

BRIAN CLANCY HIGBY PARTNERSHIP
CHARTERED STRUCTURAL & CIVIL ENGINEERS

PHASE 1 CONTAMINATED LAND RISK ASSESSMENT REPORT

Project No. 1701-6450

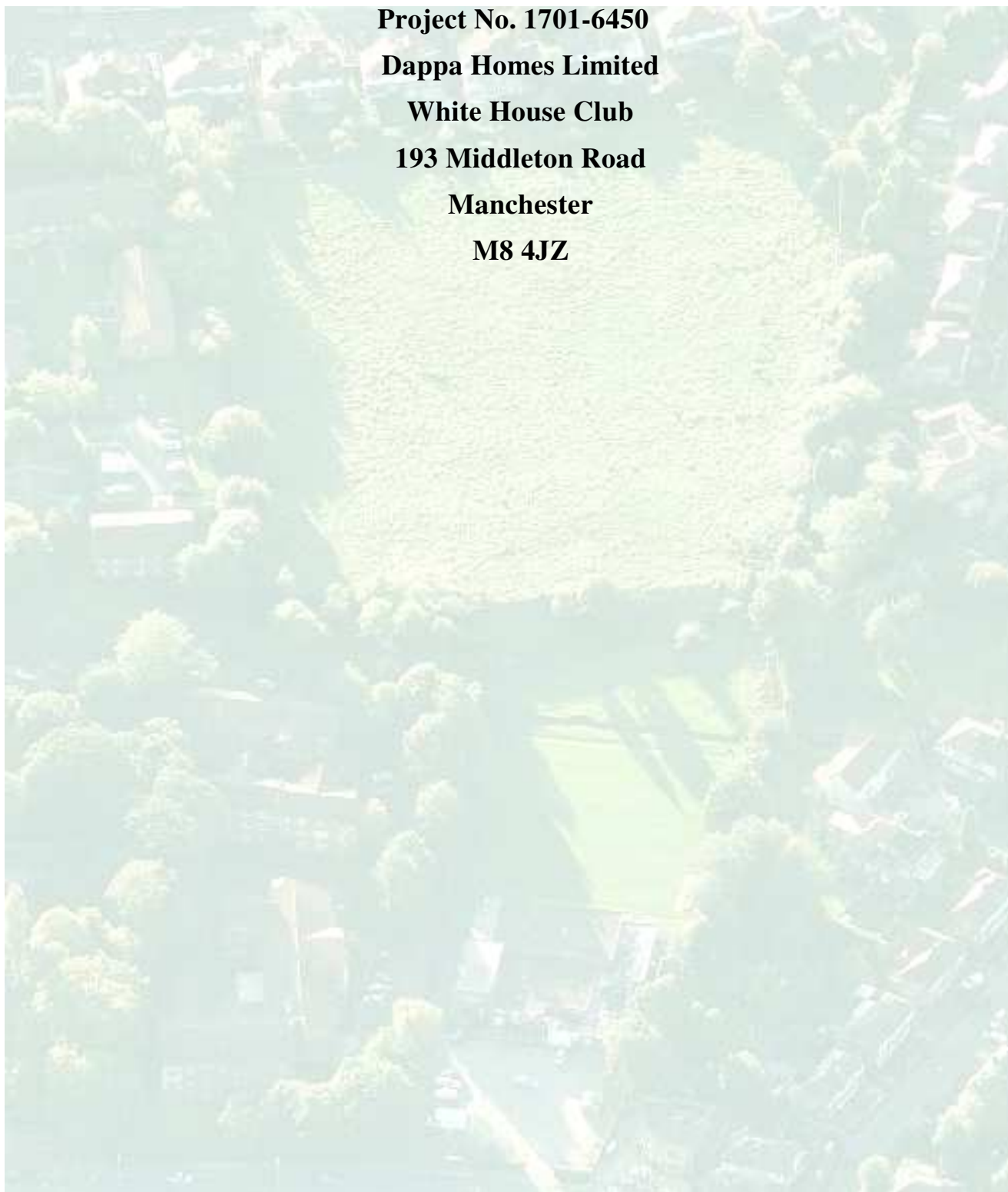
Dappa Homes Limited

White House Club

193 Middleton Road

Manchester

M8 4JZ



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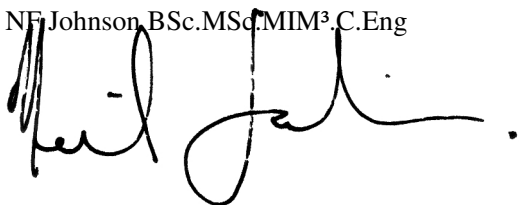
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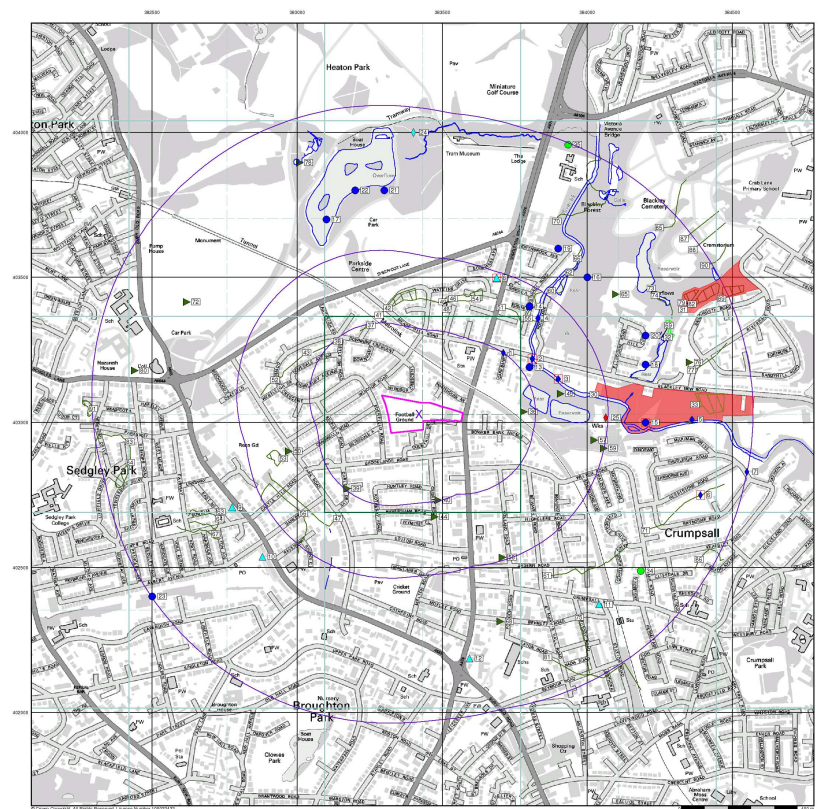
Proposed Residential Development on the site of White House Club and Sports Fields**1. DISCUSSION**

BCHP Consulting have been appointed by Grays Architecture Limited, acting on behalf of Dappa Homes Limited to conduct a Phase1 Preliminary Contaminated Land Risk Assessment Desktop Study and site walkover on the site of the White House Club and the attached former sports field (the site). It is understood that the site is to be developed for residential development of house and apartments and the redevelopment of the White House Club

The purpose of this desk based study is to provide a preliminary assessment of the site relating to current and historic operations to establish base line geo environmental and geotechnical conditions. This report presents a factual account and highlights the more pertinent points with interpretation relating to potential sources of soil or ground water contamination that may be present within site soils.

The information obtained during this assessment has also been used to collate a Preliminary Conceptual Site model for the proposed development to assist with the estimation of risks arising from contaminated land related concerns. Where required this model will form the basis for future Phase 2 Intrusive Site Investigation works to further refine (and mitigate against) risks posed to future site users.

This PRA Desk Study Report discusses the findings of the Envirocheck Report, Coal Authority Mining Report and the site walkover undertaken on 1st February 2017. The plan below shows the site location.





2. SITE DESCRIPTION

The site is located to the west of Middleton Road, north Manchester. The Whitehouse Club is set back from the road with a macadam paved car park to the front. The club house and fronts the bowling green and to the rear of the site is an elevated former football and cricket pitch. The study site is surrounded by residential properties on all sides. The aerial photograph shows the site.



The general topography shows a gentle slope down from north to the south. The site boundaries is secured with a steel paling fence on all sides. The development site is below the level of the residential properties to the south. The pitch area is elevated above the houses to the west and to the north.

The pitch area is rough grassed with self seeded scrub and annual vegetation at the perimeter. Along the southern boundary the steel paling fence shows signs of fly-tipping being retained.

The photographs in the table below show the site.



View of front of the club house



View of the rear of the club and the bowling green. The bowling green was waterlogged at the time of the inspection



View across the upper playing pitch from the north west corner.



View of annual growth of vegetation on the western boundary.
The picture shows the slight elevation of the pitch area and the houses to the rear.



View of the established annual vegetation on the northern boundary of the pitch area.



Detailed view of scrub vegetation



View of the lower elevation of the club and bowling green.



View to the north showing the bowling green and the raised platform of the pitch area in the background.



View along southern boundary showing slight elevation of the houses to the right of the picture.



View from the houses on the southern boundary showing the elevated position of the houses relevant to the pitches area



3. ENVIROCHECK REPORT©

The original Envirocheck© report 112698030 is presented in the appendices of this volume.

The Envirocheck© report is a compilation of:

- Historical Ordnance Survey plans from 1:105600, 1:2500 and 1:1250 scales
- Public environmental records from Environment Agency, British Geological Survey and, Manchester City Council.
- Flooding information and river quality information from Environment Agency
- Landfill sites from British Geological Survey and Environment Agency.
- Hazard substances storage and uses information from Manchester City Council.
- Geological Information from British Geological Survey
- Sensitive land uses from Manchester City Council, Natural England and DEFRA
- Industrial Land uses from Thompsons Directory and Catalist Ltd

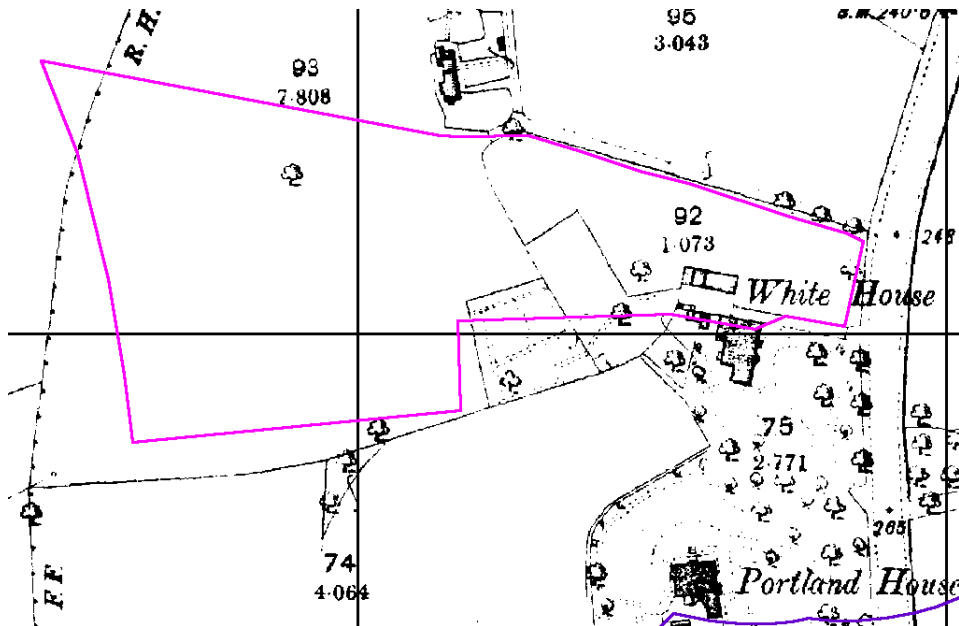


4. HISTORICAL SETTING

The full set of historical maps are presented in Volume 2.

The earliest mapping is the 1:10560 sheet of 1848 shows the site in open pasture land. At the south eastern corner of the site is shown a building identified as Bowker Vale.

The earliest large scale 1:2500 plan of 1893 shows the area as open pasture, with the house at the south east corner is now shown as the White House. Bowker Vale is now called Portland House.

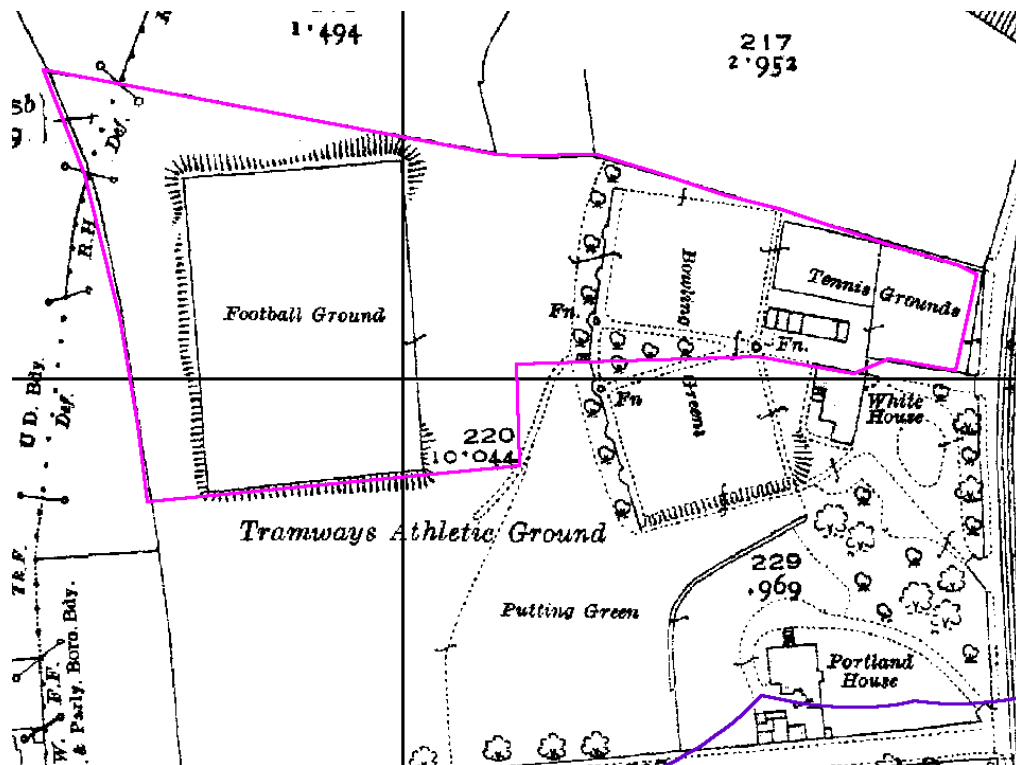


The 1909 map is shown overlain on the current mapping.

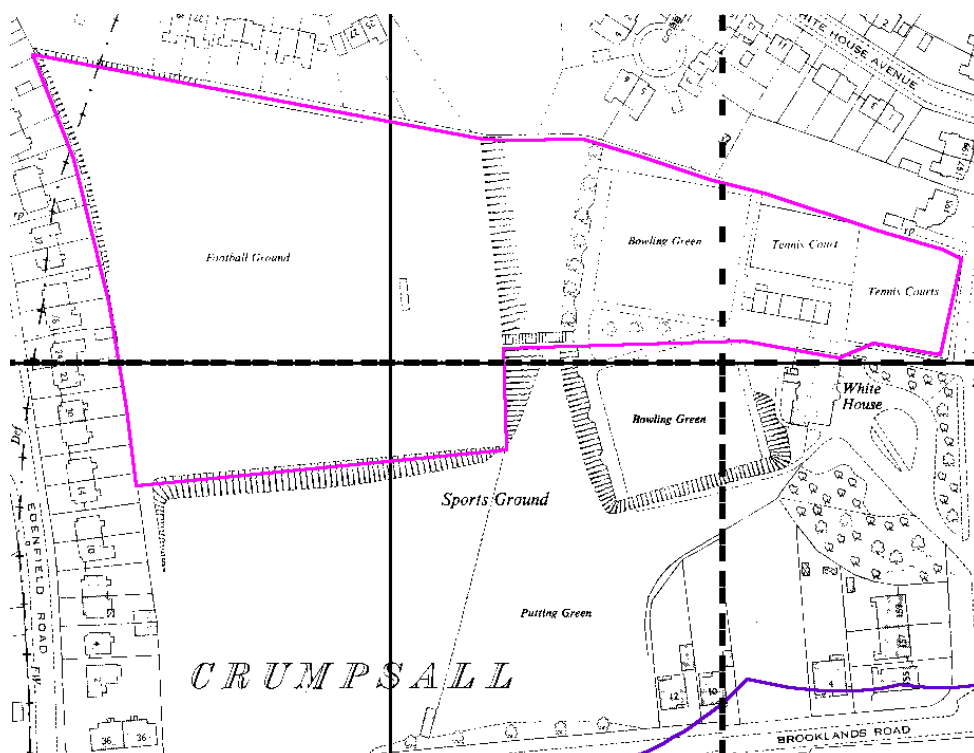




The 1:2500 map of 1922 shows that the site is now occupied by the “Tramways Athletic Ground”. The eastern portion of the site has the tennis courts and the building shown on the previous mapping. There are two bowling greens the one to the south inset in to the slope. The football pitch to the west appears to be slightly elevated with the slope lines shown on the mapping.



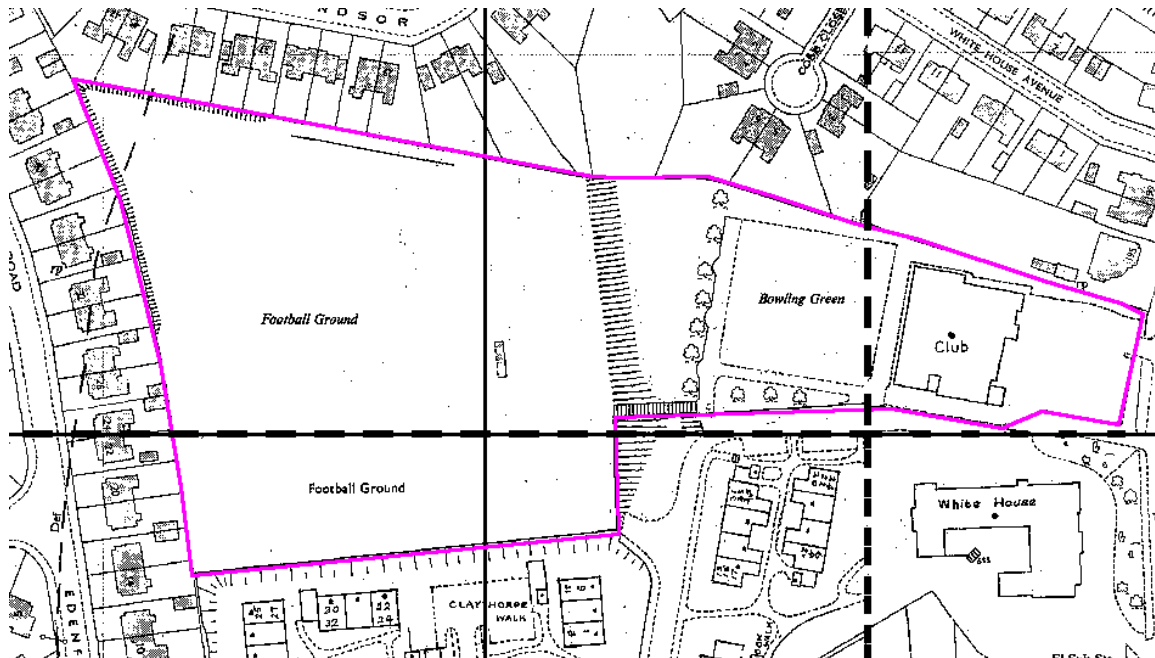
The 1:2500 1952 map below, shows the site. The map shows that there has been extensive building of pitch platforms. The football pit on the site is shown to have been extended with a large slope down on the eastern side, the off site bowling green is now shown with a raised slope on the western boundary. The other parts of





the site remain the same.

The 1979-1987 map shows the site has changed. The club house has been redeveloped. The south bowling green and the southern pitch area have been developed for housing. The slope between the bowling green and the football pitch is clearly shown.



The GoogleEarth© aerial photograph of 2013, below, shows the site in a similar condition as seen at the walkover inspection.



In conclusion, it is apparent that between the early 1920's and the 1950's the sports ground was developed and extended. It would appear that the main football pitch has been constructed on a fill platform. Some of the fill used may have come from excavations for the pitch to the south. Also the fill could have been brought to the site.



5. SITE GEOLOGY

The published British Geological Survey (BGS) map Sheet 85, Manchester shows the site underlain by:

- ◆ Drift comprising Glacial Till – Boulder Clay
- ◆ Bedrock - Triassic Chester Pebble Beds Formation. Sandstone, fine- to coarse-grained, commonly pebbly, with conglomerates and sporadic siltstones; cross-stratified.

The site lies in a Coal Authority Reporting area but is not underlain by a Coal Authority Development High Risk Zone. The Coal Authority Mining Report is attached.

6. SITE HYDROGEOLOGY

The groundwater vulnerability map, Sheet 11 South Pennines, shows the site to be underlain by:

- Soils: Soils of High Leaching Potential
- Drift Deposits: Low permeability drift deposits occurring at the surface
- Superficial Aquifer: Principal
- Bedrock Aquifer: Secondary Undifferentiated

There are no nearby surface water course that could be impacted from conditions on the site.

From 1 April 2010 The Environment Agency Groundwater Protection Policy will be using aquifer designations that are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

Principal Aquifers - These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - 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;

Secondary B - predominantly lower permeability layers which may store and 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.

Secondary Undifferentiated - Secondary Undifferentiated - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata - These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.



7. ENVIRONMENTAL ISSUES.

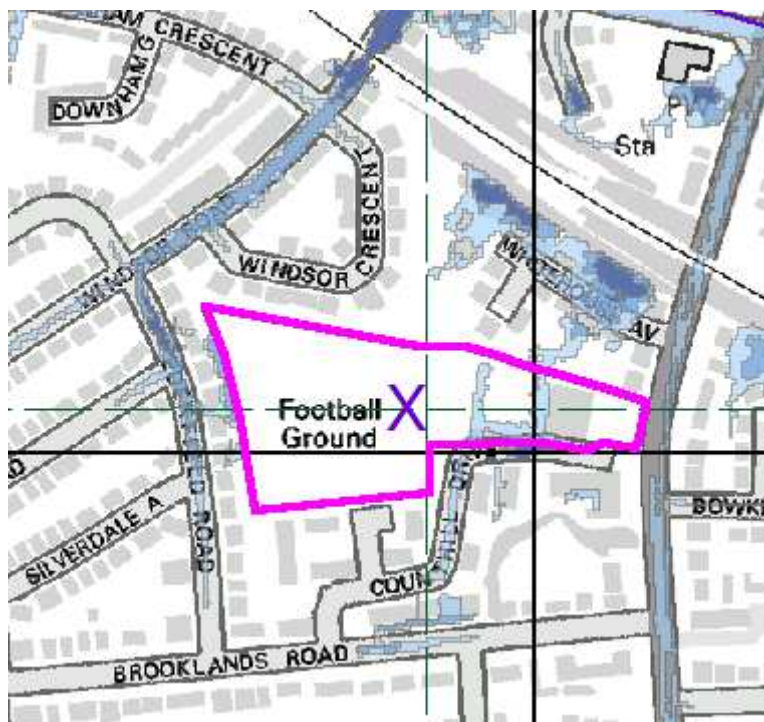
There are no database references within the site boundary.

There are no nearby recorded or registered landfill sites that may impact on the development of the site.

The nearest surface water course is the River Irk circa 300m to the east of the site.

The site is not with an area of sensitive land use.

The site is not located within an area at risk from flooding from rivers with out or with defences. The EA/NRW map shows the potential for surface water flooding as shown on the extract of the plan below.





The following table is an extract of the geological details of the Envirocheck© report.

Coal Mining Affected Area	In an area which may be affected by coal mining <i>Note1</i>
Non Coal Mining	No Hazard
Potential for Collapsible Ground Stability Hazards	Very Low
Potential for Compressible Ground Stability Hazards	No Hazard
Potential for Ground Dissolution Stability Hazards	No Hazard
Potential for Landslide Ground Stability Hazards	Very Low
Potential for Running Sand Ground Stability Hazards	Very Low
Potential for Shrinking or Swelling Clay Ground Stability Hazards	Very Low
Radon	The property is in a lower probability radon area, as less than 1% of homes are above the action level. No Radon Protection measures are required.

Note1: Mining report attached.



8. RISK ASSESSMENT

Part IIA of the EPA 1990 introduced on the 1st April 2000 and the relevant planning guidance requires that a staged approach to the assessment of the potential risk a development site may pose to the intended final use after development.

The Definition in Part IIA:

2.1 Section 78A(2) defines CONTAMINATED LAND for the purposes of Part IIA as:

"any land which appears to the LOCAL AUTHORITY in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that -

"(a) SIGNIFICANT HARM is being caused or there is a SIGNIFICANT POSSIBILITY of such harm being caused; or

"(b) POLLUTION OF CONTROLLED WATERS is being, or is likely to be, caused".

In assessing the potential risk of environmental impact the CLR 11 (Model Procedures for the management of Land Contamination) Source – Pathway – Receptor Model is followed.

RISK ASSESSMENT FOR GAS HAZARD

The site has been assessed using the criteria given in BS8576:2013 “Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs)”, CIRIA Report 665 “Assessing risks posed by hazardous ground gases” and NHBC Report 04-2007 “Guidance on the evaluation of development proposals on sites where methane and carbon dioxide are present”.

The site is not located in an area where recorded or registered landfill sites could impact on the site.

As noted in the site history assessment the western area of the site has been upfilled to form the football playing pitch. The fill is at least 60 years old and thus is considered that the potential for hazard ground gases generation is low.

During investigation stage the nature of the filled ground needs to be assessed to determine the risk of the formation of harmful ground gases.

Where the fill soils are consider to be at risk we would consider it prudent to include some monitoring wells and a programme of monitoring undertaken. The programme of monitoring should be based on CIRIA665 and the NHBC Report. The site sensitivity is classed as High (residential with gardens) and Low “general potential source”. The monitoring frequency is shown as having a duration of 3-6 months. We would recommend that when the initial data is obtained a review is undertaken and the duration of monitoring could be reduced.



RISK ASSESSMENT FOR HUMAN HEALTH

As noted above the main housing development area is located on the raised platform constructed to give a playing surface. The age of the filled ground is at least 60 years, but the nature of the fill is unknown.

The investigation of the site should allow for standard Human Health Risk Assessment contamination test suites. Where ground conditions are determined to have unusual characteristics then additional testing would need to be undertaken.

The composition of the Made Ground would need to be assessed for the potential of leaching of any, if present, soluble contaminants. In addition groundwater analyses from static water in monitoring wells should also be considered.

RISK TO CONTROLLED WATERS

As noted above there are no nearby surface water course that would be affected by any leachable contamination, if present.

As noted above some leachable and static groundwater testing will be undertaken if the soils are assessed as posing a significant risk of contamination.



9. SOURCE CHARACTERISATION

Type of Risk Assessment	Source	Pathway	Receptor	Remarks
Water Resources	Impacted Soils	Migration of leachate	There is no nearby surface water course. The Superficial Aquifer is Unproductive. Bedrock aquifer is Principal	The low risk that the soils and perched groundwater pose a significant risk to controlled waters. Testing will be undertaken to determine the nature of the fill soils and assess risk.
	Impacted Groundwater	Migration of groundwater		
Human Health	Soil gases	Inhalation of indoor air	Site Workers Site Residents Off Site Residents	There are no nearby recorded or registered landfill sites that may pose a risk to the development. The historical development of the site shows that the main development at the rear of the site has been upfilled. An assessment is necessary to determine the risk of harmful ground gases from the filled ground.
		Inhalation of harmful vapours		The historical development of the site shows that the main development at the rear of the site has been upfilled. The nature of the filled ground should be assessed from ground investigation, sampling and testing. It is anticipated that several stages of sampling and testing will be required to determine the risk to the proposed development.
	Impacted Soils	Direct Ingestion		
		Direct dermal contact		
		Vegetable Ingestion		
	Impacted Groundwater	Inhalation of indoor air		It is not anticipated that groundwater will be encountered Some perched water may be present in the filled ground and in the lower elevations of the site..
		Direct Ingestion		
		Direct dermal contact		
	Soil Gases	Migration through floor slab	Site Workers Site Residents Off site Residents	The site does not lie within influencing distance of recorded or registered landfill sites. The historical land-use of the site poses minimal risk from harmful ground gases being generated on site. The property is in a lower probability radon area, as less than 1% of homes are above the action level. No Radon Protection measures are required.
Building and services				



10. FURTHER INVESTIGATION

The development proposal comprises:

The redevelopment of the current club building and external car park. Club located to the front of the site.



32 N^o 3 bed 2 storeh houses, 18 N^o 4bed 2½ storey house, 24N^o 2 bead apartment in two blocks.





The Phase II investigation requirements should comprise soil sampling and routine testing. The initial contaminated land assessment should be carried out with sampling from trial pits. The topsoil will require frequent tests to determine the suitability of re-use on site. The Made Ground fills should be sampled through the Made Ground and suitable samples selected for test.

The ground investigation will comprise a series of trial pits located away from the areas where structural foundations will be constructed. The initial phase of the assessment for the should be main housing development should comprise:

Four light cable percussion boreholes with monitoring wells.

Ten machine excavated trial pits.

For the relocated club building we would recommend two light cable percussion boreholes

From the trial pits sufficient samples will be taken in appropriate containers for analyses. A basic outline of trial pit location is presented in the Appendices.

Sample Containers will be:

- Suite 1 (HHRA) 1x 500g glass jar
- Suite 6 (for asbestos fibres in soil) 1x 500g plastic tub
- Suite 2 (Speciated TPH) 1x 250g glass jars with 2x 60g VOC jars
- Suite BRE SD1 1x 500g plastic tub
- UU Water Supply Suite 1x 500g glass with 2x 60g VOC jars

Analysis should include testing for the following contaminants by a laboratory with MCERTS accreditation:

The initial proposal is to undertake testing as follows.

12No	Suite 1 (Human Health Risk Assessment
8No	Suite 2 (Speciated TPH) Banded aliphatic/aromatic split
8No	Suite 3 Total TPH
15No	Suite 6 (for asbestos fibres in soil
2No	Waste Acceptance Criteria Suite
2No	Suite BRE SD1
3No	UU Water Supply Suite

Additional tests may be required dependent on ground conditions identified.

The findings of the Phase2 investigation will be presented in a follow on report.

Development Proposal



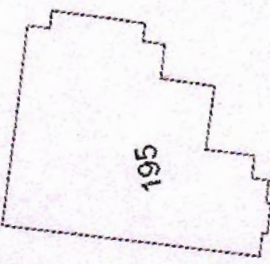


Initial Ground Investigation Proposal Location Plan

Initial Phase CI



2/2/17 (H)





Coal Authority Report



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

WHITE HOUSE
193 MIDDLETON ROAD
GREATER MANCHESTER

Date of enquiry: 02 February 2017
Date enquiry received: 02 February 2017
Issue date: 02 February 2017

Our reference: 51001375934001
Your reference: 112698030_2|



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

WHITE HOUSE, 193 MIDDLETON ROAD, GREATER MANCHESTER

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

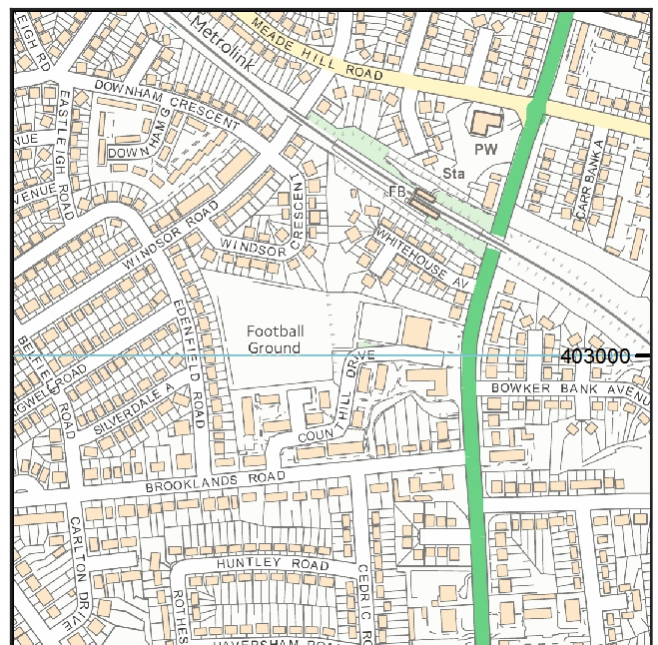
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	No
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	No
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	Yes
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is not within a surface area that could be affected by past underground mining.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

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

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

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

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is in an area where a notice to withdraw support was given in 1959.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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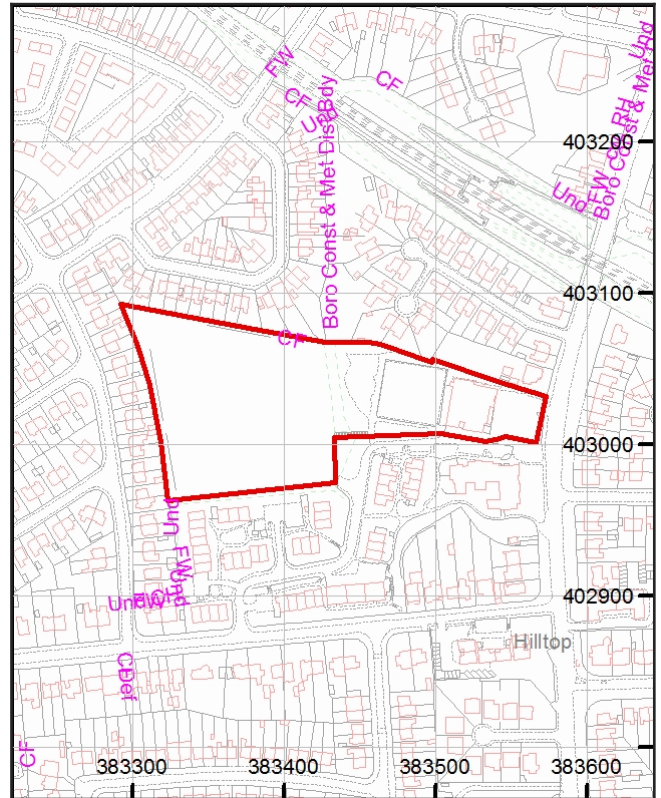
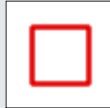
Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown



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