WML CONSULTING

Civil, Structural and Geotechnical Engineers

Remediation Strategy

For the

Academy Business Park

Lees Road, Knowsley

Undertaken for

Orbit Developments Limited

Report No. 7633/G/03

May 2017

WML CONSULTING
Civil, Structural and Geotechnical Engineers

Report Title:	**Academy Business Park, Lees Road, Knowsley Remediation Strategy**
Report Reference:	**7633/G/03**
Client:	**Orbit Developments Limited**
Issue Date:	**2nd May 2017**
Drafted By:	**S C Seddon** S. Seddon.
Authorised By:	**P G Davies**

This document has been prepared for the titled project (or named part thereof) and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authorization being obtained from WML Consulting. WML accepts no responsibility or liability for the consequences of the use of this document, wholly or in part, for any other purpose than that for which it was commissioned. Any persons so using or relying upon this document for such other purpose do so at their own risk.

This report was prepared for the sole use of the Client and shall not be relied upon or transferred to any other party without the express written authorisation of WML. It may contain material subject to copyright or obtained subject to license; unauthorised copying of this report will be in breach of copyright/license.

The findings and opinions provided in this document are given in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined within this document. The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date.

The findings and opinions conveyed in this report are based on information obtained from a variety of sources as detailed and which WML assumes to be reliable, but has not been independently confirmed. Therefore, WML cannot and does not guarantee the authenticity or reliability of third party information it has relied upon.

Where opinions expressed in this report are based on current available guidelines and legislation, no liability can be accepted by WML for the effects of any future changes to such guidelines and legislation.

The limitations of liability of WML for the contents of this document have been agreed with the Client, as set out in the terms and conditions of offer and related contract documentation.

Revision Status / History

Rev	Date	Issue / Purpose/ Comment	Prepared	Checked	Authorised
-	02/05/2017	Final	SCS	PGD	PGD
1	08/05/2017	Updated Planning references	-	-	SCS

WML Consulting Ltd
No. 8 Oak Green,
Earl Road,
Stanley Green Business Park,
Cheadle Hulme,
Cheshire
SK8 6QL

Tel: 0161 482 0600
Email:info@wmlconsulting.com
www.wmlconsulting.com

CONTENTS

1.0 INTRODUCTION 1
Appointment 1
Proposed Development 1
Background 1
2.0 SITE LOCATION AND DESCRIPTION 2
Site Location 2
Description 2
3.0 SUMMARY OF SALIENT ENVIRONMENTAL CONSIDERATIONS 3
Environmental Considerations 3
Summary of Site Investigations – 1999 to 2015 3
Imported Materials – January 2017 4
4.0 UPDATED GROUND GAS RISK ASSESSMENT 6
Methodology 6
Ground Gas Conceptual Model 6
Conclusions and Recommendations 7
5.0 REMEDIATION STRATEGY 8
General 8
Site Enabling Works 8
Electricity Sub-Stations 8
Hydrocarbon Storage Tanks 9
Capping Requirements for New / Modified Landscaped Areas 10
Unexpected Ground Contamination 10
Potable Water Supply 11
6.0 VALIDATION 12
Ground Contamination 12
Topsoil/Subsoil 12
7.0 VALIDATION REPORT 13

APPENDICES

Appendix 01 - Drawings
Appendix 02 - Local Authority Correspondence
Appendix 03 - Updated Ground Gas Risk Assessment
Appendix 04 - Site Assessment Criteria

1.0 INTRODUCTION

Appointment

1.1 WML Consulting (WML) has been commissioned by Orbit Developments Limited (Orbit) to prepare a Remediation Strategy in relation to the redevelopment of the western section of Academy Business Park, located on Lees Road in Knowsley.

Proposed Development

1.2 It is understood that the currently proposed redevelopment comprises the demolition of Unit 3 to Unit 5 and Unit 8 and the construction of two commercial units.

1.3 The site is being developed in two phases, namely Building 1 as part of Phase 1 and Phase 2 which includes Building 2. Both Phases include associated access routes, loading bays (presumably with dock-levellers) car parking and limited soft landscaping.

1.4 Phase 1 also includes a new electricity sub-station to the rear of Unit 7 on the adjacent plot.

1.5 A drawing indicating the layout and phased plan by Orbit, referenced 389-TEN-4006 and dated 11th December 2015, is presented in Appendix 01.

Background

1.6 WML Consulting initially undertook the following reports in respect of the development site as a whole:

- Phase 1 Desk Study and Preliminary Geoenvironmental Assessment, Reference 6483/G/01, dated November 2014.
- Phase 2 Geo-environmental Investigation and Assessment, Reference 6483/G/02, dated August 2015.

1.7 It is anticipated that the reports were presented to Knowsley Metropolitan Borough Council Planning Division in support of Planning Application No. 15/00819/FUL.

1.8 The findings of the Phase 1 and Phase 2 reports are summarised in the following sections.

1.9 The purpose of this report is to outline a Remediation Strategy to render risks from ground contamination acceptable.

1.10 It is assumed that the proposed remediation works will be undertaken during or immediately following demolition and removal of existing buildings.

2.0 SITE LOCATION AND DESCRIPTION

Site Location

2.1 The site is located to the south of Kirkby at the junction with Arbour Lane and County Road at Knowsley Industrial Park, Knowsley, Liverpool at approximate Ordnance Survey National Grid Reference 342502E, 398291N and an indicative postcode of L33 7RW.

2.2 It is bounded to the north and east by commercial structures and to the south by County Road with Knowsley Industrial Park to the south-east and a school to the south-west. To the west the site is bordered by Arbour Lane and a sports centre.

2.3 A site location plan is presented in Appendix 01 with the site indicated within the red boundary.

Description

2.4 The subject site is irregular in plan shape and covers an area of approximately 4.72 Hectares.

2.5 The majority of the site is surfaced with hardstanding together with several large brick and steel framed buildings, all of which are disused but are still in reasonable condition. The former Maintenance Workshop in the north of the site is, however, in disrepair and exposed to the elements.

2.6 Units 6A and 6B were occupied and inaccessible during the initial site inspections in 2015 and are presumed to now be empty.

2.7 Three electricity sub-stations are indicated within the existing buildings, namely within Unit 3, 4 and 5. It is not known whether these have been decommissioned. Their location are indicated on drawing 7633G-SK-03 in Appendix 01.

2.8 An underground water storage tank associated with a former fire hydrant pump-house is located in the north-eastern section of the site. The tank is surfaced with eight concrete slabs each approximately 6.50m by 4.25m in size and composed of 0.30m reinforced concrete. These directly overly reinforced concrete beams with the internal, water filled, tank area to a depth of 3.20mbgl.

2.9 The tank is anticipated to be approximately 8.50m in width and no longer than 26.65m in length and contained in its entirety beneath the concrete slabs. This provides a tank capacity of approximately 725m^3 or 750,000 litres.

2.10 During the 2015 stage of the investigation a possible groundwater abstraction well was also located immediately south-west of the underground water tank close to the location of the pump house in the north-eastern section of the subject site.The locations of the tank, abstraction well and sump together with the assumed tank dimensions, are depicted on the drawing 6483-SK01 in Appendix 01.

2.11 Site buildings are surrounded mainly by concrete surfacing which is only locally broken up and disaggregated. The north-western area is unsurfaced and covered by rough vegetation while the extreme southern area is covered by mown grass.

2.12 The extreme western area is also covered by rough grass which extends westwards as a steep grassed slope towards Arbour Road.

2.13 It is understood that soil comprising clean natural sand has been imported under the CL:AIRE Definition of Waste: Development Industry Code of Practice (March 2011) (CoP) from a site recently subject to earthworks and under Orbit ownership in St Helens. It is further understood that the soil has been deposited in the north-eastern area of the site for rising site levels together with general bulk fill requirements as part of the current development. No further information is available at the time of writing.

3.0 SUMMARY OF SALIENT ENVIRONMENTAL CONSIDERATIONS

Environmental Considerations

3.1 The BGS plans indicate that the northern section of the site is underlain by the Devensian Shirdley Hill Sand Formation (Blown Sand). Drift deposits are indicated to be absent beneath the southern section of the site which is directly underlain by Triassic Sherwood Sandstone Group.

3.2 The property is not in a Radon Affected Area as defined by the Health Protection Agency as less than 1% of properties are above the Action Level of exposure. No radon protection measures are therefore necessary for new properties as described in publication BR211 by the Building Research Establishment.

3.3 The Sherwood Sandstone is classified as a Principal Aquifer (formerly Major Aquifer). The Drift Deposits beneath the northern section of the site are classified as a Secondary A Aquifer. The nearest recorded groundwater abstractions are located approximately 120m and 130m north of the site and relate to 2no boreholes for general / irrigation use.

3.4 There are no watercourses within 1km of the site.

3.5 There are no operational or non-operational landfill records within 500m of the site. There are 4no non-operational licensed waste treatment, transfer or disposal site within 250m of the site. The closest relates to an aggregate recycling yard 30m north which accepts inert and excavation waste for treatment.

3.6 There are 3no potentially contaminative industrial processes within the site boundaries, relating to historical tanks and a former vehicle recovery service. The onsite electricity sub-stations are not indicated in the Groundsure report.

3.7 There are 3no Part B Activity and Enforcement sites within 250m of the site. These related to concrete batching plants 33m north-east and 234m north and a historical permit for a metal coating plant 199m east.

3.8 There are 2no Health and Safety Executive COMAH and NIHHS Authorised sites within 250m of the site. The historical NIHHS site located some 160m east was operated by Mersey Gas with a current Lower Tier COMAH site 165m east run by Potter Logistics for unknown use.

3.9 There is also 1no National Incident Record located some 140m east of the site relating to the significant impacted of contaminated topsoil on both land and water.

3.10 However, there are no records of sites which have been determined as Contaminated Land under Section 78R of the Environmental Protection Act 1990 within 500m of the study site.

3.11 Historically, the site has been developed extensively for industrial purposes comprising a paper factory and later generic works with ancillary buildings including a boiler house, electricity substation and several tanks. Surrounding development has been a mixture of industrial retail and leisure uses.

Summary of Site Investigations – 1999 to 2015

3.12 The following summarises the ground conditions described in the relevant site investigation reports by Wormseye (1999), Geodelft (2002) and WML (2015).

3.13 Typically, the ground conditions encountered beneath the site comprise Made Ground to depths of between 0.20mbgl and 3.00mbgl. Thicker Made Ground generally occurs in the western section of the site where it forms a low plateau of raised ground to accommodate the currently flat ground surface.

3.14 The Made Ground is locally underlain by granular Shirdley Hill Sand in the western and eastern areas of the site to proven depths of between 2.70m and 4.00mbgl. In places the sand is underlain by cohesive Glacial Till at depths of between 2.30m and 3.00mbgl and generally between 0.10m and 0.50m in thickness. The Drift Deposits and locally Made Ground are in turn underlain by weathered Sherwood Sandstone at depths of between 0.20m and 3.50mbgl but locally in excess of 4.00mbgl.

3.15 Ground gas monitoring initially indicated no significant concentrations of ground gas with the site classifying as Characteristic Gas Situation (CGS) 1 – 'Very Low Gas Risk' in accordance with BS8485:2015. However, as the monitoring was considered to be incomplete, further monitoring and assessment has been undertaken and is presented in Section 4.

3.16 Chemical analysis has indicated that near-surface soils at the site are not significantly contaminated as all concentrations were below the defined Generic Assessment Criteria for a 'Commercial' end use with no exceptions.

3.17 During the 2015 WML investigation a single elevated concentration of leachable Chromium VI was considered to be due to the laboratory Lowest Order of Detection being higher than the relevant Generic Assessment Criteria (GAC). In addition, no significant concentration of the contaminant was measured in the soil. Therefore, risks to controlled groundwater were concluded to be negligible.

3.18 Water obtained from the underground water tank was also submitted for analysis with the results for all contaminants analysed being below the GACs when compared to stringent drinking water standards (DWS).

3.19 The WML Phase 2 report concluded that the likelihood of widespread significant ground contamination occurring beneath the site was considered low. However, it was considered prudent to make provision for dealing with unrecorded contamination sources during the groundwork operations, especially within formerly inaccessible areas and in proximity to the former boiler house and electricity sub-station.

Imported Materials – January 2017

3.20 In January 2017, as part of the ongoing phased development of another Orbit site known as Phase C, Liverpool Road, St Helens, clean natural Shirdley Hill Sand was transferred from the St Helens site to the Lees Road site in consideration of practical sustainability principals relating to the optimum re-use of soils while minimising disposal of waste soils to landfill.

3.21 This was driven by the requirement for soil materials to be imported into the Lees Road site in order raise site levels and for re-use as general bulk fill.

3.22 The re-use of materials was undertaken under a Materials Management Plan compiled by The Arley Consulting Company Limited (TACCL), in line with the CL:AIRE Definition of Waste: Development Industry Code of Practice (March 2011) (CoP) so that the activity could be undertaken without the need for Environmental Permitting.

3.23 Subsequently in January 2017, at the St Helens 'Donor' site, overlying Made Ground was excavated and stockpiled in order to 'win' the underlying natural strata, which comprised mainly Shirdley Hill Sand and to a lesser extent cohesive Glacial Till. The natural soils, once excavated, were removal from site and transferred to Lees Road, as the 'Receiver' site, for direct use without treatment in line with the 'Direct Transfer' scenario as outlined in the CL:AIRE CoP.

3.24 The Validation Report associated with the CL:AIRE CoP Material Management Plan is currently being prepared by TACCL and was awaited during writing of this report. As such, specific details such as volume of imported material, method and location of distribution at the Lees Road site cannot be confirmed at present.

3.25 However, once the report is received from TACCL, it will be reviewed in order to determine if any additional sampling and testing of the imported soil is required as part of the current Remediation Strategy.

4.0 UPDATED GROUND GAS RISK ASSESSMENT

4.1 The WML Phase 2 report was issued after the completion of 3no of the required 6no ground gas monitoring visits. Therefore, for completeness, the following paragraphs provide an Updated Ground Gas Risk Assessment based on the completed gas monitoring.

Methodology

4.2 Current guidance for the assessment of risk associated with the presence of hazardous ground gases (principally methane and carbon dioxide) is provided in two key documents, namely:

- Code of practice for the Characterisation and remediation from Ground Gas in Affected Developments. British Standard Institution (BS 8485: 2015); and
- Assessing Risks posed by Hazardous Ground Gases to Buildings CIRIA (C665, 2007).

4.3 The assessment presented herein is primarily based on the BS8485 document.

4.4 Hazardous ground gas qualitative risk assessment is based on a conceptual model similar to that used for soil and groundwater contamination sources (i.e., source-pathway-receptor pollutant linkages). A semi-quantitative estimate of risk can be assessed based on knowledge of the conceptual model and a measure of hazardous gas concentration and gas flow at the site within monitoring standpipes.

4.5 Based on the measured flow rates and hazardous gas concentrations, individual "hazardous gas flow rates" (Q_{hg}) can be derived for each monitoring point, from which the "gas screening value" (GSV), and then the "Characteristic Situation" (CS) can be determined.

4.6 BS8485 provides guidance on the level of gas protection requirements based upon the CS and the proposed development based on building type as outlined in Table 3 of the document.

Table 3 - Building Types

	Type A	Type B	Type C	Type D
Ownership	Private	Private or commercial/ Public, possible multiple	Commercial / Public	Commercial / Industrial
Control (Change of use)	None	Some but not all	Full	Full
Room Sizes	Small	Small/ medium	Small to Large	Large Industrial/ Retail Park style

4.7 It is assumed that the proposed development classifies as a Type D building which includes industrial style buildings having large volume internal spaces that are well ventilated and are corporately owned with building management controls.

4.8 However, the internal smaller rooms such as offices, kitchens and bathrooms are classified as Type C which includes single occupancy of the smaller ground-floor spaces.

Ground Gas Conceptual Model

4.9 The site is not in an area recorded as being affected by naturally occurring radon gas.

4.10 The site is not within influencing distance of any operational, non-operational or historical landfills.

4.11 The underlying geology does not include shallow coal seams which could have the potential to release hazardous ground gas.

4.12 Made Ground beneath the site does not contain significant quantities of degradable material with the potential to generate significant volumes of ground gas therefore being low.

4.13 Therefore, the preliminary risk to the development from ground gas has been assessed as low. Nevertheless, it has been considered prudent to undertake ground gas monitoring, primarily for methane and carbon dioxide, with associated flow rates, on 6no occasions, between the 15th July and 1st October 2015.

Conclusions and Recommendations

4.14 The results indicated no detectable concentration of methane with carbon dioxide concentrations generally ranging from 0.5% to 6.3% by volume in air (v/v). The readings in excess of 5% namely 5.7% to 6.3%, were all recorded within WS3 on three of the six occasions. No detectable ground gas flows have been recorded during the initial monitoring visits.

4.15 The results for each individual standpipe have been assessed with reference to guidance provided in BS8485:2015. Based on the measured flow rates and hazardous gas concentrations, individual "hazardous gas flow rates" (Qhg) have been derived for each monitoring point.

4.16 From this, the "Characteristic Situation" (CS) is determined, with reference to Table 2 of BS8485:2015 as CS1. This indicates the majority to classify as 'Very Low Hazard Potential' in accordance with the guidance document. The CS for each standpipe per visit is presented on Table 1 in Appendix 03.

4.17 Under such circumstances, Table 3 of the document indicates that no gas protection would be required for a commercial building. Notwithstanding this, where the level of carbon dioxide exceeds 5% v/v, the document recommends that an increase in the characteristic gas regime is considered, thus increasing the Qhg for three of the six monitoring visits undertaken in WS3 to CS2. The results are presented on Table 1 in Appendix 03.

4.18 However, in consideration of the age of the Made Ground and general lack of potential gas generating sources, the elevated readings between 5.7% and 6.3% in WS3 are not considered to be representative of the gas regime in the wider site area.

4.19 Due to the nature of the structures, the industrial floor slabs within both Buildings 1 and 2 are to be constructed of well reinforced ground bearing slabs with minimal penetrations with widely spaced construction joints. Also taking into consideration the large, ventilated open plan nature of the structures the likelihood of any significant build-up of ground gas is considered low.

4.20 Consequently, the majority of the site is indicated to classify as Characteristic Gas Situation (CGS) 1 – 'Very Low Gas Risk' in accordance with BS8485:2015. Under such circumstances, and in consideration of the site conceptual model, no specific gas protection measures would be required other than ensuring that construction joints and service penetrations through the slab are fully sealed in accordance with current guidance.

5.0 REMEDIATION STRATEGY

General

5.1 The WML Phase 2 report has concluded that the likelihood of widespread significant ground contamination occurring beneath the site is considered low. However, as the investigations were limited to a degree by access restrictions, it has been considered prudent to adopt a precautionary approach and make provision for dealing with possible unrecorded contamination sources during the groundwork operations, especially within formerly inaccessible areas and in proximity to the former boiler house and electricity sub-station.

5.2 It is envisaged therefore that the precautionary remedial strategy to be adopted will comprise a watching brief, during the demolition and earthworks stages, with the following actions being undertaken where any unforeseen ground contamination is encountered.

- The undertaking the required site enabling works, including the breaking out and excavation of existing slabs, other hard surfaces and foundations where required under a watching brief.
- Excavation, removal and disposal from site of all encountered fuel infrastructure including tanks and fuel lines after excavation of slabs.
- Excavation of decommissioned electricity sub-station floor slabs and inspect exposed ground for any signs of contamination.
- Excavation and removal from site, as far as reasonably practical, of any hydrocarbon impacted soil encountered within the proximity of the boiler house and any removed tanks.
- Where reasonably practical, pumping of any hydrocarbon contaminated groundwater from excavations for disposal from site.
- Assessing the residual risk from any remaining hydrocarbon contamination and, where necessary, outline the requirements for further remedial measures where such risks are considered unacceptable.
- Assessing the risk from any previously unidentified contamination encountered during the site enabling works and providing a strategy for its appropriate remediation where the risk is considered unacceptable.
- Providing clean soil cover to soft landscaped areas.

5.3 Therefore, additional investigations are considered necessary in the areas of the electricity sub-stations, boiler house and fuels storage tanks to establish whether these areas contain contamination sources and if so, the nature and extent of such sources.

5.4 However, in consideration that demolition is yet to be undertaken, it is considered more appropriate to undertake such investigations as part of the site enabling works as outlined in the following paragraphs.

Site Enabling Works

5.5 It is anticipated that site development will include the demolition of existing structures which should not proceed until an appropriate Asbestos survey of the existing building has been undertaken and any Asbestos Containing Materials (ACM) removed by an appropriately licensed contractor. Similarly, any demolition materials present on site and considered for re-use should be inspected with any ACM removed accordingly prior to crushing.

Electricity Sub-Stations

5.6 The proposed development indicates the removal of the existing electricity sub-stations which dates back to at least 1976. Due to their age, it is advised that discussions should be held with the statutory service provider regarding the status of the facility and particularly whether any equipment potentially containing PCB's has been appropriately de-commissioned.

5.7 Once decommissioned in accordance with the specialist's Method Statement, the sub-station plant shall be removed from site under appropriate duty of care.

5.8 On removal, any concrete slabs beneath the sub-station will be inspected and, if considered suitable, will be excavated and crushed for subsequent use as backfill to the excavations.

5.9 On removal of the concrete, the resulting excavations will be inspected for any residual soil and/or groundwater contamination. Where this is deemed to be localised, it will be excavated and removed from site under controlled conditions with the resulting excavations being sampled for subsequent Selected Polychlorinated Biphenyl congeners (PCBs).

5.10 Any PCB contaminated soil so determined will be segregated and stockpiled on impermeable sheeting and clearly demarcated as contaminated soil/material for immediate removal off-site. The contaminated material will be stockpiled a sufficient distance from any other stockpiled clean or obviously less contaminated soil to prevent cross-contamination if immediate disposal to landfill is not possible.

5.11 In addition, it will be stockpiled a sufficient distance from adjacent properties and covered to minimise odour until such time as it is removed from site. Alternatively, contaminated soils will be placed directly into trucks for immediate off-site disposal.

5.12 Where significant soil and/or groundwater contamination is encountered, the excavations will be back-filled and the lateral extent of the ground contamination will be delineated by trial pits and visual/olfactory inspection followed by chemical analysis.

Hydrocarbon Storage Tanks

5.13 Site inspections in 2015 did not indicate the presence of ASTs in the northern section of the site at the position of the suspected historical hydrocarbon storage tanks. However, it cannot be discounted that USTs could be encountered within this section of the site in the area indicated on drawing SK-03 in Appendix 01.

5.14 Where such tanks are encountered, prior to any excavation being undertaken they will be inspected by a specialist decommissioning contractor to establish their current status.

5.15 Any remaining fuel within the tank will be removed with associated fuel lines being drained down. This will be undertaken by a specialist contractor under controlled conditions and agreed Method Statements to ensure that the risk of spillage of fuel is kept to a minimum. The tank and associated lines will subsequently be de-gassed prior to being excavated for removal off-site under appropriate duty of care.

5.16 On removal of the tanks and associated pipework, any concrete cradles around the tanks will be inspected and, if considered suitable, will be excavated and crushed for subsequent use as backfill to the excavations.

5.17 On removal of the concrete, the resulting excavations will be inspected for any residual soil and/or groundwater contamination. Where this is deemed to be localised, it will be excavated and removed from site under controlled conditions with the resulting excavations being sampled for subsequent chemical analysis and compared against the Site Screening Levels presented in Appendix 04.

5.18 Hydrocarbon contaminated soil will be segregated and stockpiled on impermeable sheeting and clearly demarcated as contaminated soil/material for immediate removal off-site. The contaminated material will be stockpiled a sufficient distance from any other stockpiled clean or obviously less contaminated soil to prevent cross-contamination if immediate disposal to landfill is not possible.

5.19 In addition, it will be stockpiled a sufficient distance from adjacent properties and covered to minimise odour until such time as it is removed from site. Alternatively, contaminated soils will be placed directly into trucks for immediate off-site disposal.

5.20 Where significant soil and/or groundwater contamination is encountered, the excavations will be back-filled and the lateral extent of the ground contamination will be delineated by trial pits and visual/olfactory inspection followed by chemical analysis.

5.21 Further assessment of the residual risk will then be undertaken, which may include Detailed Quantitative Risk Assessment (DQRA) modelling to determine revised Site Specific Target Concentrations (SSTCs) and further remediation objectives in consultation with the regulatory bodies.

5.22 The requirement for any long term Monitoring and Maintenance Plan would also be established at this stage.

Capping Requirements for New / Modified Landscaped Areas

5.23 Any natural Shirdley Hill Sand, Glacial Till or weathered Sherwood Sandstone excavated as part of the groundworks may be used as sub-soil subject to further chemical analysis to confirm suitability.

5.24 In consideration of the test results the Made Ground is not considered to pose a significant risk to human health based on the commercial end-use.

5.25 However, it may be considered prudent to remove Made Ground from beneath proposed soft landscaping or alternatively to cover such materials with a nominal 300mm of clean soil to remove any residual risks from a direct contact pathway in such areas.

5.26 This would usually comprise, from ground level:-

- 150mm (minimum)Topsoil
- 150mm Subsoil / or increased thickness of Topsoil

5.27 A cross sectional drawing of the capping thickness required, referenced CV3 is presented in Appendix 01.

5.28 Where new trees are proposed, the thickness of the capping horizon within the tree pits may need to be increased. Confirmation of the required thickness to sustain healthy tree growth should be obtained from the landscape architect and may be dependent upon the tree species.

Unexpected Ground Contamination

5.29 Under all circumstances during groundworks operations, where unexpected ground contamination is encountered or suspected, work will cease and WML will be informed immediately. WML will inspect the site and advise of the most appropriate measures to deal with such contamination. This may include taking samples for chemical analysis or advising that the material should be disposed to landfill.

5.30 Any unsuitable contaminated soil encountered during the works will be segregated and stockpiled on impermeable sheeting and demarcated as contaminated soil for removal off-site. The contaminated soil will be stockpiled a sufficient distance from any other stockpiled clean soil to prevent cross-contamination if immediate disposal to landfill is not possible.

5.31 If unexpected ACM were to be encountered, such will be removed from site by a licensed asbestos contractor.

Potable Water Supply

5.32 On the basis of the available chemical test results, specific protection measures to water supply pipes are not indicated to be required.

5.33 However, it is recommended that consultation is undertaken with the local supplier to confirm this once the proposed route and depth of the pipes are known and particularly if/where hydrocarbon contamination is encountered along the pipe route.

6.0 VALIDATION

Ground Contamination

6.1 Removal of ground contamination will be witnessed by WML who will take independent site records, including photographs to demonstrate appropriate compliance with the Remediation Strategy and subsequent Method Statements.

6.2 Removal of hotspots will be validated by visual inspection to include photographs and measurements of the resulting excavations. Samples will be taken from the sides and, where practical, the bases of excavations for chemical analysis to demonstrate that remaining soils do not exceed the Screening Levels.

6.3 Records of all material removed from site will be kept by the Site Manager to demonstrate compliance with Duty of Care regulations. This will include a record of volumes of waste taken from site and details of the landfill facility receiving the waste.

6.4 Environment Agency pre-notification requirements will be complied with for the removal and disposal of any waste considered to be Hazardous, backed up where necessary by Waste Acceptance Criteria (WAC) testing.

Topsoil/Subsoil

6.5 Where possible, Topsoil/subsoil will be sourced directly from site. However, should further topsoil and/or subsoil need to be imported to make up a deficit, its source will be clearly identified by reference to the site of origin. This will be accompanied by the results of appropriate chemical analysis from the supplier to certify material suitability. Certificates will be forwarded to the environmental consultant for inspection prior to any imported material being brought to site.

6.6 Notwithstanding the above, topsoil and/or sub-soil derived from site or delivered to site will be subject to further chemical analysis to confirm suitability. In this respect a minimum of 1 sample per 50m³ of topsoil and 1 sample per 200m³ of sub-soil will be required. The results of the additional validation analysis will be compared against Site Assessment Criteria for 'Commercial' use as presented in Appendix 04.

6.7 Should the results of such analysis significantly exceed the relevant Site Assessment Criteria in a significant number of samples, the soil will be removed from site and replaced with material which meets the site requirement.

6.8 The site manager will provide an approximate volume for the site derived topsoil/sub-soil and will keep records of the volumes of any imported topsoil and sub-soil delivered to site in the form of delivery slips. The records will be presented as confirmation that sufficient analysis has been undertaken on site derived and/or imported topsoil/sub-soil.

6.9 The thickness of clean cover will be validated by the Site Manager, either by taking 'pre-placement' and 'post-placement' spot levels in the landscaped area and recording this on plan, or by WML by undertaking hand-dug trial pits with photographic records following placement. Where hand dug trial pits are preferred for verification, these will be undertaken on a 10m square grid and may also be required in discrete areas as spot checks.

6.10 The photographic record will confirm the required clean cover thickness by use of a levelling staff. Each photograph will also clearly show the plot number relating to each trial pit excavation.

7.0 VALIDATION REPORT

7.1 On completion of the Remediation Works, a Validation Report will be submitted to the Local Planning Authority for approval.

7.2 The Validation Report will include:

- Details of the additional investigations and chemical analyses undertaken within the areas of former electricity sub-stations and suspected hydrocarbon storage tanks.
- Details of any unexpected ground contamination and the measures undertaken to deal with this, to include records of excavation, the results of chemical analysis resulting from the removal of contaminated soil.
- Sample waste management records confirming compliance with Duty of Care regulations;
- Records of the volumes and suitability of any imported topsoil and sub-soil delivered to site in the form of delivery slips and certificates.
- Results of subsequent chemical analysis of re-used and/or imported topsoil/sub-soil to confirm compliance with the Site Specific Assessment Criteria.
- Survey plans indicating spot levels in proposed landscaped areas taken before and after up-filling with imported sub-soil/topsoil.
- Alternatively, photographic evidence of suitable sub-soil/topsoil cover in all landscaped areas.

7.3 The Validation Report will also include a comment on any residual risk associated with the site following the remedial works.

7.4 It will be recommended that the Validation Report be included in the Health and Safety file for the site together with the site Maintenance and Management Plan.

APPENDIX 01

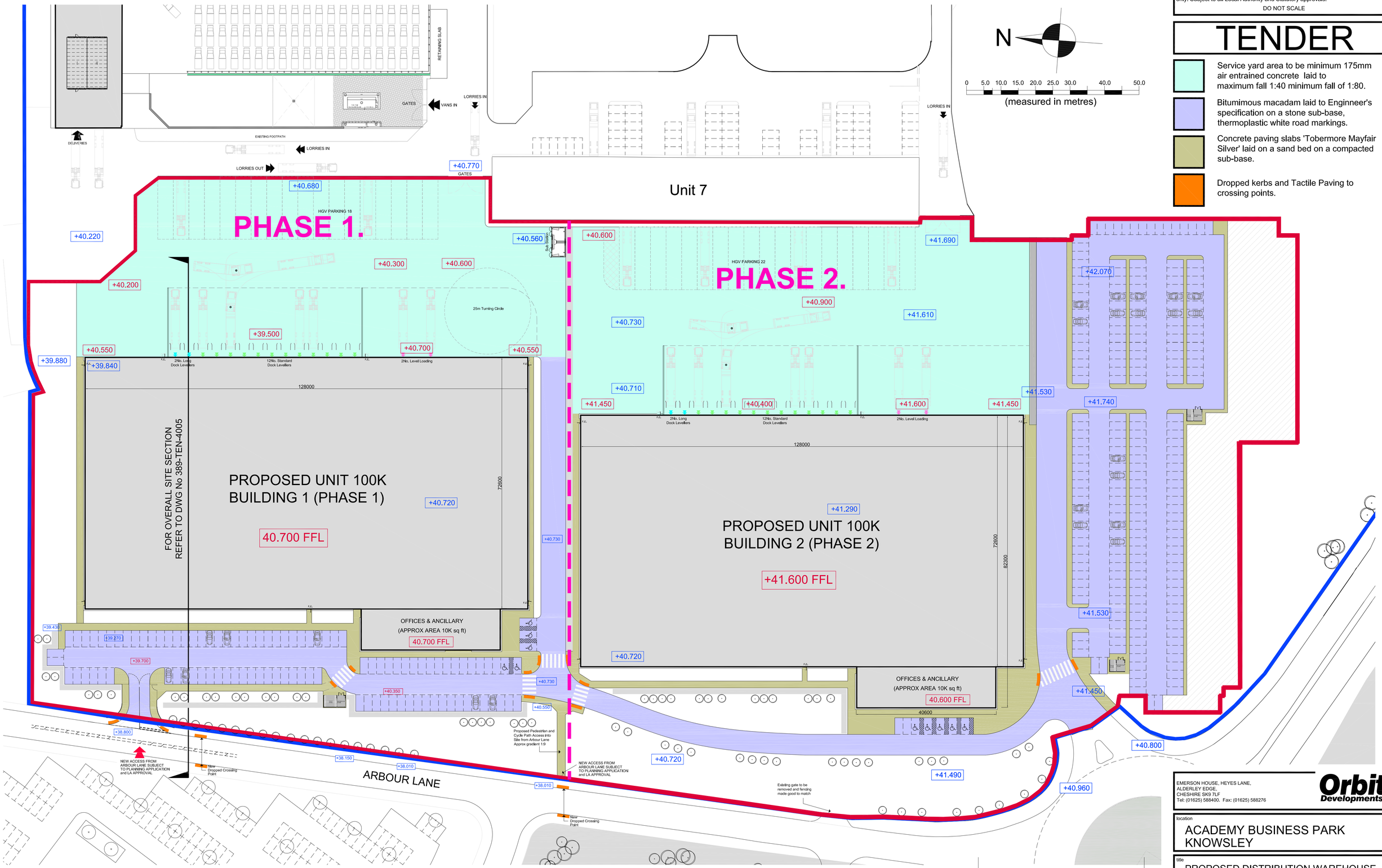
Drawings

The Contractor is responsible for checking dimensions and any discrepancy to be verified with the Architects before proceeding. Figured dimensions to be worked to only. Subject to all Local Authority and Statutory approvals.

DO NOT SCALE

TENDER

- Service yard area to be minimum 175mm air entrained concrete laid to maximum fall 1:40 minimum fall of 1:80.
- Bitumimous macadam laid to Enginneer's specification on a stone sub-base, thermoplastic white road markings.
- Concrete paving slabs 'Tobermore Mayfair Silver' laid on a sand bed on a compacted sub-base.
- Dropped kerbs and Tactile Paving to crossing points.



Please Read in Conjunction with Tyler Grange Landscaping Proposals

REV	DESCRIPTION	DATE

EMERSON HOUSE, HEYES LANE,
ALDERLEY EDGE,
CHESHIRE SK9 7LF
Tel: (01625) 588400. Fax: (01625) 588276

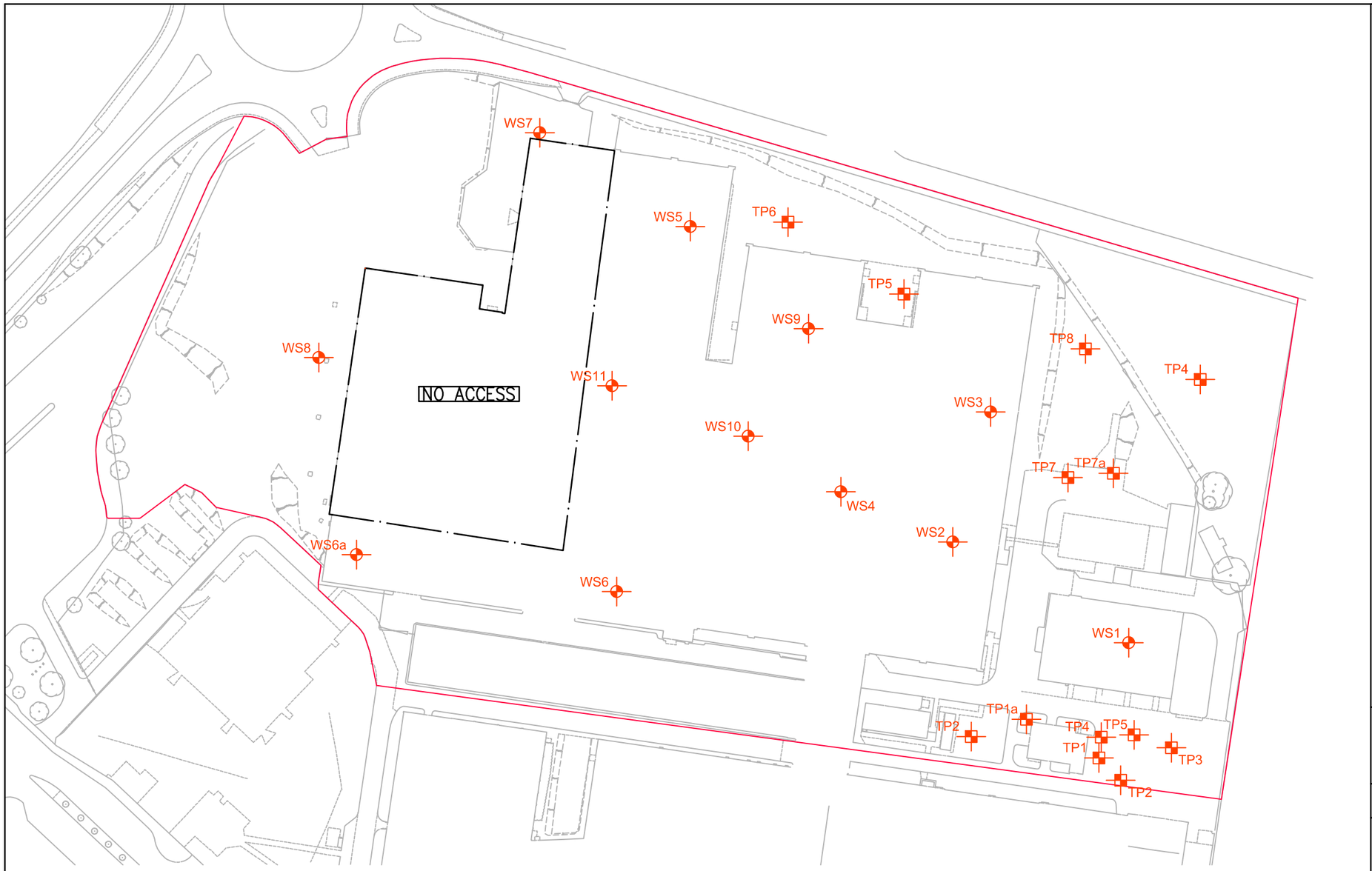
Orbit Developments

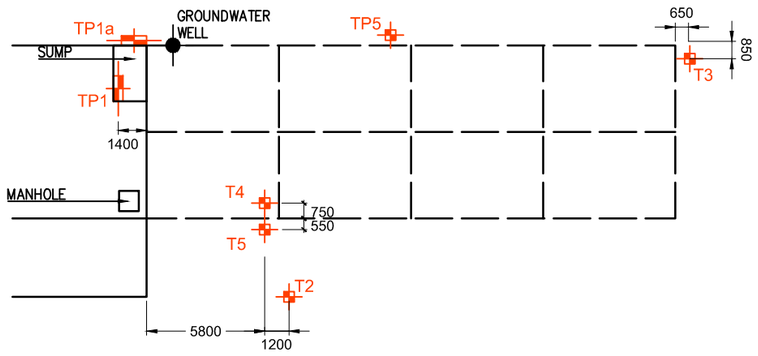
location
ACADEMY BUSINESS PARK
KNOWSLEY

title
PROPOSED DISTRIBUTION WAREHOUSE
HARD LANDSCAPING PLAN

scale	ref	checked	date
1:500 @ A1	t.l.h.		11.12.15

drawing no.
389-TEN-4006





KEYS:

TRIAL PIT (WML 2015)

WINDOW SAMPLE (WML 2015)

SITE BORDER

Rev.	Amendment	Date	By	Ch

Project
LEES ROAD, KNOWSLEY

Client
ORBIT

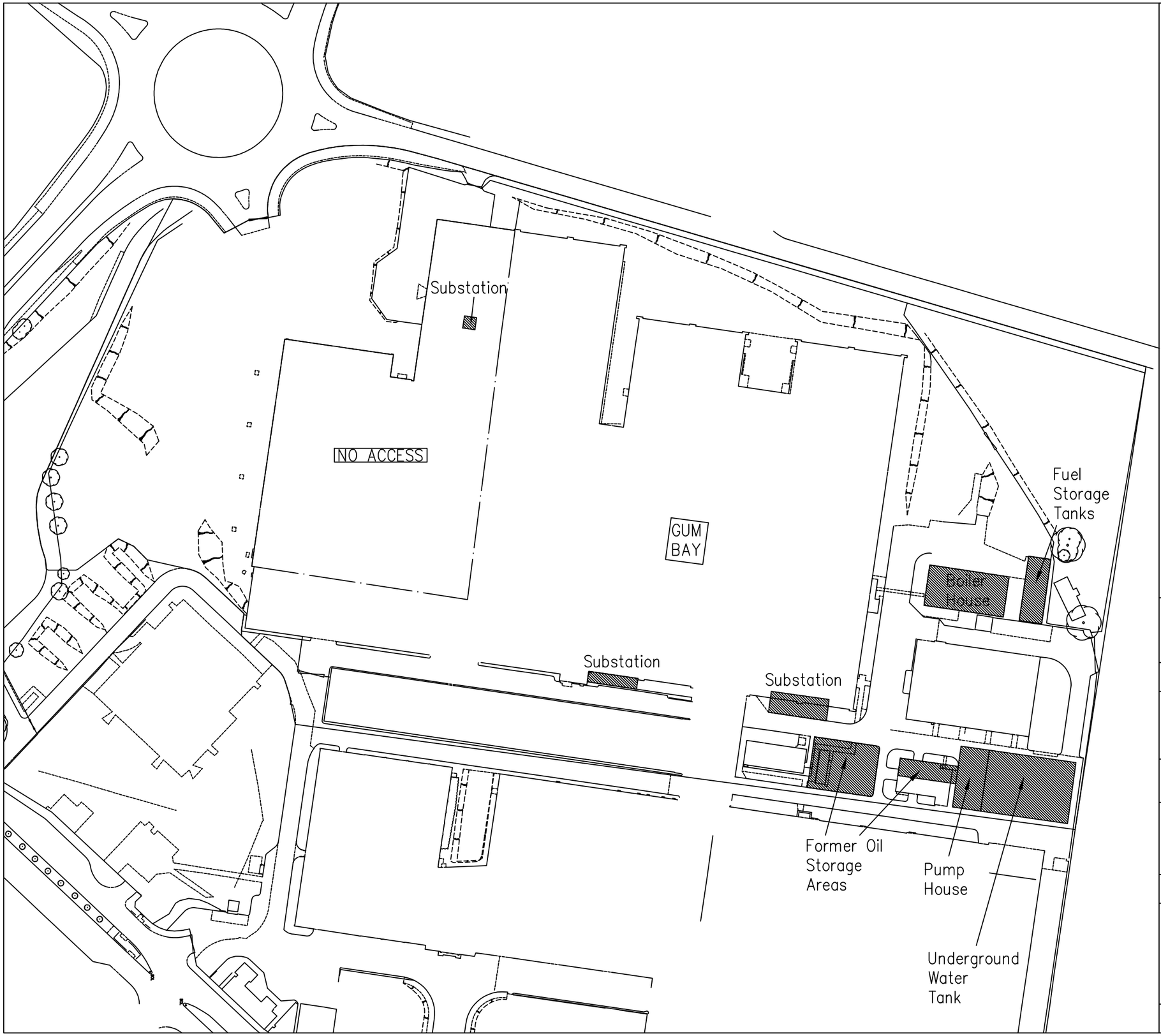
Title
EXPLORATORY HOLE
LOCATION PLAN

Drawn	Checked	Date	Scale
AG		12/08/2015	NTS

WML CONSULTING
Civil, Structural & Geotechnical Engineers
No.8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL
Tel 0161 482 0600
Fax 0161 486 9210
e-mail info@wmlconsulting.co
www.wmlconsulting.com

Job No. 6483G

Drawing No. SK-01



KEYS:

SITE BOUNDARY

AREAS WHERE POTENTIAL CONTAMINATION SOURCES COULD BE ENCOUNTERED

Rev.	Amendment	Date	By	Chkd

Project
LEES ROAD, KNOWSLEY

Client
ORBIT

Title
EXISTING SITE FEATURES

Drawn	Checked	Date	Scale
AG	SCS	18/08/2015	NTS

WML CONSULTING
Civil, Structural & Geotechnical Engineers
No.8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL
Tel 0161 482 0600
Fax 0161 486 9210
e-mail info@wmlconsulting.com
www.wmlconsulting.com

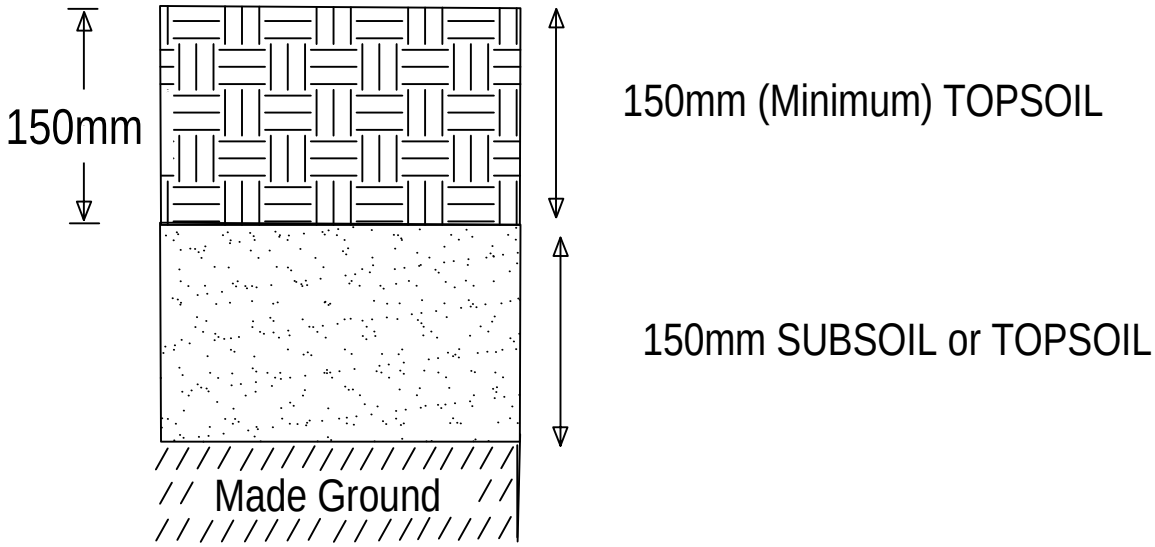
Job No. 7633G

Drawing No. SK-03

Project					
SOIL CAPPING THICKNESS					
Title					
STANDARD DETAIL					
Job No.	Drawing No.	Drawn	Checked	Date	Scale
SD	CV3	SCS	PGD	24/02/2017	NTS

WML CONSULTING
Civil, Structural & Geotechnical Engineers
No.8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL
Tel 0161 482 0600
Fax 0161 486 9210
e-mail info@wmlconsulting.com
www.wmlconsulting.com

Landscaping underlain by Made Ground



Notes

All capping soils (Topsoil / subsoil) will need to be subject to chemical suitability testing in accordance with the guidelines outlined within the Remediation Strategy Report.

All capping thickness and capping requirements are subject to confirmation with the Local Authority where applicable.

Where formation levels need to be achieved, the capping thickness can be increased with subsoil. The subsoil would be subject to chemical suitability testing.

Ideally all subsoil should be granular and free draining.

APPENDIX 02

Local Authority Correspondence

Knowsl@y Council

DIRECTORATE OF PLACE
TOWN AND COUNTRY PLANNING ACT 1990

PLANNING PERMISSION

Application No: 15/00819/FUL

Name and address of applicant
Orbit Investments (Properties) Ltd
Emerson House
Heyes Lane
Alderley Edge
Cheshire
SK9 7LF

Name and address of agent
The Emerson Group - Planning Dept
Emerson House
Heyes Lane
Alderley Edge
Cheshire
SK9 7LF

Date of Receipt: 14 December 2015

Date Valid: 14 December 2015

Address/Location Of Development:

Units 3, 4, 5A/5B, 6, 8 & Loading Bay
Academy Business Park
Lees Road
Knowsley Industrial Park
Kirkby
Knowsley

Description of Development:

APPLICATION TO VARY CONDITIONS 2, 4 AND 5 ATTACHED TO PLANNING PERMISSION 14/00787/FUL TO ALLOW FOR A NEW VEHICULAR ACCESS OFF ARBOUR LANE TO BE INCLUDED IN PHASE 1 AND THE INTERNAL ACCESS ROAD TO THE FRONT OF BUILDING 2 TO BE INCLUDED IN PHASE 2, ALTERATIONS TO INTERNAL PEDESTRIAN AND VEHICULAR CIRCULATION, ALTERATIONS TO CAR PARKING, REVISED HGV LOADING BAYS AND DOCK LEVELLERS, REVISED LANDSCAPING SCHEME, PROPOSED IMPERFORATE SCREEN ALONG NORTHERN BOUNDARY OF SITE, ALTERATIONS TO AND INCREASE IN HEIGHT OF THE ROOFS OF THE BUILDINGS, ADDITIONAL GLAZING AND REVISED CLADDING

The Council of the Metropolitan Borough of Knowsley hereby give notice in pursuance of the above Act(s) that Planning Permission has been **granted** for the carrying out of the development referred to above in accordance with the application and plans submitted subject to the following condition(s):

1. The development must be begun not later than the expiration of three years beginning with the date of this permission.

   Reason: In order to comply with the requirements of Section 91 of the Town and Country Planning Act 1990 (as amended).

2. The development hereby permitted shall be carried out in accordance with the approved plans and documents listed in Schedule 1.

   Reason: For the avoidance of doubt.

3. No development above ground shall be commenced until details and samples of the proposed external facing materials to be used on walls and roofs, and details of all external doors and windows, have been submitted to and approved in writing by the Local Planning Authority. The development shall be carried out using only the agreed materials.

   Reason: In the interests of visual amenity and to ensure the development complies with the National Planning Policy Framework; Policies CS2 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy EC3 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

4. The development hereby permitted shall not be brought into use for any phase until the areas indicated on the approved plans to be set aside for parking, servicing, vehicular manoeuvring (including provision for pedestrians/cyclists) for that particular phase have been surfaced, drained and permanently marked out or demarcated in accordance with the details and specifications shown in drawing number 389 - PLA - 2037- D and these areas shall be retained as such thereafter unless otherwise agreed in writing by the Local Planning Authority. For the avoidance of doubt, Building 1 shall provide a minimum 102 car parking spaces at all times; Building 2 shall provide 227 car parking spaces unless all activities within the building fall under Use Class B8, under which circumstances 102 car parking spaces shall be provided and those indicated as Additional Parking for B2/B1(c) shall not be implemented in such instance.

   Reason: In the interests of highway and pedestrian safety and to comply with the National Planning Policy Framework; Policy CS7 of the Knowsley Local Plan: Core Strategy , adopted January 2016 and saved Policy EC3 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

5. No above ground development shall commence until a scheme for the provision of cycle and motorcycle parking, in accordance with the Councils current standards, has been submitted to and approved in writing by the Council as Local Planning Authority. The scheme shall be implemented as approved before any part of the development is brought into use and shall be retained as such thereafter unless otherwise agreed in writing with the Local Planning Authority.

   Reason: To ensure that adequate provision is made for parking cycles and motorcycles within the site in the interests of sustainability and ensuring choice of modes of travel and to comply with the National Planning Policy Framework and Policies CS2, CS7 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016.

6. Within 3 months of one of the buildings permitted being brought into use a Travel Plan shall be submitted to and approved in writing by the Local Planning Authority for that building . The Travel Plan shall include immediate, continuing and long-term measures to promote and encourage alternative modes of transport to the

single- occupancy car. For the avoidance of doubt, the Travel Plan shall include, but not be limited to:

a) Involvement of employees.
b) Information on existing transport policies, services and facilities, travel behaviours and attitudes.
c) Access for all modes of transport.
d) Targets for mode share.
e) Resource allocation including Travel Plan Co-ordinator and budget.
f) A parking and management strategy.
g) A marketing and communications strategy.
h) Appropriate measures and actions to reduce car dependence and encourage sustainable travel.
i) An action plan, including a timetable for the implementation of each of the above.
j) Mechanisms for monitoring, reviewing and implementing the Travel Plan.

The approved Travel Plan shall be implemented in accordance with the timetable contained therein and shall continue to be implemented as long as any part of the building to which it relates is occupied and in use unless otherwise agreed in writing with the Local Planning Authority.

An annual report shall be submitted to the Local Planning Authority no later than 1 month following the anniversary of the first occupation of the relevant building for a period of 5 years. The report shall include a review of the Travel Plan measures, monitoring data and updated action plan.

Reason: To maximise opportunities for travel by modes of transport other than the private car in the interests of sustainability and to comply with the National Planning Policy Framework; Policies CS2, CS7 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy T9 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

7. No development shall take place until an assessment of the risks posed by any contamination has been submitted to and approved in writing by the Local Planning Authority. This assessment must be undertaken by a suitably qualified contaminated land practitioner, in accordance with authoritative guidance (CLR 11), and shall assess any contamination on the site, whether or not it originates on the site.
Moreover, it must include, where relevant:

i) a survey of the extent, scale and nature of contamination;
ii) an assessment of the potential risks, were relevant, to:
- human health;
- property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes;
- adjoining land;
- groundwaters and surface waters;
- ecological systems; and
- archaeological sites and ancient monuments.

A. Submission of Remediation Scheme

Where land affected by contamination is found which poses unacceptable risks, no development shall take place until a detailed remediation scheme has been submitted to and approved in writing by the Local Planning Authority. The scheme must include an appraisal of remediation options, identification of the preferred option(s), the proposed remediation objectives and remediation criteria, and a

description and programme of the works to be undertaken including the verification plan. As a minimum, the scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to its intended use.

B. Implementation of Approved Remediation Scheme

The approved remediation scheme shall be implemented and a verification report submitted to and approved in writing by the Local Planning Authority, prior to the development (or relevant phase of development) being brought into use.

C. Reporting of Unexpected Contamination

In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported immediately to the Local Planning Authority. Development on the part of the site affected must be halted and a risk assessment carried out and submitted to and approved in writing by the Local Planning Authority. Where unacceptable risks are found remediation and verification schemes shall be submitted to and approved in writing by the Local Planning Authority. These shall be implemented prior to the development (or relevant phase of development) being brought into use.

D. Importation of Soil/Material

No top soil is to be imported to the site until it has been tested for contamination and assessed for its suitability for the proposed development, a suitable methodology for testing this material should be submitted to and agreed by the Local Planning Authority prior to the soils being imported onto site. The methodology should include the sampling frequency, testing schedules, criteria against which the analytical results will be assessed (as determined by the risk assessment) and source material information. The analysis shall then be carried out and evidence submitted to and approved in writing by the Local Planning Authority.

Reason: In the interests of safety to prevent any risk to the public/employees and general pollution of the environment and in accordance with the National Planning Policy Framework; Policies CS2 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy ENV5 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

8. Notwithstanding the Code of Demolition submitted with planning application 14/00787/FUL no works shall take place on the site until a Construction and Demolition Environmental Management Plan has been submitted to and approved in writing by the Local Planning Authority. The document shall set out best practicable means to minimise the impact of construction and demolition activities on the site and shall include, but not be restricted to, the following:

i) Working methods and programme;
ii) Construction/demolition traffic routes;
iii) Confirmation that with regard building dismantling the removal of external features identified as having potential to support roosting bats, such as soffits, barge boards and fascias, will be removed first and by hand (or carefully removed using light machinery).
iv) Equipment selection;
v) Equipment siting;
vi) Measures to direct noise away from sensitive locations;
vii) Regular maintenance of equipment;
viii) Use of temporary power plant;

ix) No idling policy;
x) Lighting;
xi) Handling material to minimise noise;
xii) Minimal use of audible vehicle alarms;
xiii) Employ best practice in line with BS 5228 (2009).
xiv) A toolbox talk before working on site which includes illustrations of ground nesting birds (these should be left in a visible area throughout the life of the works), their responsibilities under The Wildlife and Countryside Act 1981and measures to be taken if a nesting bird is found during works;
xv) Wheel wash facility details including type and location;
xvi) Details of dust suppression measures.

Demolition and construction work shall only be carried out in accordance with the agreed scheme at all times unless otherwise agreed in writing.

Reason: In the interests of amenity, safety and the protection of birds and to comply with the Wildlife and Countryside Act 1981; the National Planning Policy Framework; Policies CS2, CS7, CS8 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policies ENV2 and ENV3 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

9. No demolition or construction works shall take place outside 08:00 hours to 18:00 hours Mondays to Fridays and 08:00 hours to 13:00 hours on Saturdays and at no time on Sundays or Bank Holidays unless otherwise agreed in writing with the Local Planning Authority.

   Reason: In the interests of amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy and saved Policy ENV2 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

10. The level of noise emitted from the site when operational shall not exceed 42 dB L Aeq (1 hour) between 07:00 and 23:00 Monday to Friday and 32dB L Aeq (5 mins) at any other time, as measured on the boundary of the residential properties on Delfby Crescent, Southdene, as stated in the Noise Impact Assessment ref 6243382 - 00, by Bureau Veritas submitted with planning application 14/00787/FUL unless otherwise agreed in writing by the Local Planning Authority.

    Reason: In the interests of residential amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy ENV2 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

11. Prior to any fixed plant being used on the premises, it shall be assessed to ensure it meets the performance outlined in the Noise Impact Assessment ref 6243382 - 00, by Bureau Veritas submitted with planning application 14/00787/FUL. If it does not meet this standard, it shall be installed in accordance with a mitigation scheme previously submitted to and approved in writing by the Local Planning Authority. Documentary evidence of the works shall be submitted to and approved in writing by the Local Planning Authority prior to first use of the equipment and the agreed works shall be retained on site at all times that the plant is on site.

    Reason: In the interests of amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy ENV2 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

12. The development hereby permitted shall not be commenced until a scheme for the provision and implementation of a surface water regulation system to manage the risk of flooding from both overland flow and from the sewer network, has been submitted to and approved in writing by the Local Planning Authority. The agreed scheme shall be implemented prior to the first occupation of any building hereby permitted.

    Reason: To prevent increased risk of flooding by ensuring the satisfactory storage of/disposal of surface water from the site and to comply with the National Planning Policy Framework and Policy CS24 of the Knowsley Local Plan: Core Strategy, adopted January 2016.

13. No work shall be carried out outside the confines of the buildings on the site.

    Reason: In the interests of visual and residential amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policies EC3 and ENV2 of the Knowsley Replacement Unitary Development Plan adopted June 2006.

14. No raw materials, finished or unfinished products or parts, crates, materials, waste, refuse or any other item shall be stacked or stored outside any building on the site without the prior approval in writing of the Local Planning Authority.

    Reason: In the interests of visual amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy EC3 of the Knowsley Replacement Unitary Development Plan adopted June 2006.

15. No vehicle repairs or maintenance shall be carried out outside the buildings hereby permitted on the site.

    Reason: In the interests of visual and residential amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policies EC3 and ENV2 of the Knowsley Replacement Unitary Development Plan adopted June 2006.

16. No external system of public address, loudspeaker system or amplified music shall be operated within the site without the prior written permission of the Local Planning Authority.

    Reason: In the interests of visual and residential amenity and to comply with the National Planning Policy Framework; Policy CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policies EC3 and ENV2 of the Knowsley Replacement Unitary Development Plan adopted June 2006.

17. A validation report shall be submitted after 30th September 2017, for approval in writing by the Local Planning Authority confirming the remediation treatment carried out for the eradication of Japanese Knotweed within the site and that the site has been free of the invasive species for 12 consecutive months unless a validation report is submitted in accordance with a timescale agreed with the Local Planning Authority confirming the eradication treatment of the Japanese Knotweed and its complete removal from site.

    Reason: To ensure that Japanese Knotweed has been eradicated from the development site, to prevent the spread of the plant through development works and to comply with the National Planning Policy Framework and Policy CS2 of the Knowsley Local Plan: Core Strategy, adopted January 2016.

18. Prior to the commencement of the development hereby permitted a scheme for the achievement of the efficient use of resources shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include:

a) Construction methods that minimise waste production and encourage re-use and recycling materials as far as practicable on site;

b) Designing out waste by using design principles and construction methods that prevent and minimise the use of resources and make provision for the use of high quality building materials made from recycled and secondary sources; and

c) Use of waste audits or site waste management plans where applicable to monitor waste minimisation, recycling, management and disposal.

The development shall only be constructed in accordance with the agreed scheme.

Reason: In the interests of sustainability and waste minimisation in accordance with the National Planning Policy Framework and Policy WM8 of the Joint Merseyside and Halton Waste Local Plan 2013.

19. Prior to the buildings hereby permitted coming into use a scheme for the collection and storage of waste, including separated recyclable materials, shall be submitted to and approved in writing by the Local Planning Authority for each building. The agreed scheme shall be implemented at all times that the building the scheme relates to is in use unless otherwise agreed in writing with the Local Planning Authority.

Reason: To ensure that waste created by the use of the buildings hereby permitted can be suitably stored in appropriate waste streams, and is collected from site at appropriate times by a suitable waste collection agency or firm in the interests of sustainability and to comply with the National Planning Policy Framework and Policy WM8 of the Joint Merseyside and Halton Waste Local Plan 2013.

20. The landscape scheme for phases 1 and 2 of the development hereby approved shall be implemented in its finally approved form within the first available planting season following the substantial completion of the phase of development to which that landscaping relates. Any tree or other planting which is lost, felled, removed, becomes diseased, or is substantially damaged within a period of five years thereafter shall be replaced in kind during the first available planting season following the date of loss or damage.

Reason: In the interests of visual amenity and to ensure the development complies with the National Planning Policy Framework; Policies CS2 and CS19 of the Knowsley Local Plan: Core Strategy, adopted January 2016 and saved Policy EC3 of the Knowsley Replacement Unitary Development Plan adopted June 2006.

21. Notwithstanding the provisions of the Town and Country Planning (Use Classes) Order 1987, Building 1 to which this permission relates shall be used for storage and distribution B8 Use only, and Building 2 to which this permission relates shall be used for light industrial, general industrial or storage and distribution use falling within Use Classes B1(c), B2 and B8 only and for no other purpose including any other use falling within Class B1 of the Schedule to that Order or in any provision equivalent to that Class in any statutory instrument revoking and re-enacting that Order, except with the prior grant of a further planning permission; for the avoidance

of doubt the office annexes are ancillary office accommodation to the main use of the buildings.

Reason: To enable the Local Planning Authority to assess any proposal for a further use of either unit in relation to car parking levels, whether or not it falls within the same Use Class and to comply with the National Planning Policy Framework and Policy CS7 of the Knowsley Local Plan: Core Strategy, adopted January 2016.

SCHEDULE 1

Date Received	Reference No. on Plan/Report	Version No.
22 December 2014	ARBORICULTURAL IMPACT & METHOD STATEMENT	no version Number
22 December 2014	1019-05-B	no version Number
18 November 2014	TREE SURVEY	no version Number
25 January 2016	389-PLA-2036-E	no version Number
25 January 2016	389-PLA-2037-D	no version Number
14 December 2015	389-PLA-2038-D	no version Number
14 December 2015	389-PLA-2039-B	no version Number
25 January 2016	389-PLA-2042-D	no version Number
3 February 2016	10130/P01	A
3 February 2016	10130/P02	A
14 December 2015	10130/P03	no version Number
14 December 2015	10130/P04	no version Number
14 December 2015	389-PL-2046	no version Number
25 January 2016	389-PLA-2047-A	no version Number
3 February 2016	10130/P01	REV A
3 February 2016	10130/P02	REV A

REASON(S) FOR THE GRANTING OF PLANNING PERMISSION

The decision to grant planning permission has also been taken having regard to the policies and proposals as set out below, and to all relevant material considerations including supplementary planning guidance:-

National Planning Policy Framework
KNOWSLEY LOCAL PLAN: CORE STRATEGY
SD1 - Sustainable Development
CS2 - Development Principles
CS7 - Transport Networks
CS19 - Design Quality and Accessibility in New Development
CS21 - Greenspaces and Trees
CS24 - Managing Flood Risk
The Joint Merseyside and Halton Waste Local Plan 2013
WM8 - Waste Prevention and Resource Management
WM9 - Sustainable Waste Management Design and Layout of New Development
SAVED POLICIES - KNOWSLEY REPLACEMENT UNITARY DEVELOPMENT PLAN (ADOPTED JUNE 2006)
EC3 - Primarily Industrial Areas
T9 - Travel Plans
DQ4 - Trees and Development
ENV2 - Noise and Vibration
ENV5 - Contaminated Land

This informative is only intended as a summary of the reason(s) for the granting of planning permission. Should you require any further details relating to the decision please contact the relevant case officer (Lee Osborne on 0151 443 2360)

ARTICLE 31 STATEMENT

The Local Planning Authority have worked with the applicant in a positive and proactive manner based on seeking solutions to problems arising in relation to dealing with a planning applications and have implemented the requirement in NPPF para 187.

The description of the application was discussed with the applicant and amended as a result.

NOTE FOR APPLICANT:

IMPORTANT - PLEASE READ CAREFULLY THE NOTES BELOW AS FAILURE TO COMPLY COULD MAKE THE DEVELOPMENT HEREBY PERMITTED UNAUTHORISED

1) This planning permission is granted in strict accordance with the approved plans. It should be noted however that:

   a) Any variation from the approved plans following commencement of the development, irrespective of the degree of variation, will constitute unauthorised development and may be liable to enforcement action.

   b) You or your agent or any other person responsible for implementing this permission should inform Planning Services immediately of any proposed variation from the approved plans and ask to be advised as to the best method to resolve the matter. Most proposals for variation to the approved plans will require the submission of a new planning application.

2) This permission is granted subject to conditions and it is the owner of the property and the person responsible for the implementation of the development who will be fully responsible for their compliance throughout the development and beyond.

3) If there is a condition that requires work to be carried out or details to be approved prior to the commencement of the development this is called a "condition precedent". The following should be noted with regards to conditions precedent.

   a) If a condition precedent is not complied with prior to the start of development, the whole of the development will be unauthorised and you may be liable to enforcement action.

   b) In addition, if the requirements of a condition precedent are subsequently not complied with, the development is unauthorised and the only way to rectify the development is the submission of a new application.

If any other type of condition is breached then you will be liable to a breach of condition notice.

Executive Director (Place)

Date: 4 April 2016

IMPORTANT NOTES FOR YOUR ATTENTION:

1. This permission refers only to that required under the Town and Country Planning Acts and does **not include any consent or approval under any other enactment, bylaw, order or regulation.**

2. **This permission refers only to those plans submitted as part of the Planning Application a copy of which is retained by the Local Planning Authority. The Local Planning Authority should be contacted in writing if it is proposed to amend these plans in any way as a further permission, may be required.**

3. **If a Building Regulations Consent is required for these works it is your responsibility to ensure that the plans submitted for both the Building Regulations Consent and Planning Permission are the same in all respects. Should the plans relating to one consent vary from the other, it will be necessary for you to submit amended plans to this Department and obtain the relevant approval(s) prior to commencing any works.**

4. If the applicant is aggrieved by the decision of the local planning authority to refuse permission or approval for the proposed development, or to grant permission or approval subject to condition, he may appeal to the Secretary of State for the Environment in accordance with section 78 of the Town and Country Planning Act 1990 within six months of the date of this notice. (Appeals must be made on a form, which is obtainable from the Planning Inspectorate). See address below. The Secretary of State has power to allow a longer period for the giving of a notice of appeal but he will not normally be prepared to exercise this power unless there are special circumstances, which excuse the delay in giving notice of appeal. The Secretary of State is not required to entertain an appeal if it appears to him that permission for the proposed development could not have been granted by the local planning authority, or could not have been so granted otherwise than subject to the conditions imposed by them, having regard to the statutory requirements, to the provisions of the development order, and to any directions given under the order. He does not in practice refuse to entertain appeals solely because the decision of the local planning/authority was based on a direction given by him.

5. If permission to develop land is refused or granted subject to conditions, whether by the local planning authority or by the secretary of state for the Environment, and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted he may serve on the Council of the district in which the land is situated a purchase notice requiring that council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.

6. In certain circumstances, a claim may be made against the local planning authority for compensation, where permission is refused or granted subject to conditions by the Secretary of State on appeal or on reference of the application to him. The circumstances in which such compensation is payable are set out in section 114 of the Town and country Planning Act 1990.

Appeal forms and guidance can be obtained from:-

The Planning Inspectorate
Customer Support Unit
Temple Quay House
2 The Square
Temple Quay
BRISTOL
BS1 6PN

Telephone: 0303 444 00 00

APPENDIX 03

Gas Monitoring Results

Table 1 - Site Specific Gas Risk Assessment

Monitoring Well	Date	Max Flow (l/hr)	Max CH4 (%v/v)	Max CH4 Qhg (l/hr)	Max CO2 (%v/v)	Max CO2 Qhg (l/hr)	Characteristic Situation
WS3	15/07/2015	<0.1	<0.1	0.0001	6.3	0.006	CS2
	27/07/2015	<0.1	<0.1	0.0001	1.6	0.002	CS1
	12/08/2015	<0.1	<0.1	0.0001	4.9	0.005	CS1
	24/08/2015	<0.1	<0.1	0.0001	4.9	0.005	CS1
	11/09/2015	<0.1	<0.1	0.0001	5.8	0.006	CS2
	01/10/2015	<0.1	<0.1	0.0001	5.7	0.006	CS2

Monitoring Well	Date	Max Flow (l/hr)	Max CH4 (%v/v)	Max CH4 Qhg (l/hr)	Max CO2 (%v/v)	Max CO2 Qhg (l/hr)	Characteristic Situation
WS5	15/07/2015	<0.1	<0.1	0.0001	1.7	0.002	CS1
	27/07/2015	<0.1	<0.1	0.0001	0.9	0.0009	CS1
	12/08/2015	<0.1	<0.1	0.0001	2.0	0.002	CS1
	24/08/2015	<0.1	<0.1	0.0001	2.7	0.003	CS1
	11/09/2015	<0.1	<0.1	0.0001	3.4	0.003	CS1
	01/10/2015	<0.1	<0.1	0.0001	3.5	0.004	CS1

Monitoring Well	Date	Max Flow (l/hr)	Max CH4 (%v/v)	Max CH4 Qhg (l/hr)	Max CO2 (%v/v)	Max CO2 Qhg (l/hr)	Characteristic Situation
WS9	15/07/2015	<0.1	<0.1	0.0001	0.5	0.0005	CS1
	27/07/2015	<0.1	<0.1	0.0001	0.7	0.0007	CS1
	12/08/2015	<0.1	<0.1	0.0001	0.9	0.0009	CS1
	24/08/2015	<0.1	<0.1	0.0001	0.3	0.0003	CS1
	11/09/2015	<0.1	<0.1	0.0001	0.1	0.0001	CS1
	01/10/2015	<0.1	<0.1	0.0001	0.1	0.0001	CS1

Notes: Where no flows are detected, a value of 0.1l/hr has been assumed to calculate the Q_{hg}.

Where gas concentrations are recorded below detection limits, a value of 0.1% has been assumed.

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				6.3		13.9		79.8		Dry	1018	
WS 5	0.0	0	0.0				1.7		19.7		78.5		Dry	1018	
WS 9	0.0	0	0.0				0.5		20.1		79.3		Dry	1018	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	S. Edwards / P. Platt	Contract: **Academy Business Park Knowsley**
Weather :	Dry	
Equipment used:	LMS Type G3 xi Gas Meter	Date: **15.07.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **1**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				1.6		19.2		79.1		Dry	1001	
WS 5	0.0	0	0.0				0.9		20.3		78.7		Dry	1001	
WS 9	0.0	0	0.0				0.7		20.4		78.8		Dry	1001	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	J Crook	Contract: **Academy Business Park Knowsley**
Weather :	Cloudy showers	
Equipment used:	LMS Type G3 xi Gas Meter	Date: **27.07.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **2**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				4.9		16.2		78.7		Dry	1026	
WS 5	0.0	0	0.0				2.0		19.6		78.3		Dry	1026	
WS 9	0.0	0	0.0				0.9		20.3		78.8		Dry	1026	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	S Edwards	Contract: **Academy Business Park Knowsley**
Weather :	Sunny	
Equipment used:	LMS Type G3 xi Gas Meter	Date: **12.08.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **3**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				4.9		16.0		78.8		Dry	1001	
WS 5	0.0	0	0.0				2.7		18.6		78.6		Dry	1001	
WS 9	0.0	0	0.0				0.3		20.9		78.7		Dry	1001	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	S Edwards	Contract: **Academy Business Park Knowsley**
Weather :	Dry	
Equipment used:	LMS Type G3 xi Gas Meter	Date: **24.08.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **4**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				5.8		16.3		79.0		Dry	1018	
WS 5	0.0	0	0.0				3.4		17.3		79.1		Dry	1018	
WS 9	0.0	0	0.0				0.1		21.2		78.7		Dry	1018	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	S Edwards	Contract: **Academy Business Park Knowsley**
Weather :		
Equipment used:	LMS Type G3 xi Gas Meter	Date: **11.09.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **5**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

Ground Gas Monitoring Record

Borehole	Gas Flow (l/hr)	Borehole Pressure (Pa)	Methane (% v/v)		Methane (%LEL*)		Carbon Dioxide (%v/v)		Oxygen (%v/v)		Nitrogen (%v/v)		Depth to water (m bgl)	Atmospheric Pressure (mB)	Comments
			Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
WS 3	0.0	0	0.0				5.7		15.2		79.0		Dry	1035	
WS 5	0.0	0	0.0				3.5		17.8		78.7		Dry	1035	
WS 9	0.0	0	0.0				0.0		21.4		78.5		Dry	1035	

Notes:

Monitoring should be for not less than 3 Minutes. However, if high concentrations of gases initially recorded, monitoring should be for up to 10 mins.
* LEL = Explosive Limit = 5%v/v
ND - Not Detected

Relevant Information at times of monitoring

Monitored by:	D Leach	Contract: **Academy Business Park Knowsley**
Weather :	Dry	
Equipment used:	LMS Type G3 xi Gas Meter	Date: **01.10.15**
Visible signs of vegetation stress:		
Boreholes sampled for laboratory analysis:		Job No.
Other comments / observations:		Sheet No. **6**

Geo-Ventures (UK) Limited
70 Riverside Close, Waterside, Howley, Warrington, Cheshire WA1 2JD
Tel. 01925 240476 email: paul.platt@geoventures.co.uk

APPENDIX 04

Site Assessment Criteria

Screening Levels
for
"Commercial" end use

Contaminant	Screening Levels for Commercial End Use 6% SOM (mg/kg)
Metals	
Arsenic	640
Boron	240000
Cadmium	190
Chromium VI	33
Copper	68000
Lead*	2330
Mercury	58
Nickel	980
Selenium	12000
Vanadium	9000
Zinc	730000
Non – Metals	
Polyaromatic Hydrocarbons (PAHs) 1% SOM (mg/kg)	
Benz[a]anthracene	170
Benzo[a]pyrene	35
Benzo[b]fluoranthene	44
Benzo[ghi]perylene	3900
Benzo[k]fluoranthene	1200
Chrysene	350
Dibenz[ah]anthracene	3.5
Fluoranthene	23000
Indeno[123-cd]pyrene	500
Naphthalene	190
Phenol	440
Pyrene	54000

Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3240. All rights reserved.
* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.

Contaminant	Screening Levels for Commercial End Use (mg/kg)
Volatile Organic Compounds – VOCs (1% SOM)	
Benzene	27
Ethylbenzene	16
Toluene	56000
Xylene	5900
Total Petroleum Hydrocarbons – TPH (1% SOM)	
Aliphatic C5-6	32000
Aliphatic C6-8	7800
Aliphatic C8-10	2000
Aliphatic C10-12	9700
Aliphatic C12-16	59000
Aliphatic C16-35	1600000
Aliphatic C35 - 44	1600000
Aromatic C5 - 7	26000
Aromatic C7 - 8	56000
Aromatic C8-10	3500
Aromatic C10-12	16000
Aromatic C12-16	36000
Aromatic C16-21	28000
Aromatic C21-35	28000
Aromatic C35 - 44	28000

Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3240. All rights reserved.
* Where not included in the S4UL's criteria for a limited number of contaminants, namely lead, have been derived by DEFRA in their document entitled SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, April 2014.