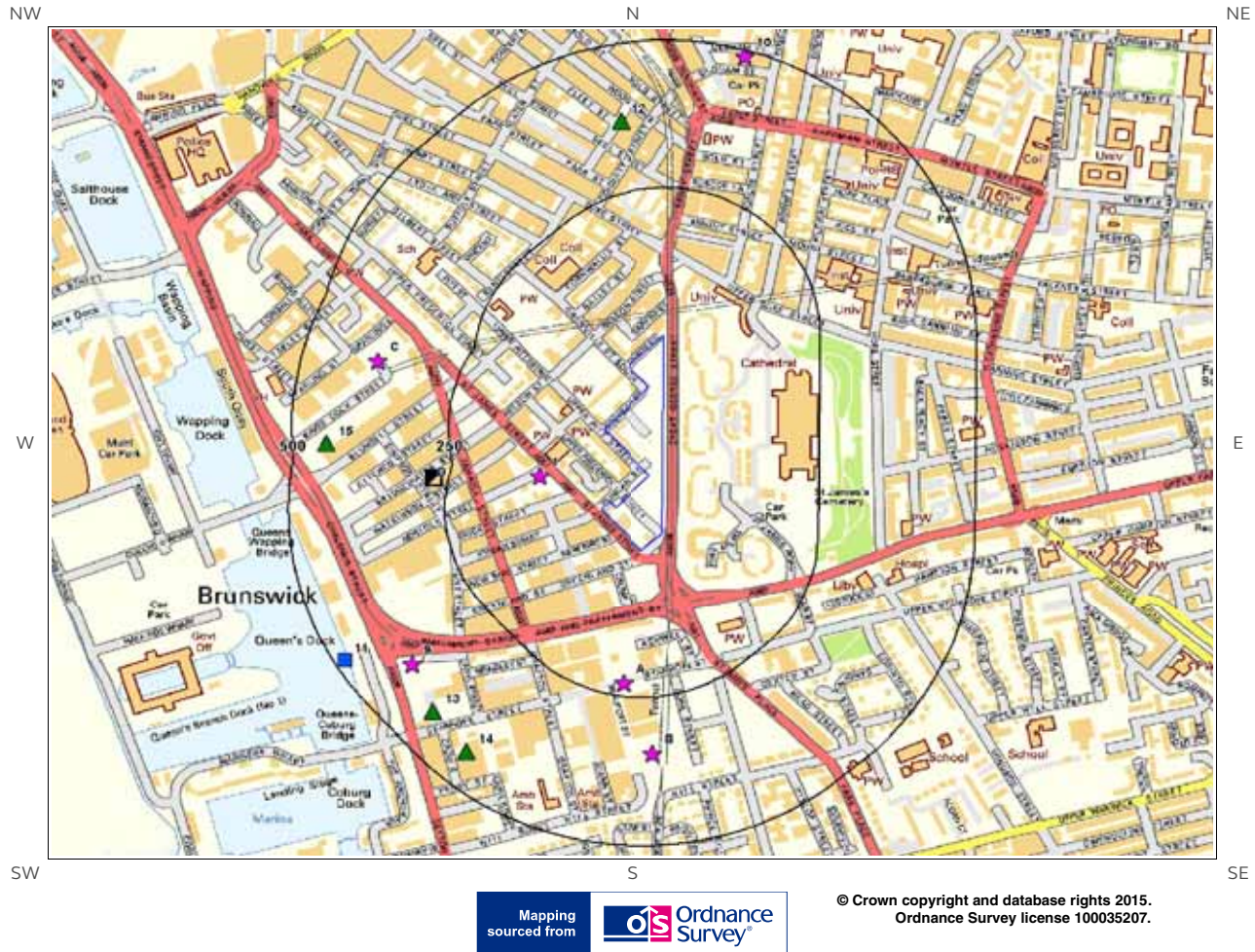
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
592DE	0	On Site	Tunnel	1928
593A	0	On Site	Tunnel	1906
594A	0	On Site	Tunnel	1938
595B	4	E	Tunnel	1987
596B	4	E	Tunnel	1967
597B	4	E	Tunnel	1989
598CH	6	E	Tunnel	1956
599D	28	N	Tunnel	1906
600C	33	N	Disused Tunnel	1987
601C	33	N	Tunnel	1967
602C	33	N	Tunnel	1956
603C	33	N	Disused Tunnel	1989
604D	38	N	Tunnel	1938
605E	61	NE	Unspecified Shaft	1989

606E	61	NE	Unspecified Shaft	1967
607E	61	NE	Unspecified Shaft	1987
608DF	65	N	Tunnel	1928
609DG	131	NW	Tunnel	1966
610F	134	NW	Tunnel	1949
611F	134	NW	Tunnel	1956
612DG	156	W	Tunnel	1909
613DG	156	W	Tunnel	1938
614DG	156	W	Tunnel	1925
615K	162	E	Cemetery	1928
616G	175	E	Cemetery	1906
617G	175	E	Cemetery	1938
618G	179	E	Cemetery	1890
619G	179	E	Cemetery	1851
620H	190	E	Unspecified Ground Workings	1956
621I	194	S	Tunnel	1924
622I	194	S	Tunnel	1906
623I	194	S	Tunnel	1938
624I	201	S	Tunnel	1989
625I	201	S	Tunnel	1987
626I	201	S	Tunnel	1967
627I	201	S	Tunnel	1956
628G	225	E	Cemetery	1967
629G	225	E	Cemetery	1956
630P	280	N	Unspecified Shaft	1989
631P	280	N	Unspecified Shaft	1987
632S	285	NW	Tunnel	1925
633S	285	NW	Tunnel	1909
634S	285	NW	Tunnel	1938
635S	289	NW	Tunnel	1956
636S	289	NW	Tunnel	1949
637AZ	327	NW	Tunnel	1928
638AB	401	E	Unspecified Shaft	1989
639AB	401	E	Unspecified Shaft	1987
640AD	407	S	Tunnel	1956
641AD	407	S	Tunnel	1989
642AD	407	S	Tunnel	1987
643AD	407	S	Tunnel	1967
644AD	407	S	Tunnel	1906
645AD	407	S	Tunnel	1938
646AD	407	S	Tunnel	1924
647AF	413	W	Docks	1966
648AF	413	W	Docks	1956
649AF	413	W	Docks	1991
650AF	413	W	Docks	1978
651AG	420	W	Docks	1925
652AG	420	W	Docks	1938

653AG	420	W	Docks	1909
654DH	424	SW	Dock	1938
655AO	425	W	Docks	1906
656AJ	428	SW	Dock	1938
657AJ	428	SW	Dock	1906
658AJ	428	SW	Dock	1924
659AK	446	W	Docks	1928
660AK	446	W	Docks	1928
661DI	449	W	Dock	1851
662AB	450	E	Unspecified Shaft	1967
663DJ	459	SW	Dock	1851
664AN	459	N	Tunnel	1989
665AO	470	W	Docks	1890
666AP	474	N	Tunnel	1975
667DK	487	SW	Dock	1949

2. Environmental Permits, Incidents and Registers Map



- | | | | | | |
|--|--------------------|--|-------------------------------|--|--|
| | Site Outline | | Recorded Pollution Incident | | RAS 3 & 4 Authorisations |
| | Search Buffers (m) | | Dangerous Substances (List 1) | | Part A(1) Authorised Processes and Historic IPC Authorisations |
| | 250 | | Dangerous Substances (List 2) | | Part A(2) and Part B Authorised Processes |
| | 500 | | Water Industry Referrals | | COMAH / NIHHS Sites |
| | | | Licenced Discharge Consents | | Sites Determined as Contaminated Land |
| | | | Red List Discharge Consents | | Hazardous Substance Consents and Enforcements |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

4

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
12	366	N	335100 389900	Address: Bell Furniture, Hanover St, L1 4LN Process: coating & enamelling process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
13	434	SW	334800 388900	Address: Pioneer Concrete Ltd, Sefton Street, L8 5SN Process: concrete & crushing process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
14	444	SW	334855 388833	Address: R.S Clare & Co Ltd Process: Bitumen Process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
15	446	W	334629 389356	Address: A J Beers Ltd Process: Saw-milling, Planing and Moulding of Timber Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

1

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
11	484	SW	334660 388990	Address: SEFTON STREET, LIVERPOOL, MERSEYSIDE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01LIV0016 Permit Version: 1 Receiving Water: Status: REVOKED - UNSPECIFIED Issue date: 01/01/1995 Effective Date: 01-Jan-1995 Revocation Date: 22/06/2005

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

1

The following Water Industry Referral records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Address	Permission reference	Local Authority	First Date Received	Last Date Received	Status
17D	274	W	MERTON ELECTROPLATING CO, UNIT 5, 6 JORDON STREET, JORDON STREET, LIVERPOOL, LIVERPOOL, L1 0BW	BB6645	LIVERPOOL CITY COUNCIL	01-Jun-2001	01-Jan-2015	RECEIVED

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

2.3 Environment Agency Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

10

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	113	NW	334970 389303	Incident Date: 01-Aug-2001 Incident Identification: 21213 Pollutant: Specific Waste Materials Pollutant Description: Vehicles and Vehicle Parts Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

ID	Distance (m)	Direction	NGR	Details	
2A	228	S	335106 388951	Incident Date: 13-May-2013 Incident Identification: 1112232 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
3A	228	S	335106 388951	Incident Date: 13-May-2013 Incident Identification: 1112232 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
4B	344	S	335151 388833	Incident Date: 19-Feb-2013 Incident Identification: 1088046 Pollutant: Specific Waste Materials Pollutant Description: Contaminated Construction & Demolition Mat & Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
5B	344	S	335151 388833	Incident Date: 19-Feb-2013 Incident Identification: 1088046 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
6C	381	W	334711 389499	Incident Date: 27-Mar-2014 Incident Identification: 1221768 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
7C	381	W	334711 389499	Incident Date: 27-Mar-2014 Incident Identification: 1221768 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
8C	381	W	334711 389499	Incident Date: 27-Mar-2014 Incident Identification: 1221768 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
9	402	SW	334767 388983	Incident Date: 06-Mar-2002 Incident Identification: 62359 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
10	489	N	335302 390013	Incident Date: 15-Jan-2003 Incident Identification: 132732 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

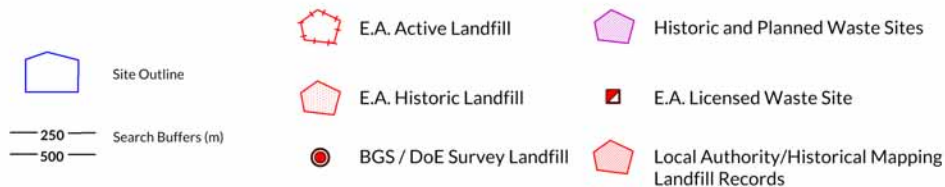
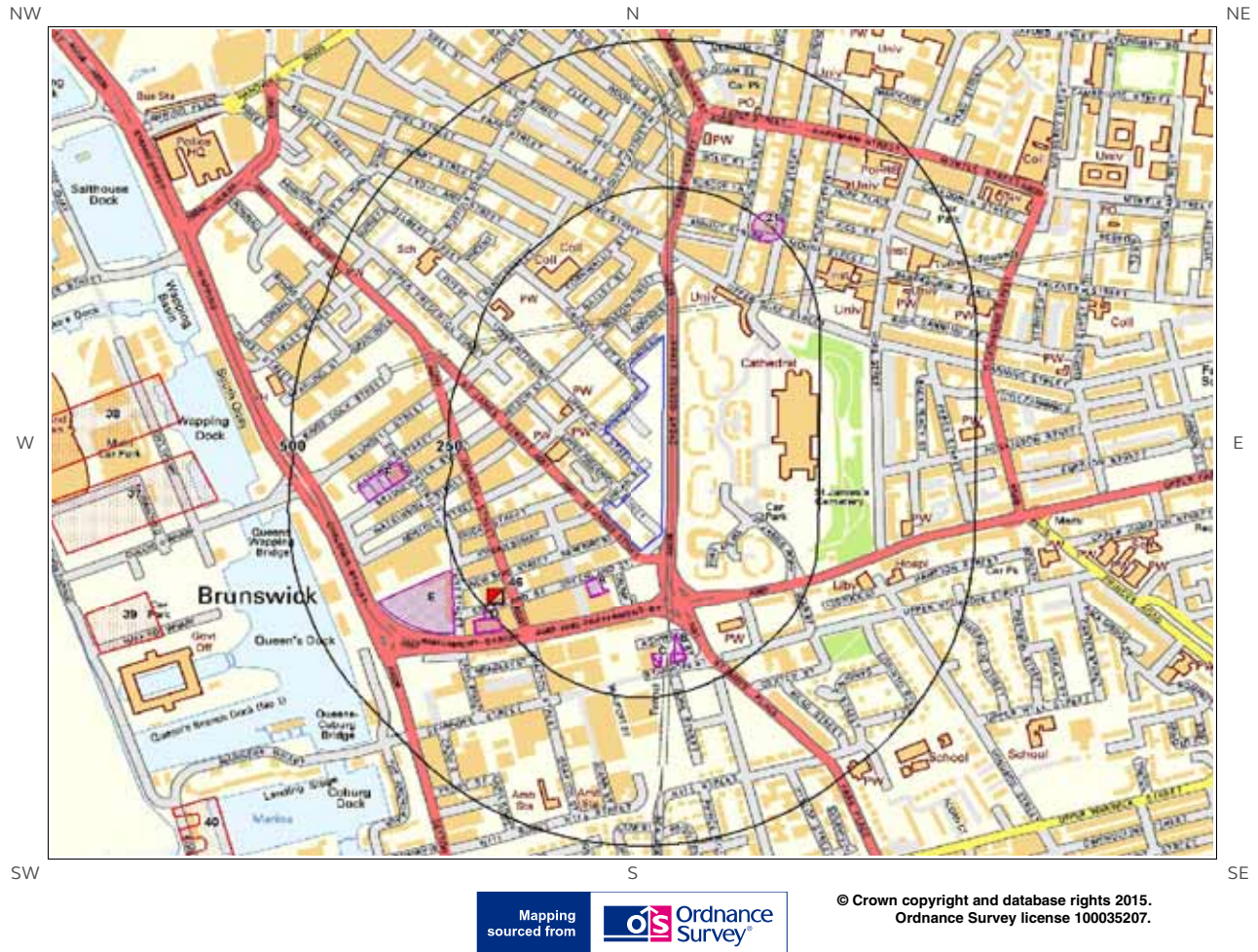
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

9

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
37	613	W	334300 389200	<p>Site Address: Kings Dock Number 1 and 2, Queens Dock Number 2, Queens Graving Dock, Toxteth Dock, Liverpool, Merseyside</p> <p>Waste Licence: Yes</p> <p>Site Reference: 154/02, GDO M002</p> <p>Waste Type: Inert, Industrial</p> <p>Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: 08-Oct-1984</p> <p>Licence Surrendered:</p> <p>Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool</p> <p>Operator: Merseyside Development Corporation</p> <p>First Recorded: 01-Sep-1984</p> <p>Last Recorded: 31-Dec-1987</p>
38	679	W	334200 389300	<p>Site Address: Kings Dock Number 1 and 2, Queens Dock Number 2, Queens Graving Dock, Toxteth Dock, Liverpool, Merseyside</p> <p>Waste Licence: Yes</p> <p>Site Reference: 154/02, GDO M003</p> <p>Waste Type: Inert, Industrial</p> <p>Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: 08-Oct-1984</p> <p>Licence Surrendered:</p> <p>Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool</p> <p>Operator: Merseyside Development Corporation</p> <p>First Recorded: 01-Sep-1984</p> <p>Last Recorded: 31-Dec-1987</p>
39	733	W	334300 389000	<p>Site Address: Kings Dock Number 1 and 2, Queens Branch Dock Number 2, Queens Graving Dock, Toxteth Dock, Liverpool, Merseyside</p> <p>Waste Licence: Yes</p> <p>Site Reference: GDO M004, 154/02</p> <p>Waste Type: Inert, Industrial</p> <p>Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: 08-Oct-1984</p> <p>Licence Surrendered:</p> <p>Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool</p> <p>Operator: Merseyside Development Corporation</p> <p>First Recorded: 01-Jan-1984</p> <p>Last Recorded: 31-Dec-1987</p>

ID	Distance (m)	Direction	NGR	Details	
40	786	SW	334400 388700	Site Address: Kings, Queens and Toxteth Docks / Coburg Dock (part), Liverpool, Merseyside Waste Licence: - Site Reference: 154/02, GDO M007 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool Operator: Merseyside Development Corporation First Recorded: - Last Recorded: -
Not shown	894	SW	334500 388400	Site Address: Brunswick Half Tide Dock, Liverpool, Merseyside Waste Licence: - Site Reference: GDO M008, 154/02 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool Operator: Merseyside Development Corporation First Recorded: 01-Jan-1984 Last Recorded: 31-Dec-1987
Not shown	1021	SW	334600 388100	Site Address: Brunswick Dock, Liverpool, Merseyside Waste Licence: - Site Reference: GDO M001 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: - First Recorded: - Last Recorded: -
Not shown	1097	S	334900 387900	Site Address: Toxteth Dock, Liverpool, Merseyside Waste Licence: - Site Reference: 154/02, GDO M006 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: 4th Floor, Royal Liver Building, Pierhead, Liverpool Operator: Merseyside Development Corporation First Recorded: 01-Sep-1984 Last Recorded: 30-Oct-1989
Not shown	1342	E	336500 389700	Site Address: Corner Of Smithdown Lane, Overbury Street, Liverpool, Merseyside Waste Licence: Yes Site Reference: GDO M236, LCC/433/02/01 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 23-Apr-1993 Licence Surrendered: 20-Aug-1993 Licence Hold Address: Wilberforce House, 25 The Strand, Liverpool Operator: Liverpool City Council First Recorded: 01-Apr-1993 Last Recorded: 30-Aug-1993
Not shown	1475	S	335200 387500	Site Address: Harrington Dock, Liverpool 8, Merseyside Waste Licence: Yes Site Reference: 108/02, GDO M005 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 17-Feb-1984 Licence Surrendered: Licence Hold Address: Royal Liver Building, Liverpool Operator: Merseyside Development Corporation First Recorded: 01-Jan-1981 Last Recorded: 31-Dec-1987

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

36

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
1A	82	SW	335062 389114	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1996	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
2A	82	SW	335062 389114	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1994	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
3A	82	SW	335062 389114	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1993	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
4A	82	SW	335058 389115	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1989	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
5B	153	S	335196 389016	Type of Site: Scrap Metal Works Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
6B	153	S	335196 389016	Type of Site: Scrap Metal Works Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7B	153	S	335196 389016	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
8B	153	S	335195 389016	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1958	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
9B	153	S	335195 389016	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1964	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
10B	153	S	335195 389016	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1976	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

ID	Distance (m)	Direction	NGR	Details		
11B	153	S	335195 389016	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
12C	178	S	335159 388988	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
13C	178	S	335159 388988	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
14C	178	S	335163 388989	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
15C	178	S	335163 388989	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1968	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
16B	182	S	335195 388991	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1969	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
17B	185	S	335197 388992	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
18B	185	S	335197 388993	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
19B	185	S	335197 388993	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1976	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
20B	185	S	335197 388993	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1968	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
21	223	NE	335339 389724	Type of Site: Recycling Unit (Conversion) Site Address: 70 Rodney Street, LIVERPOOL, Merseyside, L1 9AF	Planning Application Reference: 07F/1510 Date: -	Further Details: Scheme comprises change of use from vehicle repair centre to scrap metal recycling. An application (ref: 07F/1510) for detailed planning permission was withdrawn from Liverpool C.C. Planning decision obtained Data Source: Historic Planning Application Data Type: Point
22D	238	SW	334891 389057	Type of Site: Scrap Metal Works Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
23D	238	SW	334891 389057	Type of Site: Scrap Metal Works Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

ID	Distance (m)	Direction	NGR	Details		
24D	246	SW	334890 389048	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1983	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
25D	246	SW	334890 389048	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1984	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
26D	247	SW	334891 389047	Type of Site: Scrap Metal Depot Site Address: N/A	Planning Application Reference: N/A Date: 1964	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
27E	262	SW	334768 389086	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1983	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
28E	262	SW	334768 389086	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1984	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
29E	262	SW	334768 389086	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1991	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
30F	313	W	334707 389287	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1964	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
31F	313	W	334707 389287	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1964	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
32F	314	W	334719 389294	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1983	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
33F	314	W	334719 389294	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1984	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
34F	314	W	334719 389294	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1991	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
35F	335	W	334707 389286	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
36F	335	W	334707 389286	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

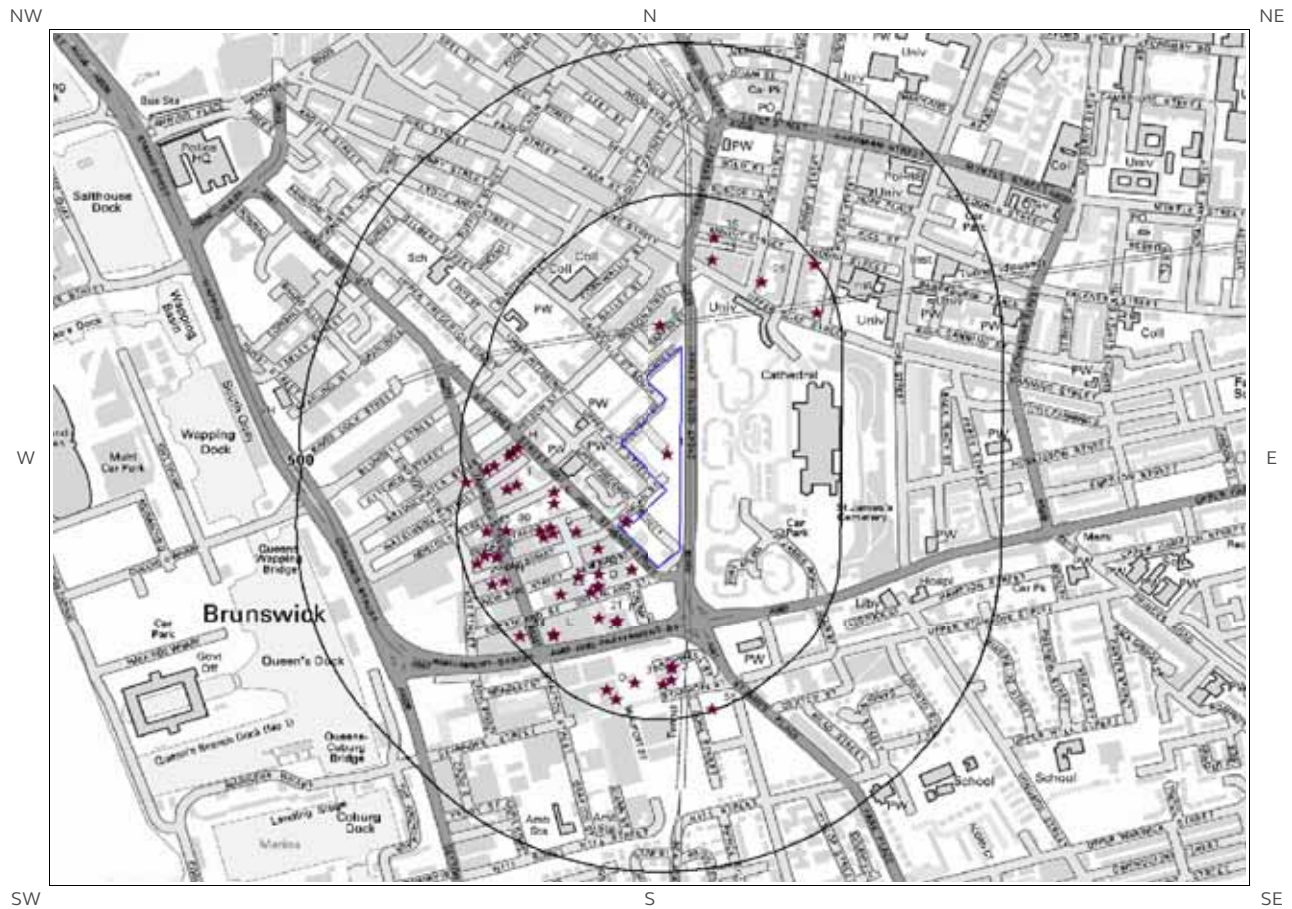
3.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

5

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
46	225	SW	334900 389100	<p>Site Address: 17/19, Parliament Street, Liverpool, Merseyside, L8 5RN Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CCL001 EPR reference: EA/EPR/UP3691CS/A001 Operator: Smith Anita Waste Management licence No: 53969 Annual Tonnage: 416.66</p> <p>Issue Date: 12/09/1988 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Coward & Co Correspondence Address: -, -</p>
Not shown	1202	S	335315 387988	<p>Site Address: National Grid, Grafton Street, Toxteth, Liverpool, L8 4YB Type: Use of waste in construction <50,000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAM036 EPR reference: EA/EPR/YP3592EK/S002 Operator: B A M Nuttall Ltd Waste Management licence No: 102847 Annual Tonnage: 0.0</p> <p>Issue Date: 14/06/2011 Effective Date: - Modified: - Surrendered Date: 06/12/2011 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: National Grid Properties Grafton Street Correspondence Address: -, -</p>
Not shown	1202	S	335315 387988	<p>Site Address: National Grid, Grafton Street, Toxteth, Liverpool, L8 4YB Type: Use of waste in construction <50,000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAM036 EPR reference: EA/EPR/YP3592EK/S002 Operator: Bam Nuttall Ltd Waste Management licence No: 102847 Annual Tonnage: 0.0</p> <p>Issue Date: 14/06/2011 Effective Date: - Modified: - Surrendered Date: 06/12/2011 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: National Grid Properties Grafton Street Correspondence Address: -, -</p>
Not shown	1288	S	334814 387930	<p>Site Address: Units 12-1, Atlantic Way, Brunswick Business Park, Liverpool, Merseyside, L3 4BE Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FRC001 EPR reference: EA/EPR/DP3794CW/A001 Operator: Furniture Resource Centre Limited Waste Management licence No: 50457 Annual Tonnage: 75000.0</p> <p>Issue Date: 27/06/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Furniture Resource Centre Limited Correspondence Address: -, -</p>
Not shown	1429	NE	335962 390733	<p>Site Address: Royal Liverpool University Hospital, Prescot Street, Liverpool, Merseyside, L7 8XP Type: Clinical Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RHL002 EPR reference: EA/EPR/UP3592CS/A001 Operator: Royal Liverpool University Hospital Trust Waste Management licence No: 53442 Annual Tonnage: 4999.0</p> <p>Issue Date: 01/11/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Royal Liverpool University Hospital Trust Correspondence Address: -, -</p>

4. Current Land Use Map



4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

58

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Electricity Sub Station	335150 389365	L1	Electrical Features	Infrastructure and Facilities
2A	0	On Site	Express Signs.Eu	335081 389253	109-111, St. James Street, Liverpool, L1 5HA	Published Goods	Industrial Products
3A	0	On Site	Express Signs	335081 389253	109-111, St. James Street, Liverpool, L1 5HA	Signs	Industrial Products
4	35	SW	The Tyre Depot	335090 389174	1, New Bird Street, Liverpool, L1 0DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
5	49	SW	Warehouse	335038 389210	L1	Container and Storage	Transport, Storage and Delivery
6	50	NW	Electricity Sub Station	335138 389577	L1	Electrical Features	Infrastructure and Facilities
7	66	W	Mersey Battery Co	335004 389236	6, Jordan Street, Liverpool, L1 0BP	Electrical Production and Manipulation Equipment	Industrial Products
8B	77	SW	Waterfront Business Area Parliament Street North	335039 389168	L1	Business Parks and Industrial Estates	Industrial Features
9B	90	SW	Works	335038 389149	L1	Unspecified Works Or Factories	Industrial Features
10D	93	SW	Lee Floorstok	335037 389145	24-32, Greenland Street, Liverpool, L1 0BS	Construction Completion Services	Construction Services
11C	102	W	Warehouse	334968 389234	L1	Container and Storage	Transport, Storage and Delivery
12	103	SW	Electricity Sub Station	335007 389163	L1	Electrical Features	Infrastructure and Facilities
13C	105	W	Transformers UK	334963 389244	14, Jordan Street, Liverpool, L1 0BP	General Construction Supplies	Industrial Products
14D	105	SW	Electricity Sub Station	335027 389139	L1	Electrical Features	Infrastructure and Facilities
15E	106	W	Works	334969 389284	L1	Unspecified Works Or Factories	Industrial Features
16F	110	SW	Pine Precision Engineering Ltd	335068 389090	45-51, Parliament Street, Liverpool, L8 5RN	Precision Engineers	Engineering Services
17E	114	NW	Liver Grease Oil & Chemical Company Ltd	334969 389303	11, Norfolk Street, Liverpool, L1 0BE	Colours, Chemicals and Water Softeners and Supplies	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
18F	115	SW	Works	335065 389087	L8	Unspecified Works Or Factories	Industrial Features
19C	118	W	Warehouse	334953 389229	L1	Container and Storage	Transport, Storage and Delivery
20C	121	W	Gordon Alison Ltd	334947 389238	16, Jordan Street, Liverpool, L1 0BP	Marine Engineers and Services	Engineering Services
21	126	SW	Works	335040 389095	L1	Unspecified Works Or Factories	Industrial Features
22	143	SW	Warehouse	334980 389134	L1	Container and Storage	Transport, Storage and Delivery
23	151	N	Hondo Trading Co Ltd	335220 389684	5, Upper Duke Street, Liverpool, L1 9DU	Catering and Non Specific Food Products	Foodstuffs
24H	161	W	Warehouse	334913 389376	L1	Container and Storage	Transport, Storage and Delivery
25	164	NE	Works	335297 389648	L1	Unspecified Works Or Factories	Industrial Features
26G	164	S	Ashwell Motors	335155 389014	30, Ashwell Street, Liverpool, L8 5RU	Vehicle Repair, Testing and Servicing	Repair and Servicing
27G	167	S	Works	335155 389011	L8	Unspecified Works Or Factories	Industrial Features
28H	169	W	Warehouse	334906 389369	L1	Container and Storage	Transport, Storage and Delivery
29I	171	NW	Birch 4x4	334912 389315	58, Norfolk Street, City Centre, Liverpool, L1 0BE	Vehicle Repair, Testing and Servicing	Repair and Servicing
30	174	W	Mersey Discount Sheds	334895 389239	43, Jamaica Street, Liverpool, L1 0AH	Garden Goods	Consumer Products
31H	176	W	Warehouse	334899 389362	L1	Container and Storage	Transport, Storage and Delivery
32I	183	W	Birch 4x4	334896 389307	46, Norfolk Street, Liverpool, L1 0BE	Vehicle Repair, Testing and Servicing	Repair and Servicing
33I	183	W	Auto Interiors	334896 389307	46, Norfolk Street, Liverpool, L1 0BE	Vehicle Repair, Testing and Servicing	Repair and Servicing
34J	185	S	Works	335154 388993	L8	Unspecified Works Or Factories	Industrial Features
35	187	N	Works	335223 389721	L1	Unspecified Works Or Factories	Industrial Features
36J	192	S	Mersey Motors Ltd	335142 388985	99-103, Stanhope Street, Liverpool, L8 5RE	Secondhand Vehicles	Motoring
37	193	S	Chimney	335098 388988	L8	Chimneys	Industrial Features
38L	194	SW	Ripstone	334971 389068	25, Parliament Street, Liverpool, L8 5RN	Published Goods	Industrial Products
39K	196	W	P R Racing	334880 389195	44, Jamaica Street, Liverpool, L1 0AF	Motorsport Services	Sport and Entertainment Support Services
40K	196	W	Ab Screenprint	334880 389195	44, Jamaica Street, Liverpool, L1 0AF	Published Goods	Industrial Products
41K	196	W	A B Screen Print	334880 389195	44, Jamaica Street, Liverpool, L1 0AF	Plate Makers, Print Finishers and Type Setters	IT, Advertising, Marketing and Media Services
42L	197	SW	Survival Media	334971 389065	25-31, Parliament Street, Liverpool, L8 5RN	Published Goods	Industrial Products
43N	200	SW	Alison Appleton Ltd	334891 389156	46, Jamaica Street, Liverpool, L1 0AF	Bricks, Tiles, Clay and Ceramic Products	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
44M	201	W	Warehouse	334876 389347	L1	Container and Storage	Transport, Storage and Delivery
45	205	W	Stanley Auto Engineers	334864 389237	30-40, Jamaica Street, Liverpool, L1 0AF	Vehicle Repair, Testing and Servicing	Repair and Servicing
46M	214	W	Warehouse	334865 389338	L1	Container and Storage	Transport, Storage and Delivery
47K	214	W	Jamaica Street Car Wash	334861 389197	42, Jamaica Street, Liverpool, L1 0AF	Vehicle Cleaning Services	Personal, Consumer and Other Services
48K	214	W	Ice Cold Ltd	334861 389197	42, Jamaica Street, Liverpool, L1 0AF	Dairy Products	Foodstuffs
49O	217	S	Robert Cain Brewery	335054 388976	Robert Cain Brewery, Stanhope Street, Liverpool, L8 5XJ	Alcoholic Drinks	Foodstuffs
50	217	E	Roger Hetherington & Associates	335383 389596	35, Upper Duke Street, Liverpool, L1 9DY	Structural Engineers	Engineering Services
51N	219	SW	Go Cre8	334872 389150	38, New Bird Street, Liverpool, L1 0DA	Published Goods	Industrial Products
52O	226	S	Waterfront Business Area Parliament Street South	335069 388961	L8	Business Parks and Industrial Estates	Industrial Features
53	228	W	D & R	334850 389184	1, Flint Street, Liverpool, L1 0DH	Vehicle Repair, Testing and Servicing	Repair and Servicing
54	235	SW	Warehouse	334918 389065	L8	Container and Storage	Transport, Storage and Delivery
55	246	W	Warehouse	334833 389319	L1	Container and Storage	Transport, Storage and Delivery
56	247	S	Electricity Sub Station	335218 388944	L8	Electrical Features	Infrastructure and Facilities
57P	248	NE	T C S Group	335380 389677	53, Rodney Street, Liverpool, L1 9ER	Business Parks and Industrial Estates	Industrial Features
58P	248	NE	Advanced Roofline Systems	335380 389677	53, Rodney Street, Liverpool, L1 9ER	Construction Completion Services	Construction Services

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TILLD	TILL, DEVENSIAN	CLAY, SANDY, GRAVELLY, COBBLY [UNLITHIFIED DEPOSITS CODING SCHEME]

5.3 Bedrock and Solid Geology

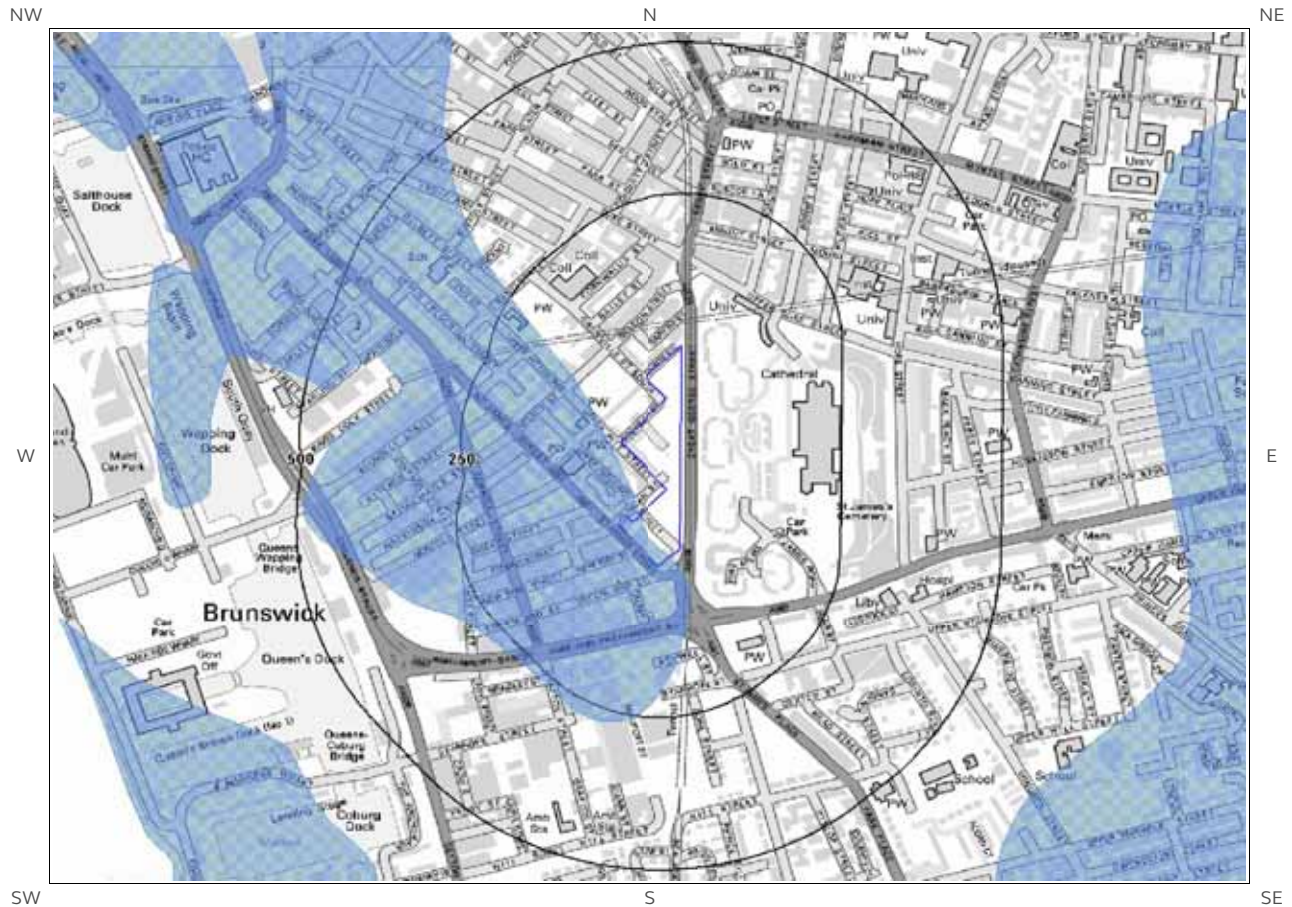
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TPSF-SIMS	TARPORLEY SILTSTONE FORMATION	SILTSTONE, MUDSTONE AND SANDSTONE
HEY-SDST	HELSEBY SANDSTONE FORMATION	SANDSTONE
HEY-SDST	HELSEBY SANDSTONE FORMATION	SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

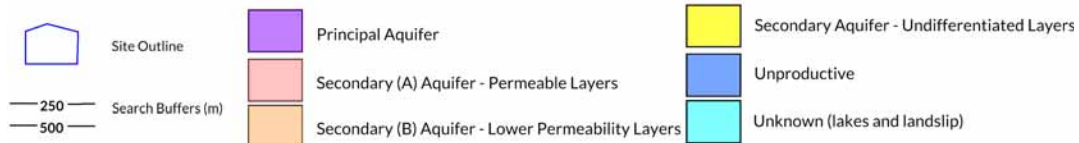
6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015
Ordnance Survey license 100035207.

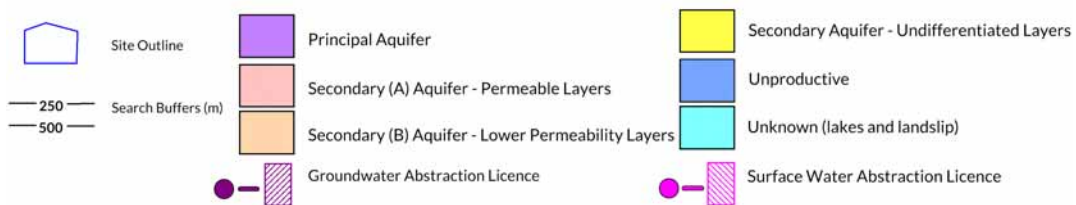


6b. Aquifer Within Bedrock Geology and Abstraction Licenses

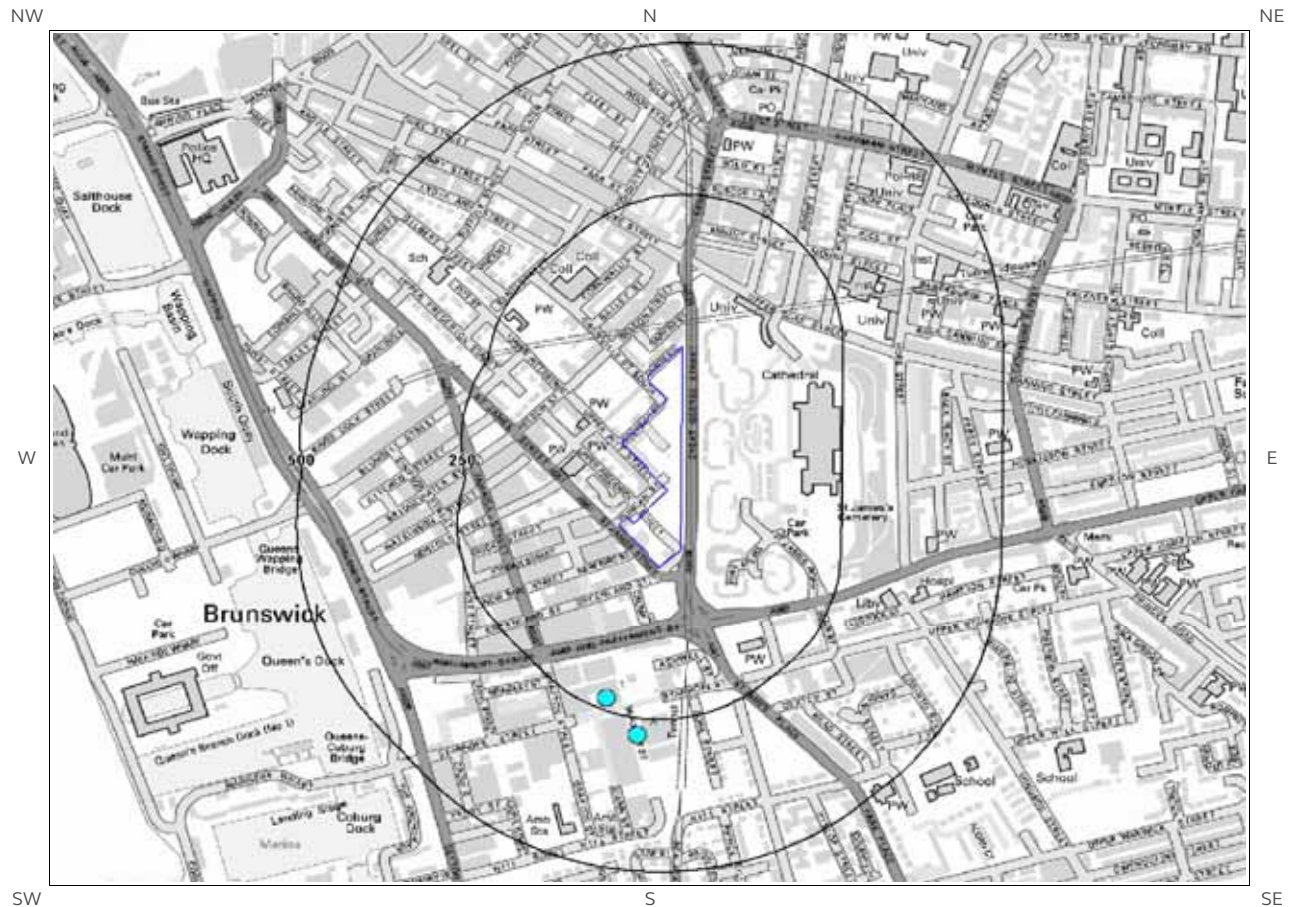


Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015
Ordnance Survey license 100035207.

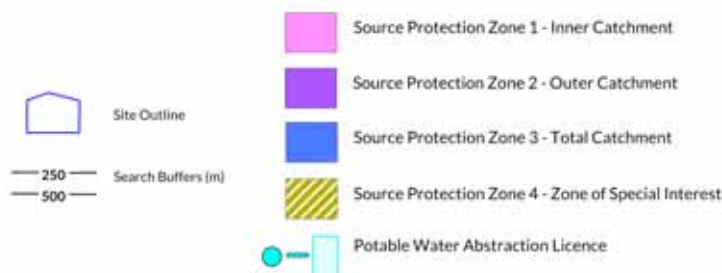


6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses

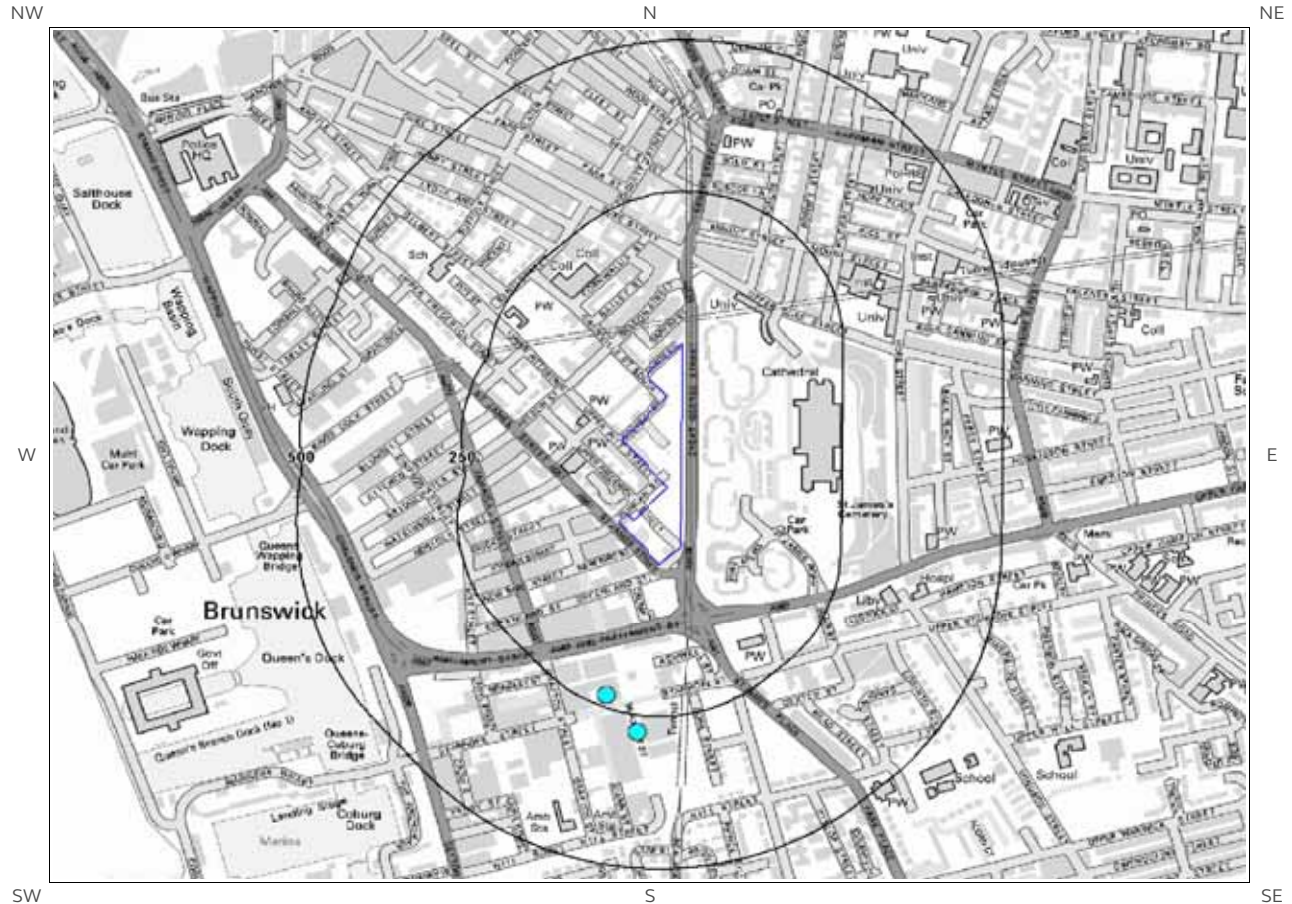


Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015
Ordnance Survey license 100035207.

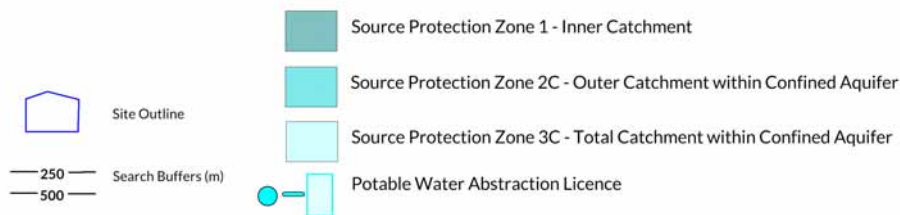


6d. Hydrogeology – Source Protection Zones within confined aquifer

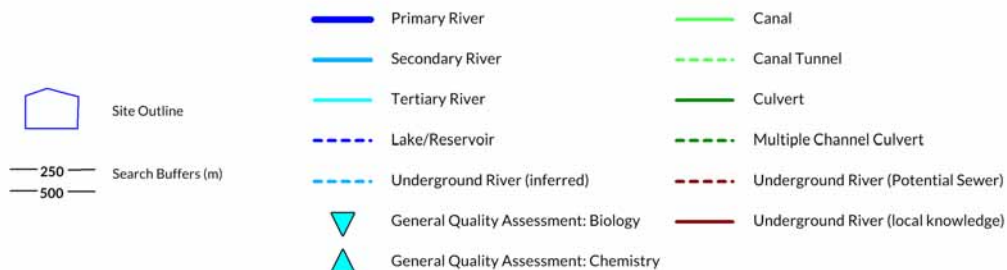
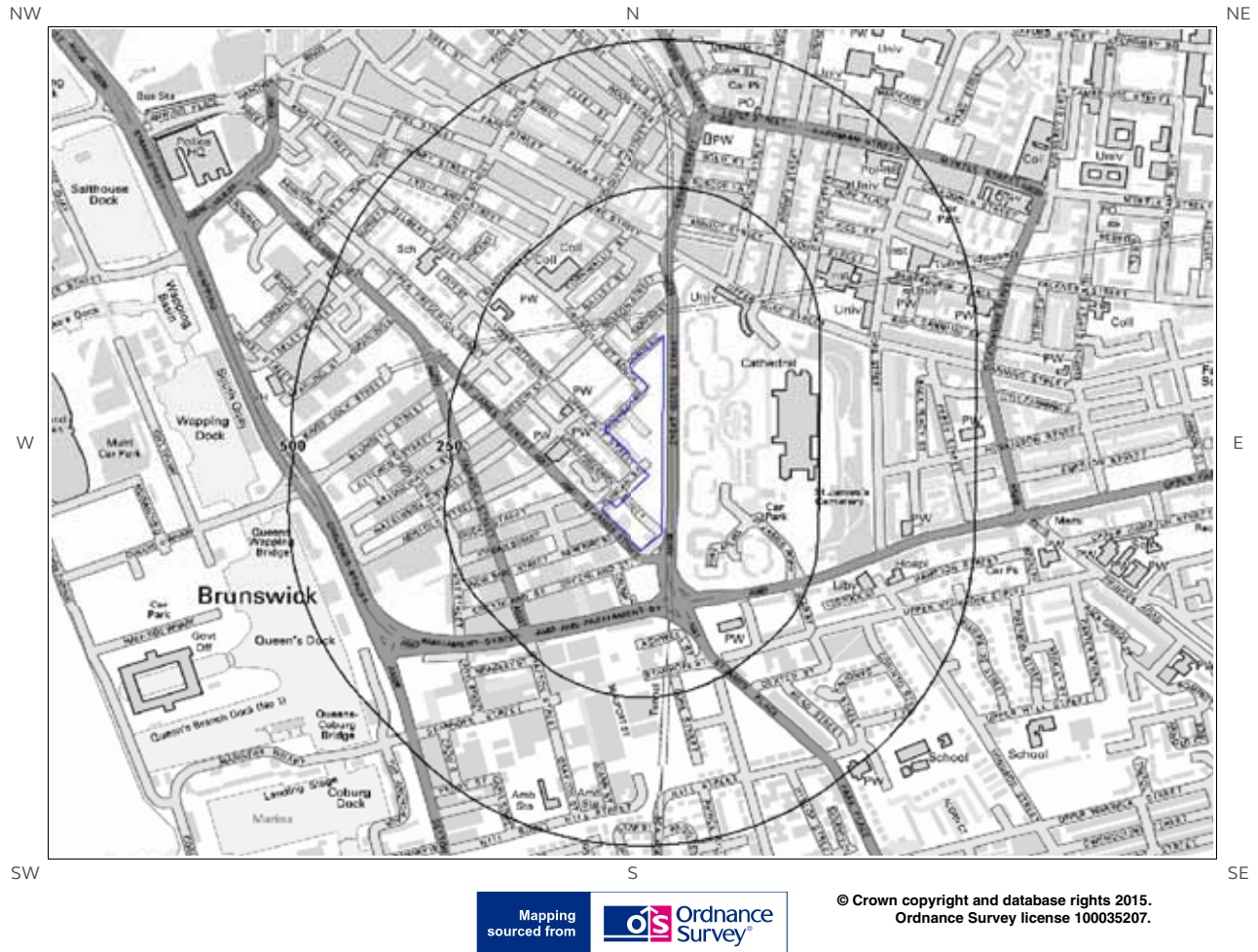


Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015
Ordnance Survey license 100035207.



6e. Hydrology – Detailed River Network and River Quality



6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	69	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
5	0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	69	W	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
6	280	E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
3	459	N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
4	491	N	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
7A	231	S	335052 388962	Licence No: NW/069/0030/004 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: RC BREWERY LIMITED Annual Volume (m³): 195000 Max Daily Volume (m³): 1133.4 Original Application No: NPS/WR/005535 Original Start Date: 4/3/2011 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 4/3/2011 Version End Date:
8A	231	S	335052 388962	Licence No: NW/069/0030/004 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: RC BREWERY LIMITED Annual Volume (m³): 195000 Max Daily Volume (m³): 1133.4 Original Application No: NPS/WR/005535 Original Start Date: 4/3/2011 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 4/3/2011 Version End Date:
9A	231	S	335052 388962	Licence No: NW/069/0030/004 Details: Evaporative Cooling Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: RC BREWERY LIMITED Annual Volume (m³): 195000 Max Daily Volume (m³): 1133.4 Original Application No: NPS/WR/005535 Original Start Date: 4/3/2011 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 4/3/2011 Version End Date:
10A	231	S	335052 388962	Licence No: NW/069/0030/004 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: RC BREWERY LIMITED Annual Volume (m³): 195000 Max Daily Volume (m³): 1133.4 Original Application No: NPS/WR/005535 Original Start Date: 4/3/2011 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 4/3/2011 Version End Date:
11B	279	S	335100 388900	Licence No: 2569030008 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: ROBERT CAIN & CO LTD Annual Volume (m³): 195000 Max Daily Volume (m³): 1600 Original Application No: 0115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:
12B	279	S	335100 388900	Licence No: 2569030008 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole On Premises At Stanhope Street, Liverpool" Data Type: Point Name: ROBERT CAIN & CO LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:

ID	Distance (m)	Direction	NGR	Details
13B	279	S	335100 388900	<p>Licence No: 2569030008 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole On Premises At Stanhope Street, Liverpool" Data Type: Point Name: ROBERT CAIN & CO LTD</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:</p>
14B	279	S	335100 388900	<p>Licence No: 2569030008 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: ROBERT CAIN & CO LTD</p> <p>Annual Volume (m³): 195000 Max Daily Volume (m³): 1600 Original Application No: 0115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:</p>
15B	279	S	335100 388900	<p>Licence No: 2569030008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: ROBERT CAIN & CO LTD</p> <p>Annual Volume (m³): 195000 Max Daily Volume (m³): 1600 Original Application No: 0115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:</p>
16B	279	S	335100 388900	<p>Licence No: 2569030008 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole On Premises At Stanhope Street, Liverpool" Data Type: Point Name: ROBERT CAIN & CO LTD</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 6/6/1990 Version End Date:</p>
Not shown	1418	S	335190 387760	<p>Licence No: 2569030061 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole At Herculaneum Dock, Liverpool" Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: S7397 Original Start Date: 30/9/1997 Expiry Date: - Issue No: 101 Version Start Date: 1/7/2000 Version End Date:</p>
Not shown	1418	S	335190 387760	<p>Licence No: 2569030061 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole At Herculaneum Dock, Liverpool Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD</p> <p>Annual Volume (m³): 14000 Max Daily Volume (m³): 150 Original Application No: S7397 Original Start Date: 30/9/1997 Expiry Date: - Issue No: 101 Version Start Date: 1/7/2000 Version End Date:</p>
Not shown	1601	NE	336145 390813	<p>Licence No: NW/069/0030/009 Details: Heat Pump Direct Source: Ground Water - North West Region Point: Borehole A - Prescott Street Data Type: Point Name: McGreavy</p> <p>Annual Volume (m³): 543120 Max Daily Volume (m³): 1488 Original Application No: NPS/WR/010468 Original Start Date: 6/8/2012 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 6/8/2012 Version End Date:</p>

ID	Distance (m)	Direction	NGR	Details	
Not shown	1758	NW	333840 390700	Licence No: 2569030065 Details: Heat Pump Direct Source: Ground Water - North West Region Point: Pipeline At Georges Dock Pumping Station, Mann Island Lpool Data Type: Point Name: TRINITY MIRROR PLC	Annual Volume (m³): 2300000 Max Daily Volume (m³): 6301.5 Original Application No: 7538 Original Start Date: 28/4/2004 Expiry Date: - Issue No: 1 Version Start Date: 28/4/2004 Version End Date:
Not shown	1758	NW	333840 390700	Licence No: 2569030065 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Pipeline At Georges Dock Pumping Station, Mann Island Lpool Data Type: Point Name: TRINITY MIRROR PLC	Annual Volume (m³): 2300000 Max Daily Volume (m³): 6301.5 Original Application No: 7538 Original Start Date: 28/4/2004 Expiry Date: - Issue No: 1 Version Start Date: 28/4/2004 Version End Date:
Not shown	1819	NW	334010 390940	Licence No: 2569030066 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Bh(c) At St Paul's Square Off Old Hall St Liverpool L3 9sy Data Type: Point Name: ECF (GENERAL PARTNER) LTD	Annual Volume (m³): 340000 Max Daily Volume (m³): 1700 Original Application No: 7563 Original Start Date: 10/8/2006 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 10/8/2006 Version End Date:
Not shown	1826	NW	334000 390940	Licence No: 2569030066 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Bh(b) At St Paul's Square Off Old Hall St Liverpool L3 9sy Data Type: Point Name: ECF (GENERAL PARTNER) LTD	Annual Volume (m³): 340000 Max Daily Volume (m³): 1700 Original Application No: 7563 Original Start Date: 10/8/2006 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 10/8/2006 Version End Date:
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: General Washing/Process Washing Direct Source: Ground Water - North West Region Point: Borehole At Blackstock Street, Liverpool Data Type: Point Name: W F DOYLE & CO LTD	Annual Volume (m³): 299905 Max Daily Volume (m³): 2182 Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "borehole At Blackstock Street, Liverpool" Data Type: Point Name: W F DOYLE & CO LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: Dust suppression Direct Source: Ground Water - North West Region Point: "borehole At Blackstock Street, Liverpool" Data Type: Point Name: W F DOYLE & CO LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: General Washing/Process Washing Direct Source: Ground Water - North West Region Point: "borehole At Blackstock Street, Liverpool" Data Type: Point Name: W F DOYLE & CO LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: Dust Suppression Direct Source: Ground Water - North West Region Point: Borehole At Blackstock Street, Liverpool Data Type: Point Name: W F DOYLE & CO LTD Annual Volume (m³): 299905 Max Daily Volume (m³): 2182 Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:
Not shown	1946	N	334630 391410	Licence No: 2569030032 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole At Blackstock Street, Liverpool Data Type: Point Name: W F DOYLE & CO LTD Annual Volume (m³): 299905 Max Daily Volume (m³): 2182 Original Application No: 1039 Original Start Date: 3/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/12/1995 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details
1	231	S	335052 388962	Licence No: NW/069/0030/004 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: RC BREWERY LIMITED Annual Volume (m³): 195000 Max Daily Volume (m³): 1133.4 Original Application No: NPS/WR/005535 Original Start Date: 4/3/2011 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: Version End Date:
2A	279	S	335100 388900	Licence No: 2569030008 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole On Premises At Stanhope Street, Liverpool Data Type: Point Name: ROBERT CAIN & CO LTD Annual Volume (m³): 195000 Max Daily Volume (m³): 1600 Original Application No: 0115 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details
3A	279	S	335100 388900	<p>Licence No: 2569030008</p> <p>Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services"</p> <p>Direct Source: Ground Water - North West Region</p> <p>Point: "borehole On Premises At Stanhope Street, Liverpool"</p> <p>Data Type: Point</p> <p>Name: ROBERT CAIN & CO LTD</p> <p>Annual Volume (m³): -</p> <p>Max Daily Volume (m³): -</p> <p>Original Application No: 115</p> <p>Original Start Date: 18/2/1966</p> <p>Expiry Date: -</p> <p>Issue No: 100</p> <p>Version Start Date:</p> <p>Version End Date:</p>

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
459	N	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

Is there any Environment Agency information on river quality within 1500m of the study site? No

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? No

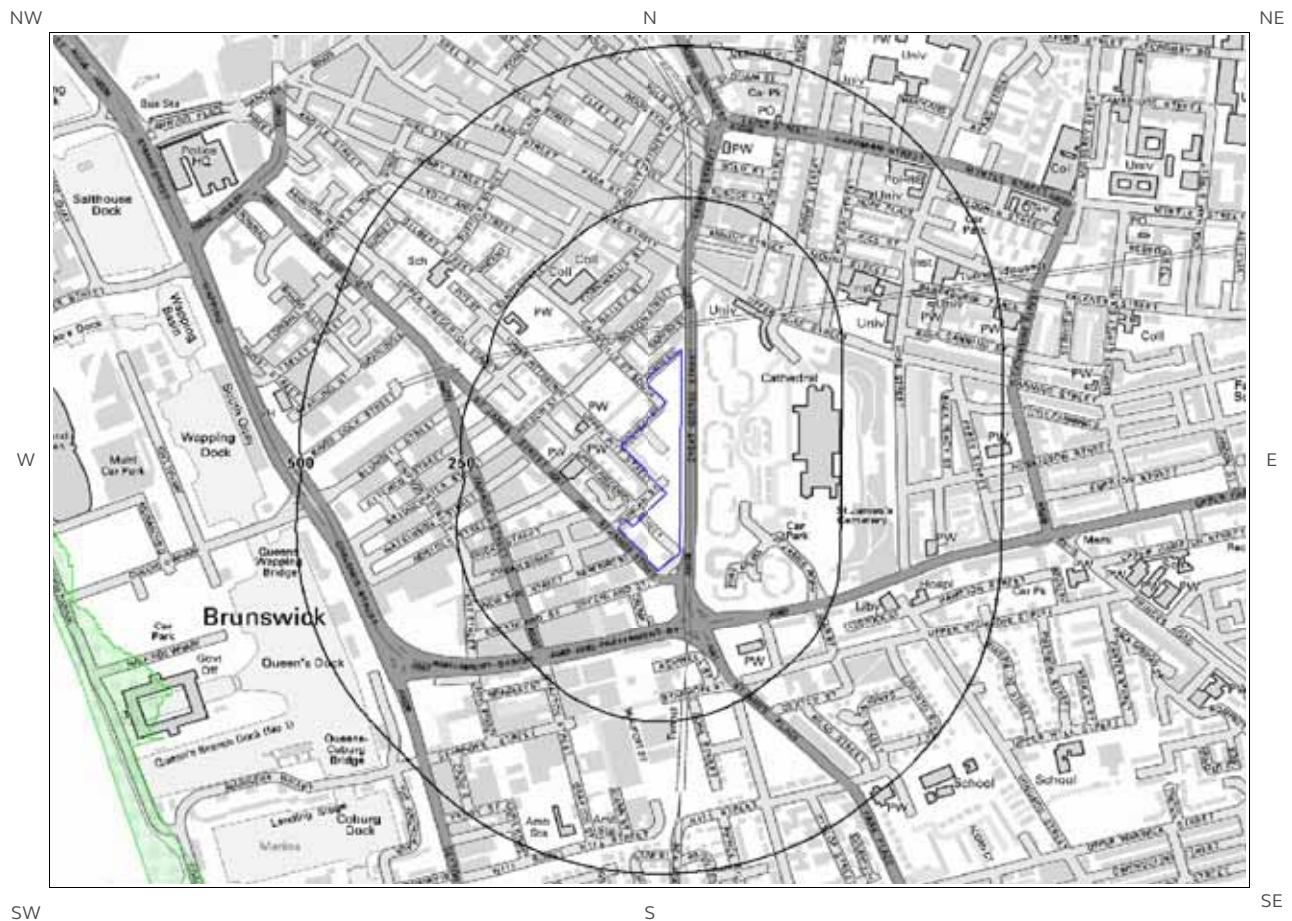
Database searched and no data found.

6.11 Surface Water Features

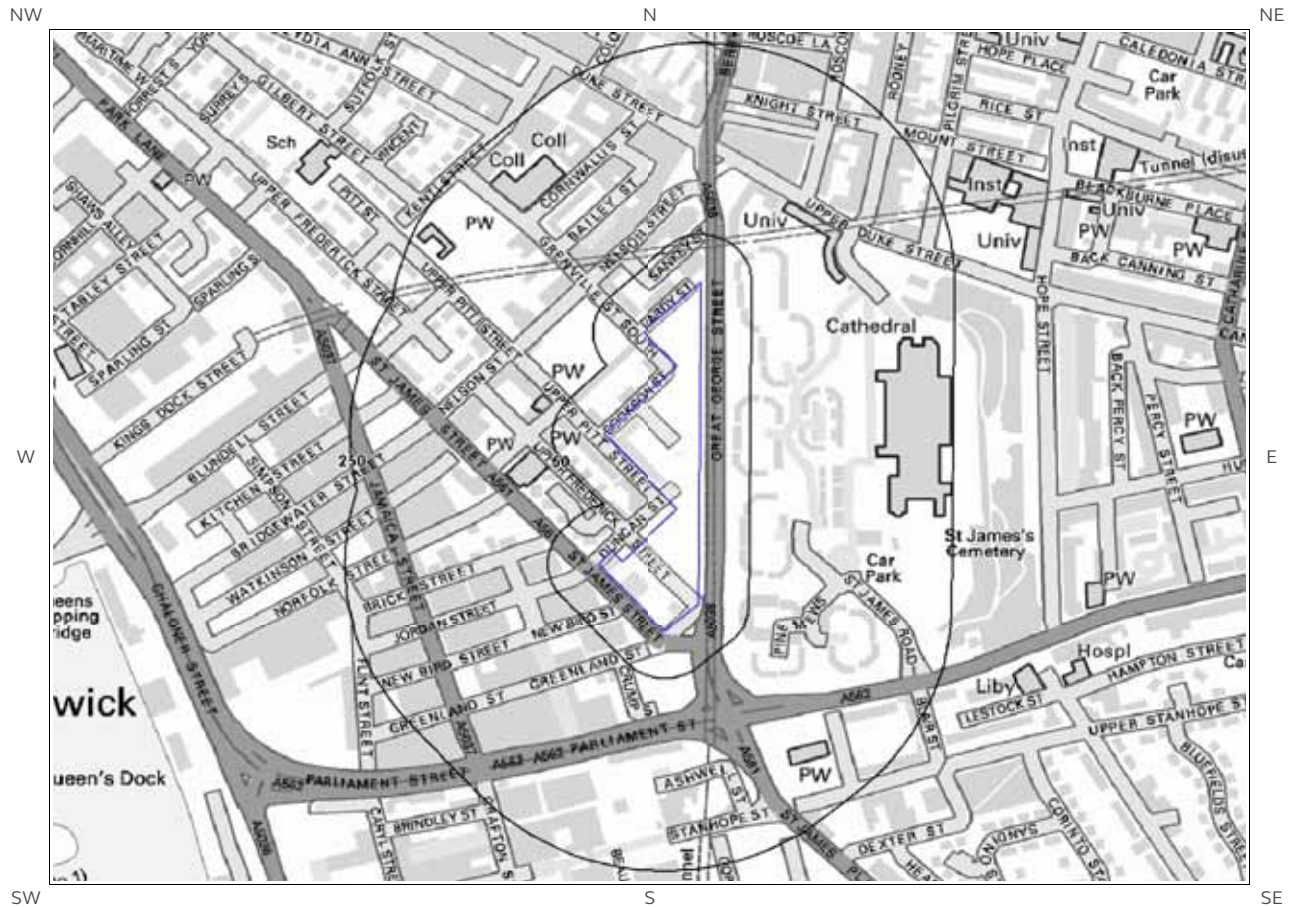
Are there any surface water features within 250m of the study site? No

Database searched and no data found.

7a. Environment Agency Flood Map for Planning (from rivers and the sea)

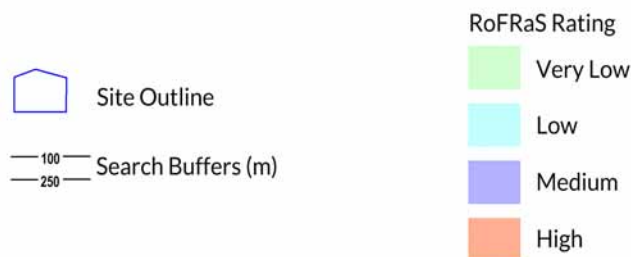


7b. Environment Agency Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency Zone 2 floodplain? No

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding?

Clearwater Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

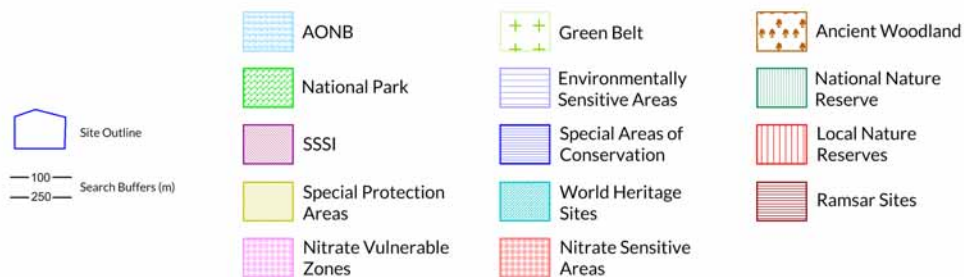
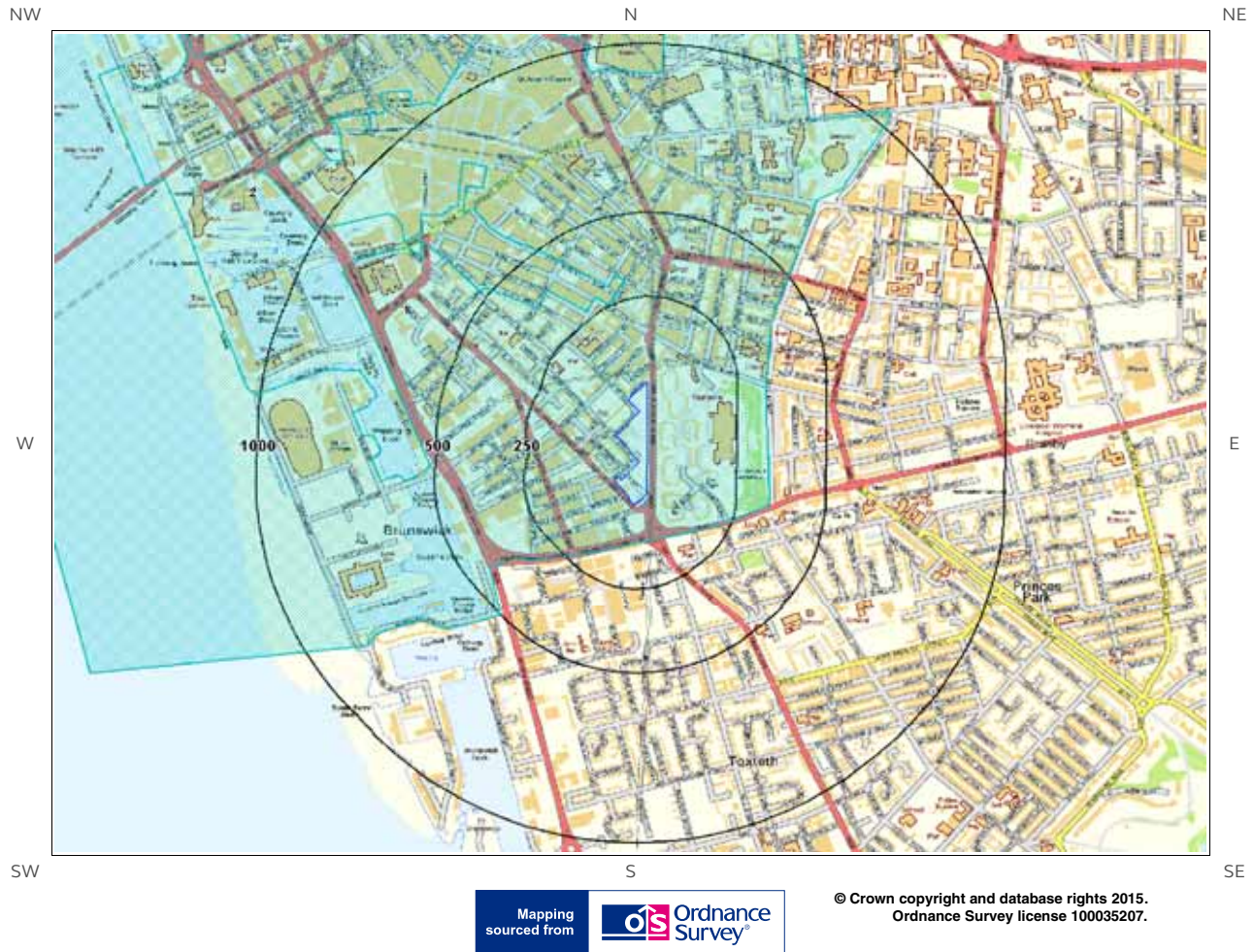
What is the British Geological Survey confidence rating in this result?

Moderate

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

2

The following World Heritage Site records provided by English Heritage and Cadw are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	World Heritage Site Name	Data Source
1	0	On Site	Liverpool - Maritime Mercantile City Buffer Zone	English Heritage
2	255	NW	Liverpool - Maritime Mercantile City	English Heritage

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure GeoInsight**, available from our [website](#). The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell** hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

* This indicates an automatically generated 50m buffer and site.

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

Contact Details

EmapSite

Telephone: 0118 9736883
sales@emapsite.com



British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk



Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 08708 506 506

Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk



Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505



Local Authority

Authority: Liverpool City Council
Phone: 0151 233 3000
Web: <http://www.liverpool.gov.uk/>
Address: Municipal Buildings, Dale Street, Liverpool, L2 2DH

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].

This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with Groundsure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to Groundsure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"Groundsure" means Groundsure Limited, a company registered in England and Wales under number 03421028.

"Groundsure Materials" means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

"Services" means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested Groundsure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from Groundsure and on the website (www.Groundsure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 Groundsure agrees to provide the Services in accordance with the Contract.

2.2 Groundsure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure. Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 Groundsure shall charge and the Client shall pay fees at the rate and

frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.

6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or

subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.

7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

8 Groundsure's right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

- (a) supplied to the Client's specification(s) and in any event
- (b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and

(ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © Groundsure Limited June 2013



EmapSite

Masdar House,
Eversley, RG27 0RP

Report Reference: EMS-312700_421709

Your Reference: EMS_312700_421709

Report Date 3 Jul 2015

Report Delivery Email - pdf
Method:

Groundsure Geoinsight

Address: New Chinatown, Great George Street, Liverpool, L1 5ET,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geoinsight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Geoinsight



Groundsure Geoinsight

Address: New Chinatown, Great George Street, Liverpool, L1 5ET,
Date: 3 Jul 2015
Reference: EMS-312700_421709
Client: EmapSite

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 24-Jun-2009
Grid Reference: 335138,389344
Site Size: 1.93ha

Contents Page

Overview of Findings.....	5
1 Geology.....	8
1.1 Artificial Ground Map.....	8
1 Geology.....	9
1.1 Artificial Ground.....	9
1.1.1 Artificial/ Made Ground.....	9
1.1.2 Permeability of Artificial Ground.....	9
1.2 Superficial Deposits and Landslips Map.....	10
1.2 Superficial Deposits and Landslips.....	11
1.2.1 Superficial Deposits/ Drift Geology.....	11
1.2.2 Permeability of Superficial Ground.....	11
1.2.3 Landslip.....	11
1.2.4 Landslip Permeability.....	11
1.3 Bedrock and Faults Map.....	12
1.3 Bedrock, Solid Geology & Faults.....	13
1.3.1 Bedrock/ Solid Geology.....	13
1.3.2 Permeability of Bedrock Ground.....	13
1.3.3 Faults.....	13
1.4 Radon Data.....	14
1.4.1 Radon Affected Areas.....	14
1.4.2 Radon Protection.....	14
2 Ground Workings Map.....	15
2 Ground Workings.....	16
2.1 Historical Surface Ground Working Features derived from Historical Mapping.....	16
2.2 Historical Underground Working Features derived from Historical Mapping.....	16
2.3 Current Ground Workings.....	19
3 Mining, Extraction & Natural Cavities Map.....	20
3 Mining, Extraction & Natural Cavities.....	21
3.1 Historical Mining.....	21
3.2 Coal Mining.....	21
3.3 Johnson Poole and Bloomer.....	21
3.4 Non-Coal Mining.....	22
3.5 Non-Coal Mining Cavities.....	22
3.6 Natural Cavities.....	22
3.7 Brine Extraction.....	22
3.8 Gypsum Extraction.....	22
3.9 Tin Mining.....	23
3.10 Clay Mining.....	23
4 Natural Ground Subsidence.....	24
4.1 Shrink-Swell Clay Map.....	24
4.2 Landslides Map.....	25
4.3 Ground Dissolution Soluble Rocks Map.....	26
4.4 Compressible Deposits Map.....	27
4.5 Collapsible Deposits Map.....	28
4.6 Running Sand Map.....	29
4 Natural Ground Subsidence.....	30
4.1 Shrink-Swell Clays.....	30
4.2 Landslides.....	30
4.3 Ground Dissolution of Soluble Rocks.....	30

4.4 Compressible Deposits.....	31
4.5 Collapsible Deposits.....	31
4.6 Running Sands.....	31
5 Borehole Records Map.....	32
5 Borehole Records.....	33
6 Estimated Background Soil Chemistry.....	36
7 Railways and Tunnels Map.....	37
7 Railways and Tunnels.....	38
7.1 Tunnels	38
7.2 Historical Railway and Tunnel Features	38
7.3 Historical Railways.....	42
7.4 Active Railways.....	43
7.5 Railway Projects.....	43

Overview of Findings

The Groundsure Geoinsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	Yes
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	Yes
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	Yes
1.4 Radon data	1.4.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

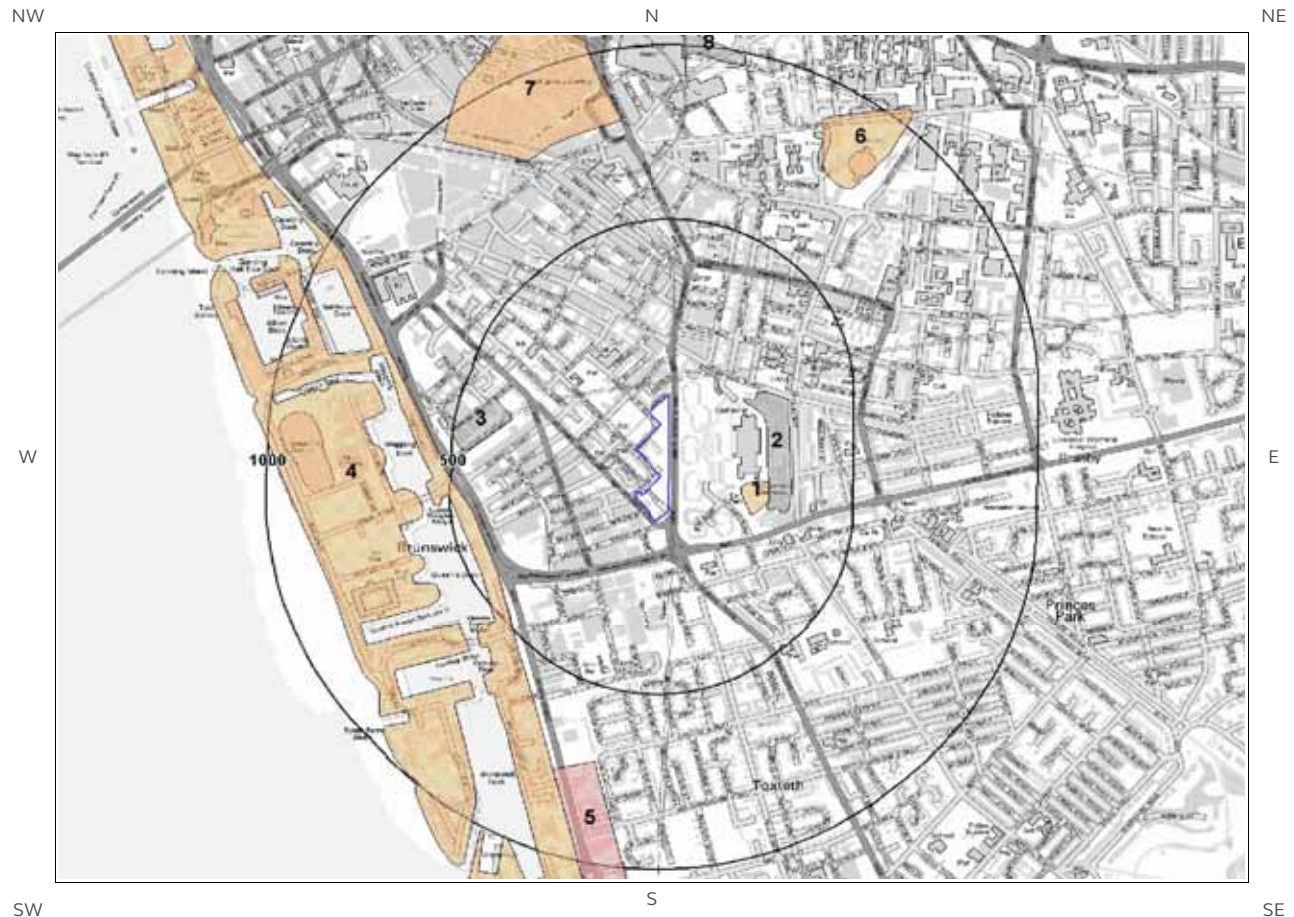
Section 2:Ground Workings	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	6	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	2	10	16	15	28
2.3 Current Ground Workings	0	0	0	1	1

Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	3	1	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0
Section 4: Natural Ground Subsidence	On-site				
4.1 Shrink Swell Clay	Very Low				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Negligible				
4.5 Collapsible Deposits	Very Low				
4.6 Running Sand	Very Low				
Section 5: Borehole Records	On-site	0-50m	51-250		
5 BGS Recorded Boreholes	0	10	51		
Section 6: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	2	0	6		
Section 7: Railways and Tunnels	On-site	0-50m	51-250	251-500	
7.1 Tunnels	0	1	3	Not Searched	
7.2 Historical Railway and Tunnel Features	6	49	46	Not Searched	
7.3 Historical Railways	0	1	0	Not Searched	
7.4 Active Railways	0	2	6	Not Searched	

Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

1 Geology




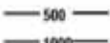




1.1 Artificial Ground Map



Artificial Ground Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.

	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground

1 Geology

1.1 Artificial Ground

1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:096

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

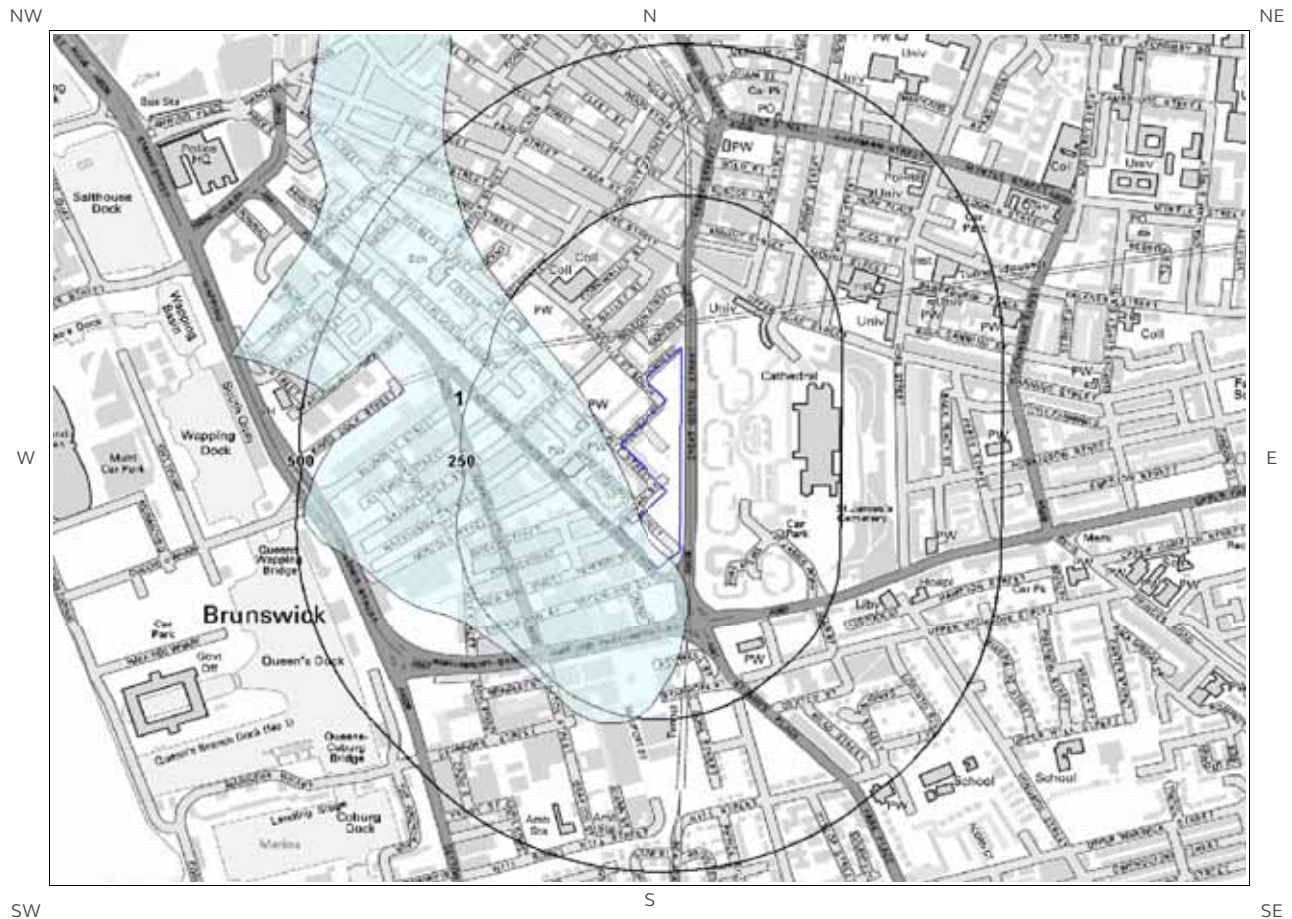
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	195.0	E	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	200.0	E	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
3	347.0	W	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
4	424.0	W	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

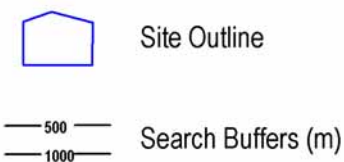
1.2 Superficial Deposits and Landslips Map



Superficial Deposits and Landslips
Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



1.2 Superficial Deposits and Landslips

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD	TILL, DEVENSAN	CLAY, SANDY, GRAVELLY, COBBLY [UNLITHIFIED DEPOSITS CODING SCHEME]

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Low

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

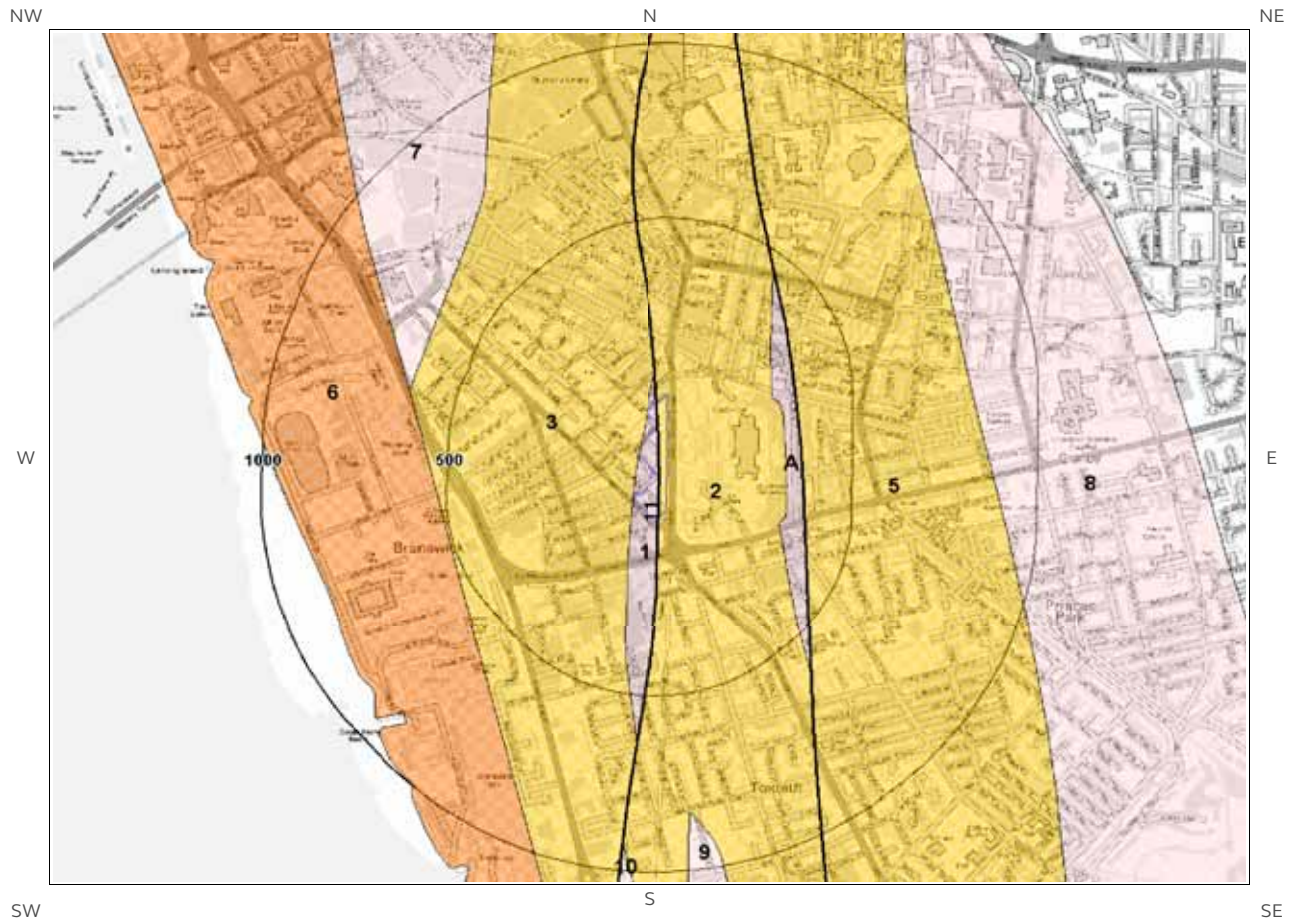
1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site** boundary? No

Database searched and no data found.

* This includes an automatically generated 50m buffer zone around the site

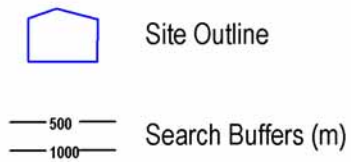
1.3 Bedrock and Faults Map



Bedrock and Faults Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:096

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	TPSF-SIMS	Tarporley Siltstone Formation - Siltstone, Mudstone And Sandstone	Anisian / Olenekian
2	0.0	On Site	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian /
3	0.0	On Site	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian /
4A	280.0	E	TPSF-SIMS	Tarporley Siltstone Formation - Siltstone, Mudstone And Sandstone	Anisian / Olenekian
5	343.0	E	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian /

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site* boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Mixed	High	Moderate

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
11	0.0	On Site	FAULT	Fault, inferred, displacement unknown
12A	343.0	E	FAULT	Fault, inferred, displacement unknown

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

* This includes an automatically generated 50m buffer zone around the site

1.4 Radon Data

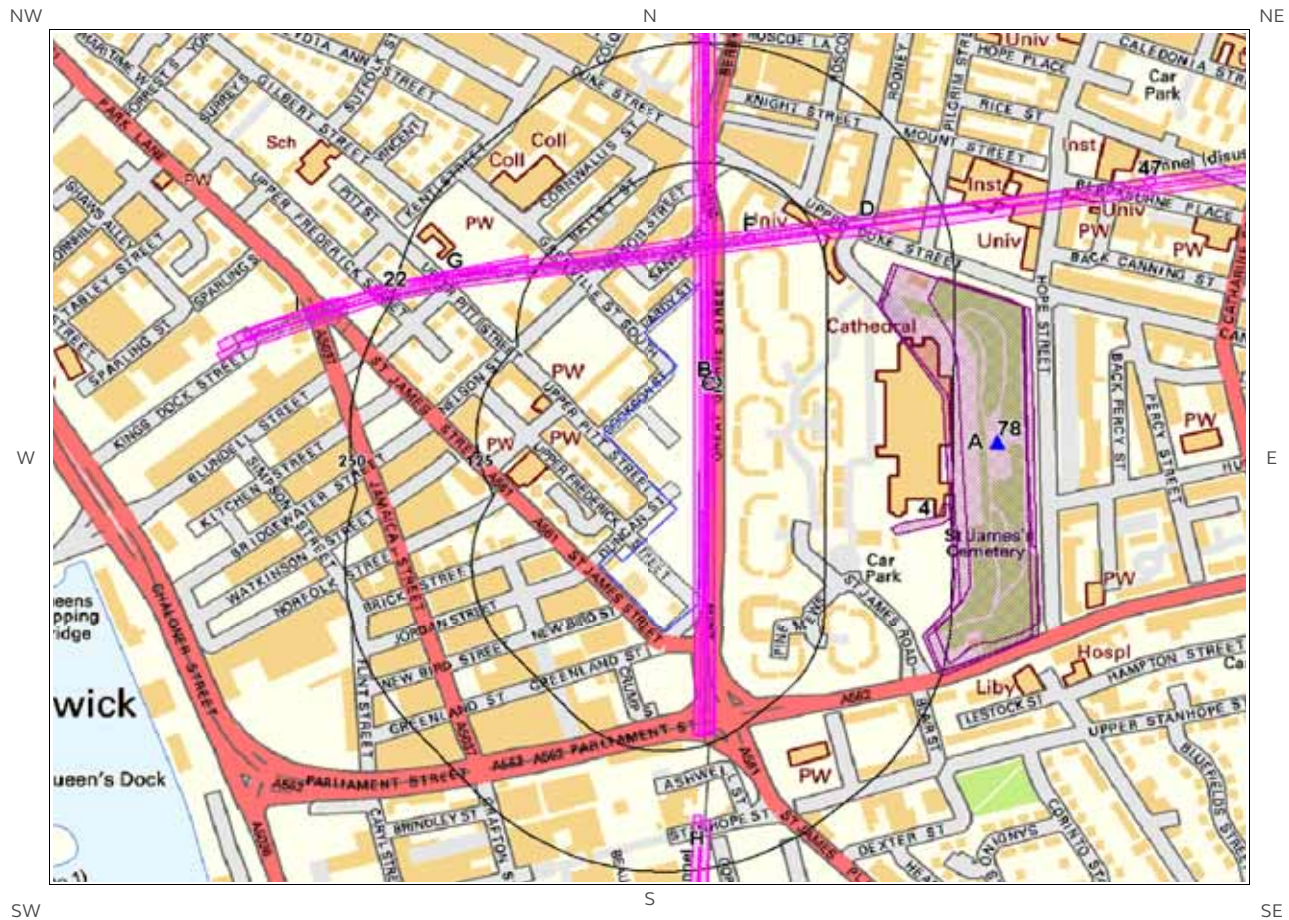
1.4.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level

1.4.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary





2 Ground Workings Map



Ground Workings Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.

-  Site Outline
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings
-  Search Buffers (m)
125
250

2 Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
1A	175.0	E	335420 389349	Cemetery	1906
2A	175.0	E	335420 389349	Cemetery	1938
3A	179.0	E	335428 389338	Cemetery	1890
4	190.0	E	335405 389294	Unspecified Ground Workings	1956
5A	225.0	E	335455 389333	Cemetery	1965
6A	225.0	E	335455 389333	Cemetery	1956

2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
7B	0.0	On Site	333435 389680	Tunnel	1938
8B	0.0	On Site	333429 389679	Tunnel	1906
9C	4.0	E	335183 389505	Tunnel	1988
10C	4.0	E	335183 389505	Tunnel	1965

ID	Distance (m)	Direction	NGR	Use	Date
11C	4.0	E	335183 389505	Tunnel	1975
12	6.0	E	335183 389505	Tunnel	1956
13E	28.0	N	335266 389586	Tunnel	1906
14D	33.0	N	335878 389685	Tunnel	1956
15D	33.0	N	335878 389685	Disused Tunnel	1975
16D	33.0	N	335878 389685	Disused Tunnel	1988
17D	33.0	N	335878 389685	Tunnel	1965
18E	38.0	N	335267 389597	Tunnel	1938
19F	61.0	NE	335220 389587	Unspecified Shaft	1988
20F	61.0	NE	335220 389587	Unspecified Shaft	1975
21F	61.0	NE	335220 389587	Unspecified Shaft	1965
22	131.0	NW	334845 389525	Tunnel	1966
23G	134.0	NW	334921 389549	Tunnel	1956
24G	134.0	NW	334921 389549	Tunnel	1949
25G	156.0	W	334906 389541	Tunnel	1938
26G	156.0	W	334906 389541	Tunnel	1909
27G	156.0	W	334906 389541	Tunnel	1925
28H	194.0	S	335165 388899	Tunnel	1924
29H	194.0	S	335165 388899	Tunnel	1906
30H	194.0	S	335165 388899	Tunnel	1938
31H	201.0	S	335172 388897	Tunnel	1975
32H	201.0	S	335172 388897	Tunnel	1956
33H	201.0	S	335172 388897	Tunnel	1965
34H	201.0	S	335172 388897	Tunnel	1988
35I	285.0	NW	334771 389503	Tunnel	1909
36I	285.0	NW	334771 389503	Tunnel	1938
37I	285.0	NW	334771 389503	Tunnel	1925
38I	289.0	NW	334767 389502	Tunnel	1949
39I	289.0	NW	334767 389502	Tunnel	1956

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	407.0	S	335163 388693	Tunnel	1956
Not shown	407.0	S	335163 388693	Tunnel	1965
Not shown	407.0	S	335163 388693	Tunnel	1975
Not shown	407.0	S	335163 388693	Tunnel	1988
Not shown	407.0	S	335155 388692	Tunnel	1924
Not shown	407.0	S	335155 388692	Tunnel	1938
Not shown	407.0	S	335155 388692	Tunnel	1906
47	450.0	E	335616 389646	Unspecified Shaft	1965
Not shown	459.0	N	335077 390077	Tunnel	1989
Not shown	474.0	N	335071 390085	Tunnel	1975
Not shown	590.0	S	335154 388517	Tunnel	1965
Not shown	590.0	S	335154 388517	Tunnel	1956
Not shown	590.0	S	335154 388517	Tunnel	1975
Not shown	590.0	S	335154 388517	Tunnel	1988
Not shown	592.0	S	335147 388514	Tunnel	1924
Not shown	592.0	S	335147 388514	Tunnel	1938
Not shown	592.0	S	335147 388514	Tunnel	1906
Not shown	603.0	N	334053 390146	Railway Tunnel	1973
Not shown	643.0	N	335210 390415	Tunnel	1989
Not shown	666.0	N	334054 390147	Railway Tunnel	1967
Not shown	694.0	N	333592 389800	Tunnel	1890
Not shown	705.0	N	334100 390196	Tunnel	1938
Not shown	705.0	N	334100 390196	Tunnel	1909
Not shown	743.0	S	335143 388338	Tunnel	1965
Not shown	743.0	S	335143 388338	Tunnel	1988
Not shown	743.0	S	335143 388338	Tunnel	1956
Not shown	743.0	S	335143 388338	Tunnel	1975
Not shown	746.0	S	335138 388333	Tunnel	1906
Not shown	746.0	S	335138 388333	Tunnel	1938

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	746.0	S	335138 388333	Tunnel	1924
Not shown	930.0	E	336418 389754	Tunnel	1925
Not shown	930.0	E	336418 389754	Tunnel	1906
Not shown	930.0	E	336418 389754	Tunnel	1938
Not shown	957.0	N	335425 390478	Tunnel	1989
Not shown	957.0	N	335425 390478	Tunnel	1975
Not shown	981.0	NE	335800 390353	Tunnel	1968
Not shown	981.0	NE	335931 390313	Tunnel	1975
Not shown	981.0	NE	335931 390313	Tunnel	1989

2.3 Current Ground Workings

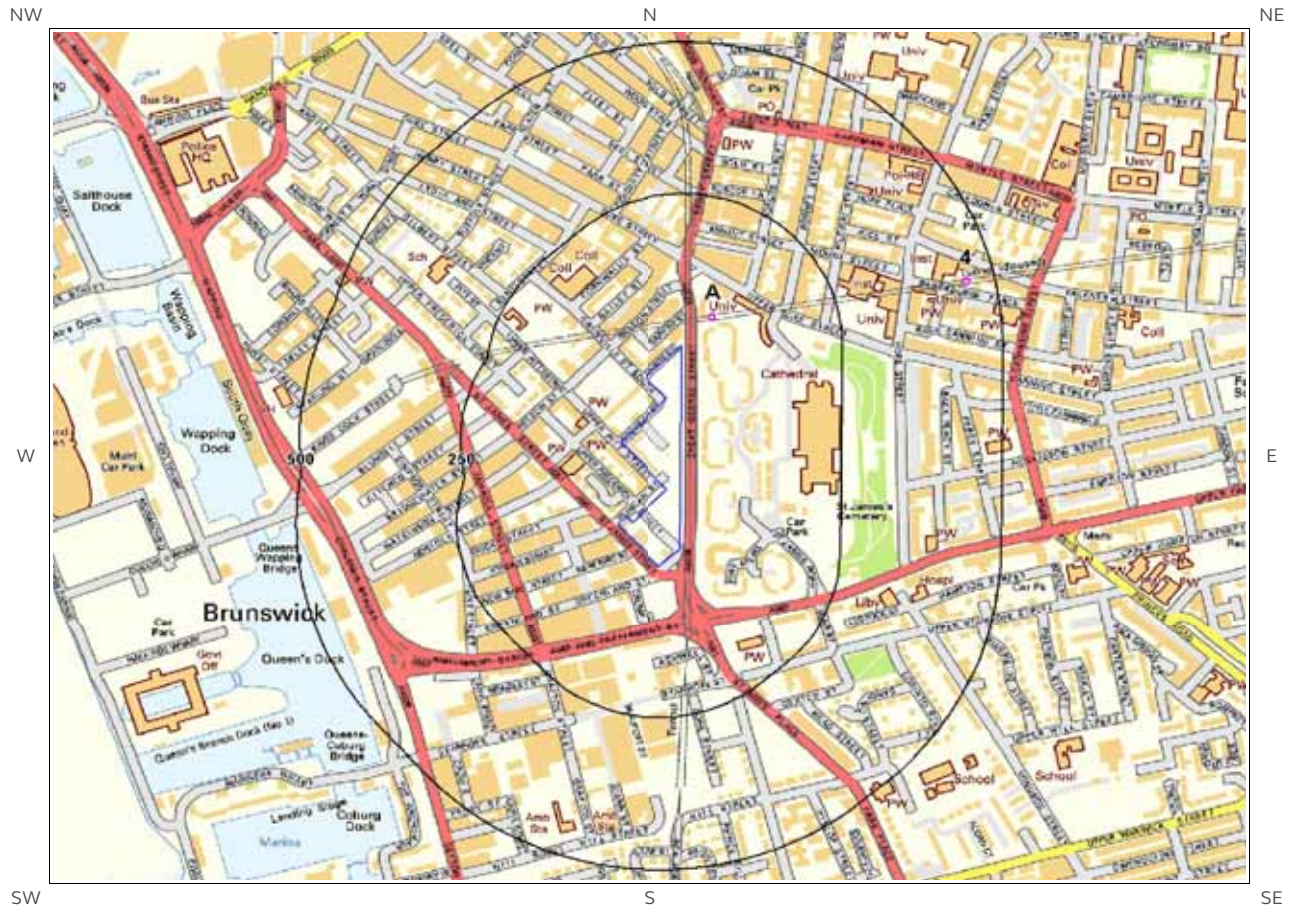
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
78	293.0	E	335465 389375	Sandstone	Old Park	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	922.0	SE	335655 388415	Sandstone	Park Road	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend

Mapping sourced from **Ordnance Survey**

© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



3 Mining, Extraction & Natural Cavities

3.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
1A	61.0	NE	335220 389587	Unspecified Shaft	1965
2A	61.0	NE	335220 389587	Unspecified Shaft	1988
3A	61.0	NE	335220 389587	Unspecified Shaft	1975
4	450.0	E	335616 389646	Unspecified Shaft	1965

3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.10 Clay Mining

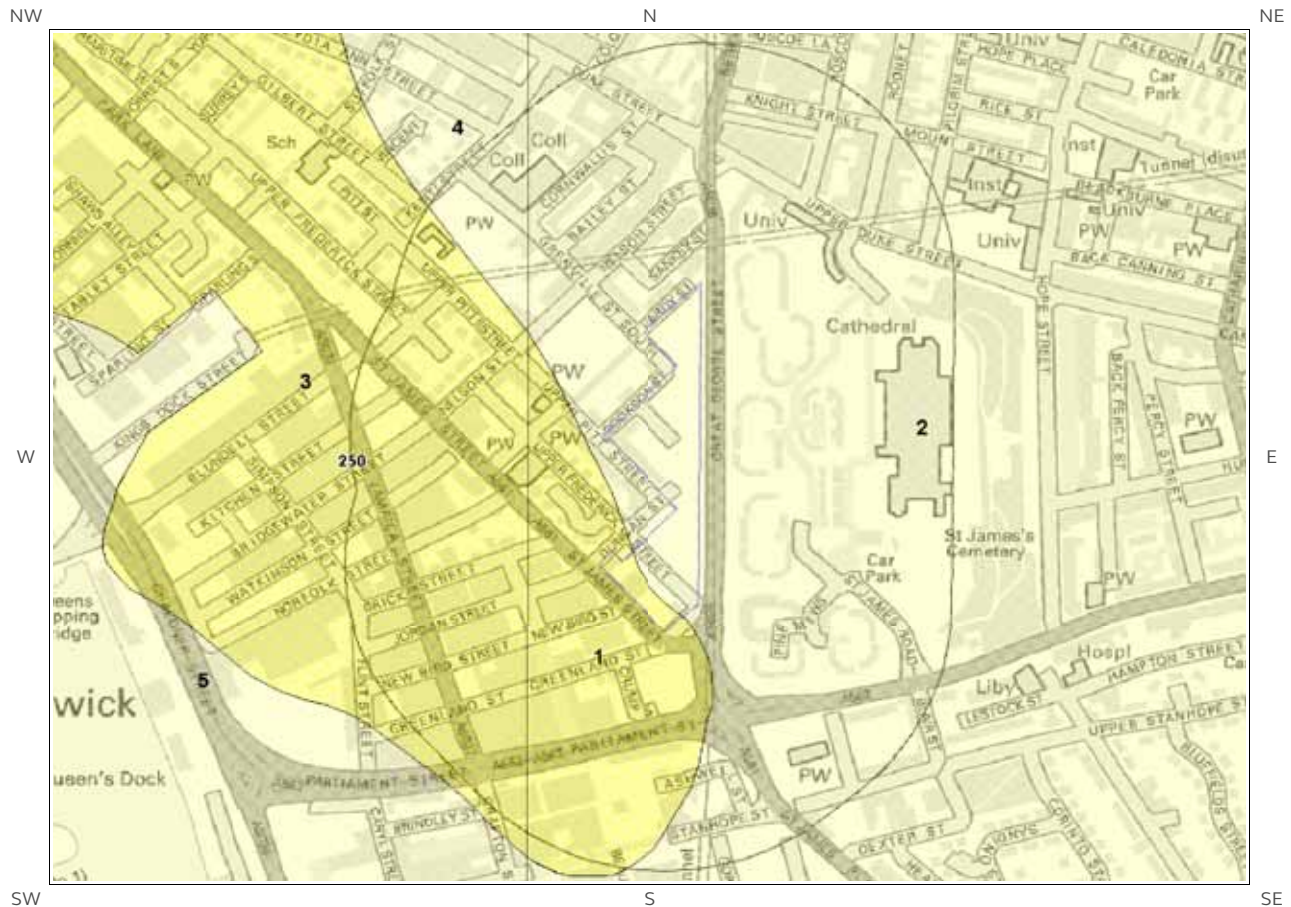
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

4 Natural Ground Subsidence

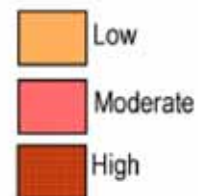
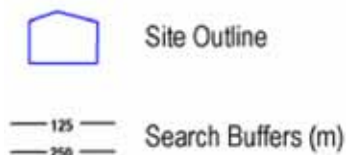
4.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



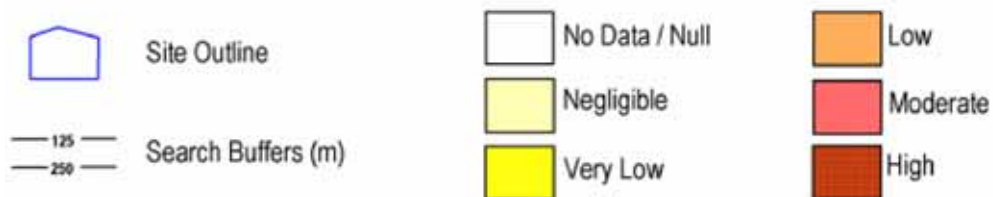
4.2 Landslides Map



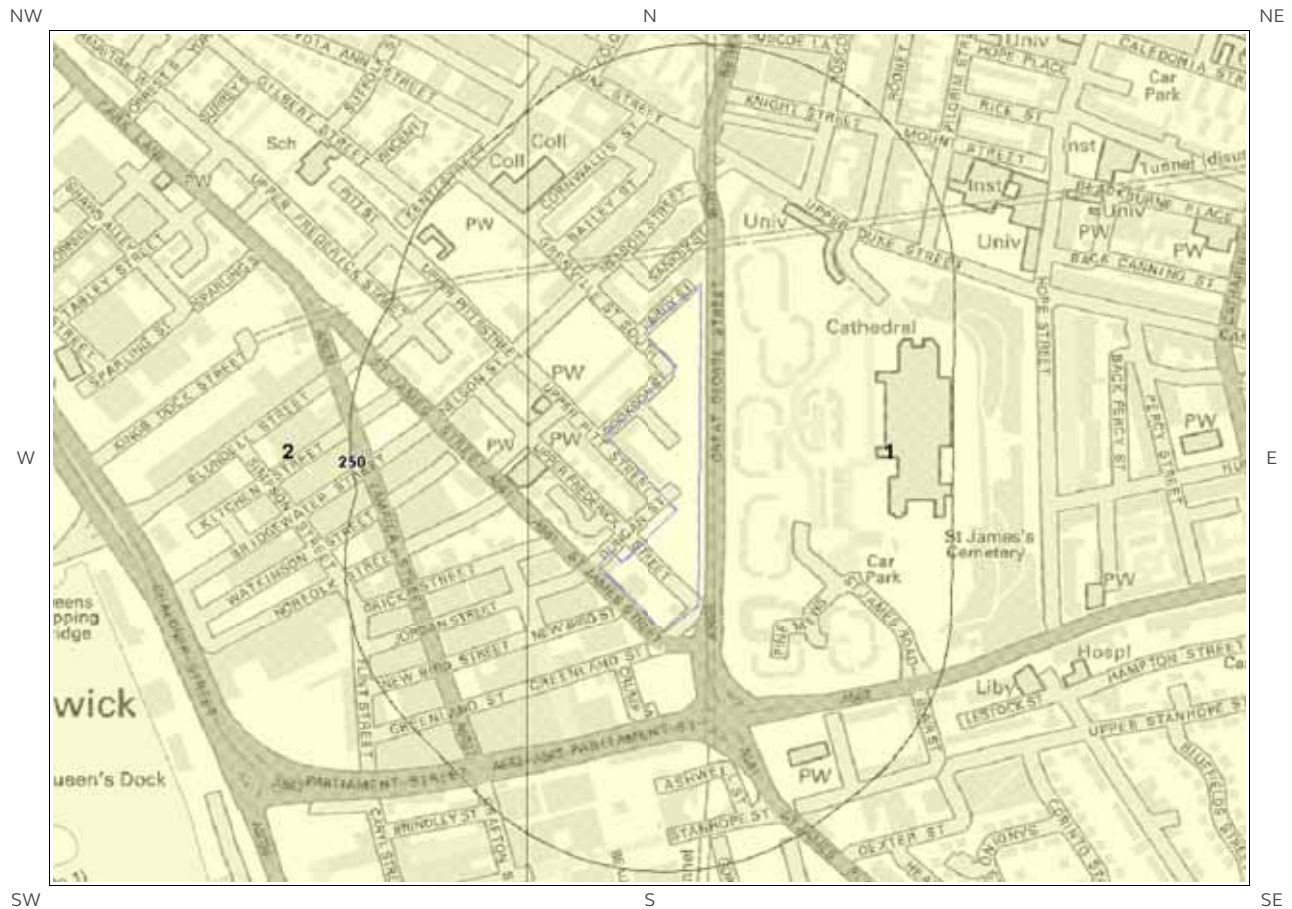
Landslides Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



4.3 Ground Dissolution Soluble Rocks Map






Ground Dissolution
Soluble Rocks Legend

Mapping
sourced from
**Ordnance
Survey**

© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.

 Site Outline
 Search Buffers (m)
125
250

 No Data / Null
 Negligible
 Very Low

 Low
 Moderate
 High

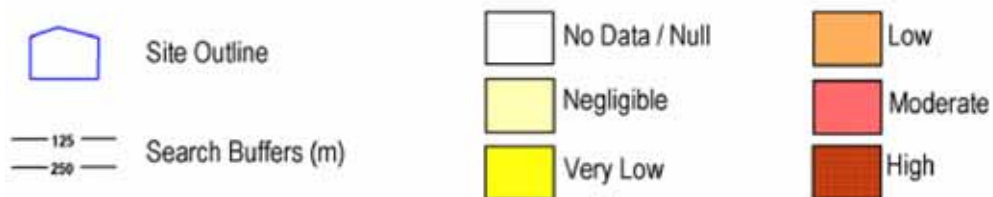
4.4 Compressible Deposits Map



Compressible Deposits Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



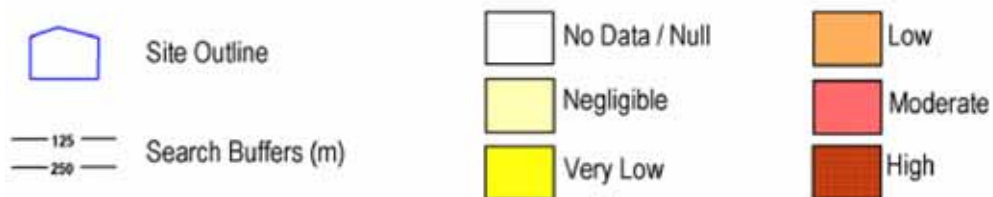
4.5 Collapsible Deposits Map



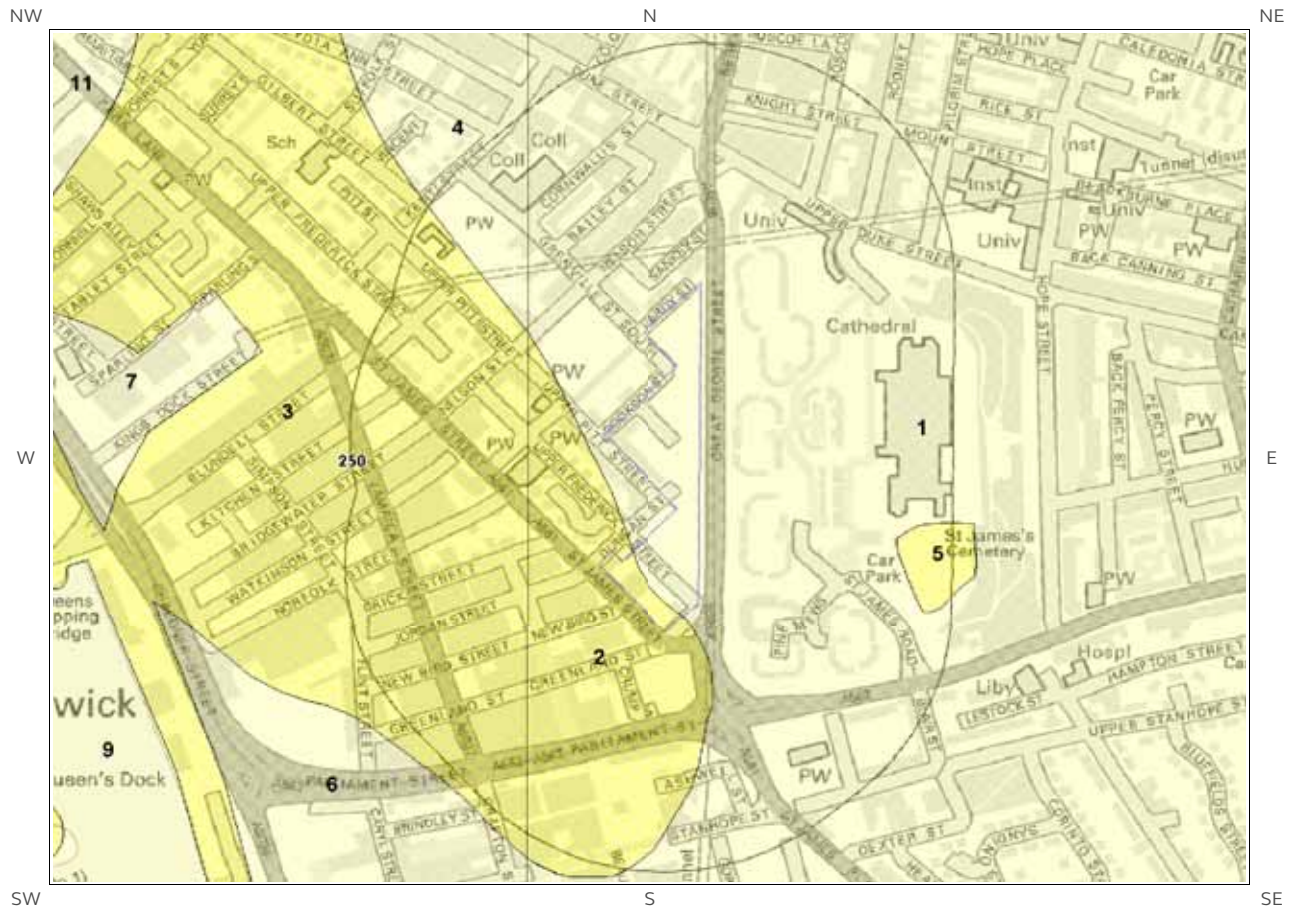
Collapsible Deposits Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



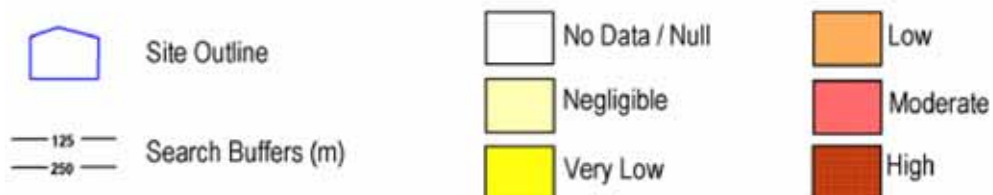
4.6 Running Sand Map



Running Sand Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site** boundary? Very Low

4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

4.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This includes an automatically generated 50m buffer zone around the site

4.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.

4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

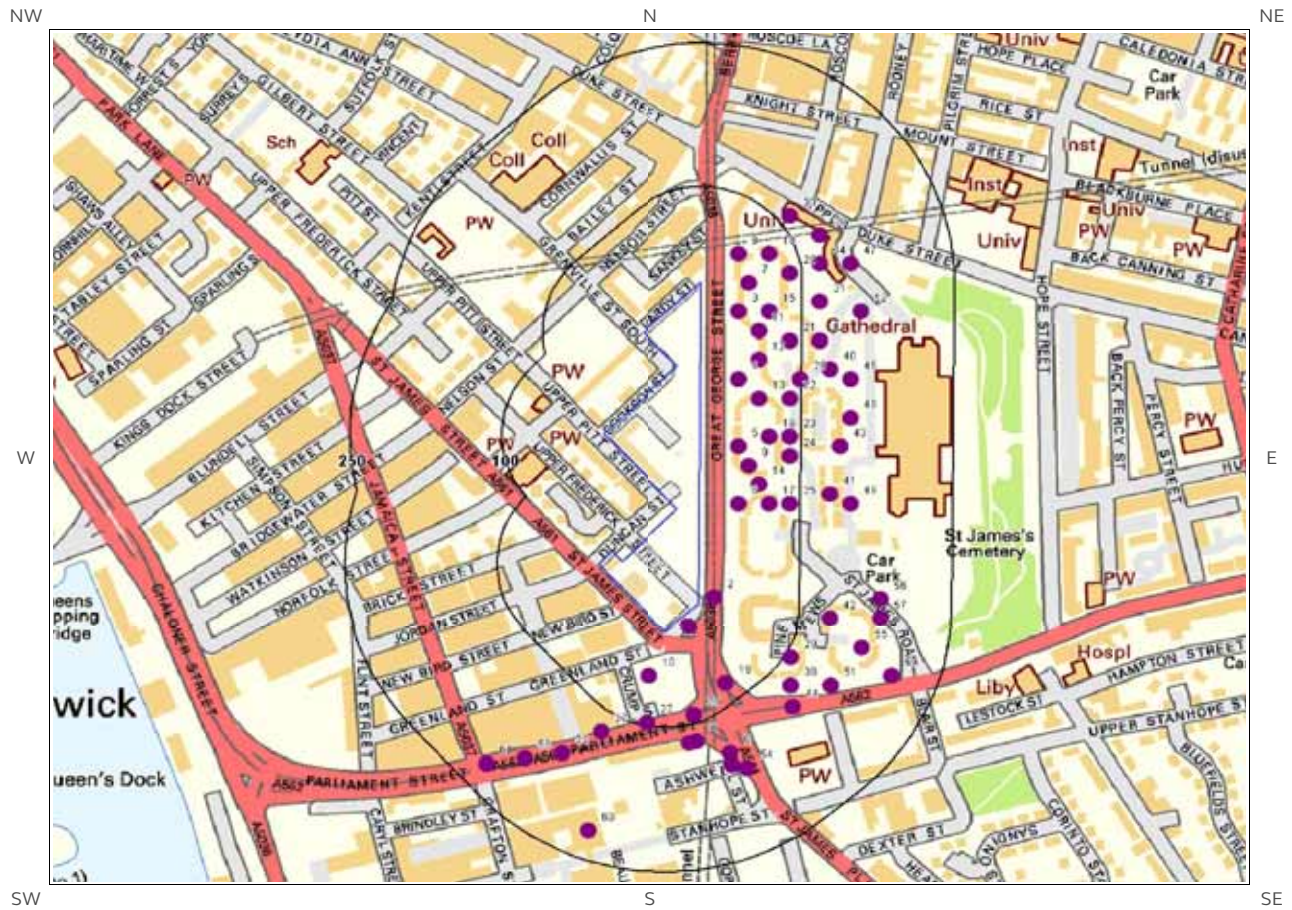
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

4.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

5 Borehole Records Map



Borehole Records Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.



5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

61

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	11.0	SE	335160 389182	SJ38NE122	-1.0	LIVERPOOL INNER R RD 49
2	16.0	E	335186 389212	SJ38NE123	-1.0	LIVERPOOL INNER R RD 50
3	37.0	E	335210 389510	SJ38NE250	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 41
4	38.0	E	335210 389440	SJ38NE252	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 43
5	39.0	E	335210 389370	SJ38NE255	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 46
6	39.0	E	335210 389310	SJ38NE225	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 15
7	47.0	E	335220 389540	SJ38NE248	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 39
8	47.0	NE	335210 389570	SJ38NE247	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 38
9	49.0	E	335220 389350	SJ38NE226	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 16
10	50.0	S	335120 389130	SJ38NE133	100.0	GREENLAND STREET LIVERPOOL
11	57.0	E	335230 389490	SJ38NE214	-1.0	LIVERPOOL ANGLICAN CATHEDRAL 3A
12	58.0	E	335230 389460	SJ38NE251	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 42
13	58.0	E	335230 389420	SJ38NE253	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 44
14	59.0	E	335230 389330	SJ38NE227	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 17
15	67.0	E	335240 389510	SJ38NE249	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 40
16	68.0	E	335240 389380	SJ38NE254	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 45
17	69.0	E	335240 389310	SJ38NE228	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 18
18	73.0	NE	335240 389570	SJ38NE246	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 37
19	80.0	SE	335196 389123	SJ38NE121	-1.0	LIVERPOOL INNER R RD 48
20	87.0	E	335260 389550	SJ38NE244	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 35
21	88.0	E	335260 389480	SJ38NE243	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 34
22	88.0	E	335260 389420	SJ38NE242	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 33

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
23	88.0	E	335260 389380	SJ38NE241	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 32
24	89.0	E	335260 389360	SJ38NE229	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 20
25	89.0	E	335260 389310	SJ38NE230	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 21
26	91.0	S	335164 389090	SJ38NE118	-1.0	LIVERPOOL INNER R RD 45
27	98.0	S	335118 389081	SJ38NE117	-1.0	LIVERPOOL INNER R RD 44
28	98.0	E	335270 389440	SJ38NE215	-1.0	LIVERPOOL ANGLICAN CATHEDRAL 4
29	105.0	SE	335260 389150	SJ38NE218	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 2
30	111.0	NE	335260 389610	SJ38NE245	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 36
31	117.0	E	335290 389520	SJ38NE212	-1.0	LIVERPOOL ANGLICAN CATHEDRAL 1
32A	118.0	E	335290 389480	SJ38NE213	-1.0	LIVERPOOL ANGLICAN CATHEDRAL 2
33A	118.0	E	335290 389480	SJ38NE239	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 30
34	119.0	E	335290 389560	SJ38NE216	-1.0	LIVERPOOL ANGLICAN CATHEDRAL 5
35B	119.0	S	335167 389062	SJ38NE124	-1.0	LIVERPOOL INNER R RD 51
36B	119.0	S	335160 389060	SJ38NE191	-1.0	PARLIAMENT ST/ST JAMES PL 1
37	122.0	SW	335073 389072	SJ38NE116	-1.0	LIVERPOOL INNER R RD 43
38	124.0	SE	335260 389120	SJ38NE217	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 1
39	127.0	NE	335290 389590	SJ38NE238	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 29
40	128.0	E	335300 389450	SJ38NE240	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 31
41	129.0	E	335300 389320	SJ38NE231	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 22
42	131.0	E	335300 389190	SJ38NE220	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 5
43	139.0	E	335310 389370	SJ38NE233	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 24
44	141.0	SE	335262 389098	SJ38NE119	-1.0	LIVERPOOL INNER R RD 46
45C	142.0	SE	335200 389050	SJ38NE192	-1.0	PARLIAMENT ST/ST JAMES PL 2
46	148.0	E	335320 389440	SJ38NE235	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 26
47	148.0	E	335320 389560	SJ38NE237	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 28
48	148.0	E	335320 389400	SJ38NE234	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 25
49	149.0	E	335320 389310	SJ38NE232	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 23
50C	154.0	SE	335202 389038	SJ38NE125	-1.0	LIVERPOOL INNER R RD 52

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
51	155.0	SE	335300 389120	SJ38NE219	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 4
52	157.0	E	335330 389510	SJ38NE236	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 27
53	163.0	SW	335034 389050	SJ38NE115	-1.0	LIVERPOOL INNER R RD 42
54	164.0	SE	335217 389034	SJ38NE120	-1.0	LIVERPOOL INNER R RD 47
55	166.0	E	335330 389160	SJ38NE221	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 6
56	180.0	E	335350 389210	SJ38NE224	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 9
57	181.0	E	335350 389190	SJ38NE223	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 8
58	192.0	SW	334997 389044	SJ38NW215	-1.0	LIVERPOOL INNER CITY R RD BH41
59	204.0	E	335360 389130	SJ38NE222	-1.0	LIVERPOOL ANGLICAN CATHEDRAL TP 7
60	221.0	S	335060 388970	SJ38NE10/B	-1.0	HIGSONS BREWERY STANHOPE STREET 2
61	223.0	SW	334960 389039	SJ38NW214	-1.0	LIVERPOOL INNER CITY R RD BH40

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#10: scans.bgs.ac.uk/sobi_scans/boreholes/157835

#60: scans.bgs.ac.uk/sobi_scans/boreholes/157709

6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

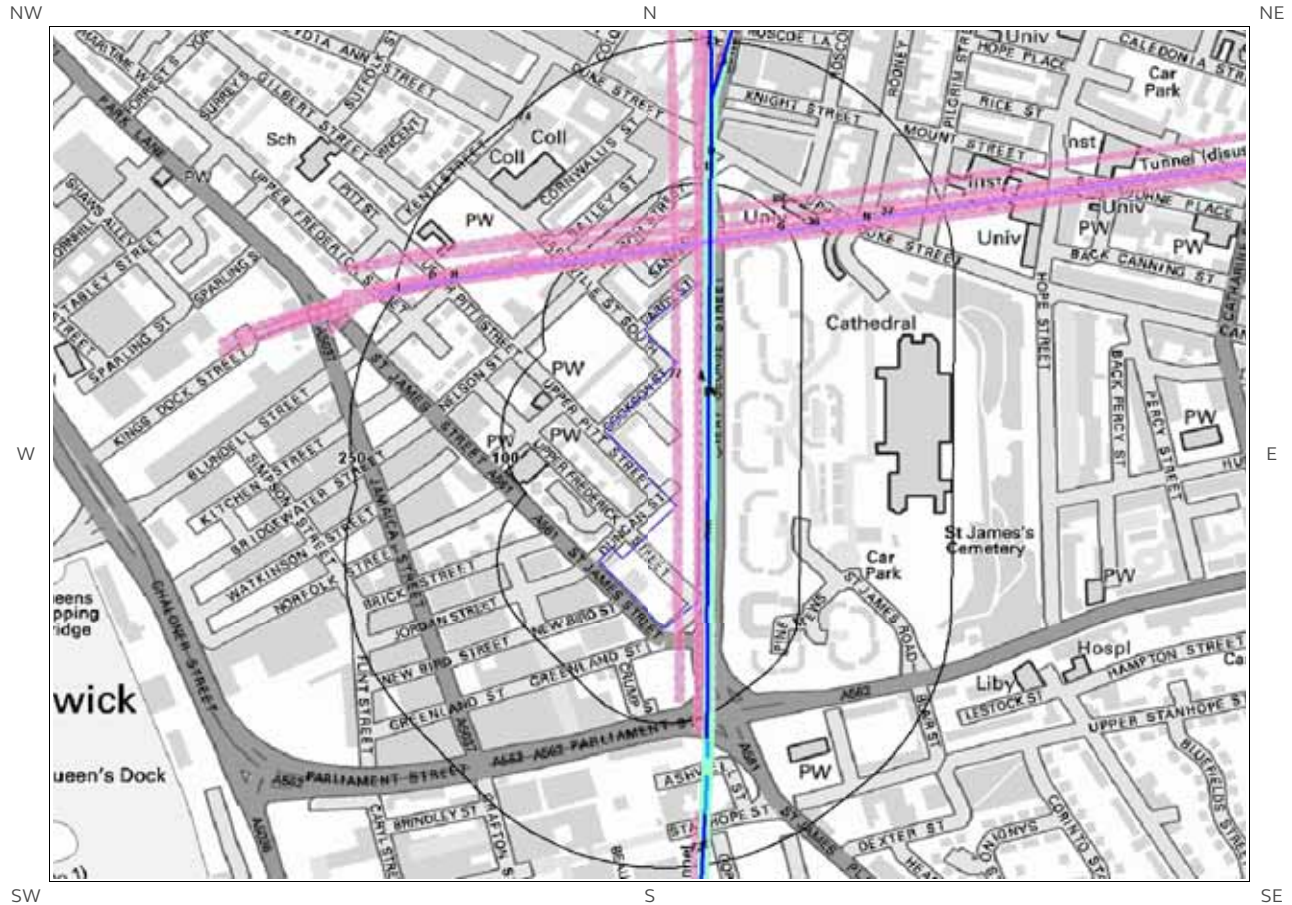
8

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geosight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	100 - 200 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
69.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
115.0	W	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
177.0	S	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
177.0	S	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
223.0	SW	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
223.0	SW	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

7 Railways and Tunnels Map



Railways and Tunnels Legend



© Crown copyright and database rights 2015.
Ordnance Survey license 100035207.
© OpenStreetMapContributors

	Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Railway Tunnel (OS Mapping)		High Speed 2
	Abandoned or Dismantled Railway (OpenStreetMap)		Crossrail 1
	Railway Track (OS Mapping)		Railway and/or Tunnel Feature from Historical Mapping
	Site Outline		
	Search Buffers (m) 250 500		

7 Railways and Tunnels

7.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? Yes

Distance (m)	Direction	Detail
8	E	Railway Tunnel
190	N	Railway Tunnel
190	N	Railway Tunnel
198	S	Railway Tunnel

Any records that have been identified are represented on the Railways and Tunnels Map.

7.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1A	0	On Site	335174 389534	Tunnel	1927
2A	0	On Site	335174 389534	Tunnel	1927

ID	Distance (m)	Direction	NGR	Details	Date
3A	0	On Site	335174 389534	Tunnel	1908
75L	0	On Site	333435 389680	Tunnel	1938
76L	0	On Site	333429 389679	Tunnel	1906
77	0	On Site	335147 389562	Tunnel	1928
4B	4	E	335181 389750	Tunnel	1984
5B	4	E	335181 389750	Tunnel	1984
6B	4	E	335181 389750	Tunnel	1984
7B	4	E	335181 389750	Tunnel	1989
78M	4	E	335183 389505	Tunnel	1967
79M	4	E	335183 389505	Tunnel	1989
80M	4	E	335183 389505	Tunnel	1987
8C	5	E	335179 389279	Tunnel	1983
9C	5	E	335179 389279	Tunnel	1986
10C	5	E	335179 389279	Tunnel	1987
11C	5	E	335180 389279	Tunnel	1993
12C	5	E	335180 389279	Tunnel	1996
13C	5	E	335180 389279	Tunnel	1994
14D	5	E	335182 389750	Tunnel	1998
15D	5	E	335182 389750	Tunnel	1993
16D	5	E	335182 389750	Tunnel	1996
17D	5	E	335182 389750	Tunnel	1993
18B	5	E	335182 389750	Tunnel	1962
19B	5	E	335182 389750	Tunnel	1953
20C	5	E	335180 389286	Tunnel	1990
21E	5	E	335180 389286	Tunnel	1977
22E	5	E	335180 389286	Tunnel	1953
23E	5	E	335180 389286	Tunnel	1965
24E	5	E	335180 389286	Tunnel	1959

ID	Distance (m)	Direction	NGR	Details	Date
25A	6	E	335183 389536	Tunnel	1967
26A	6	E	335183 389536	Tunnel	1953
81	6	E	335183 389505	Tunnel	1956
82O	28	N	335266 389586	Tunnel	1906
27F	31	N	335291 389594	Tunnel	1927
28F	31	N	335291 389594	Tunnel	1927
29F	31	N	335291 389594	Tunnel	1908
83N	33	N	335878 389685	Tunnel	1956
84N	33	N	335878 389685	Tunnel	1967
85N	33	N	335878 389685	Disused Tunnel	1989
86N	33	N	335878 389685	Disused Tunnel	1987
30G	35	N	335250 389593	Disused Tunnel	1998
31G	35	N	335250 389593	Disused Tunnel	1996
32G	35	N	335250 389593	Disused Tunnel	1993
33G	35	N	335250 389593	Disused Tunnel	1993
34G	36	N	335250 389593	Tunnel	1953
35G	36	N	335250 389593	Tunnel	1962
36	36	N	335424 389617	Tunnel	1967
37	36	N	335424 389617	Tunnel	1953
38G	37	N	335250 389594	Tunnel	1984
39G	37	N	335250 389594	Tunnel	1984
40G	37	N	335250 389594	Tunnel	1984
41G	37	N	335250 389594	Disused Tunnel	1989
87O	38	N	335267 389597	Tunnel	1938
42	49	N	n/a	Tunnel	1908
88	65	N	335440 389650	Tunnel	1928
43H	130	NW	334925 389541	Tunnel	1962
44H	130	NW	334925 389541	Tunnel	1953
45H	130	NW	334925 389541	Tunnel	1973

ID	Distance (m)	Direction	NGR	Details	Date
46I	130	NW	334924 389541	Disused Tunnel	1993
47I	130	NW	334924 389541	Disused Tunnel	1994
48I	130	NW	334924 389541	Disused Tunnel	1997
49I	130	NW	334924 389541	Disused Tunnel	1996
50H	130	NW	334925 389541	Tunnel	1953
51H	130	NW	334925 389541	Tunnel	1953
52H	130	NW	334924 389541	Disused Tunnel	1988
53H	130	NW	334924 389541	Disused Tunnel	1989
54H	130	NW	334924 389541	Disused Tunnel	1988
55H	130	NW	334924 389541	Disused Tunnel	1992
89I	131	NW	334845 389525	Tunnel	1966
90H	134	NW	334921 389549	Tunnel	1956
91H	134	NW	334921 389549	Tunnel	1949
92P	156	W	334906 389541	Tunnel	1909
93P	156	W	334906 389541	Tunnel	1938
94P	156	W	334906 389541	Tunnel	1925
56J	173	N	335211 389862	Tunnel	1984
57J	183	N	335211 389862	Tunnel	1989
95K	194	S	335165 388899	Tunnel	1924
96K	194	S	335165 388899	Tunnel	1938
97K	194	S	335165 388899	Tunnel	1906
58K	196	S	335173 388901	Tunnel	1968
59K	197	S	335172 388899	Tunnel	1997
60K	197	S	335172 388899	Tunnel	1999
61K	198	S	335172 388899	Tunnel	1953
62K	198	S	335172 388899	Tunnel	1958
63K	198	S	335172 388899	Tunnel	1953
64K	198	S	335173 388899	Tunnel	1953

ID	Distance (m)	Direction	NGR	Details	Date
65K	198	S	335173 388899	Tunnel	1977
66K	198	S	335173 388899	Tunnel	1968
67K	198	S	335173 388899	Tunnel	1958
68K	198	S	335171 388899	Tunnel	1987
69K	198	S	335171 388899	Tunnel	1987
70K	198	S	335171 388899	Tunnel	1985
71K	198	S	335171 388899	Tunnel	1992
72	201	S	335146 388499	Tunnel	1927
98K	201	S	335172 388897	Tunnel	1956
99K	201	S	335172 388897	Tunnel	1987
100K	201	S	335172 388897	Tunnel	1967
101K	201	S	335172 388897	Tunnel	1989
73	225	N	n/a	Tunnel	1908
74	238	NW	334996 389708	Railway Sidings	1996

Any records that have been identified are represented on the Railways and Tunnels Map.

7.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
38	N	Abandoned

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
5	E	Not given	Rail
11	E	Merseyrail Northern Line	Rail
120	S	Not given	Rail
124	S	Not given	Rail
125	S	Not given	Multi Track
159	S	Not given	Multi Track
195	S	Not given	Rail
196	S	Not given	Rail

Note: multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels Map.

7.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Contact Details

emapsite™

EmapSite
Telephone: 0118 9736883
sales@emapsite.com

emapsite™

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk



BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX



The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
<https://www.gov.uk/government/organisations/public-health-england>
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettell Lane
Brierley Hill, West Midlands
DY5 3LH
Tel: +44 (0) 1384 262 000
Email: enquiries.gs@jpb.co.uk
Website: www.jpb.co.uk



Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505
Website: <http://www.ordnancesurvey.co.uk/>



Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website: <http://www1.getmapping.com/>



Peter Brett Associates

Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail: reading@pba.co.uk
Website: <http://www.peterbrett.com/home>



Contact Details



Acknowledgements: Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028]. This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with Groundsure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by Groundsure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by Groundsure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between Groundsure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to Groundsure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"Groundsure" means Groundsure Limited, a company registered in England and Wales under number 03421028.

"Groundsure Materials" means all materials prepared by Groundsure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from Groundsure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by Groundsure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by Groundsure.

"Services" means any Report, Mapping and/or Support Services which Groundsure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested Groundsure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to Groundsure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from Groundsure and on the website (www.Groundsure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 Groundsure agrees to provide the Services in accordance with the Contract.

2.2 Groundsure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of Groundsure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, Groundsure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and Groundsure will have no liability therefor. In addition you acknowledge and agree that Groundsure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 Groundsure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by Groundsure.

Groundsure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by Groundsure. Groundsure's acceptance of an Order shall be binding only when made in writing and signed by Groundsure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to Groundsure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to Groundsure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as Groundsure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable Groundsure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the Groundsure Materials, or use the Groundsure Materials in a manner for which they were not intended. The Client may make the Groundsure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that Groundsure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by Groundsure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by Groundsure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,
(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and
(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by Groundsure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 Groundsure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by Groundsure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to Groundsure in full without deduction, counterclaim or set off within 30 days of the date of Groundsure's invoice or such other period as may be agreed in writing between Groundsure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of Groundsure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and
(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the Groundsure Materials.

6.2 All Intellectual Property in the Groundsure Materials are and shall remain owned by Groundsure or Groundsure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure

acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the Groundsure Materials shall:

- (i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to Groundsure or any third party from the Services;
 - (ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;
 - (iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
 - (iv) not combine the Services with or incorporate such Services into any other information data or service;
 - (v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);
 - (vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and
 - (vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,
- 6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the Groundsure Materials in order to advise the Beneficiary in a professional capacity. However, Groundsure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.
- 6.6 The Client shall procure that any person to whom the Services are made available shall notify Groundsure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of Groundsure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

- (i) any breach of contract, including any deliberate breach of the Contract by Groundsure or its employees, agents or subcontractors;
- (ii) any use made of the Reports, Services, Materials or any part of them; and
- (iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 Groundsure shall not be liable for

- (i) loss of profits;
- (ii) loss of business;
- (iii) depletion of goodwill and/or similar losses;
- (iv) loss of anticipated savings;
- (v) loss of goods;
- (vi) loss of contract;
- (vii) loss of use;
- (viii) loss or corruption of data or information;
- (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;
- (xi) loss or damage that arise as a result of the use of all or part of the Groundsure Materials in breach of the Contract;
- (xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the Groundsure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;
- (xiii) loss or damage to a computer, software, modem, telephone or other property; and
- (xiv) loss or damage caused by a delay or loss of use of Groundsure's internet ordering service.

7.5 Groundsure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 Groundsure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of Groundsure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against Groundsure in relation to the Services or other matters arising pursuant to the Contract.

8 Groundsure's right to suspend or terminate

8.1 If Groundsure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, Groundsure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 Groundsure shall be entitled to terminate the Contract immediately on written notice in the event that:

- (i) the Client fails to pay any sum due to Groundsure within 30 days of the Payment Date; or
- (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
- (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
- (iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

- (i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon Groundsure's acceptance of the Order; and
- (ii) the Reports and/or Mapping provided under this Contract are
 - (a) supplied to the Client's specification(s) and in any event
 - (b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

- (i) Groundsure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in Groundsure's possession or control; and
- (ii) the Client shall pay to Groundsure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay Groundsure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

- (i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;
- (ii) comply with such of Groundsure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and
- (iii) promptly report to Groundsure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through Groundsure.

12.3 Groundsure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of Groundsure.

12.4 No failure on the part of Groundsure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 Groundsure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond Groundsure's reasonable control.

In the event that Groundsure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then Groundsure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 Groundsure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at Groundsure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law



A P P E N D I X H

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com



DO NOT SCALE

NOTES:

 **Window Sample Borehole**

 **Trial Pit**

 **Rotary Borehole**



GRM Development Solutions Ltd

Laurus House, First Ave, Centrum 100,

Burton-on-Trent, Staffordshire

Tel: 01283 551 249 Fax: 01283 211 968

mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Proposed Exploratory Hole Plan

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© **GRM Development Solutions Ltd**

© Crown Copyright. AL 100014100

- Former Residential Properties**
- Former Orthopaedic Appliance Factory**



DO NOT SCALE
NOTES:

Proposed Exploratory Hole (Not Including Rotary)



GRM Development Solutions Ltd
Laurus House, First Ave, Centrum 100,
Burton-on-Trent, Staffordshire
Tel: 01283 551 249 Fax: 01283 211 968
mail@grm-uk.com www.grm-uk.com

CLIENT:

Chinatown Developments Ltd

PROJECT:

New Chinatown, Liverpool

TITLE:

Proposed Exploratory Hole Plan

SCALE@SIZE :

NTS

ISSUE:

FINAL

DESIGN/DRAWN :

AS

DATE:

07/2015

PROJECT No:

P7076

DRAWING No:

© **GRM Development Solutions Ltd**
© Crown Copyright. AL 100014100



A P P E N D I X I

**GRM Development Solutions provides
multi-disciplinary consultancy services, UK-wide:**

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

Tel: 01283 551249

info@grm-uk.com

Fax: 01283 211968

www.grm-uk.com

GRM Chemical Analysis Suite Breakdown

Standard Soil Suite

Arsenic	Cadmium	Total Chromium
Chromium VI	Copper	Lead
Mercury	Nickel	Selenium
Zinc	Total Phenols	Total Cyanide
Acenaphthene	Acenaphthylene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene
Dibenzo(ah)anthracene	Fluoranthene	Fluorene
Indeno(123-cd)pyrene	Naphthalene	Phenanthrene
Pyrene		
Asbestos	pH	Water Soluble Sulphate

Standard Leachate Suite

Arsenic	Cadmium	Total Chromium
Chromium VI	Copper	Lead
Mercury	Nickel	Selenium
Zinc	Total Phenols	Total Cyanide
Acenaphthene	Acenaphthylene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene
Dibenzo(ah)anthracene	Fluoranthene	Fluorene
Indeno(123-cd)pyrene	Naphthalene	Phenanthrene
Pyrene		
Asbestos	pH	Water Soluble Sulphate