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CONSULTING

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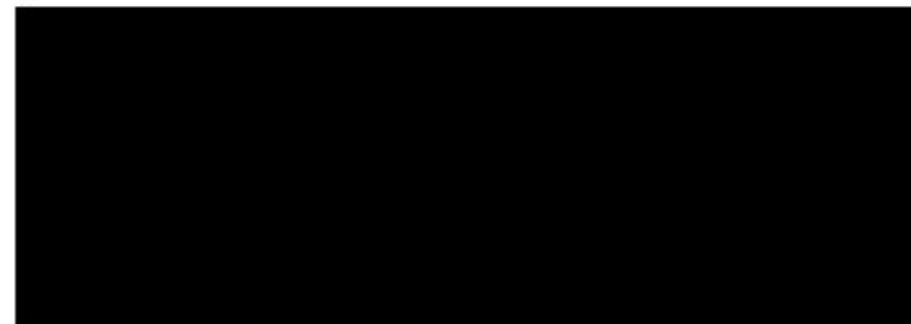
REVISION

CLIENT *ST. JAMES'S PLACE PROPERTY UNIT TRUST*

CLIENT CONTACT

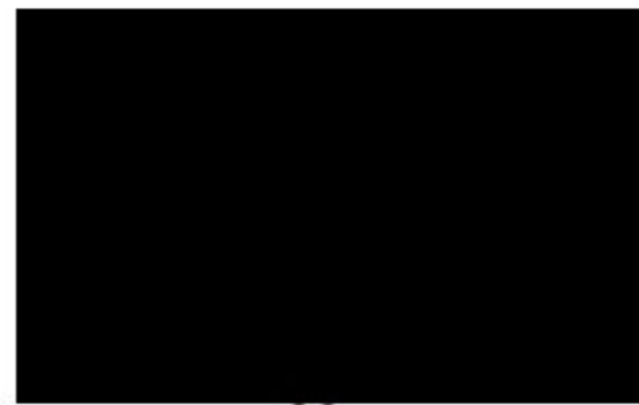
For and Behalf of Groundtech Consulting

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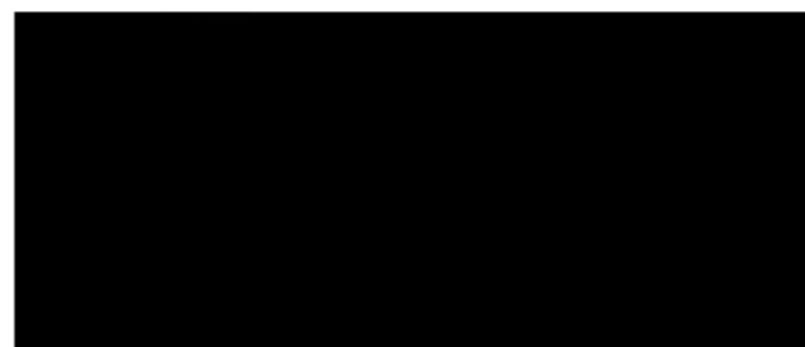
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PLANS

Plan Reference	Revision	Title
19038 01	-	Project Location Plan
19038 02	-	Preliminary Development Constraints Plan
19038 03	-	Illustrative Preliminary CSM

1.0 INTRODUCTION

1.1 Project Objectives

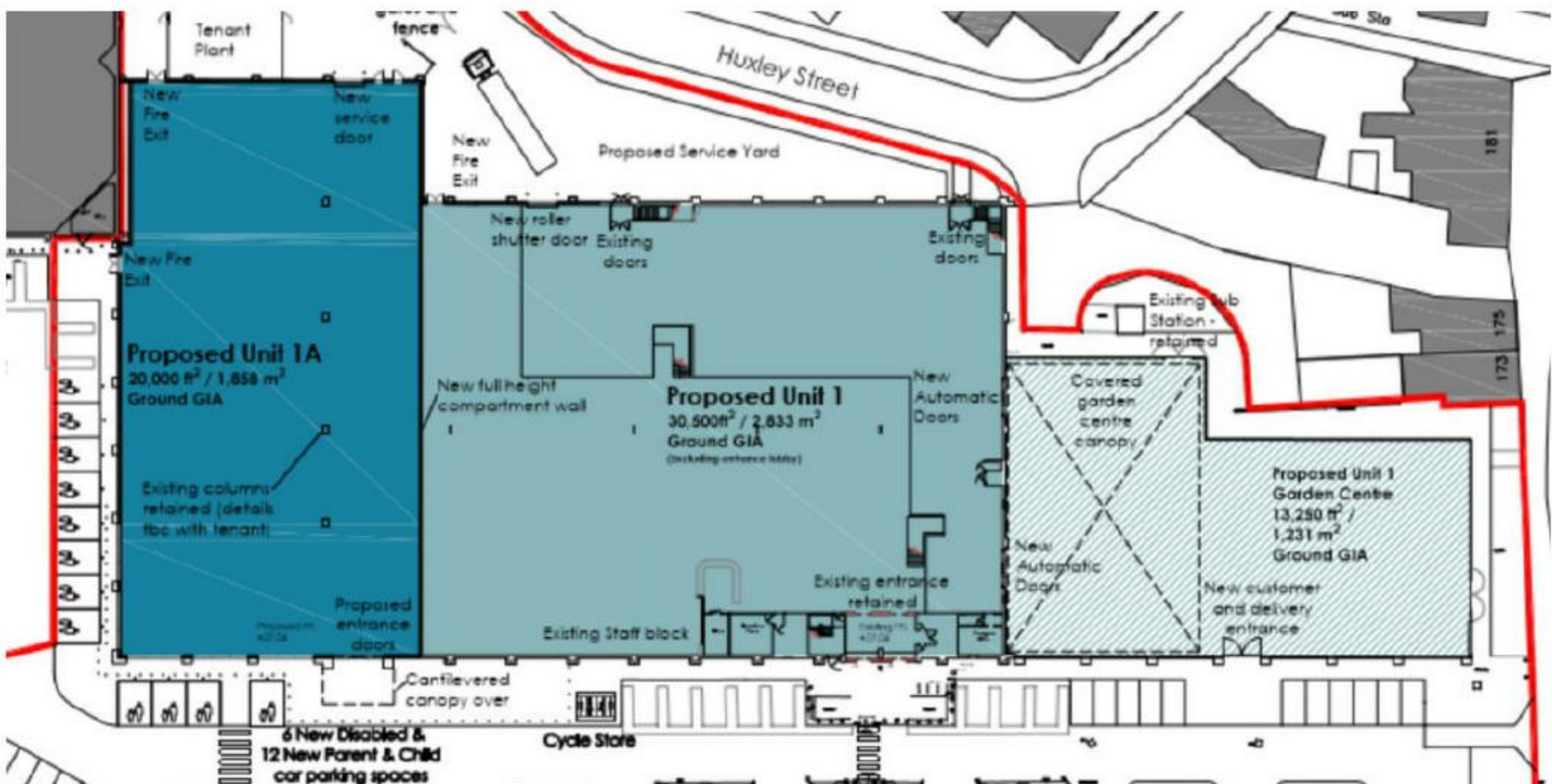
Groundtech Consulting Limited have been instructed by Bell Munro Consulting Limited on behalf of St. James's Place Property Unit Trust to undertake a Preliminary Environmental Risk Assessment (PERA) for a site at Altrincham Retail Park.

The objectives of the PERA were to establish the sites environmental and geotechnical background in order to generate a Conceptual Site Model to identify any potential constraints and linkages which may affect the redevelopment of the site.

The report has been undertaken to fulfil the requirements of a preliminary risk assessment in accordance with CLR11 "Model Procedures for the Management of Land Contamination".

1.2 Proposed Development

The proposed development is commercial and comprises the construction of further units either side of the existing Homebase store. Some additional work is to be done to the externals creating additional parking spaces, A highway access and strip of soft landscaping.



1.3 Limitations

This Preliminary Risk Assessment is based on information obtained from a number of sources, and the information is assumed to be correct.

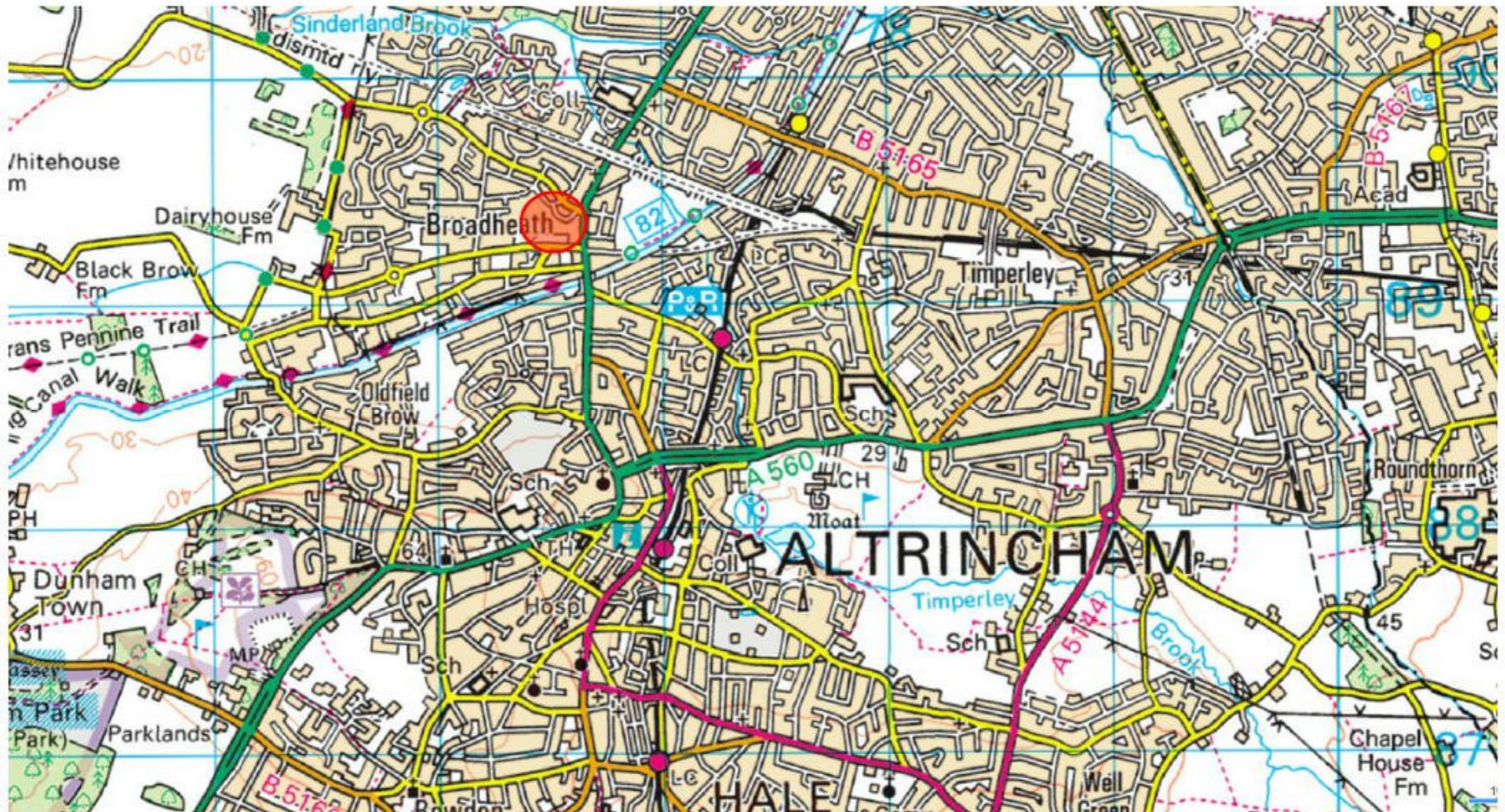
Other conditions may exist on the site that have not been taken into account in this assessment as they are outside the scope of works. Groundtech Consulting are not responsible for these circumstances that are not outlined in the report.

The assessment has been prepared for the exclusive use of the client. No third parties may rely on or reproduce the contents of the report without the written permission of Groundtech Consulting Limited. If any unauthorised third party comes into possession of the report they rely on it at their own risk and Groundtech Consulting Limited will not be obliged to provide a duty of care.

2.0 SITE SETTING

2.1 Location

The site is located circa 1.0 mile north of Altrincham Town Centre, as shown on the Project Location Plan 19038/01. The site is approximately centred on National Grid Reference 376550, 389322.



Access to the site is gained off George Richards Way to the south.

2.2 Site Description

The site is irregular in shape and c.1.4 Hectares in area, the site is generally topographically level.

North Western Area

Situated on the northern area of the site is an approximately rectangular shaped commercial unit covering c.4300m² which houses an active Homebase store. The unit is constructed from stone blocks with a metal cladding roof, which is supported by external columns. The columns are steel supported on pads along the southern elevation and stone columns along the eastern elevation. Directly to the west of the main unit is the Homebase Garden Centre which is surrounded by an open roofed structure.

Southern and North Eastern Area

The Homebase building is mostly surrounded to the east and west by a tarmac surfaced car park which is expansive to the south forming the southern half of the site. The north western corner of the site is formed by a roughly triangular-shaped service yard which is covered with concrete hardstanding.

Some shrubs bushes and semi-mature trees are present on site within the car park and also to the north of the service yard.

Site Boundaries and Surrounding Area

Grassed areas with some shrubs and bushes form the southern and eastern site boundaries of the car park. The site boundary to the north is formed by vegetation, roads and commercial units. The north eastern corner is bound by an existing unit and there is no definitive feature along the south eastern boundary.

The site is surrounded by the following land uses/features:

- North - Huxley Street, commercial units and housing.
- East - Manchester Road.
- South - George Richards Way.
- West - Car park and commercial units.

Site Photographs are presented in Appendix 2.

3.0 ENVIRONMENTAL SETTING

3.1 Site History

Available historical maps have been obtained, a list of dates and scale are listed in the table below:

Scale	Date
1:1,250	1969-1973, 1975-1977, 1981-1986, 1985-1988, 1987-1992, 1989-1992, 1989-1983, 1992-1993.
1:2,500	1876, 1898, 1910, 1935, 1958.
1:10,000/10,560	1848, 1897, 1908, 1938, 1950, 1954, 1971-1972, 1977-1980, 1990, 2002, 2010, 2014.

The plans were examined and potential issues have been identified and summarised in the table below:

Date	Site	Surrounding Area
1876	Goods shed and railway sidings present on south of site. Railway station, signal box and railway embankment present on the southern edge of the site. Housing present in the north east of the site.	Coal Wharf c.130m south of site. Massey Farm c.40m east of site. Railway directly to south of site.
1897	Further housing built in south west of the site.	Engineering Works c.40m south of site. Emery Works c.95m south of site.
1898	Unchanged.	Gasometer c.50m south of site.
1908	Further housing built in north of site. Engineering works on western edge of site.	Unchanged.
1910	Unchanged.	Photographic Apparatus Works c.40m south of site. Rubber Works c.160m east of site. Engine Packing Works c.160m south west of site. Massey Farm no longer present.
1935	Unchanged.	Atlantic Engineering Works c.50m west of site. Saw Mill c.170m north east of site. Radium Works c.190m south east of site.
1958	Goods Shed no longer present. Works building developed in north of site.	Numerous General Works present c.30-150m south of site.
1971	Unchanged.	Atlantic Engineering Works now Broadheath Works . Coal Wharf to the south potentially infilled .
1977-1980	Works developed in south of site.	Unchanged.
1981-1986	Works developed in north of site. Scrap Yard shown in west of site. Coach Depot shown in north of site. Railway Sidings no longer present.	Unchanged.
1987-1992	Electricity Substation present on site. Railway on southern edge of the site no longer present.	Railway to the south no longer present.
2002	Single commercial unit and car park now present on site in its current format with no other buildings.	Retail Park developed to the east of the site. Works to the south now unspecified commercial buildings.
2014	Unchanged.	Unchanged.

The historical plans are presented in Appendix 3.

3.2 Geology

The following British Geological Survey (BGS) records and other available information were inspected to accurately determine the geology underlying the site:

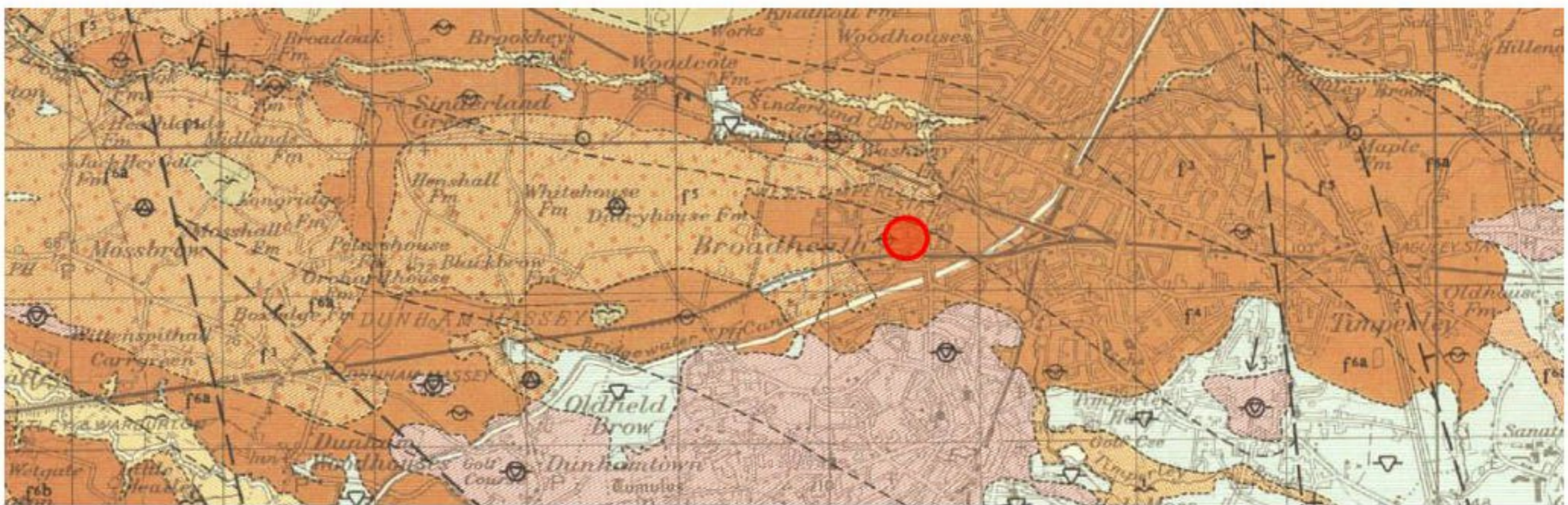
- 1:50,000 Scale Geological Sheet 98, Stockport – Solid and Drift Edition.
- BGS Records.

Made Ground

Made ground is indicated to be present beneath the site due to extensive historical development.

Superficial Deposits

The site is indicated to be underlain by Devensian Glaciofluvial Sheet Deposits, this strata characteristically comprises sand and gravel.

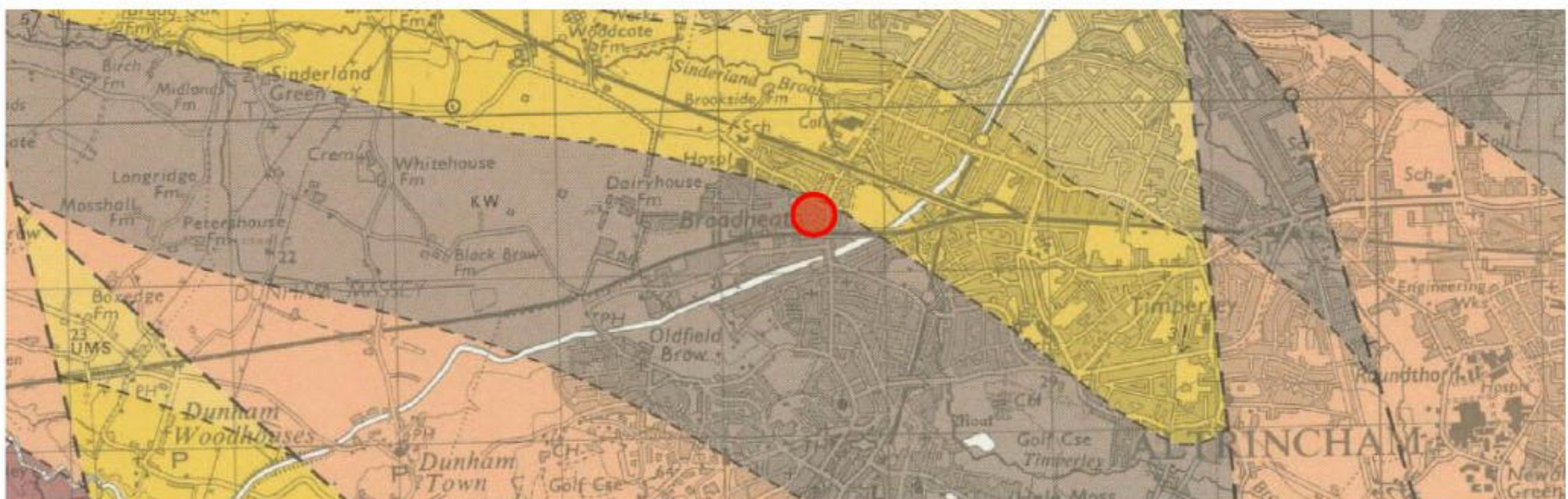


Solid Geology

The site is indicated to be underlain by the Taporley Siltstone Formation, this strata characteristically comprises siltstone, mudstone and sandstone. The bedrock is indicated to be dipping 5° to the south.

The Helby Sandstone Formation is indicated to be present c.120m north of the site consisting of a pebbly sandstone.

The nearest fault is c.2.5km to the east of the site with the site sitting on the upthrown side of the fault.



BGS Records

The nearest recorded BGS boreholes is located on the eastern edge of the site.

The borehole log indicates made ground is present to 0.50m bgl overlying brown sand to 4.20m bgl. Medium dense gravelly sand is then present to the base of the hole at 5.0m bgl.

The BGS records are presented in Appendix 4.

3.3 Hydrogeology

The superficial deposits in this area are classified by the Environment Agency as a Secondary A Aquifer (Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers). The Secondary A Aquifer is classified as having a high a high leaching potential (soils which have little ability to attenuate diffuse source pollutants and therefore have the potential to allow pollutants to move rapidly).

The bedrock is classified as a Secondary B Aquifer (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)

The site is not indicated to lie within 500m of a Source Protection Zone.

There are no active groundwater abstraction licences within 500m of the site.

3.4 Hydrology

The nearest named watercourse is The Bridgewater Canal 156m south east of the site.

Environment Agency information indicates that the site is outside a flood risk zone and the risk from flooding is very low.

There are no surface water abstraction licences within 1km.

The nearest discharge consent is 373m north east of the site on Balfour Road, Altrincham and relates to sewage discharges at a sewer storm overflow.

3.5 Environmental Consultations

A request has been submitted to the Contaminated Land Officer at Trafford Council for information pertaining to the site, this information will be forwarded on receipt.

An environmental search has been conducted through Groundsure, which accesses British Geological Survey and Environment Agency databases. The complete EnviroInsight Report can be found in Appendix 6, a summary of the more relevant points are presented in the table below.

Record	<250m	250 – 500m	Description
Authorised Processes	0	0	N/A
Pollution Incidents	0	3	The nearest was 301m east and relates to an oil and fuel spill which had a minor impact on land and water.
Landfill and Waste Treatment	1	6	A Scrap Yard was located on the west of the site some time between 1969 and 1993. A historical landfill site was present 297m north east of the site on Manchester Road.
Discharge Consents	0	3	The nearest is 373m north east on Balfour Road and relates to sewage discharges.

Record	<250m	250 – 500m	Description
Petrol Filling Stations	0	1	Shell Petrol Station 282m - Manchester Road, West Timperley.
Current industrial Uses	57	-	Electricity Substation on site. Halfords Autocentre 77m south east. Unspecified works/ factories 110m north east.

3.6 Radon

Map 13 Northern Welsh Marches and Liverpool from BRE 211 and HPA were examined which defines areas which require radon protective measures. The probability is less than 1% and Altrincham is not an area requiring radon precautions in foundations in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2015 Edition.



The radon data in the Groundsure report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland, and confirms the recommendations presented on the radon maps. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supersede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square.

3.7 Coal Authority Consultation

The site is outside the area of a designated coalfield, the Law Society and Coal Authority state a mining search is not required.

4.0 LAND QUALITY CONCEPTUAL SITE MODEL AND RISK ASSESSMENT

4.1 Introduction

The potential level of risk posed by contaminants in soil and/or groundwater will be influenced by the type and concentration of the contamination at source, the likelihood of exposure occurring, the potential pollution linkages and the likely chronic or acute effects on the receptors.

A contaminant is defined as a substance that has the potential to cause harm, a risk is considered to exist if such a substance is present at sufficient concentrations to cause harm and if a pathway is present a receptor could be exposed to the contaminant.

Section 4.0 compiles the information from the previous sections to assemble a Conceptual Site Model to inform the risk assessment process. The potential sources identified on the site and off the site that are within influencing distance are assessed to determine if pollution linkages exist and an unacceptable risk is posed to human health and controlled waters. The assessment has been carried out on a qualitative basis and aims to produce a complete and comprehensive Preliminary Conceptual Site Model, the potential pollution linkages are displayed on 19038/03 - Illustrative Preliminary CSM.

Three potential types of impacts exist for a site and all three need to be considered in the qualitative preliminary risk assessment:

- Impacts from sources on the subject site.
- Impacts to the surrounding area from the subject site.
- Impacts to the subject site from the surrounding area.

4.2 Potential Contamination Sources

On-Site Sources and Associated Contaminants

From the information obtained during the preliminary risk assessment potential sources of contamination exist which may affect the redevelopment of the site for commercial end use. The relevant DoE Industry Profiles were referred to and associated contaminants discussed below.

Made ground is likely to be present beneath the site associated with its various industrial and residential uses historically. Potential contaminants may include metals, PAHs, asbestos and ground gas.

Railway sidings a goods shed and station which were present on the south of the site may be a source of contaminants including metals and organic chemicals such as fuels, lubricating oils, greases, PAHs, solvents and degreasants. The same contaminants are associated with the Coach Depot historically on the northern area of the site.

Engineering works have been present on the west of the site which may be associated with contaminants including metals, acids, solvents, fuels and other oils.

A scrap yard was present on the west of the site and associated contaminants may include metals, oils and fuels.

Unspecified works have been present on the site which may be associated with a range of contaminants

The electricity substation on site may be a potential source of PolyChlorinated Biphenyls (PCBs) used as a cooling agent in the transformers.

Off-Site Sources and Associated Contaminants

A number of possible off-site sources of contamination have been identified through the desk-based consultations and include the following:

- Similar historic industry surrounding site to west and south as on site.
- Coal Wharf c.130m south of site potentially infilled.
- Railway lands directly south of site.
- Engineering Works c.40m south of site.
- Processes associated with the surrounding industrial estates.
- Historic landfill c.297m north east of the site.
- Petrol station c.282m.

The Coal Wharf that was historically present south of the site is indicated to have potentially been infilled. Therefore, this may be a source of ground gas depending on the nature of any material that was used to backfill it. The landfill is also a potential source of ground gas.

Railway lands are present directly to the south of the site and according to the DoE industry profiles associated contaminants may include diesel, lubricating oils, paraffin, PAHs, solvents, metals, ash and fill.

Engineering works were present c.40m south of the site which may be associated with contaminants including metals, acids, solvents, fuels and other oils.

4.3 Pollution Linkages

The definition of a pollution linkage is a medium which allows a contaminant to impact a receptor. Potential pollution linkages have been recognized for the commercial development from the identified contamination sources that exist.

At this stage the potential contaminants identified above are considered to pose an unacceptable risk human health and controlled waters through the following pollution linkages:

- Direct soil and dust ingestion.
- Dermal contact with soil both indoor and outdoors.
- Indoor air inhalation from soil and vapour.
- Outdoor inhalation of soil and vapour.
- Migration and accumulation of ground gas into internal spaces.
- Impaction of groundwater from soil contamination (diffuse and point).
- Impaction of groundwater from groundwater plume.
- Migration of soil and groundwater contamination impacting surface waters.

4.4 Receptors

Receptors generally fall into the categories of human health or controlled waters within the river basin system. The recognized receptors are listed below:

- Site end users.
- Secondary A Aquifer within the superficial deposits.
- Clean potable water supply pipe.

4.5 Preliminary Conceptual Site Model (CSM)

The factual information obtained from the searches and summarised in Section 2.0 and 3.0 has been used to compile a Preliminary CSM. Using Source-Pathway-Receptor assessment criteria that is applicable in the UK, a risk assessment has been completed to determine if a plausible pollution linkage exists between the identified contaminants and receptors. The risk classification has been estimated in accordance with the CIRIA C552 assessment criteria outlined in Appendix 7.

Human Health Pollution Linkage Assessment

PL	POTENTIAL SOURCE	POLLUTION LINKAGE	LIKELIHOOD	SEVERITY	LEVEL OF RISK	RATIONALE
PL1	Contaminated Soils	Ingestion soil and dust. Dermal contact with soil.	Unlikely	Medium	Low	<p>Made ground is likely to be present across the site associated with its historical industrial and residential developments. The majority of the site appears to have been developed historically. Engineering works, railways, a scrap yard and unspecified works have been present on the site so contamination is anticipated. The proposed development is to entirely consists of building and hardsurfacing therefore no realistic pollution linkage exists.</p> <p>An electricity substation is present on site however it was located behind locked doors. This may be a potential source of PCBs used as a cooling agent in the transformers however the contamination is immobile, and the site is generally covered with hardsurfacing.</p> <p>The risk from potential off-site sources is considered to be low as the surrounding areas are generally covered with hardsurfacing or buildings which will restrict mobilisation of contaminants and therefore contamination would remain localised.</p>
PL2	Contaminated Soils	Inhalation of vapour.	Unlikely	Medium to Severe	Moderate	<p>Potential sources of volatile contamination have been identified through the desk-based consultations including fuel derived hydrocarbons associated with the railway sidings, goods shed, and Coach Depot that were present on site.</p> <p>Investigation works will need to be carried out to determine if there is a risk from volatile contamination within the ground to the existing and proposed buildings. Therefore, the risk at present is considered to be moderate.</p>

PL	POTENTIAL SOURCE	POLLUTION LINKAGE	LIKELIHOOD	SEVERITY	LEVEL OF RISK	RATIONALE
PL3	Contaminated Soils	Inhalation of soil dust by adjacent site users.	Unlikely	Medium	Low	Contamination is anticipated to be present beneath the site and the existing commercial unit is to be extended on either side. The surrounding area is generally surrounded by commercial/industrial premises covered in hardsurfacing that are not considered to be at risk from the subject site.
PL4	Contaminated Soils	Attacking potable water supply pipe	Likely	Medium	Moderate	Pollution Linkage 4 refers to the possible contaminants permeating potable water pipes and consumption by the future residents of the tainted water supply. There is the possibility made ground and organic contamination exists at between 0.75m and 1.35m bgl where the pipe will be installed that could influence the pipe material required. Investigation, testing and UU Risk Assessment should be undertaken to quantify the risk.
PL5	Ground Gas	Migration and accumulation of ground gas in internal spaces.	Likely	Medium to Severe	Moderate	Sources of potential ground gas have been identified in close proximity to the site in the form of the coal wharf c.130m south of the site and landfill 297m north east. Depending on the nature of the fill material, the sources could potentially be generating permanent ground gas. Superficial deposits consisting of sand are indicated to underlie the site so ground gas migration to the site is feasible therefore the risk is considered to be moderate. As a minimum the gas protection measures within the existing building should be incorporated within the proposed extension.

Controlled Waters Pollution Linkage Assessment

PL	POTENTIAL SOURCE	POLLUTION LINKAGE	LIKELIHOOD	SEVERITY	LEVEL OF RISK	RATIONALE
PL6	Contaminated Soils	<p>Impaction of groundwater from soil contamination (diffuse and point).</p> <p>Impaction of groundwater from groundwater plume.</p>	Unlikely	Medium	Low	<p>Sources of contamination have been identified during the desk-based consultations including oils, fuels, metals and PAHs associated with the various industrial uses of the site.</p> <p>Currently the site is almost entirely covered with hardsurfacing and the proposed development is continued same use comprising an extension of the existing commercial unit. Infiltration and leaching will be severely restricted by the hardsurfacing and drainage system. The site is not within 500m of an SPZ and no groundwater abstractions are recorded in the vicinity of the site, therefore the Secondary A Aquifer in the superficial deposits is not a sensitive water resource.</p>
PL7	Contaminated Soils	Migration of soil and groundwater contamination impacting surface waters.	Unlikely	Medium	Low	<p>Pollution Linkage 7 refers to the impaction of the Bridgewater Canal 156m to the south east from contaminated soils and groundwater. Canals are a closed system, lined with impermeable materials therefore no plausible pollution linkage exists. In addition, the distance will allow considerable attenuation.</p>

5.0 GROUND ENGINEERING RECOMENDATIONS AND POTENTIAL LIMITATIONS

5.1 Preliminary Foundation Assessment

It is proposed to extend the existing commercial unit to the east and to the west. Made ground is anticipated to be present beneath the site which is in turn underlain by glaciofluvial sands and gravels and the Taporley Siltstone Formation which comprises siltstone, mudstone and sandstone.

Based on nearby investigations carried out by Groundtech consulting it is anticipated that bedrock is present at approximately 10m to 12m bgl.

The new foundations associated with the new development should not undermine any of the existing foundations associated with the current surrounding properties.

Depending on the depth of the existing foundations, density of the natural sand deposits and the proposed loadings – pad foundations may be an option. Alternatively, piled foundations could be installed transferring the loads to the competent Taporley Siltstone Formation stratum.

The above preliminary foundation recommendations are based on desk-based information and should be confirmed by a ground investigation in accordance with current guidance.

5.2 Additional Limitations

SuDS drainage is likely to be a feasible option as it is anticipated that the site will be underlain by permeable granular sand and gravel deposits. It is likely the existing drainage system will be utilised for the new development.

The site is not located in an area affected by historic coal mining legacy.

6.0 CONCLUSIONS AND GROUND INVESTIGATION SCOPE RATIONALE

6.1 Environmental

The site was shown to be developed in the north east with housing and in the south with railway sidings, a goods shed and a railway station in 1876. Further housing was built on the south west and north of the site thereafter. Engineering works were developed on the western edge of the site in 1908. By the 1950's the Goods Shed is no longer present and further works buildings are developed on the north of the site. In the 1980's further works are developed in the north and south of the site as well as a scrap yard in the west. By 2002 only the one commercial unit and car park is present on the site in its current format.

Contaminated made ground may be present below the site associated with its historical uses however the proposed development will be covered in hardsurfacing which will break the pollution linkage to end users and *the risk is considered to be low.*

Sources of volatile contamination have been identified on site historically and the *risk is considered to be moderate.*

The site is to have the continued same end use as the current commercial unit is to be extended to the east and the west. Sources of contamination have been identified, however infiltration and leaching will be restricted by the hardsurfacing and drainage system. The site is not within 500m of an SPZ and no potable groundwater abstractions are in the vicinity of the site, *the risk to controlled waters is considered to be low.*

Made ground is likely to be present beneath the site which could be a source of ground gases. The nearby potentially infilled Coal Wharf may also be a source of ground gas. Any gas protection measures within the existing building should be incorporated within the proposed extension as a minimum. *The risk at present is considered to be moderate* and requires further investigation.

6.2 Geotechnical

The site is likely to be underlain by superficial glaciofluvial sands and gravels overlying the Taporley Siltstone Formation.

Pad foundations may be suitable depending on the depth of existing foundations, density of natural sand strata and proposed loadings. Pile foundations are an alternative solution for the proposed extensions transferring loads to the underlying competent sedimentary bedrock. Any new foundations should be designed to accommodate the proposed loadings and to not undermine any existing foundations associated with nearby properties.

The use of SuDS drainage may be feasible within the natural granular deposits beneath the site subject to soil percolation testing.

6.3 Additional Considerations

The site is not affected by former coal mining workings.

6.4 Recommended Ground Investigation Scope of Investigation

Based on the information in this report we consider a main investigation is required in accordance with BS 10175:2013 and BS 22475. The following scope of works is recommended based on the Preliminary CSM compiled, additional works maybe required as the result of planning conditions for the proposed development:

Method of Investigation	G / E
2 No. cable percussive boreholes to c.10m to 12m bgl	G
6 No. windowless sample boreholes to 3m bgl	G/E
Shallow gas monitoring installations	E
Geo-Environmental testing comprising metals, PAHs and asbestos.	E
Geotechnical testing of soils to obtain parameters for preliminary design.	G
Ground Gas Monitoring	E

Note Environmental (E) / Geotechnical (G)

APPENDIX 1 - Plans



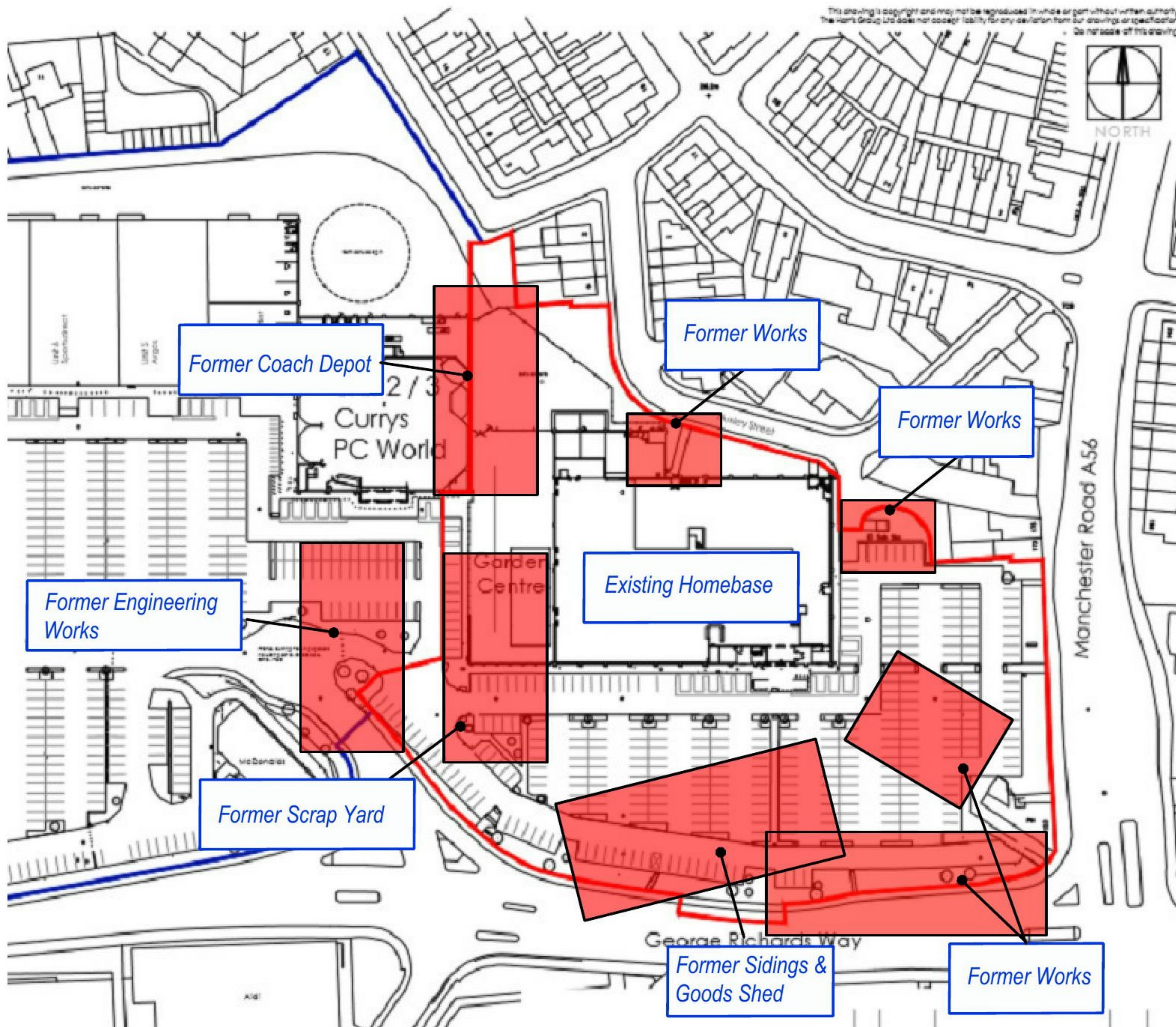
CLIENT	ST JAMES'S PLACE PROPERTY UNIT TRUST
PROJECT TITLE	ALTRINCHAM RETAIL PARK
PLAN TITLE	PROJECT LOCATION PLAN

DATE	APRIL 2019
SCALE	NTS
PLAN NUMBER	19038 01

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes	
● The Site	



CLIENT	ST JAMES'S PLACES PROPERTY UNIT TRUST
PROJECT TITLE	ALTRINCHAM RETAIL PARK
PLAN TITLE	PRELIMINARY DEVELOPMENT CONSTRAINTS PLAN

DATE	APRIL 2019
SCALE	NTS
PLAN NUMBER	19038 02

Rev.	Details	Date

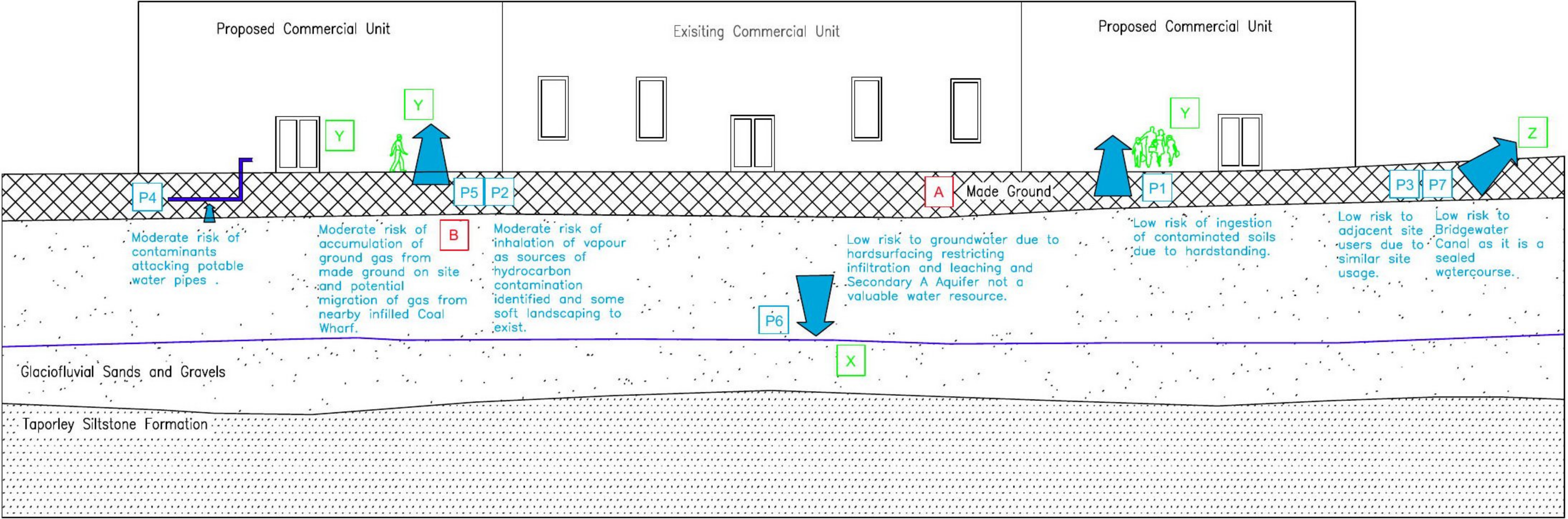
Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

SOURCES
A. Contaminated soils / Made ground.
B. Ground gas.

POLLUTION LINKAGES
P1. Ingestion of soil and dust.
P2. Inhalation of vapour.
P3. Inhalation of soil dust by adjacent site users.
P4. Attacking of potable water supply pipe.
P5. Migration and accumulation of ground gas in internal places.
P6. Impaction of groundwater from soil contamination.
P7. Migration of soil and groundwater contamination impacting surface waters.

RECEPTORS
Y. Site end users
X. Groundwater within the secondary aquifer.
Z. Adjacent site users.



CLIENT	ST. JAMES'S PLACE PROPERTY UNIT TRUST
PROJECT TITLE	ALTRINCHAM RETAIL PARK
PLAN TITLE	ILLUSTRATIVE PRELIMINARY CSM

DATE	APRIL 2019
SCALE	NTS
PLAN NUMBER	19038 03

Rev.	Details	Date

Status
Preliminary
Draft
Issued
For Comment
Approved

Notes

APPENDIX 2 – Site Photographs



Eastern elevation of existing Homebase.



Garden centre forming western side of unit.



Service yard to north of Homebase building.



Car park forming the southern half of the site.

APPENDIX 3 - Historical Maps