

Verification Report

Property: Imagination 2, Acornfield Road, Knowsley
Industrial Estate, Knowsley, Liverpool L33 7UF

Prepared for: Wilten Construction Ltd & Seybourne
Estates Limited

Project Ref: 24-0110_02/ P25-006

Planning Consent Ref: 21/00959/FUL

Date of Decision: 22/09/2022

Description of the Proposal: Erection of a detached industrial building (mixed E(g)(iii), B2 & B8 uses) with ancillary offices, car parking, service area and soft landscaping

Condition number(s) to which this document relates: 4 (C) (D) (F)

Issue No.	Status	Issue Date	Author	QA/QC Review
01 02	Final Updated following receipt of letter from Environmental Health & Consumer Protection to Planning Services, dated 11 February 2026	08/01/2026 13/03/2026	 Alan Crossfield BSc. (Hons) MEnvSc CEnv Director	 Kevan Holbrook BSc. (Hons) Director
Competent Person Statement: This Report has been written and / or reviewed by a person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution, and membership of a relevant professional organisation.				

Limitations & Confidentiality Statement

This report has been prepared by Epsilon Environmental Limited with the reasonable skill and care to be expected of a professional consultant having the competence, experience, and resources necessary for the purpose of carrying out similar work in scope and character to the services performed under the Contract. Epsilon Environmental Limited does not warrant or guarantee that the Site is free of hazardous or potentially hazardous materials or conditions. This report does not present a geotechnical assessment of the Site.

Epsilon Environmental Limited obtained, reviewed and evaluated information in preparing this Report from the Client and others. The conclusions, opinions and recommendations have been determined using this information. Epsilon Environmental Limited does not warrant the accuracy of the information provided to it and will not be responsible for any opinions which Epsilon Environmental Limited has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

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1.0 Introduction

1.1 Instruction

Epsilon Environmental Limited (“Epsilon Environmental”) was instructed by Wilten Construction Ltd & Seybourne Estates Limited (the “Client”) to present a Verification Report pursuant to Condition 4 of Planning Consent Ref: 21/00959/FUL at the site known as Imagination 2, Acornfield Road, Knowsley Industrial Estate, Knowsley, Liverpool L33 7UF (the “Site”).

A Site location plan is presented as Figure 1.

1.2 Development Planning Context

The Site was granted full planning consent on 22nd September 2022 under Planning Consent Ref: 21/00959/FUL for the “Erection of a detached industrial building (mixed E(g)(iii), B2 & B8 uses) with ancillary offices, car parking, service area and soft landscaping”.

Attached to the permission was a contaminated land condition, referenced as **Condition 4 A-F** that set out six parts (phases), which between them are designed to ensure that the development is “*carried out in the interests of safety, to prevent pollution of the water environment and to comply with Policy ENV5 of the Knowsley Replacement Unitary Development Plan, adopted June 2006*”. A full copy of the condition wording is set out in Appendix A.

It is noted that third-party reports have been completed in their own rights and the details previously submitted to the Local Planning Authority (LPA), pursuant to the following phases of **Condition 4**:

- 4 A. Contaminated Land Risk Assessment
- 4 B. Submission of Remediation Scheme
- 4 E. Materials Management Plan

Therefore, the outstanding requirements of **Condition 4** are:

- 4 C. Implementation of Approved Remediation Scheme
- 4 D. Reporting of Unexpected Contamination
- 4 F. Importation of Soil/Material

1.3 Report Context

The purpose of the Verification Report to demonstrate where the development has complied with the outstanding requirements of Condition 4 (4C, 4D & 4F). This is Version 2 of the Report, which includes additional information and commentary requested by Environmental Health & Consumer Protection (Helen Bradshawe) at Knowsley Council in their letter dated 11th February 2026 to Planning Services (Planning) and in relation to the Application to Discharge Condition 4 (Contamination) Parts C, D, F pertaining to Planning Permission 21/00959/FUL. A copy of the letter is presented in **Appendix A**.

This document is preceded by a number of reports that have previously been submitted to the LPA to support the discharge of Condition 4, as described in Table 1 below:

Table 1: Schedule of Environmental Reports submitted to-date

a. Preliminary Geo-Environmental Risk Assessment: Plots A, B and C, Image Business Park, Acornfield Road, Knowsley Presented to Knowsley (Image Business Park) Limited dated August 2019 (Delta-Simons Project No. 19-0654.01).	Submitted to support the original application 21/00959/FUL
b. Geo-Environmental Assessment: Plot B, Image Business Park, Acornfield Road, Knowsley Presented to Knowsley (Image Business Park) Limited dated August 2019 (Delta-Simons Project No. 19-0654.02).	Submitted to support the original application 21/00959/FUL and with 25/00053/DISCON
c. Additional Ground Investigation Report Site 2: Image Business Park, Acornfield Road, Knowsley L33 7UF Presented to Knowsley (Image Business Park) Ltd dated June 2021 (Delta-Simons Project No. 19-0654.07).	Submitted to support the original application 21/00959/FUL
d. Controlled Water Risk Assessment and Updated Gas Assessment: Imagination 2 and 3, Image Business Park Presented to: Seybourne Estates Ltd dated July 2022: Delta-Simons Project No: 19-0654.10.	Submitted with 25/00053/DISCON

e. Remediation & Verification Strategy Imagination 2, Image Business Park, Knowsley L33 7UF Presented to Knowsley (Image Business Park) Ltd dated : Issued: August 2022 (Delta-Simons Project No: 19-0654.08).	Submitted with 25/00053/DISCON
f. Asbestos Management Plan by Wiltern Construction Ltd dated June 2025.	Submitted with 25/00053/DISCON
g. Construction Environmental Management Plan (CEMP) by Wiltern Construction Ltd dated May 2025.	Submitted with 25/00053/DISCON
h. Materials Management Plan (MMP) by Wilten Construction Ltd dated July 2025	Submitted with 1/00959/COND2

1.4 Verification Report Requirements

The Verification Report requirements have been informed by, and are variously described in, the above listed documents. The primary goal of the Verification Report is to verify that the construction activities have mitigated the risks posed by the identified contaminants of concern and break potential contaminant linkages allowing the redevelopment of the Site for a commercial end use¹.

The key features of the remedial strategy are summarised below:

- i. Any earthworks carried out as part of the proposed redevelopment will need to be undertaken under a Materials Management Plan (MMP) in accordance with the CL:AIRE Code of Practice to facilitate the reuse of these materials.
- ii. Details of [any] remedial measures undertaken, specifically treatment of any hydrocarbon contaminated soils and confirmation of suitability for retention/reuse or off-Site disposal.
- iii. A record of any 'hotspots' found during construction and groundworks, and the associated actions taken to remove them.
- iv. Details of the placement of a clean cover system.
- v. Details of any imported topsoil/ subsoil.
- vi. Details of the ground gas protection measures installed.
- vii. Details of the final water pipe material utilised within the development.

¹ Remediation & Verification Strategy, Delta-Simons Project Number 19-0654.08

2.0 Ground Model

The ground model for the Site has been developed from the data presented in the Geo-Environmental Assessments carried out by Delta-Simons, as listed in Table 1.

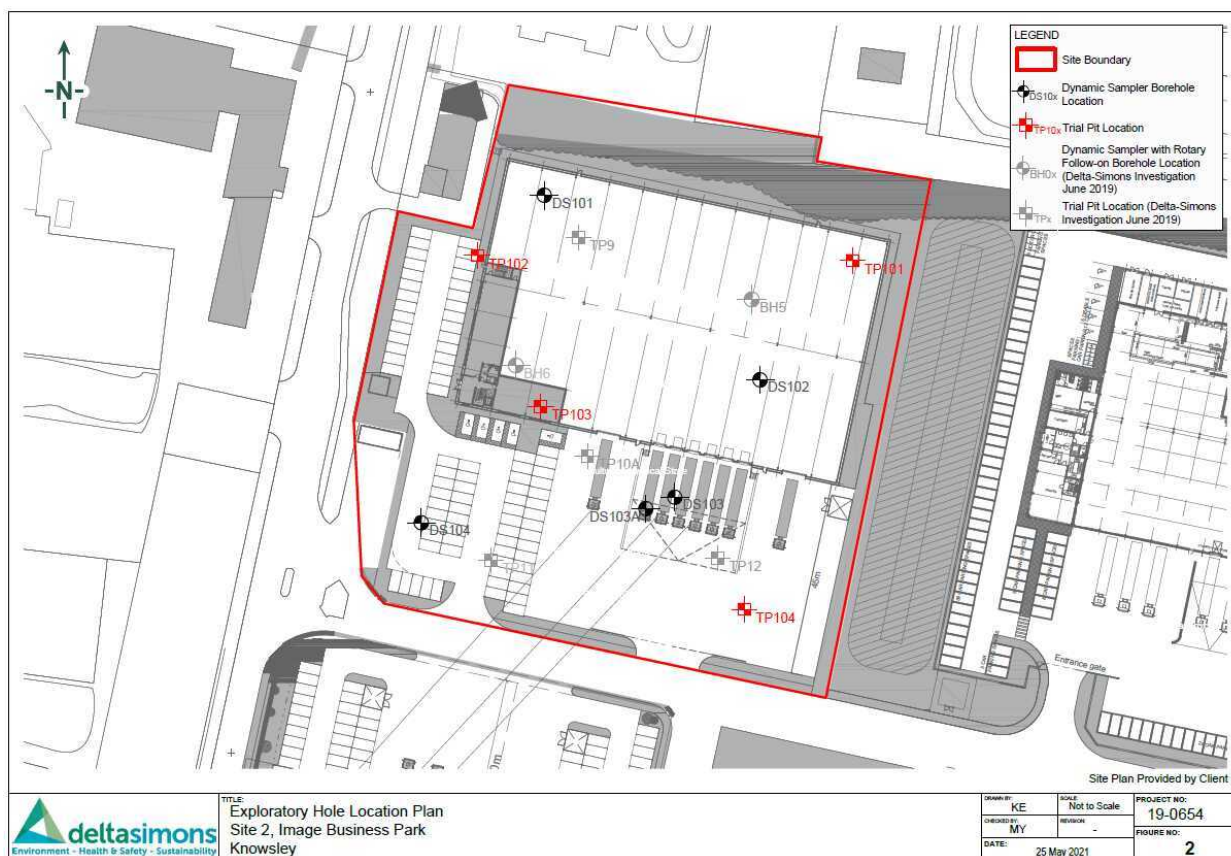
Ground Conditions - Soil Profile

With reference to British Geological Survey (BGS) geological mapping data (1:50,000 geological map), the underlying geology is recorded to comprise Made Ground over superficial deposits comprising Shirdley Hill Sand Formation over the solid geology of the Chester Formation (Sandstone). The published geology has been further confirmed via publicly available BGS borehole logs relating to a ground investigation carried out close to the Site in 2003 and Site Investigations carried out within the Site boundary by Delta-Simons in 2019 & 2021. Table 2 below presents the Soil Profile for the Site:

Table 2: Soil Profile (Delta-Simons, June 2021)

Summary of Observed Ground Conditions				
Stratum	Typical Stratum Description	Depth Range of Stratum Base (m)	Maximum Proven Thickness (m)	Comments
Topsoil	Grass overlying dark brown slightly gravelly sand with abundant roots. Gravel is fine to medium angular to rounded brick and quartzite.	0.25 - 0.50	0.5	Recorded in BH5, TP9, TP11, TP12, DS102, DS103 and DS103A.
Made Ground	Dark blackish brown slightly clayey slightly gravelly sand with occasional pockets of orangish brown/black soft clay. Gravel is fine to coarse angular to subrounded brick, concrete, wood, slag, clinker, sandstone, glass and quartzite. Frequent broken bricks.	0.60 - 1.5	1.5	Deepest Made Ground identified within TP10A and DS103A. Concrete slab/hard standing in centre of Site is between 0.15 and 0.4 m thick as identified in BH6 and TP102. Full extent of Made Ground unproven in DS103.
Shirdley Hill Sand Formation	Loose becoming medium dense orangish brown slightly silty fine to coarse (locally gravelly) SAND.	1.4 - 3.1	1.4	-
Glacial Till	Typically firm becoming stiff light grey mottled orangish brown slightly sandy gravelly CLAY. Gravel is fine to coarse rounded quartzite. Thin horizons of soft clay and/or initially soft becoming firm clay.	3.2 - 8.0	5.2	Thin horizons of locally soft clay and/or initially soft becoming firm clay: TP9 at 1.4 - 1.7 m, TP12 at 1.8 - 2.5 m, DS101 at 2.0 - 2.3 m, DS102 at 1.95 - 4.45 m, DS104 at 2.25 - 2.75 m, TP101 at 2.1 - 3.6 m, TP103 at 2.3 - 3.5 m and TP104 at 2.1 - 3.5 m.
Weathered Chester Formation*	Medium dense becoming very dense dark reddish brown slightly gravelly SAND. Gravel is fine to medium angular to subrounded sandstone.	9.1 - 10.5	4.4	-
Chester Formation*	Weak becoming medium strong dark reddish-brown medium to coarse grained thinly laminated SANDSTONE.	>15.0 (unproven)	>8.9 (unproven)	15.0 m maximum depth of investigation.

*Encountered during previous investigation only – maximum depth of recent investigation was 5.45 m bgl.



Hydrogeology

The Environment Agency (EA) designates the Shirdley Hill Sand Formation as *Secondary A Aquifer*, the Glacial Till as *Secondary Undifferentiated Aquifer*, and bedrock of the Chester Formation (Sandstone) as *Principal Aquifer*.

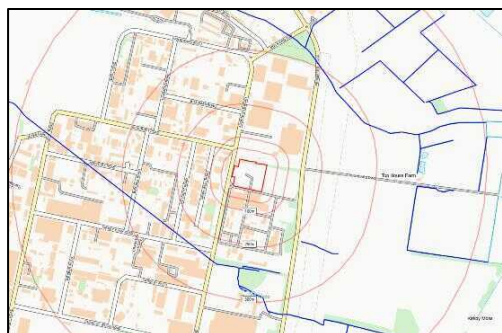
Groundwater within the Sandstone is confined by the overlying Glacial Till.

The Site is located within a designated groundwater Source Protection Zone (Zone III – Total Catchment). This relates to groundwater abstraction by United Utilities Water Ltd for potable water supply, under licence number 2569031016, located 1.7 km to the south of the Site.

Generally, Delta-Simons have reported that shallow standing groundwater levels within Made Ground and superficial deposits were recorded between 0.31 and 6.57 m bgl (34.63 to 42.64 m AOD). Groundwater levels within the bedrock geology of the Chester Formation were recorded between 0.8 and 8.55 m bgl (35.24 to 40.84 m AOD). Representative groundwater flow direction within the superficial deposits appears to flow in a predominately westerly direction.

Hydrology

The nearest surface water features appear to be drainage channels and streams, as shown on the plan (right):



Anthropogenic & Geochemical Soil Conditions

Visual and Olfactory Evidence of Contamination (Soils): No visual or olfactory evidence of potential significant contamination was observed during the Delta-Simons investigations. All environmental samples were screened in the field using a photoionization detector. All results were less than 1ppm (indicating an absence of volatile hydrocarbons within the samples).

Soil Sample Analysis Suite:

Analytes	No. of Samples Tested		Rationale
	Soil	Ground-water	
Asbestos	6	-	Common potential contaminant - Analysed in all samples of Made Ground.
pH, As, Cd, Cu, Cr, Hg, Pb, Ni, Zn, speciated Polycyclic Aromatic Hydrocarbons (PAH)	6	3	Potential contaminants of concern, common to many sites.
Leachable metals	3	-	
Total Petroleum Hydrocarbons, Criteria Working Group Method (TPHCWG), Benzene, Toluene, Ethylbenzene and Xylene (BTEX)	6	3	
Volatile and Semi-Volatile Organic Compounds (VOC and SVOC)	3	3	
Polychlorinated Biphenyls (PCB)	2	-	To assess the presence of PCB associated with the on-Site electrical equipment.
pH, sulphate	6	3	To assess potential for chemical attack on buried concrete.
Soil Organic Matter (SOM)	3	-	To allow comparison of potentially elevated contaminants against their relevant assessment criteria.
Waste Acceptance Criteria (WAC)	2	-	To inform off-site waste disposal.

Summary of Laboratory Analysis of Soils:

Contaminant	No. Samples	Max Conc. (mg/kg)	GAC (mg/kg)	GAC Source	No. Exceed GAC	Volatile	Location of Exceedances (depth) = Concentration (mg/kg)	Area of Site of Exceedance
Asbestos	14	0.005	Detected	DS	1	N	TP104 at 0.7 m bgl - Chrysotile Loose Fibrous Debris	South-east
Metals and metalloids								
Arsenic	14	96	640	LQM	0	N	-	-
Cadmium	14	0.7	190	LQM	0	N	-	-
Chromium	14	1.5	33	LQM	0	N	-	-
Chromium VI	14	33	8,600	LQM	0	N	-	-
Copper	14	270	68,000	LQM	0	N	-	-
Lead	14	130	2300	C4SL	0	N	-	-
Mercury	14	0.6	1100	LQM	0	N	-	-
Nickel	14	84	980	LQM	0	N	-	-
Zinc	14	130	730,000	LQM	0	N	-	-
Polyaromatic Hydrocarbons								
Phenanthrene	14	0.8	22,000	LQM	0	N	-	-
Anthracene	14	0.13	520,000	LQM	0	N	-	-
Fluoranthene	14	1.8	23,000	LQM	0	N	-	-
Pyrene	14	2.0	54,000	LQM	0	N	-	-
Benzo[a]anthracene	14	1.1	170	LQM	0	N	-	-
Chrysene	14	1.1	350	LQM	0	N	-	-
Benzo[b]fluoranthene	14	1.4	44	LQM	0	N	-	-
Benzo[k]fluoranthene	14	0.49	1,200	LQM	0	N	-	-
Benzo[a]pyrene	14	1.2	35	LQM	0	N	-	-
Indeno[1,2,3-c,d]pyrene	14	0.55	500	LQM	0	N	-	-
Benzo[g,h,i]perylene	14	0.73	3,900	LQM	0	N	-	-
Petroleum Hydrocarbons								

Contaminant	No. Samples	Max Conc. (mg/kg)	GAC (mg/kg)	GAC Source	No. Exceed GAC	Volatile	Location of Exceedances (depth) = Concentration (mg/kg)	Area of Site of Exceedance
Aromatic TPH >C10-C12	14	3.7	16,000	LQM	0	Y	-	-
Aromatic TPH >C12-C16	14	5.7	36,000	LQM	0	Y	-	-
Aromatic TPH >C16-C21	14	12	28,000	LQM	0	N	-	-
Aromatic TPH >C21-C35	14	47	28,000	LQM	0	N	-	-
Aromatic TPH >C35-C44	14	17	N/A	N/A	0	N	-	-
Total Petroleum Hydrocarbons	14	58	5000	DS	0	Y	-	-

Notes: **Shaded** = Maximum concentration exceeds GAC
C4SL = Category 4 Screening Levels (C4SLs) published by DEFRA.
DS = In-house GAC derived by Delta-Simons Environmental Consultants Ltd, 2018.
EIC = Guidance values produced by the Environmental Industries Commission (EIC), the Associated of Geotechnical and Geo-environmental Specialists (AGS) and Contaminated Land: Application in Real Environments (CL-AIRE) in December 2009.
LQM = Land Quality Management/CIEH S4ULs for Human Health Risk Assessment, 2014.
AGAC = Acute Generic Assessment Criteria published by the Society of Brownfield Risk Assessment (SoBRA) 2019
No GAC = No Generic Assessment Criteria value available for compound.

Generally, contamination of the soils has not been identified at the Site. None of the site-specific contaminants of concern were recorded at concentrations in excess of their respective generic assessment criteria (GAC).

One sample of Made Ground (TP104 at 0.70 m) tested positive for the presence of chrysotile type asbestos (loose fibrous debris, quantification analysis indicated 0.005 % by weight).

No observations of non-aqueous phase liquids (NAPL) were made within the soils observed during drilling. No elevated concentrations of Total Petroleum Hydrocarbons were recorded. No NAPL was measured during groundwater monitoring works.

Ground Gas Data & Gas Risk Assessment: The data set gathered by Delta-Simons in relation to the Site is detailed in their Controlled Water Risk Assessment and Updated Gas Assessment, dated July 2022 (Delta-Simons Project No: 19-0654.10). *However, it is relevant to note and understand that their Gas Risk Assessment included the ground gas monitoring data for a separate site, known as "Imagination 3". Delta-Simons did not carry out a gas risk assessment of the data just relating to the Site, instead they combined the two data sets (for Imagination 2 & Imagination 3) to determine the gas screening value for the Site.*

The ground data specific to the Site is summarised in Table 3, and a further discussion of the data is presented below.

Table 3: Summary of the Ground Gas Monitoring Results (Delta-Simons, July 2022)

Location	Maximum Steady Methane (%v/v)	Maximum Steady Carbon Dioxide (%v/v)	Maximum Steady Flow Rate (l/hr)	GSV/Classification				Flooded?
				Methane		Carbon Dioxide		
				GSV	Classification	GSV	Classification	(Frequency)
DS101s	0.1	13.1	<0.1	0.0001	CS1	0.0131	CS1+	N
DS102 s	0.1	7.6	<0.1	0.0000	CS1	0.0076	CS1+	N
DS103A s	<0.1	8.2	<0.1	0.0001	CS1	0.0082	CS1+	Y (3/5)
DS104 s	<0.1	11.9	<0.1	0.0001	CS1	0.0119	CS1+	N
BH5* d	<0.1	13.4	1.6	0.0001	CS1	0.2144	CS2	Y
BH6* d	2.1	6.8	1.9	0.0039	CS1+	0.1292	CS2	N

CS1+ = Calculated GSV is CS1; however, peak carbon dioxide exceeds 5 %v/v. Therefore, consider increase in CS classification.

* = Not monitored during 2021 to 2022 monitoring, reported in 2019 report

s = shallow installation

d = deep installation

Italics - results affected by flooded well response zone. Flow rates not considered representative of true conditions. Discussed below.

The data that was obtained from the Site has been re-analysed by Epsilon Environmental in order to determine the correct gas regime and Characteristic Situation (CS) calculation for this Site:

- The identified source of the gas is the topsoil/ nominal thickness of Made Ground above the natural deposits comprising Glacial Till & Chester Formation (see Ground Conditions – Soil Profile, above)). There are no significant off-site sources of Ground Gas identified within the CSM.
- Gas monitoring was carried out at the Site on six occasions in two phases between 2021 and 2022. Barometric pressures during the gas monitoring period ranged from 999 mBar to 1021 mBar, of which four visits were completed during periods of falling pressure.
- Boreholes BH5(d) and BH6(d) were not constructed as gas monitoring wells (they were installed primarily as groundwater monitoring wells) and their construction (including the depths at which the well was screened) means that they did not target the identified source area (topsoil and Made Ground). Therefore, the gas monitoring data obtained from these wells should not be used to calculate the gas screening value for the Site.

- The values for Total Organic Carbon (TOC) measured in the soil samples collected from the ground gas source area on the Site were 2.1% (from DS101 – sample depth 0.40 m bgl) and 1.1 % (from TP103 - at 0.2 m bgl).
- The concentration of carbon dioxide measured from the appropriate ground gas monitoring wells ranged from 7.6 %v/v to 13.1 %v/v.
- The concentration of methane measured from the appropriate ground gas monitoring wells did not exceed the instrument detection limit of 0.1 %v/v.
- Gas flow rates within the appropriate ground gas monitoring wells were recorded below the instrument detection limit of <0.1 l/h (*note: The flow rates measured in BH5(d) and BH6(d) cannot be used to assess the gas regime, as they are not measured from the identified source area*).
- The concentrations of ground gas have been determined as Characteristic Situation (CS) 1.

Visual and Olfactory Evidence of Contamination (Groundwater): No visual or olfactory evidence of potential contamination was observed during both phases of investigation by Delta-Simons.

Summary of Laboratory Analysis of Groundwater: Laboratory results above relevant detection limits from both phases of investigation (Delta-Simons 2019, 2021) are summarised in the table below with a comparison to the GAC applied.

Contaminant	No. Samples	Max Conc. (µg/l)	GAC (µg/l)	GAC Source	No. Exceed GAC	Location of Exceedances	Area of Site of Exceedance
Metals and Metalloids							
Arsenic	5	5.25	10	DWQS 2016	0	-	-
Cadmium	5	0.06	5	DWQS 2016	0	-	-
Chromium III	5	9.3	50	DWQS 2016	0	-	-
Chromium VI	5	7.2	50	DWQS 2016	0	-	-
Copper	5	6.4	2000	DWQS 2016	0	-	-
Lead	5	12	10	DWQS 2016	1	BH6	West
Nickel	5	8.4	20	DWQS 2016	1	-	-
Zinc	5	17	3000	WHO 2003	0	-	-

Notes: Shaded = Maximum concentration exceeds GAC.
DWQS 2016 = The Water Supply (Water Quality) Regulations 2016 [UK Drinking Water Standards]
WFD 2003 = Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015.

Conceptual Site Model (from Delta-Simons)

Revised Conceptual Site Model				
Source	Pathways	Receptors	Risk Rating	Mitigation
Potential contamination in areas not directly investigated	Ingestion and/or inhalation of soil/dust	Future site workers and patrons. Construction and Maintenance workers. General public during the construction phase.	Low Risk	Low to moderate risk – clean cover capping layer placed in all soft landscaped areas will break pollutant linkage between future end users of the site and the impacted Made Ground. Asbestos has been identified in Made Ground during the additional phase of investigation, therefore it is prudent to assume that more asbestos can be present on-Site. The use of suitable dust prevention measures during the construction phase should mitigate the generation of airborne fibres, furthermore, suitable levels of PPE (as determined by the asbestos risk assessment to be completed by the contractor) would mitigate the risk to construction and maintenance workers in close contact with the impacted Made Ground.
	Direct contact between aggressive ground conditions and new infrastructure.	The Built Environment (new buildings and infrastructure)	Low Risk	The Local Water Authority should be contacted to understand their requirements for upgraded water pipes.
	Leaching of contamination into groundwater followed by migration of groundwater to the wider groundwater environment or surface waters.	The underlying Principal Aquifers / Controlled waters.	Very Low Risk	Significant contamination has not been identified at the Site within shallow soils. Hardstanding within the development will further mitigate the risk by restricting any infiltration and subsequent mobilisation of any soil contaminants, as such the risk is considered low.
Ground Gas (Methane and Carbon Dioxide)	Migration of ground gas into on-site buildings causing asphyxiation or risk of explosion.	The Built Environment (new buildings and infrastructure) Future users.	Low to Moderate	Elevated concentrations of methane and carbon dioxide have been recorded. The Site can provisionally be classified as a CS2 for which low level gas protection measures are required. Further monitoring is likely to be required to confirm this classification. Radon protection measures are not required.

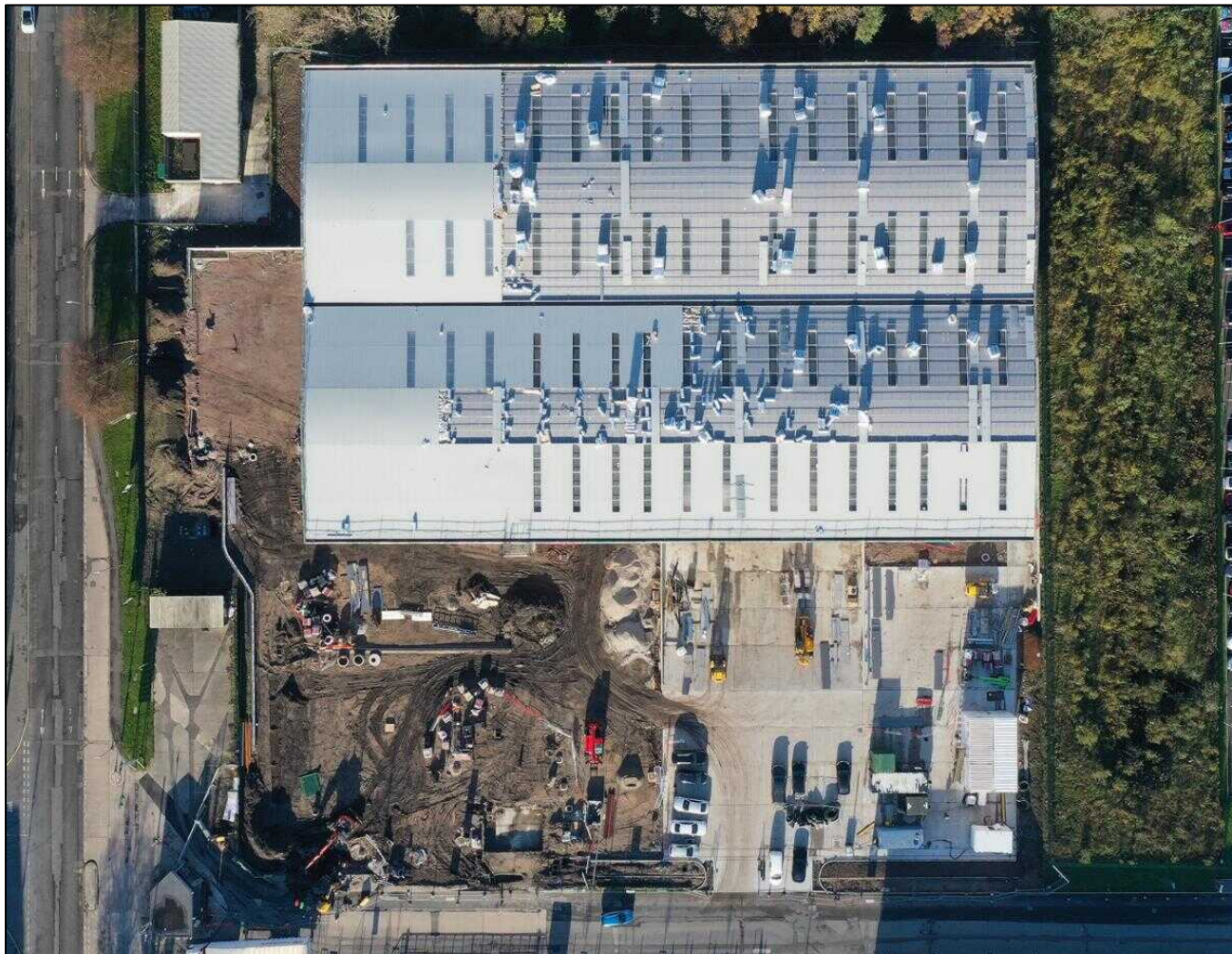
Revised Risk Assessment	i. The proposed development will be covered with the building footprint and/or hardstanding which will break the pollutant linkage between asbestos contaminated soils and future end users. ii. Generally, water quality was noted to be within acceptable limits with only one localised slight exceedance of lead observed. This exceedance is not considered to represent unacceptable risks to controlled waters receptors. Therefore, there is no significant source that it is considered that significant migration of any contaminants to the underlying aquifers / off-Site is unlikely. Hardstanding and drainage across the development will further mitigate the risk by restricting any infiltration and subsequent mobilisation of any soil contaminants, as such the risk is considered low. iii. The multiple lines of evidence approach indicates a very low risk ground gas regime on-Site: The principal ground gas Source is the topsoil/ nominal thickness of Made Ground, with a corresponding low Total Organic Carbon content. The concentrations of ground gas have been determined as Characteristic Situation (CS) 1. iv. The proposed use of the Site is Building Type D (large, open space warehouse unit) with ancillary Type C Offices. v. British Standard BS 8485 states that <u>consideration</u> should be given to increasing the CS from CS1 to CS2 where the measured carbon dioxide concentration is greater than 5%v/v. In this case, given the very low gas generating potential of the source area and the nature of the building, consideration only needs to be given for the ancillary Type C Offices.
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3.0 Verification Documentation

Wiltan Construction Limited are the Main Contractor appointed to deliver the Design and Construction of the Site. Design and implementation of the construction works are under their remit and control, and the supporting verification documentation has been provided by them.

The construction project has a 37 week programme, which commenced on 21.07.2025 and the Practical Completion date is 08.04.2026.

The image below, taken on 19.11.2025 shows the general progress of the development.



3.1 Bulk Earthworks & Re-Use of Compliant Site-Won Material

A Materials Management Plan (MMP) was created by Soiltechnics Limited, and the Definition of Waste Code of Practice Declaration Receipt was submitted to the Environment Agency under the Definition of Waste Code of Practice (DoW CoP) dated 3rd July 2025 (see **Appendix B**). Appendix B also sets out a schematic illustrating the sequence of the main earthworks activity completed on the Site. In summary, this comprised the following:

- Topsoil strip & topsoil stockpile.
- Excavate to reduce levels.
- Attenuation tank excavation.
- Re-soiling to landscape areas with Site-won topsoil.
- 300mm formation layer to 30% CBR with Type 1.
- Fill and modify to 5% CBR to make up levels.

The bulk earthworks operations were undertaken by Greenfisher Contracting on behalf of Wilten Construction and validated by Powell Tolner Associates (Civil & Structural Engineers).

The breakdown of the material re-use on Site is set out as follows:

- Approximately 1700m³ – site won crushed concrete (to Type 1 grading)
- Approximately 4000m³ – site won crushed concrete
- Approximately 500m³ – site won topsoil

The MMP facilitated the sustainable re-use of Site-won topsoil as part of the clean-cover system specified in the approved Remediation Strategy and was supported by laboratory testing carried out by Chemtest on behalf of Soiltechnics Limited on the topsoil before its re-emplacement (results presented in **Appendix B**). The results of the testing confirmed that the topsoil met the re-use criteria set out in the Remediation Strategy and the material was therefore re-used on-Site in accordance with the MMP.

The MMP was submitted to the LPA under planning reference 21/00959/COND2 and was discharged via a Decision dated 10 February 2026.

3.2 Details of Waste Disposal

Epsilon Environmental has received a photograph of each of the 180 nr waste certificates for haulage loads of excess soil removed from Site during construction. *A copy of the files can be provided upon request.*

3.3 Verification of Unexpected Contamination

Wilten Construction Limited has confirmed and verified that no hydrocarbon impacted soil or unexpected soil, or groundwater contamination has been encountered on the Site during the development. A copy of the letter received from Wilten Construction Limited is presented in **Appendix C**.

An Asbestos Management Plan (AMP) is in place that sets out how asbestos-containing materials (ACMs) on site will be managed to minimise the risk of exposure to workers, contractors, and visitors, and to comply with duties under the Control of Asbestos Regulations 2012 and with reference to the Joint Industry Working Group Asbestos in Soil and Construction & Demolition (C&D) Materials guidance (published by CL:AIRE) titled “Control of Asbestos Regulations 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction & Demolition materials: Industry Guidance” (shortened name CAR-SOIL™). The AMP has been developed to discharge pre-commencement planning condition 4B (*therefore has been submitted to the LPA*) and detail mitigation measures relating to asbestos containing soils. The AMP includes appropriate procedures to ensure risks to Site personnel are appropriately addressed, no further contamination will occur, and to ensure no risk to off-site receptors.

3.4 Clean Cover Placement

The Remediation Strategy recommended the following criteria for the clean cover system:

- i. A high visibility membrane or hard-dig layer should be installed on top of Made Ground upon which the cover layer will then be placed. This is to provide a physical break of a potential pathway between Made Ground and the cover system;
- ii. A layer of clean soil, a minimum of 300 mm in soft landscaped areas. Subject to the final development levels a reduced level dig may be required to facilitate the clean cover layer;
- iii. The material will be sourced by the Contractor and documentation submitted on its origin that is acceptable to Knowsley Council, the Main Contractor and to Delta-Simons. The documentation should as a minimum comprise information on the origin of the materials, the volume imported with delivery notes; at-source classification testing of the material; and
- iv. Once imported and placed, the depth and chemical composition should be confirmed by the Environmental Consultant and the results screened to show compliance with the specified screening criteria.

The verification of the clean cover system is summarised in Table 3, as follows:

Table 3: Verification Evidence – Clean Cover System

Remediation Strategy Recommendation	Verification Evidence
i. A high visibility membrane or hard-dig layer should be installed on top of Made Ground upon which the cover layer will then be placed.	A high visibility membrane was emplaced by the Contractor on top of Made Ground prior to the clean cover layer being laid. Photographs confirming evidence of this are presented in Appendix D .
ii. A layer of clean soil, a minimum of 300 mm in soft landscaped areas. Subject to the final development levels a reduced level dig may be required to facilitate the clean cover layer.	The clean cover system utilised Site-won topsoil that has been taken from the surplus from the plot. This work was carried out under the approved MMP (Reuse on the Site of Origin) and was supported by laboratory testing carried out by Chemtest on behalf of Soiltechnics Limited. The laboratory analytical results of the MMP approved Topsoil are presented in Appendix B . Evidence of the depth of the clean cover system is presented in the Topsoil Report by Wiltern Construction dated 11 March 2026, presented in Appendix D . The soft landscape provisions include a top up layer of bark mulch to a depth of 75mm, providing moisture retention for the soil growing medium.
iii. The material will be sourced by the Contractor and documentation submitted on its origin that is acceptable to Knowsley Council, the Main Contractor and to Delta-Simons. The documentation should as a minimum comprise information on the origin of the materials, the volume imported with delivery notes; at-source classification testing of the material.	Wiltern Construction Limited and Powell Tolner Associates has confirmed and verified that no topsoil has been imported to Site for the implementation of the soft landscaping scheme (see letter statement in Appendix D). The clean cover system utilised Site-won topsoil that has been taken from the surplus from the plot. This work was carried out under the approved MMP (Reuse on the Site of Origin) and was supported by appropriate laboratory testing.
iv. Once imported and placed, the depth and chemical composition should be confirmed by the Environmental Consultant and the results screened to show compliance with the specified screening criteria.	No soil was imported onto the Site for use within the clean cover system. The depth and chemical composition of the Site-won material used in the clean cover system has been verified, as above.

The Soft Landscape Planting Plan for the Site is also presented in **Appendix D**. The landscape programme is broadly sub-divided into the following categories:

- WILDFLOWER MEADOW AREAS: seeded with Emorsgate EM2 wildflower seed mix to open areas and EH1 hedgerow mix to the woodland edge.
- EXISTING WOODLAND MANAGEMENT: nursery species (including Cherry, Field Maple, Birch, Alder) and poorer climax species (Ash, Pine, Poplar & Oak) to be thinned out to benefit the better condition climax species.
- NATIVE TREE & SHRUB PLANTING: native species planting mix shrubs at 500mm to 1m centres, trees at 2m centres to Northern half of area seeded with Emorsgate EW1.
- ORNAMENTAL GRAVEL: pea gravel from local source; 50-75mm minimum depth; refer to notes.
- TREE PLANTING: standard tree planting with canopy spread illustrated at 25 years growth.
- EVERGREEN HEDGE: evergreen shrub hedge as detailed.
- GROUND COVER: deciduous and evergreen shrub ground cover planting with specimen shrubs.
- DECIDUOUS HEDGE: native tree and shrub species mix hedge as detailed.

It is noted that the two main soft landscape areas (Wildflower Meadow and Existing Woodland) are located behind retaining wall structures with no public/tenant amenity access provided. Furthermore, the landscape strategy has been designed to require minimal on-going maintenance once established.

3.5 Additional Soil Testing (Wiltren Construction, February 2026)

In support of the above verification evidence (Section 3.4), Wiltren Construction Limited has carried out in-situ sampling and laboratory analysis within the soft landscaping, as set out in Table 4 below and illustrated in the Topsoil Report by Wiltren Construction dated 11 March 2026 (**Appendix D**):

Table 4: Additional Soil Testing ID & Location

Sample ID	Sample Location
TS201	Wildflower Meadow Strip – A sloping, narrow strip of soft landscaping located to the north of the building and adjacent to the retained (existing) woodland area.
TS202	Ground Cover & Tree Planting - located in the car park adjacent to the EV charging bays and disabled parking spaces.
TS203	Wildflower Meadow Strip – in the northwest of Site, located below and behind the retaining wall and the fenced off electricity sub-station building. This area is noted to be an easement due to existing buried services.
TS204	Wildflower Meadow Strip – western boundary of Site, located below and behind the retaining wall and the palisade fencing demarking the Site boundary. This area is noted to be an easement due to existing buried services.
TS205	Ground Cover & Tree Planting, located at the entrance/exit to the Site.

The samples collected from these locations were submitted to Normec DETS Limited testing laboratory and tested against the Imported Soils Assessment Criteria presented in the Remediation Strategy.

The results of the testing are presented in Appendix D and in summary, they confirm that the contamination concentrations fall below the screening levels set for imported soils, with the exception of the presence of asbestos. Three of the samples detected asbestos, with very low quantification values (less than 0.005% total mass).

The detection of asbestos in the clean cover from three of the five samples is unexpected but is not deemed to be indicative of a risk to human health or the wider environment given that the areas where the samples were taken are not locations where the public/tenants have amenity access.

A summary of the results is presented in Table 5:

Table 5: Asbestos in Soils

Sample ID	Result	Laboratory Analyst Comment	Quantification Result
TS201	Chrysotile	Chrysotile present as fibre bundles	0.003%
TS202	NAD	none	Nil
TS203	Chrysotile	Chrysotile present as fibre bundles	0.002%
TS204	Amosite Chrysotile	Amosite Chrysotile present as fibre bundles	0.001%
TS205	NAD	none	Nil

3.6 Gas Membrane Details

Wiltren Construction Limited were responsible for carrying out construction of the permitted building and followed the design and specification provided by Powell Tolner Associates with regards to the design and extent of the

gas protection measures. A copy of the agreed design is presented in **Appendix E** along with correspondence setting out the technical advice provided by the Project Engineer and the Environmental Consultant (Powell Tolner & Associates Ltd and Delta Simons) to provide an uprated hydrocarbon resistant membrane under the offices.

ACS Linings were appointed to install the hydrocarbon resistant gas protection membrane beneath the offices and MEC Environmental Ltd (MEC) were appointed by ACS Linings to carry out independent validation of the installation of the membrane. A copy of the validation report is presented in **Appendix E**. This confirms that the installer carried out the installation in a workmanlike manner, the materials were adequately prepared and applied, used and fixed so as to perform adequately the functions for which they are intended as per Regulation 7 of the building regulations.

Within the warehouse, ABS Brymar floors were contracted to design & install the ground floor concrete slab for the Site. The floor slabs were cast in large bay format utilising Somero laser screed technology over a period of 4 days in December 2025. The floor slab consists of a 175mm deep slab of well graded C40 concrete laid onto a 1200g polythene membrane with 300mm lapped joints. The slab has 1 layer of A142 mesh reinforcement throughout which is positioned 40mm from the bottom of the slab. Day joints within the floor slab consist of armoured type joints, further sawn crack control joints are installed within each panel. All areas of the slab were treated with a spray applied curing and sealing agent. Sawn and isolation joints within the slab were sealed using a polysulphide sealant. There are minimal service penetrations within the warehouse floor slab.

3.7 Potable Water Pipe Supply Details

Wiltan Construction Limited has confirmed that United Utilities (UU) approved the use of 63mm barrier pipe to supply potable water into the Site. This material is a multi-layered (polyethylene (PE)/ aluminium barrier (Al)) PE-Al-PE pipe for use in contaminated ground. It features an inner PE core, aluminium barrier, and outer PE layer (often blue with brown stripes), rated for pressures around 12.5-16 bar (SDR11), WRAS approved.

Correspondence verifying that UU have approved the installation is presented in **Appendix F**.

4.0 Verification Statement

Epsilon Environmental confirms that the information provided in this verification report accurately reflects the documentation and evidence received regarding the works undertaken on-site. The report has been prepared to meet the verification standards required for Conditions 4C, 4D, and 4F of Planning Consent 21/00959/FUL.

Figure 1 – Site Location Plan



Disclaimer:
Subject to survey.
The topographical information shown is based on the
topographical survey by Survey & Engineering Projects
Ltd. Survey dwg no. S15946_T Rev0, dated April 2018

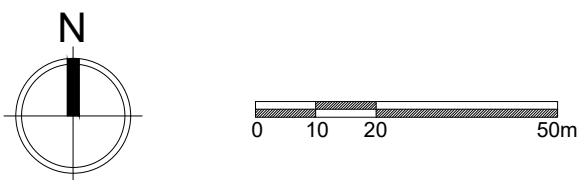
Notes:

KEY

Image Business Park

Site Boundary Line
(13,885m²/ 3.43acres/ 1.39ha)

A	Road names included	04.01.22	HT	HA
-	First issue	20.05.21	HT	HA
Rev:	Notes:	Date:	Dwn:	Iss:



Client:

SEYBOURNE

hale
ARCHITECTURE | DESIGN MANAGEMENT
22c Leathermarket Street, London, SE1 3HP

Project:
Imagination 02
Image Business Park, Knowsley

Drawing Title:
Site 2
Site Location Plan

Project No: 21065	Scale @ A1/A3: 1:1250 / 1:2500
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Drawing No: 21065 - PL1000	Revision: A
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Appendix A – Condition 4 Wording (from 21/00959/FUL) & Letter from Environmental Health & Consumer Protection to Planning Services



Knowsley Council

**REGENERATION AND ECONOMIC DEVELOPMENT
DEPARTMENT**

TOWN AND COUNTRY PLANNING ACT 1990

**This application is subject to a Section 106 Agreement and needs to
be read in conjunction with that Agreement.**

PLANNING PERMISSION

Application No: 21/00959/FUL

Name and address of applicant

Knowsley (Image Business Park) Ltd
180 Piccadilly
London
W1J 9HF
UK

Name and address of agent

Hale Architecture Limited
22c Leathermarket Street
London
SE1 3HP

Date of Receipt: 20 December 2021

Date Valid: 5 January 2022

Address/Location Of Development:

Imagination 2
Image Business Park
Acornfield Road
Knowsley Industrial Park
Kirkby
Knowsley

Description of Development:

**ERECTION OF A DETACHED INDUSTRIAL BUILDING (MIXED E(G)(III), B2 & B8
USES) WITH ANCILLARY OFFICES, CAR PARKING, SERVICE AREA AND SOFT
LANDSCAPING**

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):

4. A. Contaminated Land Risk Assessment

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 (were relevant):

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

B. 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.

C. 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.

D. 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.

E. Materials Management Plan

Prior to the reuse of site won materials ('waste' and non-waste) a Materials Management Plan, signed off by a Qualified Person, shall be submitted to and agreed in writing with the local planning authority. The MMP shall demonstrate that any reuse of contaminated materials does not result in increased risk to the environment or human health.

F. Importation of Soil/Material

No topsoil 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 in writing 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 agreed in writing to by the Local Planning Authority.

Reason: In the interests of safety, to prevent pollution of the water environment and to comply with Policy ENV5 of the Knowsley Replacement Unitary Development Plan, adopted June 2006.

 Knowsley Council	Planning Consultation Response Environmental Health and Consumer Protection Service
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To:	Planning Services (Planning)	
From:	Environmental Health & Consumer Protection (Helen Bradshawe)	
Planning App. No:	21/00959/COND7	26/00346/PLANDI
Date:	11 February 2026	
Location:	Imagination Two, Image Business Park, Acornfield Road, Knowsley Industrial Park, Kirkby, Knowsley, L33 7SP	
Proposal:	APPLICATION TO DISCHARGE CONDITION 4 (CONTAMINATION) PARTS C, D, F PERTAINING TO PLANNING PERMISSION 21/00959/FUL.	

Further Information Required

Condition 4, Part C(Implementation of Approved Remediation Scheme), Part D (Reporting of Unexpected Contamination) and Part F(Importation of Soil/Material)

Merseyside EAS were consulted on the documents submitted in respect of the above discharge of condition application. Comments and observations following a review of the documents referenced beneath, submitted in support of the application to discharge Condition 4, Parts C, D and F, are detailed below:

- Verification Report, Imagination 2, Acornfield Road, Knowsley Industrial Estate, Knowsley, Liverpool L33 7UF, Epsilon Environmental, Project Ref:24-0110_02/P25-006, Issue 01, 08/01/2026; and
- Letter from Wilten Construction Ltd (Tom Corbett) to Epsilon Environmental Ltd (Alan Crossfield), RE: P25-006 Imagination Two, Knowsley – verification 4th December 2025; and
- Letter from Wilten Construction Ltd (Tom Corbett) to Hale Architecture (Mahdeih Pourali), RE: P25-006 Imagination Two, Knowsley – Planning Condition 4F, 13 October 2025.

The requirements of Condition 4, Parts C, D and F are as following:

C. 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.

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D. 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.

F. Importation of Soil/Material

No topsoil 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 in writing 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 agreed in writing to by the Local Planning Authority.

MEAS advise that further information is required to satisfy the requirements of Condition 4 Part C (Implementation of Approved Remediation Scheme). The submitted information is sufficient to satisfy the requirements of Condition 4 Parts D (Reporting of Unexpected Contamination) and F (Importation of Soil/Material).

Comments and observations

Condition 4 Part C (Implementation of Approved Remediation Scheme)

Validation of Cover System

1. Further information is required to verify the placement of the clean cover system. No details are provided on the specification of the emplaced cover system with information limited to the results of analysis of 4no. samples of site-won topsoil and confirmation that site won topsoil would be used within the soft landscaping scheme (Wilten Construction Ltd letter dated 13 October 2025).
2. The recommended specification of the cover system provided within the agreed Remediation and Verification Strategy (Section 5.1) (Delta-Simons, Issue 02, August 2022) includes a high visibility membrane or hard-dig layer and a clean soil layer (minimum thickness of 300mm) in soft landscaped areas.
3. Validation requirements (Sections 5.1.2 of the Remediation and Verification Strategy) include depth verification to confirm the required cover thickness and membrane depth and post-placement sampling and analysis.

Specification of Gas Protection Measures

4. The agreed Remediation and Verification Strategy (Delta-Simons, Issue 02, August 2022) recommended gas protection measures consistent with Characteristic Situation 2 classification, including a vapour resistant membrane as a precaution, installation

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compliant with BS8485:2015+A1:2019 and agreement of the specification with the Local Authority prior to adoption.

5. Information provided within Appendix E of the Verification Report shows that whilst a ground gas and hydrocarbon resistant membrane (Juta Titanflex) was installed in the office area, a 1200 gauge damp proof membrane was installed across the remainder of the building footprint. There is no evidence that the specification was agreed with the Local Planning Authority (LPA), as required.
6. As the CS2 ground-gas regime applies to the entire building, the LPA must be satisfied that all areas of the building have suitable gas protection. Clarification is required that the specification of the installed gas protection measures meets the requirements of BS8485:2015+A1:2019 for a CS2 characterisation across the entire building footprint.

Verification of Gas Protection Measures

Office Area (Gas/Hydrocarbon Membrane)

7. With regard to the Gas/Hydrocarbon membrane, ACS Linings were appointed to install the gas protection membrane and MEC Environmental Ltd (MEC) carried out independent validation of the installation. A copy of the MEC's Validation Report is provided within Appendix E of the Verification Report.
8. The information provided within the Gas Membrane Installation Validation Report (MEC Environmental Ltd, undated) is satisfactory and accepted. However, the report refers to an installer CQA report for areas not inspected independently; this document is not provided and should be submitted to complete the validation record.

Remainder of Building Footprint

9. No verification evidence is provided for the CS2 gas protection measures for the remainder of the building footprint. Details, as specified in the Remediation and Verification Strategy, are required.

Details of Waste Disposal

10. Epsilon Environmental note that 180no. waste haulage certificates are available upon request. These should be provided for completeness of the validation record.

Condition 4 Part D (Reporting of Unexpected Contamination)

11. Wiltern Construction Ltd's letter of 4 December 2025 confirms the following:

- No hydrocarbon contaminated soil or groundwater was encountered during the construction works.
- No visible potentially asbestos containing material in soil was encountered during the construction works.
- No unexpected, contaminated soil or groundwater was encountered during the construction works.

This satisfies the requirements of Condition 4 Part D.



Condition 4 Part F (Importation of Soil/Material)

12. Wilten Construction confirm (letter dated 13th October 2025) that no soils were to be imported for implementation of the soft landscaping scheme. This satisfies the requirements of Condition 4 Part F.

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Appendix B – DoW CoP Receipt, Earthworks Sequence & Retained Topsoil Validation Laboratory Test Results

Definition of Waste Code of Practice Declaration Receipt

This Declaration has been submitted to the Environment Agency under the Definition of Waste Code of Practice (DoW CoP).

You are reminded that if materials are not used in accordance with the Materials Management Plan or risk assessment, or if it is discovered that materials were not suitable for use, were used in excessive quantity or in such a manner as to harm human health or pollute the environment, the Environment Agency may conclude that those materials were discarded and were waste.

You are also reminded that a Verification Report must be prepared on completion of the work as set out in the Remediation Strategy / Design Statement covering the site. This Verification Report must be provided to the Environment Agency upon request.

This receipt relates to the following Declaration -

1. References	
Your Reference for this Declaration	Imagination 2 Knowsley
Related declaration references	STX7107
3. Site of Origin	Checked
4. Direct Transfer	N/A
5. Cluster Project (including use of a fixed Soil Treatment Facility as a Hub site)	N/A
2. Proposed Volumes	
Proposed Volumes in m ³	6200
Additional comments on Proposed Volumes	Approximately 5,335m ³ of cut, and 4,900m ³ of fill in the earthworks Type 1: Site-own ~ 1,700m ³ , fill ~ 1,300m ³ , surplus ~400m ³ Approximately 500m ³ of topsoil will be bought in as product
3. Site of Origin	
3a. Route A: Land affected by contamination or suspected of being affected by contamination	Checked
3b. Route B: Land not suspected of being affected by contamination.	N/A

3c. Site Details	
Site Address	Imagination 2, Image Business Park, Knowsley
Postcode for Site of Origin	L33 7UF
Grid Reference for Site of Origin	343746, 398719
3d. Site Owner(s)	
Site Owner #1	
Name	Seybourne Estates Limited
Address	Seybourne Estates Limited, Hyde House, Edgeware Road, London, NW9 6LA
Email	stephen.corner@seybourne.co.uk
Telephone	07394083933
3e. Developer	
Developer #1	
Company	Seybourne Estates Limited
Address	Seybourne Estates Limited, Hyde House, Edgeware Road, London, NW9 6LA
Contact Name	Stephen Corner
Job Title	CFO
Email	stephen.corner@seybourne.co.uk
Telephone	07394083933
6. Local Authorities / Regulators	
6a. Local Authorities	
Local Authority #1	
Receiver Site Local Authority	Knowsley Borough Council
Local Authority Address	Municipal Buildings, Archway Road, Huyton, L36 9YU
Lead Contact Name	Jo Sheridan
Lead Contact Role	Interim Development Team Leader



Lead Contact Address (if different from above)	Knowsley Council, Huyton Library, Civic Way, Huyton, Knowsley, L36 9GD
Lead Contact Email	planning@knowsley.gov.uk
Lead Contact Telephone	07833481030

6b. Environment Agency / Natural Resources Wales

Receiver Site Agency	Warrington
Agency Address	Richard Fairclough House, Knutsford Road, Warrington, WA4 1HT
Contact Telephone	03708 506 506
Contact Email	enquiries@environment-agency.gov.uk

7. Lines of Evidence

7a. Materials Management Plan (MMP)

Reference for the Materials Management Plan	materials_management_plan Imagination Two Knowsley Rev1 Issued to QP 26-6-25
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7b. Risk Assessment

Reference for the Risk Assessment	Delta-Simons 'Preliminary Geo-Environmental Risk Assessment: Plots A, B and C, Image Business Park, Acornfield Road, Knowsley' for Knowsley (Image Business Park) Limited, reference 19-0654.01, dated August 2019; Delta-Simons 'Geo-Environmental Assessment: Plot A, Image Business Park, Acornfield Road, Knowsley' for Knowsley (Image Business Park) Limited, reference 19-0654.02, dated November 2019; Delta-Simons 'Additional Ground Investigation Report: Site 2, Image Business Park, Acornfield Road, Knowsley' for Knowsley (Image Business Park) Limited, reference 19-0654.07, dated June 2021. Delta-Simons 'Controlled Waters Risk Assessment and Updated Gas Assessment. Imagination 2 and 3, Acornfield Road, Knowsley' for Knowsley (Image Business Park) Limited, reference 19-0654.10, dated
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	July 2022. It The Site was formerly referred to as 'Plot A', 'Site 2' and is now known as 'Imagination 2'
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7c. Remediation Strategy / Design Statement

Reference for either Remediation Strategy or Design Statement	Remediation & Verification Strategy Imagination 2, Image Business Park, Acornfield Road, Knowsley Delta-Simons Project Number 19-0654.08
---	---

7d. Verification Plan

Reference for the Verification Plan	See Question 26 of the MMP, supplemented by the requirements of the Remediation Strategy.
-------------------------------------	---

7e. Verification Report Contact

Company	PTA Consult
Address	29 Red Lion Street Chesham Buckinghamshire HP5 1EJ
Name	Sarah Hunt
Email	sarah.hunt@ptaconsult.co.uk
Telephone	07779 619829

7f. Verification Report

Expected production date for the Verification Report.	2025-08-29 00:00:00
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7g. Additional Documentation

7gi. Location plans	Masterplan, Proposed Site Plan. SK4000, by Hale Site Location Plan, 19-0654, by Delta Simons, April 2021
7gii. Schematics	T8789 Earthworks sequence Rev 002, powerpoint showing 8 slides in sequence for material movements.
7giii. Desk Top Study	Delta-Simons 'Preliminary Geo-Environmental Risk Assessment: Plots A, B and C, Image Business Park, Acornfield



	Road, Knowsley' for Knowsley (Image Business Park) Limited, reference 19-0654.01, dated August 2019;
7giv. Mass balance calculations	Knowsley cut and fill with tank dig - excel file with table of material volumes and cut-fill image.
7gv. Contingency arrangements	Unsuitable material will be removed from site at Wilten cost. Suitable classification/contamination testing will be undertaken before any material is moved
7gvi. Tracking System	A site tracker updated weekly by site teams – Form FO52. Physical records are filed for keeping. All records are kept on their 'Procore' Integrated management system
Digital Tracking	no
Reason	Handling of site-won materials. No electronic tracking between sites required.

7h. Regulator Communications

a) The Local Authority	Checked
b) Environment Agency	Checked
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Reference the correspondence with the Local Authority	Requirement to undertake the MMP is a planning condition - 21/00959/FUL, Condition 4E. The Remediation Strategy has been approved.
Reference the correspondence with the Environment Agency	No direct EA correspondence Requirement to undertake the MMP is a planning condition - 21/00959/FUL, Condition 4E. The Remediation Strategy has been approved by the LA. The EA have a standard position statement for MMPs.

7i. Planning Consent

I have reviewed the planning consent including planning conditions	Checked
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Planning Reference (State either the reference or Not Applicable.)	21/00959/FUL
a) The Local Authority	Checked
b) Environment Agency	N/A
c) Natural Resources Wales	N/A
d) Other relevant environmental regulatory bodies	N/A
Please list correspondence reviewed above	Requirement to undertake the MMP is a planning condition - 21/00959/FUL, Condition 4E. The Remediation Strategy has been approved.
Planning consent not required	N/A

8. QP Declaration

Qualified Person	
8a. QP Name	Mark Hamill
8b. QP Number	QP432
8c. I satisfy the Qualified Person requirements set out in Appendix 6 of the Definition of Waste: Development Industry Code of Practice to complete this Declaration.	Checked
8d. I have reviewed the Materials Management Plan for the above project.	Checked
8e. I have reviewed the Risk Assessment.	Checked
8f. I have reviewed the Remediation Strategy/Design Statement covering the above site.	Checked
8g. I have requested correspondence / documentation relating to the development and how that relates to the use of materials.	Checked

Materials Management Plan (MMP)

8h. The risk assessment assesses human health and environmental risks in relation to	Checked
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the proposed uses of all the materials in the MMP. The risk assessment concludes that the objectives of preventing harm to human health and pollution of the environment will be met if materials are used in the proposed manner	
8i. The Local Authority, the Environment Agency / Natural Resources Wales and other relevant environmental regulatory bodies have not objected to the proposed development / land remediation on the basis that the use of any material is likely to cause harm to human health or pollution of the environment. [This confirmation should be given regardless of whether planning consent is required for the activity. Also see paragraph 3.37 of the CoP].	Checked
8j. The EA/NRW have not objected to the reuse of materials on the grounds that it a.) constitutes a waste management operation or b.) has had a previous application for an environmental permit for waste recovery refused (on the grounds that the project represents waste disposal).	Checked
8k. The project does not involve land-spreading / agricultural re-profiling.	Checked
Project	
8l. The project has not yet commenced; this is not a retrospective application of the DoW CoP.	Checked

T879 – Knowsley

Earthworks Sequence Revision 002

Key



Access/Egress to site



Material movement



Topsoil strip



Topsoil stockpile



Excavate to reduce levels



Fill and modify to 5% CBR to make up levels



Attenuation tank



Re-soiling to landscape areas with site-won topsoil



Stabilise 300mm formation layer to 30% CBR



Supply and place imported Type 1



Finished areas



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 Access/Egress to site

➔ Material movement

 Topsoil strip Topsoil stockpile

 Excavate to reduce levels

 Fill and modify to 5% CBR to make up levels

 Attenuation tank

- Re-soiling to landscape areas with site-won topsoil

 Stabilise 300mm formation layer to 30% CBR

 Supply and place imported Type 1

 Finished areas



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T879 – Knowsley

Earthworks Sequence Revision 002

Key



Access/Egress to site



Material movement



Topsoil strip



Topsoil stockpile



Excavate to reduce levels



Fill and modify to 5% CBR to make up levels



Attenuation tank



Re-soiling to landscape areas with site-won topsoil



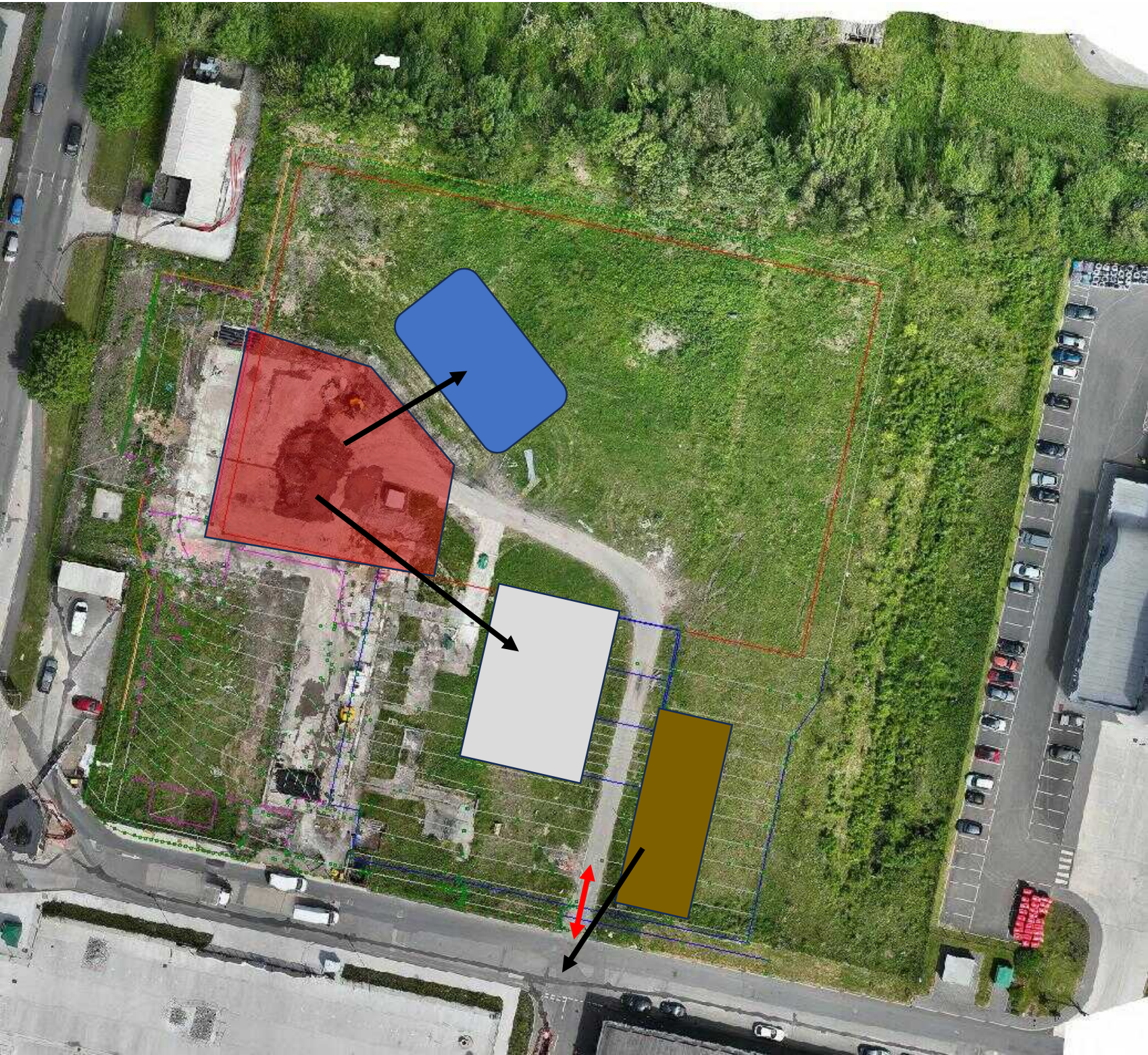
Stabilise 300mm formation layer to 30% CBR



Supply and place imported Type 1



Finished areas



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T879 – Knowsley

Earthworks Sequence Revision 002

Key

-  Access/Egress to site
-  Material movement
-  Topsoil strip
-  Topsoil stockpile
-  Excavate to reduce levels
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T879 – Knowsley

Earthworks Sequence Revision 002

Key



 Access/Egress to site



 Material movement



 Topsoil strip



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 Re-soiling to landscape areas with site-won topsoil



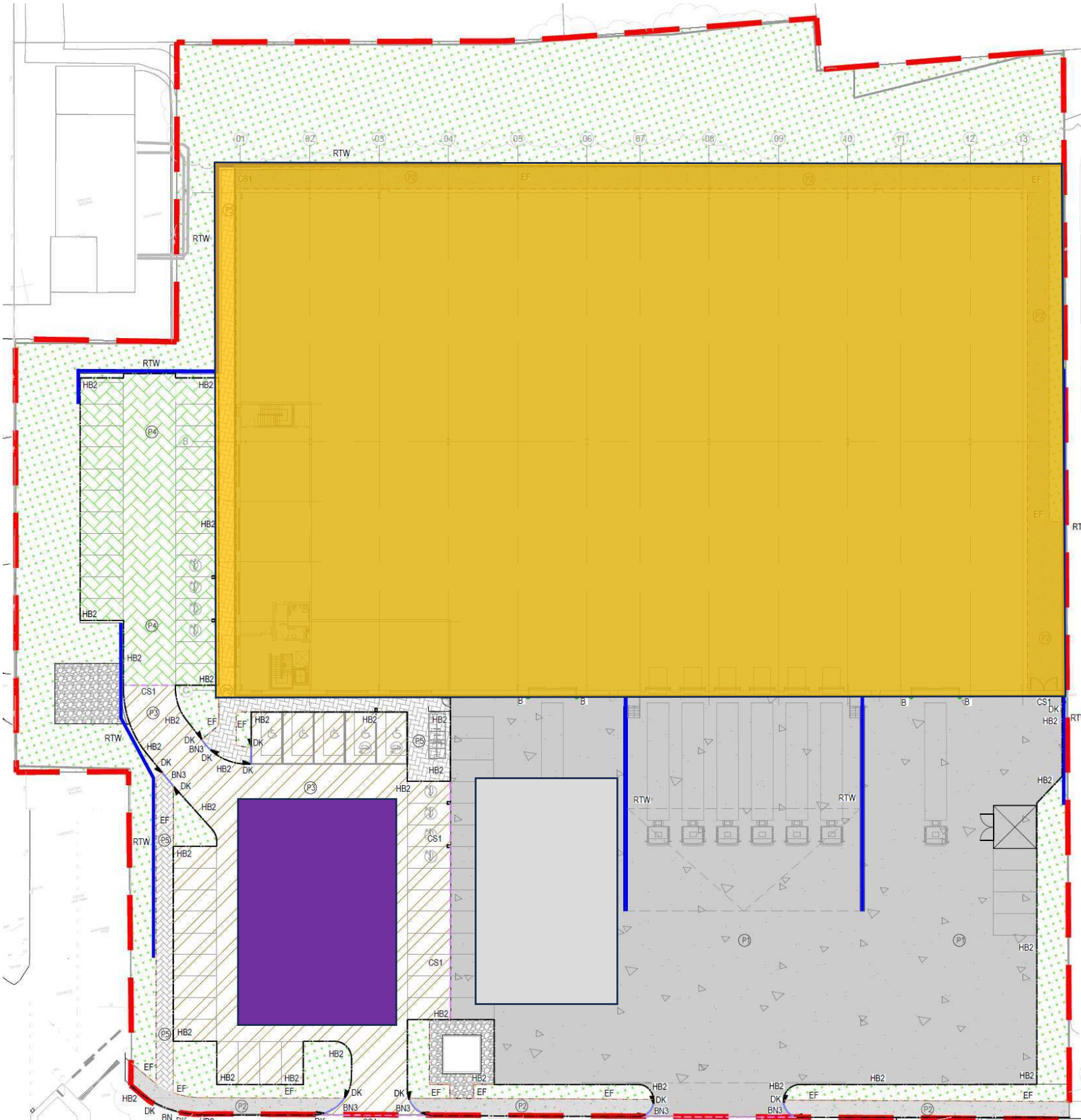
 Stabilise 300mm formation layer to 30% CBR



 Supply and place imported Type 1



 Finished areas



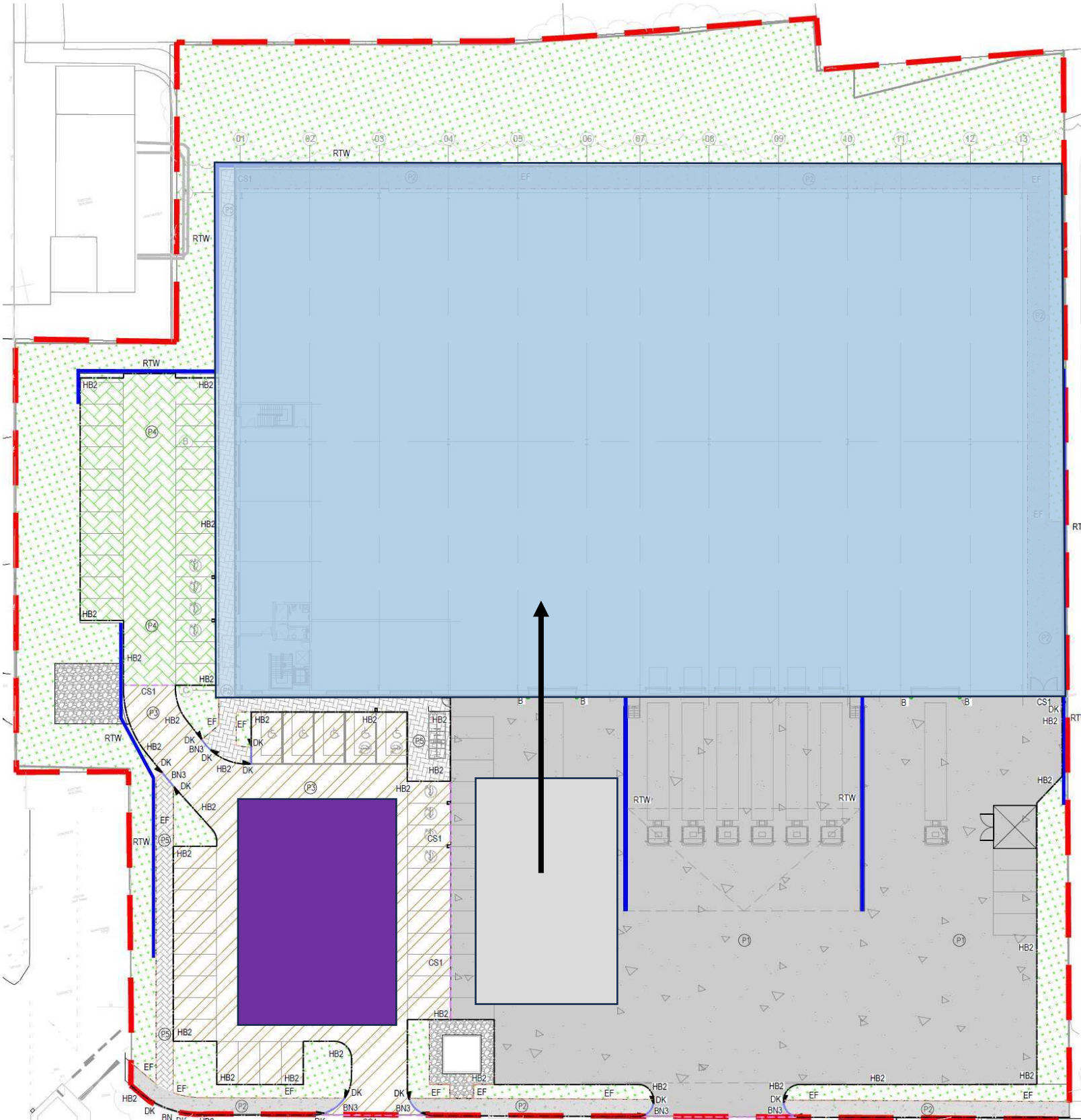
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T879 – Knowsley

Earthworks Sequence Revision 002

Key

-  Access/Egress to site
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T879 – Knowsley

Earthworks Sequence Revision 002

Key

Access/Egress to site

Material movement

Topsoil strip

Topsoil stockpile

Excavate to reduce levels

Fill and modify to 5% CBR to make up levels

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Re-soiling to landscape areas with site-won topsoil

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Supply and place imported Type 1

Finished areas

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IMS Document Ref 105a

Please note this sequence is indicative of the overall process and is subject to change to meet specific site requirements

T879 – Knowsley

Earthworks Sequence Revision 002

Key



 Access/Egress to site



 Material movement



 Topsoil strip



 Topsoil stockpile



 Excavate to reduce levels



 Fill and modify to 5% CBR to make up levels



 Attenuation tank



 Re-soiling to landscape areas with site-won topsoil



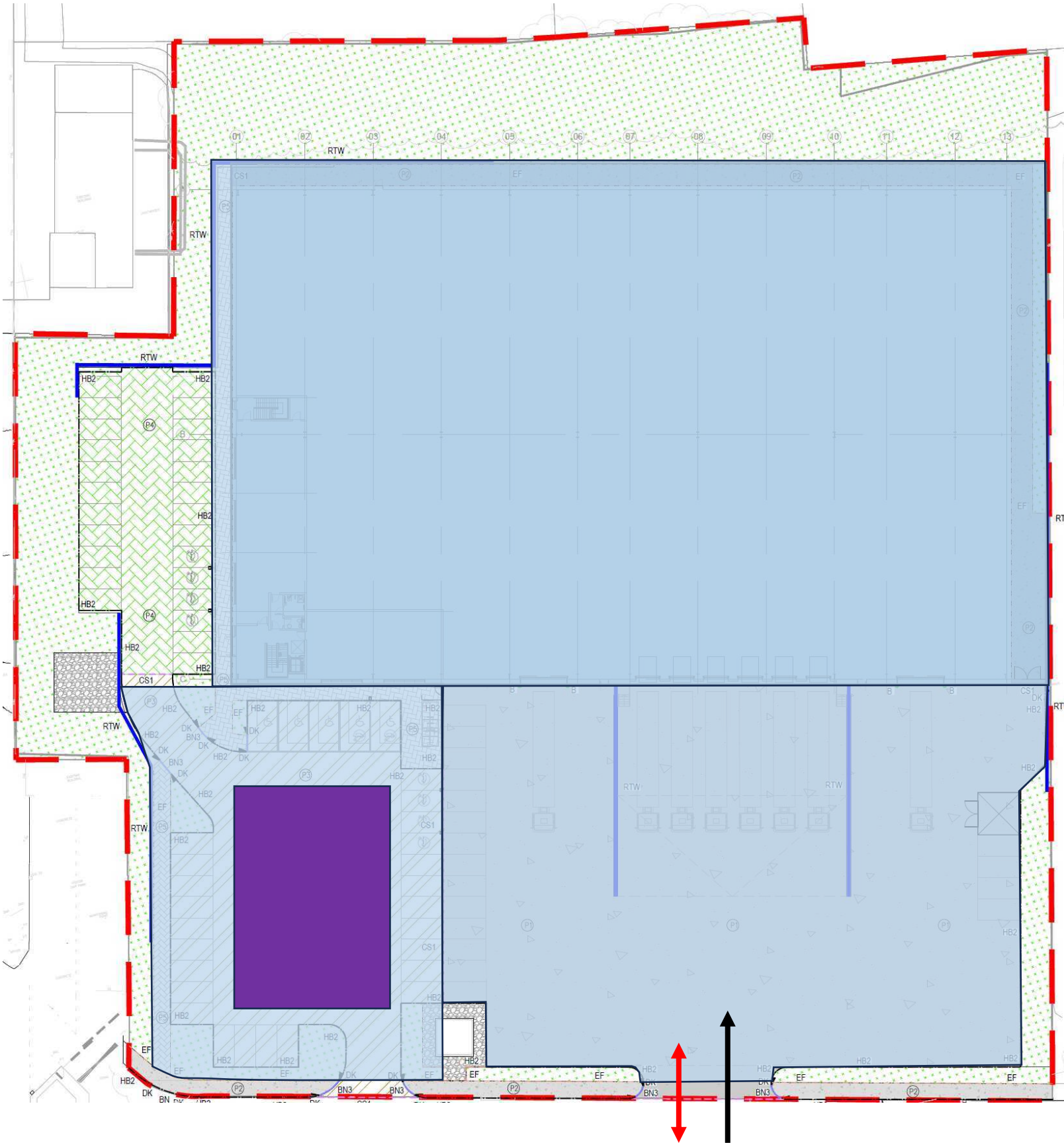
 Stabilise 300mm formation layer to 30% CBR



 Supply and place imported Type 1



 Finished areas



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Final Report

Report No.: 25-21560-1

Initial Date of Issue: 04-Jul-2025

Re-Issue Details:

Client *Soiltechnics Limited*

Client Address: *Cedar Barn, White Lodge
Walgrave
Northamptonshire
NN6 9PY*

Contact(s): *Admin*

Project *STX7107 Knowsley Topsoil*

Quotation No.: **Date Received:** 30-Jun-2025

Order No.: POR022743 **Date Instructed:** 30-Jun-2025

No. of Samples: 4

Turnaround (Wkdays): 3 **Results Due:** 02-Jul-2025

Date Approved: 04-Jul-2025

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: STX7107 Knowsley Topsoil

Client: Soiltechnics Limited		Chemtest Job No.:		25-21560	25-21560	25-21560	25-21560
Quotation No.:		Chemtest Sample ID.:		1993151	1993152	1993153	1993154
Order No.: POR022743		Client Sample Ref.:		1	1	1	1
		Client Sample ID.:		TS01-0-1	TS02-0-1	TS03-0-1	TS04-0-1
		Client Reference:		TS01	TS02	TS03	TS04
		Sample Type:		SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.00	0.00	0.00	0.00
		Date Sampled:		27-Jun-2025	27-Jun-2025	27-Jun-2025	27-Jun-2025
		Time Sampled:		11:59	11:59	12:00	12:00
		Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
ACM Type		N	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	5.3	4.3
Soil Colour		N	2030		N/A	Brown	Brown
Other Material		N	2030		N/A	Stones and Roots	Stones and Roots
Soil Texture		N	2030		N/A	Loam	Loam
pH at 20C		M	2010		4.0	7.6	7.4
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50
Arsenic		M	2455	mg/kg	0.5	0.7	1.2
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10
Chromium		M	2455	mg/kg	0.5	1.4	2.5
Copper		M	2455	mg/kg	0.50	2.9	4.7
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel		M	2455	mg/kg	0.50	1.2	2.3
Lead		M	2455	mg/kg	0.50	3.2	5.3
Selenium		M	2455	mg/kg	0.25	< 0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	7.6	8.9
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05

Results - Soil

Project: STX7107 Knowsley Topsoil

Client: Soiltechnics Limited		Chemtest Job No.:	25-21560	25-21560	25-21560	25-21560
Quotation No.:		Chemtest Sample ID.:	1993151	1993152	1993153	1993154
Order No.: POR022743		Client Sample Ref.:	1	1	1	1
		Client Sample ID.:	TS01-0-1	TS02-0-1	TS03-0-1	TS04-0-1
		Client Reference:	TS01	TS02	TS03	TS04
		Sample Type:	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):	0.00	0.00	0.00	0.00
		Date Sampled:	27-Jun-2025	27-Jun-2025	27-Jun-2025	27-Jun-2025
		Time Sampled:	11:59	11:59	12:00	12:00
		Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	< 10
Organic Matter		M	2625	%	0.40	< 0.4
Benzene		M	2760	µg/kg	1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	< 0.10
Pyrene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	Clients Sample Ref:	Clients Sample ID:	Clients Reference:	Sampled Date:	Deviation Code(s):	Containers Received:
1993151	1	TS01-0-1	TS01	27-Jun-2025	C	Miscellaneous
1993152	1	TS02-0-1	TS02	27-Jun-2025	C	Miscellaneous
1993153	1	TS03-0-1	TS03	27-Jun-2025	C	Miscellaneous
1993154	1	TS04-0-1	TS04	27-Jun-2025	C	Miscellaneous

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Text example All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory
This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.
For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - The required amount of sample for analysis was not received
- H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix C – Main Contractor Verification Statement (no unexpected contamination)

Epsilon Environmental Ltd
Sparkhouse,
Rope Walk,
Lincoln,
LN6 7DQ

For the Attention of Alan Crossfield

4th December 2025

Dear Alan,

RE: P25-006 Imagination Two, Knowsley – verification

We can confirm the following:

- No hydrocarbon contaminated soil or groundwater was encountered during the construction works.
- No visible potentially asbestos containing material in soil was encountered during the construction works.
- No unexpected, contaminated soil or groundwater was encountered during the construction works.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Tom Corbett", is positioned above the printed name and title.

Tom Corbett
Head of Design & Technical
Wiltén Construction Ltd

Appendix D - Main Contractor Verification Statement (no imported topsoil) & Clean Cover Validation Evidence

Hale Architecture
22c Leathermarket Street,
London,
SE1 3HP

For the Attention of Mahdiah Pourali

13th October 2025

Dear Mahdiah,

RE: P25-006 Imagination Two, Knowsley – Planning Condition 4F

We can confirm that there will be no imported soils for the implementation of the soft landscaping scheme. The top soil will be taken from the surplus from the plot.

Yours sincerely,



Tom Corbett
Head of Design & Technical
Wiltan Construction Ltd

IM2 KNOWSLEY - TOPSOIL

Wednesday, 11 March 2026





SAMPLE 1 - TS201

Rear of building East Boundary



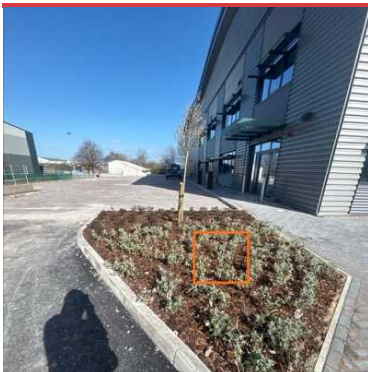
SAMPLE 2 - TS203

Rear of building under retaining wall



SAMPLE 3 - TS204

West Boundary



SAMPLE 4 - TS202

Car park north



SAMPLE 5 - TS205

Car Park South



Topsoil placement depths 1



Topsoil placement depth 2



Topsoil placement depths 3



SAMPLE LOCATION 3

View from Acornfield Road



SAMPLE LOCATION 2

View from Acornfield Road (Building 99 is a substation building that cannot be accessed by the public)

Certificate of Analysis

Certificate Number 26-04565

Issued: 09-Mar-26

Client Soiltechnics Ltd
White Lodge
Cedar Barn
Walgrave
NN6 9PY

Our Reference 26-04565

Client Reference ~ STX107

Order No ~ (not supplied)

Contract Title ~ Knowsley Topsoil

Description 5 Soil samples.

Date Received 26-Feb-26

Date Started 26-Feb-26

Date Completed 09-Mar-26

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "R. Irfan".

Reyhan Irfan
Operations Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 26-04565

Client Ref ~ STX107

Contract Title ~ Knowsley Topsoil

Lab No	2647497	2647498	2647499	2647500	2647501
Sample ID ~	TS201	TS202	TS203	TS204	TS205
Depth ~					
Other ID ~					
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	24/02/2026	24/02/2026	24/02/2026	24/02/2026	24/02/2026
Sampling Time ~	1100	1100	1100	1100	1100

Test	Method	LOD	Units					
Asbestos Quantification (Gravimetric)	DETSC 1102	0.001	%	0.003		0.002	0.001	
Preparation								
Moisture Content	DETSC 1004	0.1	%	17	19	17	14	19
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	6.2	5.5	6.8	6.1	5.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.2	0.4	0.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	15	8.8	13	14	10
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	49	20	39	31	25
Lead	DETSC 2301#	0.3	mg/kg	47	48	33	28	29
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.18	0.07	0.06
Nickel	DETSC 2301#	1	mg/kg	15	8.6	14	14	9.8
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	83	48	95	60	70
Inorganics								
pH	DETSC 2008#		pH	8.3	8.0	8.4	8.1	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.5	0.3	0.2	0.5
Organic matter	DETSC 2002#	0.1	%	3.8	6.2	4.1	3.2	7.0
Petroleum Hydrocarbons								
VPH (C8-C10): HS_1D_Total	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
EPH (C10-C12): EH_1D_Total	DETSC 3311	10	mg/kg	< 10	< 10	< 10	< 10	< 10
EPH (C12-C16): EH_1D_Total	DETSC 3311	10	mg/kg	< 10	< 10	< 10	< 10	< 10
EPH (C16-C21): EH_1D_Total	DETSC 3311	10	mg/kg	10	14	< 10	< 10	< 10
EPH (C21-C40): EH_1D_Total	DETSC 3311	10	mg/kg	12	34	< 10	< 10	< 10
TPH (C8-C40): HS_1D_Total	DETSC 3311*	10	mg/kg	27	54	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.16
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.21
Fluorene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.21
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	1.0
Anthracene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.14
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.65
Pyrene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.63
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.24

Summary of Chemical Analysis

Soil Samples

Our Ref 26-04565

Client Ref ~ STX107

Contract Title ~ Knowsley Topsoil

Lab No	2647497	2647498	2647499	2647500	2647501
Sample ID ~	TS201	TS202	TS203	TS204	TS205
Depth ~					
Other ID ~					
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	24/02/2026	24/02/2026	24/02/2026	24/02/2026	24/02/2026
Sampling Time ~	1100	1100	1100	1100	1100

Test	Method	LOD	Units					
Chrysene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.30
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.31
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.16
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.27
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.34
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.15
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	0.32
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	5.1
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	1.9	1.0	0.9	2.0

Summary of Asbestos Analysis Soil Samples

Our Ref 26-04565

Client Ref ~ STX107

Contract Title ~ Knowsley Topsoil

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2647497	TS201	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
2647498	TS202	SOIL	NAD	none	D Wilkinson
2647499	TS203	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
2647500	TS204	SOIL	Amosite Chrysotile	Amosite Chrysotile present as fibre bundles	D Wilkinson
2647501	TS205	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 26-04565

Client Ref ~ STX107

Contract Title ~ Knowsley Topsoil

Lab No	2647497	2647499	2647500
Sample ID ~	TS201	TS203	TS204
Depth ~			
Other ID ~			
Sample Type ~			
Sampling Date ~	24/02/2026	24/02/2026	24/02/2026
Sampling Time ~	1100	1100	1100

Test	Method	LOQ	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	< 0.001	Mass %	0.003	0.002	0.001
Gravimetric Quantification (a)	DETSC 1102	< 0.001	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	< 0.001	Mass %	0.003	0.002	0.001
Quantification by PCOM (c)	DETSC 1102	< 0.001	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	< 0.001	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample			g	1540.10	1430.01	988.89
ACMs present*			type			
Mass of ACM in sample			g			
% ACM by mass			%			
% asbestos in ACM			%			
% asbestos in sample			%			
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample			Mass %	na	na	<0.001
% Chrysotile bundles in sample			Mass %	0.003	0.002	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample			Mass %	na	na	na
% Chrysotile fibres in sample			Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres			Fibres/g	na	na	na
Chrysotile fibres			Fibres/g	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample
 The results are based on dry weight.

Information in Support of the Analytical Results

Our Ref 26-04565
 Client Ref ~ STX107
 Contract ~ Knowsley Topsoil

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2647497	TS201 SOIL	24/02/26	GJ 250ml, GJ 60ml, PT 1L		
2647498	TS202 SOIL	24/02/26	GJ 250ml, GJ 60ml, PT 1L		
2647499	TS203 SOIL	24/02/26	GJ 250ml, GJ 60ml, PT 1L		
2647500	TS204 SOIL	24/02/26	GJ 250ml, GJ 60ml, PT 1L		
2647501	TS205 SOIL	24/02/26	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
VPH (C8-C10)	HS_1D_Total
EPH (C10-C12)	EH_1D_Total
EPH (C12-C16)	EH_1D_Total
EPH (C16-C21)	EH_1D_Total
EPH (C21-C40)	EH_1D_Total
TPH (C8-C40)	HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report Ver 25.10.03





PLANNING NOTES (SOFT LANDSCAPE):

1. SOILS: Subgrade / subsoil to be prepared in accordance with BS 8801:2013 and BS 4428:1989 and scarified or ripped to 300mm depth (excluding root protection areas of retained trees refer to Tree Protection Plan) prior to spreading topsoil to alleviate compaction and promote drainage. Imported and as saved topsoil to be in accordance with BS 3882:2015 'Multipurpose Grade' with minimum soil organic matter contents 1% greater than the minima value (or as approved). Imported topsoil (and as saved if requested) is to be laboratory tested to BS 3882:2015 and ameliorated as required to meet the required characteristics as detailed within table 1 of BS 3882:2015 specification. Wildflower areas to be unimproved topsoil or low fertility topsoil to BS 3882:2015. Grass areas to be a minimum depth of 150mm. Shrub & hedge beds 450mm depth. Any weed / grass growth to be sprayed out with appropriate herbicide at least 10 days before cultivation. All areas to be cultivated to a minimum depth of 150mm removing weeds and rubbish / stones greater than 20mm in size. Incorporate proprietary non peat compost to BSI PAS 100 to 50mm depth evenly worked into soil during cultivation.

NB Proposed services (electric, water, gas etc) in landscape areas should be installed as a minimum below the required topsoil depths and clearly identified in accordance with service / utility requirements.

2. BUILDING FOUNDATION DESIGN: All tree and shrub planting proposals are to be referred to by the structural engineer during building foundation design.

3. PLANT STOCK: Unless agreed otherwise all trees and shrubs are to be of UK provenance where plants have been propagated and/or grown for a minimum of 5 years in the UK for trees and 2 years for shrubs. All plants are to comply with the requirements of all current British Standards including BS3936 Specifications for Nursery Stock and BS6545 'Trees from nursery to independence in the landscape' and be supplied in accordance with the Plant Schedule. Should planting be required outside of the planting season (November - March) any bare root or rootballed stock specified is to be replaced with containerised stock to an appropriate or similar specification to the approval of the landscape architect prior to ordering.

4. EXISTING TREES: Where trees are to be retained they should be subject to a full arboricultural inspection to assess condition and safety. Retained trees shall be protected from damage by erection of 2.3m waisthigh fencing on a scaffold framework in accordance with BS 5837:2012 Figure 2. These barriers shall be maintained in position and in good condition until works are complete. Fencing to be located in accordance with Table D.1 at a radius of 12 times the stem diameter (single stem trees) or based on the combined stem diameter for multi-stem trees (trees with more than one stem arising below 1.5m above ground level) refer to Clause 4.8. Further precautions are to be taken as detailed within BS 5837:2012 6.2.4.

5. TREE SURGERY / REMOVAL: Tree surgery and tree removal to be carried out by an Arboricultural Association approved Tree surgeon in accordance with BS 3996:2010. Arisings to be removed to a licensed tip.

6. TREE PLANTING: All trees to be in accordance with BS 3936, BS8545 and The National Plant Specification - 'Rootballed Trees' recommendations. Trees to be planted in accordance with BS 4428:1989, double staked (10-12cm - 14-16cm girth trees) and tied with webbing loops in prepared pits. Tree pits in open field / uncompacted ground conditions or shrub beds to be 1000mm x 1000mm (at least 75mm greater than that of the root system) with pit depth to be based on the planting depth of the tree (distance from root flare to underside of rootball) in accordance with BS 8545:2012. Topsoils and subsoils to be excavated and stored separately for reuse. Tree pit to be backfilled with stored subsoil and topsoil at depths to replicate the existing soil horizons. Topsoil to be mixed enriched with 40L of peat free tree planting compost, incorporating Rootgrow professional (RGPro as supplied by Empathy) and Serranin N Map Pre-planter Fertiliser in accordance with manufacturers recommendations. Root balls to be encased by Root Ram Metro or similar irrigator pipe. Well water after planting. The base of trees to be planted in grass areas are to be covered with 75mm amenity grade bark mulch such as Melcourt 'Amenity Bark Mulch' (or similar approved by the landscape architect) to 1.0 metre diameter and kept weed free.

Where trees are to be planted in heavily compacted ground, tree pits are to be excavated to achieve the an uncompacted growing volume with pits being approximately 4m x 4m x900mm backfilled with excavated subsoil and topsoil (as described above) mixed with 160L of peat free tree planting compost.

Generally all trees are to be planted as shown ensuring a minimum of 5 metres from buildings and 3 metres from drainage or services. In locations close to footpaths and roadways linear root barriers Greenblue Urban, ReRoot or similar are to be installed in accordance with manufacturers instructions. Where proposed tree locations conflict with services, trees are to be relocated in accordance with the appropriate utilities guidance notes subject to client / local authority approval. Proprietary root barrier Greenblue Urban, ReRoot or similar to be installed in accordance with manufacturers instructions where relocation is not considered appropriate.

7. SHRUB PLANTING: plants to be in accordance with BS 3936 and handled in accordance with NPS 'Handling & Establishment' guidelines and planted in accordance with BS 4428:1989. Nursery stock supplier to be approved by the Landscape Architect. All shrubs to have a minimum of three breaks, except Hedera with a minimum of two. Shrubs to be pit planted incorporating Rootgrow professional in accordance with manufacturers recommendations and Agrilene 'Yellow' tablets evenly distributed around the plant at 200mm depth with 2 tablets for plants up to 3 ltrs, 3 tablets for plants up to 5 ltrs and 4 ltrs for plants up to 10ltrs. Well water plants immediately after planting and prior to spreading of mulch. Planting areas to be covered with 75mm depth amenity grade bark mulch such as Melcourt 'Ornamental Bark Mulch' (or similar approved by the landscape architect) and kept weed free.

8. NATIVE TREE & SHRUB PLANTING: plants to be in accordance with BS 3936 and planted in accordance with BS 4428:1989. Shrub transplants to be planted at 1 metre centres (or as scheduled) in random groupings of 3-5 and 7-10 shrub species depending on numbers of plants. With tree species at 2m centres randomly planted within the area. Bare root transplants to be root dipped with Broadleaf Root Dip prior to planting. Planted areas to be kept weed free and protected from rabbits, with rabbit fence and / or individual mesh tree guards securely fixed to timber stake(s).

9. WILDFLOWER SEEDING: grass areas to be seeded in accordance with BS 4428:1989 during March, April or September. Unimproved or low fertility topsoil to be imported, cultivated and leveled to remove all minor hollows or ridges as required with any debris or stones greater than 20mm diameter removed to provide a fine weed free till. Do not apply fertiliser. Weeds to be eradicated by herbicide or repeated cultivation prior to sowing. Lightly rake areas after sowing and keep well watered. Areas to be kept free from unwanted plants and mown every 6 - 8 weeks during establishment year removing anisaks. In subsequent years cut in early spring and autumn after setting seed (in accordance with manufacturers recommendations) removing anisaks. Seed mixes to be supplied by Emorsgate Seeds and include the following sown in accordance with suppliers recommendations.

EM2 'Standard General Purpose Meadow Mixture' to general landscape areas (sown at 4g/m2)

EH1 'Hedgerow mix' to woodland edges (sown at 4g/m2)

10. MAINTENANCE: To be carried out at approximately monthly intervals during the defects liability / rectification period to include the following:

- Eradicate weeds by hand or appropriate chemical means.
- Cut out dead or / and damaged stock or branches, prune as required.
- Ensure all shrubs and trees are firmed in, securely staked and tied with guards where applicable.
- Collect litter, sweep and tidy site.
- Apply suitable non-residual herbicides, pesticides and water as required.
- Carry out mowing to grass areas when attained 100mm, cut to 35mm (50mm for shaded areas) approximately 2 week intervals during the growing season.
- Carry out mowing to wildflower areas as per Emorsgate Seeds Ltd aftercare First year & Established sward guidance.
- All hedges to plot frontages be maintained to a max height of 2.0m.
- At final visit apply granular fertiliser to all planted areas and top up bark mulch depth to 75mm.

11. WATERING: all plant material (including turf) to be watered in dry periods until established during April through to September with a fine rose until the water penetrates the topsoil to at least 5cm depth and achieves field capacity. Frequency of watering regime to be determined by weather conditions, soil conditions and underlying geology, all plant beds to be watered to ensure soil is consistently moist to promote successful establishment. As a guide only it is suggested that during hot, dry periods, plants are to be watered every six to ten days. For individual trees it is suggested that 16 watering visits per year are carried out commencing late March (prior to budburst) and utilising a minimum of 50 litres of water per tree. Soil probe to be used to determine soil saturation to full depth of root ball.

Plant Schedule (02.12.25)

Trees				
No.	Species Name	Specification	Girth	Height
7	Acer campestre	1+1: 3 transplant 8	80-100cm	11m
2	Amelanchier x grandiflora 'Robin Hill'	3x Extra Heavy Standard / Clear Stem 175-200 / 5 brks : RB : PG	14-16cm	425-450cm
9	Carpinus betulus	3x Extra Heavy Standard / Clear Stem 175-200 / 5 brks : RB : PG	14-16cm	400-450cm
7	Carpinus betulus	1+1: 3 transplant 8	80-100cm	11m
8	Carpinus betulus 'Fastigiata'	3x Extra Heavy Standard / Clear Stem 175-200 / 5 brks : RB : PG	14-16cm	400-450cm
3	Carpinus betulus 'Fastigiata'	3x Extra Heavy Standard / Clear Stem 175-200 / 5 brks : RB : PG	14-16cm	400-450cm
5	Pinus sylvestris	2+2: 3 transplant 8	60-80cm	11m
8	Sorbus aucuparia 'Cardinal Royal'	3x Extra Heavy Standard / Clear Stem 175-200 / 5 brks : RB : PG	14-16cm	400-450cm

Hedging				
No.	Species Name	Specification	Girth	Height
34	Acer campestre (*)	1+1: 3 brks : RB	40-60cm	0.45Cm Double Staggered at 0.35m offset
10	Cornus sanguinea	1+1: 3 transplant / branched 2 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
3	Corylus avellana (*)	1+1: 2/3 brks : RB	50-60cm	0.45Cm Double Staggered at 0.35m offset
68	Crataegus monogyna (*)	1+1: 3 transplant / B	40-60cm	0.45Cm Double Staggered at 0.35m offset
343	Escallonia rubra macrantha (*)	Bushy : 4 brks : C : PG 9	40-60cm	0.45Cm Triple Staggered at 0.35m offset
11	Euonymus europaeus	1+2: 3 transplant / branched 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
17	Ilex aquifolium (*)	Bushy 2 brks : C : PG 9	40-60cm	0.45Cm Double Staggered at 0.35m offset
112	Ligustrum vulgare (*)	0/2: Cutting / branched 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
17	Rosa pimpinellifolia	1+1: 3 transplant / branched 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
17	Sambucus nigra	1+1: 3 transplant / branched 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
17	Viburnum opulus	1+2: 3 transplant / branched 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset
17	Viburnum opulus (*)	1+1: 3 brks : B	40-60cm	0.45Cm Double Staggered at 0.35m offset

Shrubs				
No.	Species Name	Specification	Diameter	Height
12	Brachyglottis Sunshine	Branched 4 brks : C : PG 8	30-40cm	3L
14	Cornus sanguinea	1+1: 3 transplant / branched 2 brks : B	40-60cm	11m
19	Cornus sanguinea	1+1: 3 transplant / branched 2 brks : B	40-60cm	11m
10	Cornus avellana	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m
14	Crataegus monogyna	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m
10	Crataegus monogyna	1+1: 3 transplant / B	40-60cm	11m
5	Euonymus europaeus	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m
11	Euonymus europaeus	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m
68	Hebe Mrs Winder	Bushy 3 brks : C : PG 9	40-60cm	3L
10	Hypericum 'Hidcote'	Bushy 5 brks : C : PG 8	40-60cm	3L
14	Ilex aquifolium	Leader With Lateralis	40-60cm	11m
7	Lavandula angustifolia 'Hidcote'	Bushy 5 brks : C : PG 10	20-30cm	3L
11	Ligustrum vulgare (*)	0/2: Cutting / branched 3 brks : B	40-60cm	11m
17	Ligustrum vulgare (*)	0/2: Cutting / branched 3 brks : B	40-60cm	11m
20	Lonicera pileata	Bushy 4 brks : C : PG 2	30-40cm	3L
49	Mahonia aquifolium 'Apollo'	Branched 2 brks : C : PG 8	20-30cm	3L
63	Prunus laurocerasus 'Otto Luyken'	Bushy 3 brks : C : PG 8	40-60cm	5-7.5L
4	Rosa canina (*)	1+1: 3 transplant / branched 3 brks : B	40-60cm	11m
4	Sambucus nigra	1+1: 3 transplant / branched 3 brks : B	40-60cm	11m
7	Viburnum lanata	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m
7	Viburnum opulus	1+2: 3 transplant / branched 3 brks : B	40-60cm	11m

LEGEND: SOFT LANDSCAPING

- GROUND COVER: deciduous and evergreen shrub ground cover planting with specimen shrubs
- EVERGREEN HEDGE: evergreen shrub hedge as detailed
- SPECIMEN SHRUBS: specimen shrub planting as detailed
- WILDFLOWER MEADOW AREAS: to be seeded with Emorsgate EM2 wildflower seed mix to open areas and EH1 to the woodland edge
- DECIDUOUS HEDGE: native tree and shrub species mix hedge as detailed
- NATIVE SHRUB PLANTING: native species planting mix at 500mm centres
- NATIVE TREE & SHRUB PLANTING: native species planting mix at 500mm centres
- ORNAMENTAL GRAVEL: pea gravel from local source, 50-75mm minimum depth, refer to notes
- TREE PLANTING: standard tree planting with canopy spread illustrated at 25 years growth
- EXISTING TREES: to be retained in accordance with BS 5837 'Trees in relation to Construction' 2012
- TREES TO BE REMOVED

NATIVE TREE & SHRUB MIX
7 No. Acer campestre 7%
7 No. Carpinus betulus 7%
14 No. Cornus sanguinea 15%
19 No. Corylus avellana 20%
14 No. Crataegus monogyna 15%
5 No. Euonymus europaeus 5%
14 No. Ilex aquifolium 3L 15%
11 No. Ligustrum vulgare (*) 11%
5 No. Pinus sylvestris 5%

VEGETATED RETAINING WALL SYSTEM:
to engineers details, hydresseded with
Wildflower mix EH1

Double Staggered hedge:
62 No. Cornus sanguinea 25%
13 No. Euonymus europaeus 5%
86 No. Ligustrum vulgare (*) 30%
13 No. Rosa pimpinellifolia 5%
13 No. Sambucus nigra 5%
62 No. Viburnum opulus 25%

Double Staggered hedge:
18 No. Cornus sanguinea 25%
4 No. Euonymus europaeus 5%
26 No. Ligustrum vulgare (*) 30%
4 No. Rosa pimpinellifolia 5%
4 No. Sambucus nigra 5%
18 No. Viburnum opulus 25%

NATIVE SHRUB MIX
10 No. Cornus sanguinea 15%
10 No. Corylus avellana 15%
10 No. Crataegus monogyna 15%
4 No. Euonymus europaeus 5%
7 No. Ilex aquifolium 3L 10%
7 No. Ligustrum vulgare (*) 10%
4 No. Rosa canina (*) 5%
4 No. Sambucus nigra 5%
7 No. Viburnum lanata 10%
7 No. Viburnum opulus 10%

Double Staggered hedge:
34 No. Acer campestre (*) 20%
10 No. Cornus sanguinea 5%
68 No. Crataegus monogyna (*) 40%
17 No. Ilex aquifolium (*) 3L 10%
17 No. Viburnum opulus (*) 10%

2 No. Carpinus betulus 'Fastigiata' 14-16cm
70 No. Hypericum 'Hidcote' 3L

44 No. Brachyglottis 'Sunshine' 3L
27 No. Lavandula angustifolia 'Hidcote' 3L

1 No. Carpinus betulus 'Fastigiata' 14-16cm

40 No. Escallonia rubra macrantha (*) 3L

40 No. Mahonia aquifolium 'Apollo' 3L

116 No. Escallonia rubra macrantha (*) 3L

3 No. Sorbus aucuparia 'Cardinal Royal' 14-16cm

EXISTING WOODLAND MANAGEMENT: nursery
species (including Cherry, Field Maple, Birch, Alder) and
poorer climax species (Ash, Pine, Poplar & Oak) to be
thinned out to benefit the better condition climax species.

TYPICAL TREE PIT DETAIL:

- SOILS: subsoil and topsoil to be excavated to form tree pit, depth to be based on the planting depth of the tree (distance from root flare to underside of rootball), with soils retained and placed separately in backfills as specified (refer to item 6.0 in the drawing notes) and used to backfill the upper part of the tree pit to match the existing soil profile.
- SUBSOIL: as dug subsoil to be used to backfill the tree pit to depth to match the existing soil profile. NB where excavated subsoil is to be used to backfill the tree pit it is to be replaced with imported subsoil to BS 8601:2013.
- ROOT BALL / BARE ROOTS: tree pits sizes to be at least 75mm wider than the tree root system or rootball.
- TOPSOIL: topsoil enriched as specified (refer to item 6.0 in the drawing notes) and used to backfill the upper part of the tree pit to match the existing soil profile.
- IRRIGATION: R33A RootRam Metro irrigation system with plastic caps and firing bracket. Secure to stake with 30mm galvanised nail. Ensure cap finishes slightly above finished surface level.
- MULCH LAYER: finished with Melcourt amenity grade bark mulch to a minimum depth of 75mm.
- STAKES: softwood timber round, peeled chestnut, larch or oak, free from projections and large or edge knots and with pointed lower ends. 75mm diameter to 2000mm with the required clients of ground.
- TIES: tree held to stakes with 35mm flexible webbing and 40mm spacer sleeves fixed to stake with galvanised coil nail.

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Refer only query to office of originator.

rev	date	amendments	alt
P01	02/12/25	Layout amendments, trees relocated.	

cdm 2015: designers residual risk information

In addition to the risks & hazards normally associated with the type of work detailed on this drawing the following residual risks should be noted:

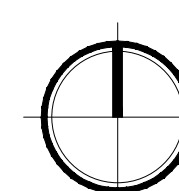
Construction:

- Standard Soft Landscape Works Only. No Additional identifiable risks.
- Changes in level across the site including ramped access / steps.
- The proximity of adjacent pavements, estate roads & car parks.
- The proximity of adjacent buildings and associated buried services.

Maintenance:

- Standard Soft Landscape Works Only. No Additional identifiable risks.
- Changes in level across the site including ramped access / steps.
- The proximity of adjacent pavements, estate roads & car parks.
- The proximity of adjacent buildings and associated buried services.

It is assumed that works will be carried out by competent contractor working where appropriate to an approved method statement.



bea
landscape design ltd

client:
WILTEN CONSTRUCTION LTD
project:
SITE 2, IMAGE BUSINESS PARK
KNOWSLEY
title:
PLANTING PLAN

status:
PLANNING
date:
NOV/25
scale:
A0
1:250
drawn:
E.C.H.
T.G-W
number:
25-095-01
checked:
P01
revision:
P01
Bea Landscape Design Ltd
132A The Westlands, Compton Road,
Wolverhampton, WV9 9JH
T: 01902 424 950 / 01902 425 001
E: info@bealandscape.co.uk
W: www.bealandscape.co.uk

Appendix E – Gas Membrane Installation Supporting Documents

Alan Crossfield

Subject: FW: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

From: Sarah Hunt <sarah.hunt@ptaconsult.co.uk>

Sent: 25 September 2025 16:43

To: Thomas Corbett <TomCorbett@wilten.co.uk>

Cc: Mark Tugman <mark@absbrymarfloors.co.uk>; James Potts <JamesPotts@wilten.co.uk>; Ben Harrison <BenHarrison@wilten.co.uk>

Subject: RE: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

Hi Tom,

Please find attached sketch indicating the proposed extent of the CS2 Gas/Hydrocarbon membrane.

This all needs to be designed, agreed and installed with your specialist subcontractor.

Kind regards,

Sarah Hunt

Senior Structural Engineer



Powell Tolner & Associates Ltd

T: 01494 772 721 | M: 07779 619829 | W: www.ptaconsult.co.uk

PTA, 29 Red Lion Street, Chesham, Bucks., HP5 1EJ



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From: James Potts <JamesPotts@wilten.co.uk>

Sent: 19 September 2025 15:38

To: Thomas Corbett <TomCorbett@wilten.co.uk>; sarah.hunt@ptaconsult.co.uk; Ben Harrison <BenHarrison@wilten.co.uk>

Cc: Mark Tugman <mark@absbrymarfloors.co.uk>

Subject: FW: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

So after a chat and reading Robins email here is the news

We need a up rated membrane to the office area to cover gas and hydrocarbon that extends into the warehouse by a minimum of 2 m with in the warehouse we do not need a hydrocarbon membrane only a 1200 gauge membrane lapped and tapped, this in combination with the concrete will be enough to cover the report.

Sarah you need to cover this design .and a drawing please showing the zones of Membrane. The office area will have to be validated

James Potts
Operations Manager

Telephone: 01858 457242
Mobile: 07708 390437
Email: JamesPotts@wilten.co.uk

Address: Wilten Construction Ltd, 8 The Point, Rockingham Road,
Market Harborough, Leicestershire, LE16 7QU
Check out our website www.wilten.co.uk



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From: Robin Slade <Robin.slade@luciongroup.com>
Sent: 19 September 2025 13:42
To: James Potts <JamesPotts@wilten.co.uk>
Cc: sarah.hunt@ptaconsult.co.uk
Subject: RE: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

Hi James, Sarah,

I've taken a quick look through our 2022 Controlled Waters Risk Assessment and Updated Gas Assessment report for Imagination 2 and 3. Please note I've not revisited the source data or looked to re-assess anything.

In summary, the report noted the following relating to Imagination 2:

- A CS2 ground risk classification based predominantly on steady state carbon dioxide concentrations and corresponding gas flow rates;
- No significant potential sources of volatile vapours were identified on Imagination 2 though a precautionary recommendation was made to include a hydrocarbon resistant membrane given the present of low levels of hydrocarbons and volatile organic vapours within groundwater on the adjacent Imagination 3 site.

To answer your specific questions please see my responses below in blue:

- 1) What specification do we need to meet the hydrocarbon membrane? Is a gas membrane that meets CS2 sufficient? Is this something the specialist subcontractor should be advising on? – This would need to be specified by the gas/vapour mitigation designer though typically would require a membrane that specifically states it is resistant to or has very low permeability to hydrocarbon and VOC vapours. As this is a precautionary approach and not required to meet a specific hydrocarbon source / contaminant, a membrane that is referred to as hydrocarbon resistant or with low permeability to hydrocarbons would likely be acceptable (i.e. there is no specific hydrocarbon / vapour requirements to be met). Please note, there will be specific requirements to verify installation of the uprated membrane and the designer will be able to advise on these.
- 2) What is the extent of the hydrocarbon resistant membrane? Does it just need to extend beneath the Type C - office area. Or does this need to be extended beneath the entire footprint of the building? – This is not specified within the 2002 Delta-Simons report and I have not viewed the site / building layouts and the requirements should be confirmed by the designer. It is worth noting that at least two elements of protection will be required to address the ground gas / vapour risk (so the cast insitu slab with minimal service penetrations plus a membrane) though the risk of hydrocarbon vapour build up to an unacceptable level in a large open space such as the warehouse area is much lower than in the enclosed office / accommodation spaces. Given the precautionary nature of the recommendation regarding the hydrocarbon

vapours I would consider an approach which includes an uprated hydrocarbon resistant membrane under the office / enclosed spaces area would be sensible though this would be best confirmed by your designer.

Best regards,
Robin

Robin Slade
Unit Director
m: 07790 934 791

From: James Potts <JamesPotts@wilten.co.uk>
Sent: 19 September 2025 11:27
To: Robin Slade <Robin.slade@luciongroup.com>
Cc: sarah.hunt@ptaconsult.co.uk
Subject: RE: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

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Be extra cautious when replying, opening attachments, or clicking links.

Sounds good, thank you.

James Potts
Operations Manager

Telephone: 01858 457242
Mobile: 07708 390437
Email: JamesPotts@wilten.co.uk

Address: Wilten Construction Ltd, 8 The Point, Rockingham Road,
Market Harborough, Leicestershire, LE16 7QU
Check out our website www.wilten.co.uk



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From: Robin Slade <Robin.slade@luciongroup.com>
Sent: 19 September 2025 11:13
To: James Potts <JamesPotts@wilten.co.uk>
Cc: sarah.hunt@ptaconsult.co.uk
Subject: RE: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

Hi James,

Email now received. I'll be able to take a look at the previous report early afternoon and will feedback.

Best regards,
Robin

Robin Slade

Unit Director

Lucion Delta-Simons Ltd

e: Robin.slade@luciongroup.com

m: 07790 934 791

w: www.luciongroup.com



Lucion Delta-Simons Ltd is registered in England and Wales, company registration number: 04786034

Registered office address: 5 Abbots Park Preston Brook Runcorn WA7 3GH

From: James Potts <JamesPotts@wilten.co.uk>

Sent: 19 September 2025 11:09

To: Robin Slade <Robin.slade@luciongroup.com>

Subject: FW: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

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James Potts

Operations Manager

Telephone: 01858 457242

Mobile: 07708 390437

Email: JamesPotts@wilten.co.uk

Address: Wilten Construction Ltd, 8 The Point, Rockingham Road,
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Check out our website www.wilten.co.uk



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From: Sarah Hunt <sarah.hunt@ptaconsult.co.uk>
Sent: 18 September 2025 18:52
To: Robin.slade@luciongroup.co.uk
Cc: James Potts <JamesPotts@wilten.co.uk>
Subject: Knowsley - Imagination 2 - Gas/Hydrocarbon Protective Measures

Hi Robin,

As discussed, we would be grateful if you could advise on the membrane requirements for the above site.

The site has been classified as CS2, but recommends that due to the presence of low levels of Hydrocarbon/VOC contamination identified on Imagination 3, within the ground water, a hydrocarbon resistant membrane is recommended as a precaution.

Using BS 8485-2015+A1-2019 the proposed development is identified as Type C-Offices, and Type D commercial warehouse. This equates to the area under the offices requiring 2.5 points and the warehouse requiring 1.5 points. We can achieve the 1.5 points with the reinforced ground floor slab with minimal penetrations laid on a DPM, however, under the offices we will require a gas membrane to achieve the 2.5 points.

My questions are:

- 1) What specification do we need to meet the hydrocarbon membrane? Is a gas membrane that meets CS2 sufficient? Is this something the specialist subcontractor should be advising on?
- 2) What is the extent of the hydrocarbon resistant membrane? Does it just need to extend beneath the Type C - office area. Or does this need to be extended beneath the entire footprint of the building?

I have attached the Delta Simons Controlled Water Risk Assessment and Updated Gas Assessment FYI. Report No 19-0654.10, issued July 2022.

Your quick response would be much appreciated.

Many thanks,

Kind regards,

Sarah Hunt
Senior Structural Engineer

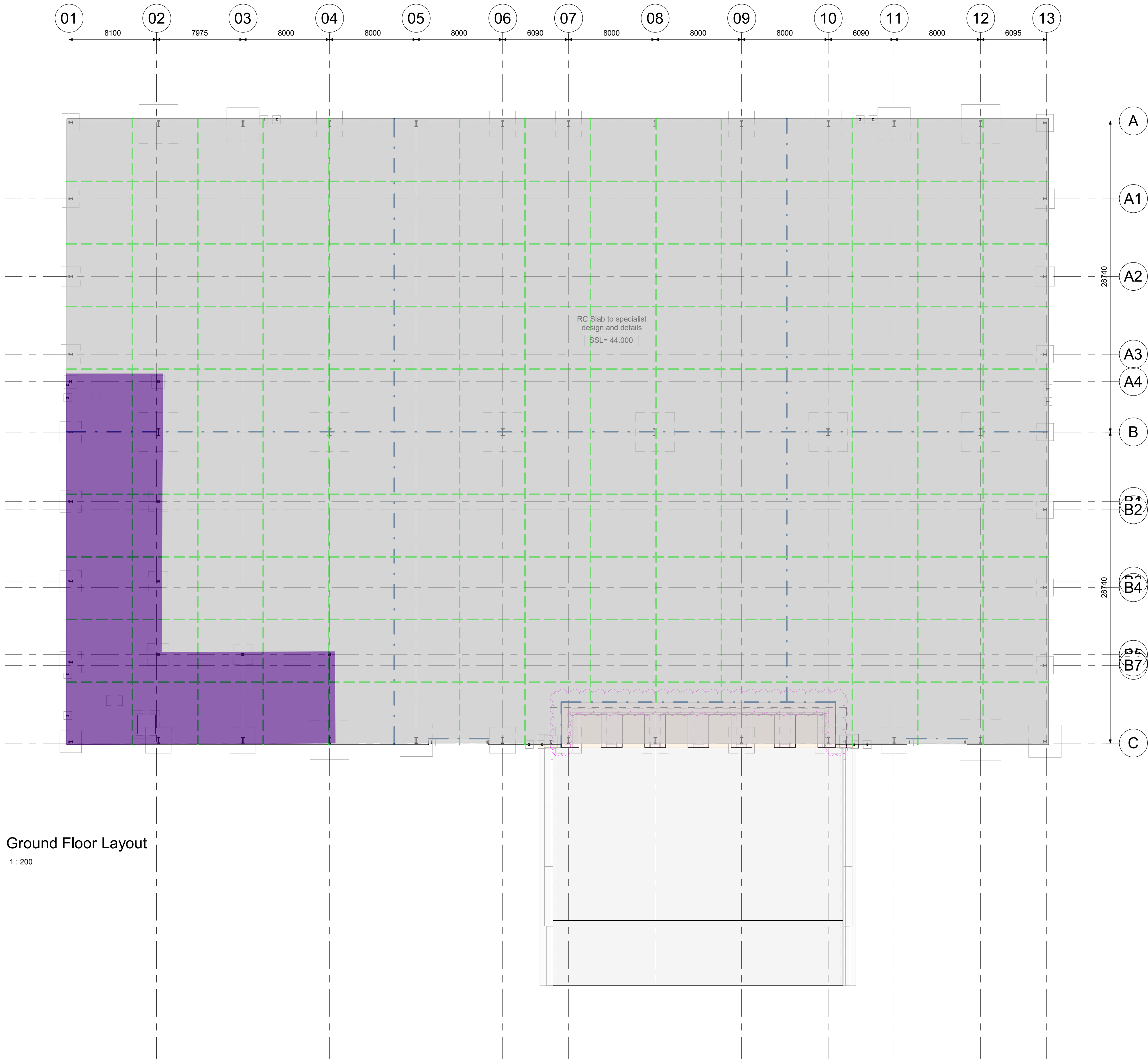


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PTA, 29 Red Lion Street, Chesham, Bucks., HP5 1EJ



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Warehouse Floor Design	
Design Loads	Maximum UDL load = 50kN/m²
	Maximum rack leg load = 70kN (200mm from joints, 300mm c/c in back to back load case)
Slab Thickness	175mm main slab
Reinforcement	1No. layer A193 mesh 40mm bottom cover
Concrete Strength	C32/40 (cylinder/cube)
'k' Value for Design Purposes	0.055N/mm²/mm
Floor Flatness	FM2 to TR34 4th edition

Slab Joint Key	
	Armoured-Free Movement Joint (AJ)
	Saw Cut Joint (SCJ)

FLOOR JOINTS SHOWN INDICATIVELY. FINAL GROUND SLAB DESIGN AND JOINT LAYOUT TO SPECIALIST SUB-CONTRACTOR DETAILS.

GROUND BENEATH SLAB TO BE VIBRO GROUND IMPROVEMENT TO SUSTAIN A DESIGN LOAD OF 55kN/m².

- Notes:
- Do not scale from this drawing.
 - In case of any discrepancies in drawings, details or bills, refer to engineers for clarification: unilateral decisions by the contractor will not be accepted.
 - This drawing is to be read in conjunction with all related Architects, Consultants & Sub-Contractors drawings and specifications.
 - The contractor is advised that all design drawings and information are to be read concurrently and any discrepancies or omissions reported directly to PTA's Structural Department.

Ground Floor Notes:

- Refer to Steel Fabricator's drawing for cast-in anchors and baseplate details.
- Concrete to be Grade C32/40.
- Refer to PTA Structural Concrete Specification.
- Refer to PTA drg 9865-PTA-XX-XX-DR-S-0081 for typical details.
- The modulus of sub-grade reaction set out in the design table must be achieved and proven prior to the completion of the sub-base and before construction of the concrete slab.
- The sub-base consist of minimum 200mm well graded, well compacted type 1 material, which will be well closed at the surface. Material must be non-degradable and must not contain soft materials such as chalk and sandstone. The sub-base shall be finished to a surface tolerance of +0/-25mm.
- Prior to placing concrete, all roof and wall sheeting shall be completed where practical, to provide protection from sun, wind and rain. Loading doors shall be fixed in place and openings sheeted.
- Walls and existing slabs shall be protected from concrete splashes.
- The slab is to be laid on gas membrane to meet CS2 constitions in accordance with BS8485.
- Cover to all reinforcement to be 40mm, unless stated otherwise.
- Minimum lap to fabric reinforcement to be 300mm or 40 times the bar diameter, whichever is greater. All laps to be tied. Excessive build-up of steel fabric under saw-cuts is not permitted.
- Spacers to be placed at maximum 800mm centres, as per section 6.2.1 of TR34 4th edition 2013.
- Slab penetrations shall be isolated using 20mm 'Miothene' (or similar approved). Special care is to be taken to ensure that the slip membrane is lapped and taped up the side of the 'Miothene' isolation.
- The top 20mm of 'Miothene' is to be removed and sealed with a suitable sealant upon completion of the floor casting. Internal columns shall be isolated from the main floor by means of "leave in place" steel plates and 20mm wide polyethylene foam surround with a 25mm tear off strip at the top. The perimeter and column joints shall be sealed with a polysulphide sealant to match the floor.
- Saw joints are to be cut within 24hours of concrete being placed.
- Following the final power floating operation the floor slab is to be cured and sealed with a proprietary acrylic based hardener Sika ProSeal (or similar approved curing agent). The floor slab shall not be trafficked for a minimum of 4 days following the sealing operation.

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DRAWING STATUS / PURPOSE OF ISSUE

ISO 19650 STATUS CODE

S4

CD1	Joint positions around dock updated.	DAB	14.08.25	SH
PO2	Updated tender issue.	SO	15.11.24	SH
PO1	Tender Issue	NL	26.05.22	SH
Rev	Description	By	Date	Chk'd

PROJECT TITLE

Image Business Park Knowsley Site 2

DRAWING TITLE

Ground Floor Layout

DATE	Jan'22	This drawing is issued only for the purposes described in the drawing status box.	PTA PROJ No
DRAWN	NL		9865
SCALE	1 : 200		REVISION
DRG SIZE	A1		C01

DRAWING No

9865-PTA-XX-XX-DR-S-0041

Consulting Civil & Structural Engineers

29 Red Lion Street
Chesham
Bucks
HP5 1EJ
Tel. 01494 772 721

www.ptaconsult.co.uk

1 Ground Floor Layout

1 : 200

Sketch Indicating the Extent of Gas/Hydrocarbon/DPM to be Installed Beneath the Ground Floor Slab.



Unit 40
Drumhead Road
Chorley North Ind Park
Chorley
PR6 7BX

Tel: 0161 972 5000.
E: general@absbryr

CLIENT

WILTEN CONSTRUCTION LTD

PROJECT TITLE

IMAGE BUSINESS PARK, KNOWSLEY

DRAWING TITLE

PROPOSED JOINT LAYOUT

PROJECT-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NO

N/A

CONSTRUCTION

DRAWN

DATE _____

SCAL

ABS DRAWING NO.

REV

C02.

30.10.2025

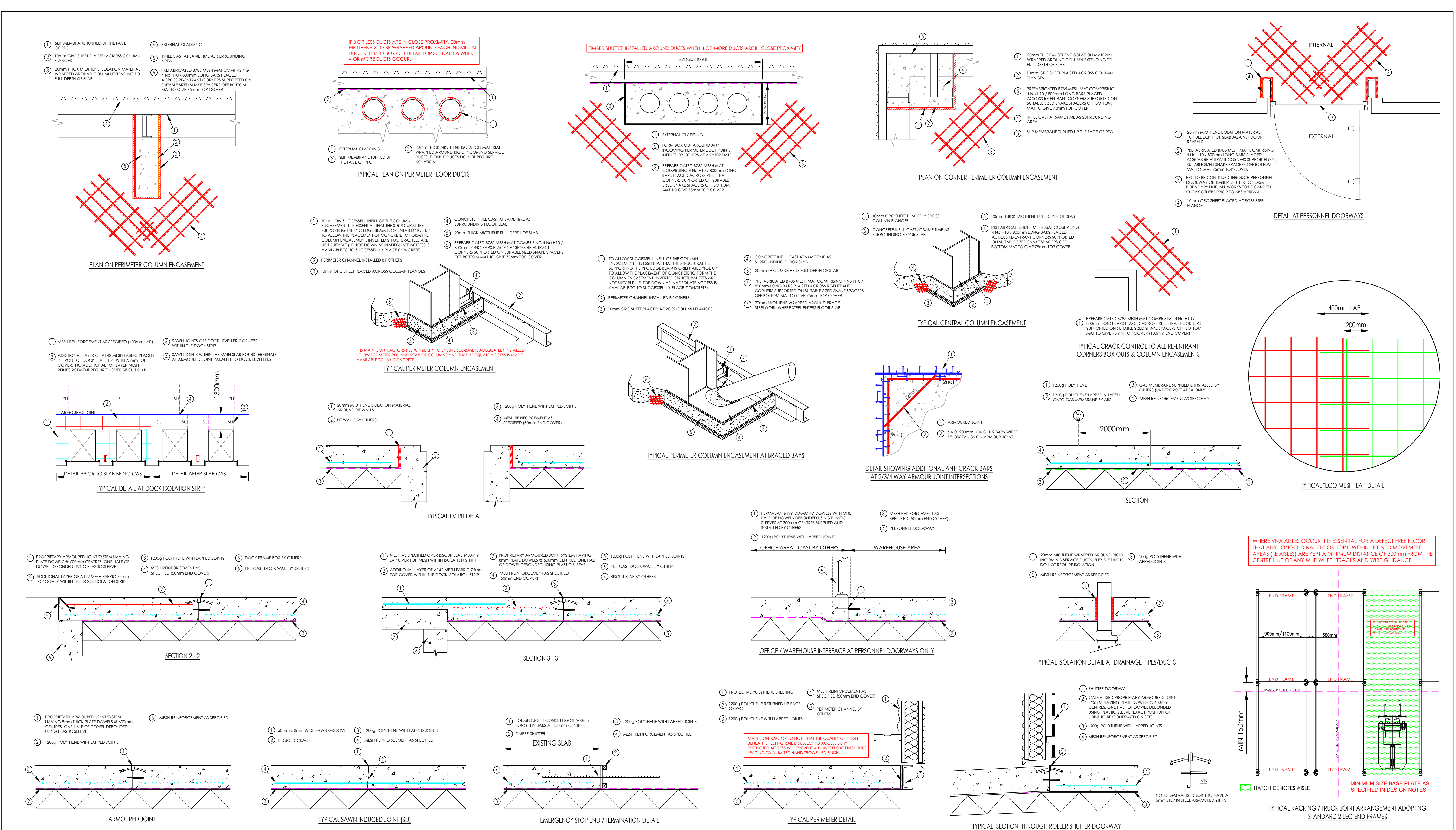
601.

10.10.2023

LV PIT ADDED TO PLAN

CONSTRUCTION.

FIGURE 1550E.



SLAB SPECIFICATION			SLAB DESIGN			GENERAL NOTES			CONSTRUCTION			CLIENT														
175mm THICK INTERNAL CONCRETE SLAB C40 WELL GRADED CONCRETE 1 LAYER OF A142 MESH FABRIC WITH 400mm LAPS (MIN 300mm) PLACED ONTO 40mm SNAKE SPACERS AT 800mm CENTRES AS WORK PROCEEDS LAID ONTO ONE LAYER OF 1200g POLYTHENE WITH 300mm LAPPED JOINTS SURFACE TO RECEIVE A POWER FLOAT FINISH 1 COAT OF SPRAY APPLIED COMBINED CURE AND SURFACE SEALER LAID UTILISING LASER SCREED & MOBILE CONCRETE PUMPING EQUIPMENT TOLERANCE TR34 (2013) FM2 PROPERTIES E & F SUB-BASE TOLERANCE TO ACHIEVE +/-10mm WITH AN AVERAGE OF ZERO			THE SLAB CONSTRUCTION INDICATED ON THIS DRAWING FOR THE WAREHOUSING AREA HAS BEEN BASED UPON THE FOLLOWING DESIGN CRITERIA:- - UNIFORMLY DISTRIBUTED LOAD ~ 50kN/m² OR - INDIVIDUAL RACK LEG LOAD OF 70kN - TAKEN IN A BACK TO BACK CONFIGURATION AT 300mm CENTRES - MINIMUM SIZE BASE PLATES OF 100mm x 100mm - CENTRE LINE OF RACKING BASE PLATES POSITIONED A MINIMUM DISTANCE OF 150mm FROM ANY JOINTS IN THE SLAB - EDGE OF BASE PLATES POSITIONED A MINIMUM DISTANCE OF 250mm FROM THE SLAB EDGE THE MAXIMUM INDIVIDUAL WHEE WHEEL LOAD ACTING IN COMBINATION WITH A SINGLE RACK LEG LOAD (AISLE SIDE) MUST NOT EXCEED 40kN THE SLAB AS DESIGNED WILL SUSTAIN A LINE LOAD CAPACITY DIRECTLY ADJACENT A FLOOR JOINT OF 25kN/M, WHERE LINE LOADS EXCEED THIS VALUE UNDERSLAB THICKENINGS MAY BE REQUIRED AND SHALL BE DESIGNED AND INSTALLED BY OTHERS PRIOR TO SLAB WORKS COMMENCING.			THE DESIGN DETAILS INDICATED ON THIS DRAWING FORM THE BASIS OF THE DESIGN PROPOSALS FOR THE SPECIFIED MAGNITUDE OF LOADING WHICH ADOPTS A MINIMUM VALUE FOR THE MODULUS OF SUB GRADE REACTION ("K-VALUE") OF 0.054 N/mm³. THIS VALUE WILL REQUIRE TO BE CONFIRMED IN WRITING BY THE MAIN CONTRACTOR BY PLATE LOADING TESTS MEASURED AT A FIXED SETTLEMENT OF 1.25 MM CARRIED OUT (BY OTHERS) IN ADVANCE OF THE REGULATING LAYER BEING PLACED TO ALLOW CONFIRMATION THAT THE SLAB DESIGN/THICKNESS IS CORRECT. THE REQUIREMENT FOR ANY UNDERSLAB INSULATION (DESIGNED, SUPPLIED AND INSTALLED BY OTHERS) SHALL BE BASED UPON ACHIEVING AN EQUIVALENT SUB GRADE REACTION AS NOTED ABOVE. ALLOWANCE HAS BEEN TAKEN FOR WHEEL LOADING ASSOCIATED WITH STANDARD UK HEAVY GOODS VEHICLES DRIVING ON THE SLAB. LOADING CONDITIONS WITHIN THE DESIGN ARE NOT CONCURRENT BUT ARE ASSUMED TO ACT SEPARATELY UNLESS NOTED OTHERWISE. REFER TO SEPARATE CALCULATIONS PREPARED BY "KONTRAD LLP - INDUSTRIAL FLOORING CONSULTANTS" FOR FULL DETAILS OF SLAB DESIGN REFERENCE SHALL ALSO BE MADE TO THE "OPERATION AND MAINTENANCE DOCUMENT" WHICH PROVIDES GUIDANCE ON CLEANING AND ROUTINE INSPECTIONS TO BE CARRIED OUT BY THE END USER.			- PRIOR TO PLACING CONCRETE, ALL ROOF AND WALL SHEETING SHALL BE COMPLETED WHERE PRACTICAL TO PROVIDE PROTECTION FROM THE SUN, WIND AND RAIN. LOADING DOORS SHALL BE FIXED IN PLACED AND OPENINGS SHEETED. - THE JOINTS ARE TO BE INITIALLY SEALED USING A SEALANT WITH A SHORE "A" HARDNESS IN THE RANGE OF 30-50 & M.A.F. IN THE RANGE OF 25%-35%, INSTALLED BY OTHERS (UNLESS NOTED OTHERWISE). THE SEALANT IS DESIGNED TO BE A TEMPORARY APPLICATION AND THE INSPECTION AND MAINTENANCE OF SAID SEALANT IS THE RESPONSIBILITY OF THE TENANT / BUILDING USER. ALL INSPECTION, MAINTENANCE AND CLEANING OPERATIONS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS OF CHAPTER 13, TR34 4TH EDITION 2013. SEALING JOINTS SHOULD BE LEFT AS LATE IN THE CONSTRUCTION PROCESS AS POSSIBLE. - SPACING BETWEEN FIXINGS INTO THE SLAB AND ANY SAWN OR FORMED JOINT IS TO BE A MINIMUM 5 X HOLE DIAMETER WITH AN EMBEDMENT THAT DOES NOT EXCEED 2/3 SLAB DEPTH.			- THE SLAB CAN BE USED BY LIGHT TRAFFIC 7 DAYS AFTER IT IS POURED. THE LOADS SHALL NOT EXCEED 30% OF THE DESIGN CAPACITY. THE FLOOR SHALL NOT BE LOADED TO ITS FULL DESIGN CAPACITY BEFORE 28 DAYS HAVE PASSED SINCE POURING. - THE SLAB HAS BEEN DESIGNED AS A FULLY SUPPORTED GROUND BEARING SLAB. NO ADDITIONAL MOMENTS, POSITIVE OR NEGATIVE HAVE BEEN CONSIDERED. SHOULD THEIR BE ANY INDUCED MOMENTS IN THE SLAB ARE TO BE NOTIFIED AS FURTHER DESIGN CHANGES/CHECKS MAY BE REQUIRED. - AREA NUMBERS DO NOT REPRESENT POUR SEQUENCE BUT ARE FOR IDENTIFICATION PURPOSES ONLY. - SAWN AND ISOLATION JOINTS TO BE INITIALLY SEALED USING ABERMORIC MP20 - THE EXACT POSITION OF SHUTTERING/JOINTS AT DOORWAYS IS TO BE CONFIRMED ON SITE BY MAIN CONTRACTORS SITE ENGINEER TO SUIT THE VARIOUS DOOR TYPES & FIXING REQUIREMENTS.			- IT IS THE MAIN CONTRACTORS RESPONSIBILITY TO ENSURE THAT "DOCK LEVELLERS" ARE FULLY SHUTTERED AND/OR SEALED TO PREVENT CONCRETE INFILL OR GROUT LOSS DROPPING INTO THE PIT BELOW DURING SLAB PLACEMENT. ABS BRYMAR ARE UNABLE TO ACCEPT ANY RESPONSIBILITY FOR LEAKAGES INTO THE PIT. - IN ACCORDANCE WITH CS-TR34 CLAUSE 11.10, ABS BRYMAR FLOORS DO NOT RECOMMEND THE USE OF PORTAL TIE BARS TO RESIST HORIZONTAL FORCES WHICH MAY INDUCE SLAB RESTRAINT AND COULD RESULT IN SIGNIFICANT CRACKING. - THE JOINT LAYOUT SHOWN ON ABS DRAWING HAS NOT BEEN CO-ORDINATED WITH ANY RACKING. SHOULD A RACKING LAYOUT BE MADE AVAILABLE PRIOR TO CASTING THE FLOOR SLAB THE JOINT POSITIONS CAN BE ADJUSTED TO SUIT UPON RECEIPT OF THE FINALISED RACK LAYOUT. - REFER TO ABS DRAWING 2526-01 FOR JOINT LAYOUT.			C02, 30.10.2025, ADDED LV PIT DETAIL. C01, 16.10.2025, UPDATED DOORWAY JOINT DETAIL TO 5mm STEPPED. FIRST ISSUE. P01, 30.09.2025, REV, DATE, DESCRIPTION			 ABS BRYMAR FLOORS LTD Unit 40 Drumhead Road Chorley North Ind Park Chorley PR6 7BX Tel: 0161 972 5000. E: general@absbrymarfloors.co.uk			CLIENT WILTEN CONSTRUCTION LTD PROJECT TITLE IMAGE BUSINESS PARK, KNOWSLEY DRAWING TITLE TYPICAL DETAILS PROJECT-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NO N/A		
PLEASE NOTE:- THIS DRAWING WILL BE DEEMED ACCEPTABLE FOR CONSTRUCTION BY THE MAIN CONTRACTOR/CLIENT IF NO COMMENTS TO THE CONTRARY ARE RECEIVED PRIOR TO COMMENCEMENT ON SITE.									CONSTRUCTION			DRAWN, DATE, SCALE, ABS DRAWING NO., REV			BG, 30.10.2025, DNS, 2526 - 02, C02											



Gas Membrane Installation
Validation Report
Wiltern Contruction
Knowsley Industrial Park
Liverpool
L33 7UF



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1. INTRODUCTION

1.1 Purpose

ACS Linings are installing a gas protection membrane to the aforementioned site. MEC Environmental Ltd (MEC) has been appointed by ACS Linings to carry out independent validation of the installation of the membrane on the site as per our terms of engagement. The frequency of independent inspections has been determined by the client, comprehensive CQA should be forwarded by the installer to cover any data gaps for areas that have not been subjected to independent inspections.

The **SOLE** purpose of the works undertaken by MEC Environmental is to provide independent inspections and a factual report as and when requested to assist the client in gaining regulatory approval with regards to the gas membrane installation. This is as per the scope of work section within our term's engagement.

1.2 Limitations

This report is limited to providing lines of evidence to the regulatory authority for the areas components inspected by MEC only in support of the discharging of the relevant planning conditions only and cannot be used or relied upon for any other purpose. No professional liability shall be extended to any other parties by MEC, the report should explicitly not be relied on by any future vendor or tenant as proof that the gas protection measures are sufficient for the site and functioning at the time of purchase or start of any tenancy. Gas protection systems are not solely reliant on the gas membrane as points are scored under BS8485 for the floor slab, membrane and venting, these components work collaboratively to provide a gas protection system. This is as per the conditions within our term's engagement.

The report has been provided on the assumption that no damage or works that may have compromised the components and integrity of the gas membrane have been made after our inspections, failure to report any such occurrences will invalidate any liability and render the report and contents invalid. This is as per the conditions within our term's engagement.

This report has been prepared in accordance with the best available practice and the relevant guidance documents listed below of which the author of the report was a contributor and member of the steering committees:

Mallett H, Wilson S, Corban M (2014) "Good practice on the testing and verification of protection systems for buildings against hazardous ground gases". CIRIA Report C735

1.3 Compliance with Regulation 7 of Building Regulations

Regulation 7 of the building regulations requires that building work shall be carried out in a workmanlike manner. Approved document 7 suggests installation can comply with the regulation if workmanship is such that, where relevant, materials are adequately mixed or prepared and applied, used or fixed so as to perform adequately the functions for which they are intended.

A reasonable standard may be demonstrated by:

Compliance with a standard and independent certification - The relevant standard for gas protection measures is BS8485:2015 +A1:2019, Table 7 of the standard requires that gas membranes are verified as per CIRIA C735.

Past experience – The installers qualifications are checked by MEC Environmental to ensure that the installation supervisor holds the NVQ Level 2 in gas membrane installations.

Integrity Testing methods. – are carried out as prescribed in CIRIA C735, unless stated elsewhere

Frequency of Visits – MEC have not been employed to prepare a validation plan for this project, the frequency of visits is as per the instructions of the client, in essence MEC inspected the available membrane that could be inspected each time an inspection visit was requested. The area inspected on each visit is noted on the survey sheets in appendix 1. This report should be read in conjunction with the installers CQA report.

1.4 Method of Inspection (Per Visit)

All seams and non-seam areas of the available gas membrane were inspected/tested by the Validation Surveyor for identification of defects, protruding and penetrating objects, lack of subgrade support, overheating, holes, blisters, undispersed raw materials, scratches and gouges, and any sign of contamination by foreign matter.

Any portion of the gas membrane exhibiting a flaw or failing a visual inspection/testing was repaired. Several procedures exist for the repair of these areas. The final decision as to the appropriate repair procedure was agreed upon between the Validation Consultant and the Installer at the time of the repair and is noted in the survey sheets.

Major repairs are visually inspected/tested, repairs passing the inspection/testing were considered acceptable. In some cases minor repairs maybe carried out under contractor CQA and photographic evidence supplied to the verifier for inclusion in the report.

1.5 MEC Staff Competency

All site inspections have been carried out by suitably qualified staff as defined in CIRIA C735, the qualification held by all MEC inspection surveyors is either the NVQ Level 4 in gas protection verification or the NVQ Level 2 in gas membrane installation

The author of this report is also a CL:AIRE accredited Specialist in Gas Protection Verification (SGPV) and holds both the NVQ Level 2 in gas membrane installation and the NVQ Level 4 in gas protection verification.

1.6 Conclusion

During our inspections to the areas denoted in Appendix 1 (Site Surveys Sheets) we witnessed the installer carrying out the installation in a workmanlike manner, the materials were adequately prepared and applied, used and fixed so as to perform adequately the functions for which they are intended as per Regulation 7 of the building regulations. In instances where 100% of the installation has not been independently inspected/tested then this report should be read in conjunction with the gas membrane installers CQA records.

The installers all hold the NVQ Level 2 "Gas membrane Installations" qualification and as such are classed as a qualified and experienced installer. MEC Environmental have checked the CSCS Trade Cards of the installers, which confirms the holder has attained the qualification.

Signed



Date: 12/12/2025

Michael Corban S.G.P.V.

Director

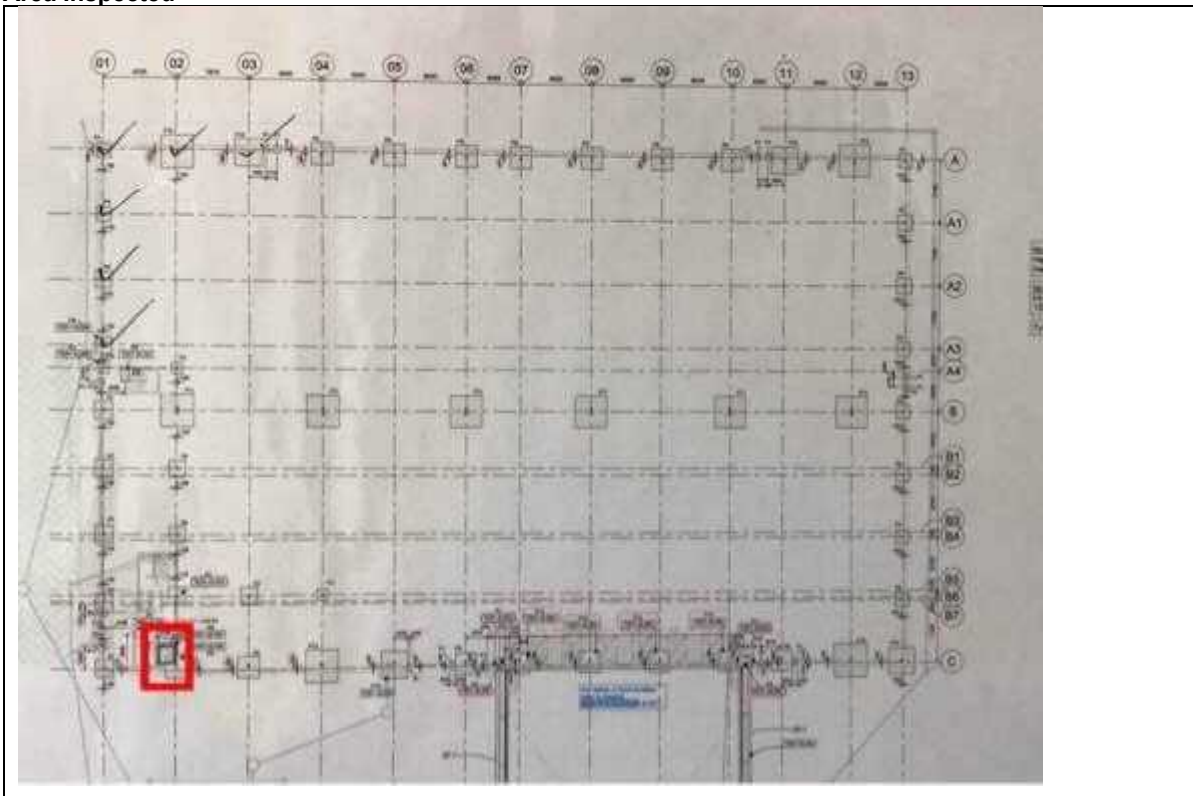
MEC Environmental Ltd

Appendix 1 – Site Survey Sheets

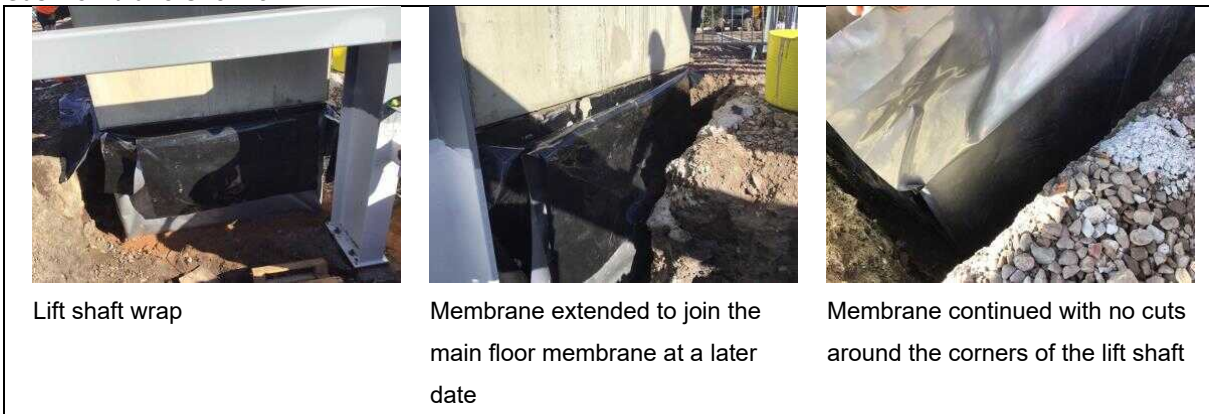
Main Contractor Name: Wiltern Construction		Date: 26/09/2025
Site Name: Knowsley Industrial Park, Liverpool		Temp: 14 °C
		Installer: ACS
Postcode: L33 7UF	Surveyor: Dan Squire (TGPV) (NVQ 4)	
Building Reference/Unit No:	1no industrial unit	
Area Inspected:	Lift shaft wrap. Gridlines 2 / C See Marked Up Plan	
Description of Works:	MEC Environmental carried out a thorough inspection of the gas membrane. A 6 meter pre made panel was originally placed along the base of the lift pit. MEC did not inspect the base membrane. Now the lift shaft is constructed the installers have lifted the exposed membrane up the lift shaft walls and wrapped around the corners as a continuous sheet. The membrane will now be temporarily taped to walls to allow the lift shaft to be back filled, leaving enough membrane exposed to allow it to be joined to the main floor membrane at a later date. All membrane lap joints were auto welded when the panel was originally made. MEC was unable to obtain photographic evidence of the materials used.	
Sub-Grade Preparation:	The subgrade had already been covered prior to our inspection and therefore has not been inspected by MEC Environmental	
Result of Inspection:	No defects recorded and therefore no action required	
(Section 1, Materials and Method of Seal)		
Gas Membrane Name: Juta Titanflex gas membrane		
Other Products Used: N/A		
Perimeter Seal Method: Not Applicable		
Service Entry Seal Method: Not Applicable		
Stanchion Seal Method: Not Applicable		
Material Jointing Method: The membrane has been overlapped sufficiently to achieve a sound joint, the joint is clean and dry and has been joined by means of welding with a hot air automatic welding machine, the width of the welded joint is a minimum of 30mm.		
Others Please List: N/A		
(Section 2, Testing and Inspection Method)		
Leak/Hole Detection	MEC Environmental Ltd carried out a thorough Visual Inspection to the available area at the time of our inspection	
Joint Testing	The surveyor carried out Probe testing as per the method prescribed in ASTM D4437 to all detailing work, detailing work is defined as any part of the installation that includes a joint in the membrane, this includes but is not limited to pipes/ducts, stanchions, wind posts, braces, field seams, masonry abutments, tanking, door thresholds and the like	

(Section 3, Defects List)	Action Required
No recorded defects	No defects recorded and therefore no action required

Area Inspected



Gas Membrane Overview

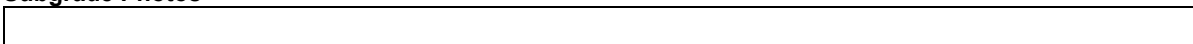


Lift shaft wrap

Membrane extended to join the main floor membrane at a later date

Membrane continued with no cuts around the corners of the lift shaft

Subgrade Photos



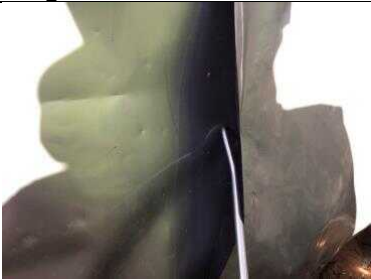
Materials Used

Perimeter Detail

Pipe and Duct Seals

Stanchions and Columns Seals

Testing of Joints



Auto welded membrane lap joint testing

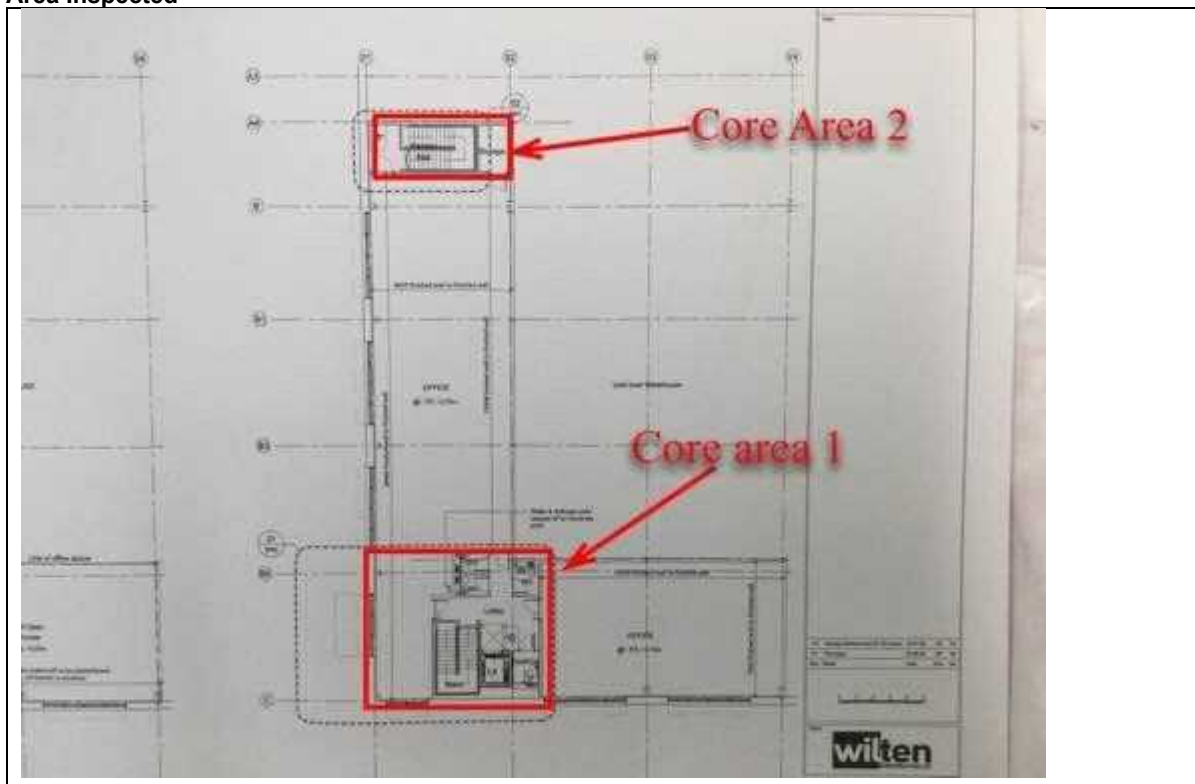
Auto welded membrane lap joint testing

Additional Photos

Main Contractor Name: Wilten Construction		Date: 05/11/2025
Site Name: Knowsley Industrial Park, Liverpool		Temp: 16 °C
		Installer: ACS Linings
Postcode: L33 7UF	Surveyor: Ross Edwards (NVQ 4)	
Building Reference/Unit No:	Imagination 02	
Area Inspected:	Core area 1 gridlines 1-2 / B6-C & Core area 2 gridlines 1-2 / A4-B - See Marked Up Plan	
Description of Works:	MEC Environmental carried out a thorough inspection of the gas membrane, the membrane has been installed across the footprint of both core areas upon a sand blinding substrate. The membrane has been installed up the perimeter cladding rail and detailed with a strip of double sided butyl tape. All lap joints have been hand welded. Pipe and stanchion details have been dressed with JUTA GPSAM with sufficient heat applied. Within Core area 1 about the lift shaft the installers have applied strips of JUTA GPSAM as a retro detail. Both stairwell bases have been detailed also with JUTA GPSAM. Evidence for the materials used could not be obtained due to the packaging not available at the time of inspection.	
Sub-Grade Preparation:	The subgrade consists of sand blinding that has been well rolled and compacted and is acceptable to lay the membrane on	
Result of Inspection:	N/A	
(Section 1, Materials and Method of Seal)		
Gas Membrane Name: JUTA Titan Flex membrane		
Other Products Used: JUTA GPSAM		
Perimeter Seal Method: The membrane has been sealed to the cladding rail with double sided butly tape		
Service Entry Seal Method: The external of the pipe/ducts have been sealed using strips of self-adhesive gas membrane, this is an approved and recognised method in CIRIA C735		
Stanchion Seal Method: The stanchions have been sealed using strips of self-adhesive gas membrane, this is an approved and recognised method in CIRIA C735		
Material Jointing Method: The membrane has been overlapped sufficiently to achieve a sound joint, the joint is clean and dry and has been joined by means of hand welding with a hot air gun and neoprene roller, the width of the welded joint is a minimum of 30mm.		
Others Please List: See description of works		
(Section 2, Testing and Inspection Method)		
Leak/Hole Detection	MEC Environmental Ltd carried out a thorough Visual Inspection to the available area at the time of our inspection	
Joint Testing	The surveyor carried out Probe testing as per the method prescribed in ASTM D4437 to all detailing work, detailing work is defined as any part of the installation that includes a joint in the membrane, this includes but is not limited to pipes/ducts, stanchions, wind posts, braces, field seams, masonry abutments, tanking, door thresholds and the like	

(Section 3, Defects List)	Action Required
No defects located during visit.	N/A

Area Inspected



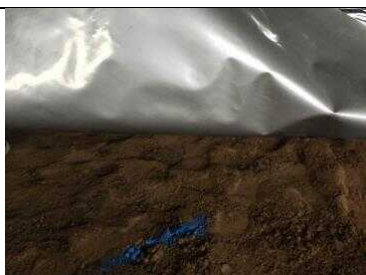
Gas Membrane Overview



Overview to core area 1
membrane line out.

Overview to core area 2
membrane line out.

Subgrade Photos



Sand blinding substrate within Core Area 1.



Membrane installed upon a sand blinding substrate within Core Area 2.

Materials Used

--

Perimeter Detail



Perimeter cladding rail detail sealed with double sided butyl tape to Core Area 1.



Testing along there perimeter cladding rail.



Perimeter cladding rail sealed with double sided butyl tape to Core Area 2.



Testing to the perimeter cladding rail detail.

Pipe and Duct Seals



Typical pipe detail to core area 1.



Typical pipe detail to core area 1.



Typical pipe detail to core area 1.



Testing to the pipe detail to core area 1.



Typical pipe detail to core area 1.

Stanchions and Columns Seals



Typical stanchion detail to core area 1



Typical stanchion detail to core area 1



Testing to the stanchion detail within Core Area 1.



Typical stanchion detail to core area 1



Typical stanchion detail to core area 2.



Testing to the stanchion detail within Core Area 2.



Typical stanchion detail to core area 2.

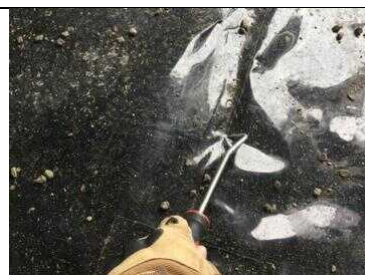
Testing of Joints



Testing to the welded lap joint to core area 1.



Testing to the welded lap joint to core area 1.



Testing to the welded lap joint to core area 2.



Testing to the welded lap joint to core area 2.

Additional Photos



Stairwell base detailing to core area 1.



Testing to the stairwell base detail.



Retro detailing to lift shaft to core area 1.



Testing along the lift shaft detail.



Stairwell base detailing to core area 2.



Testing along the stairwell base detail.

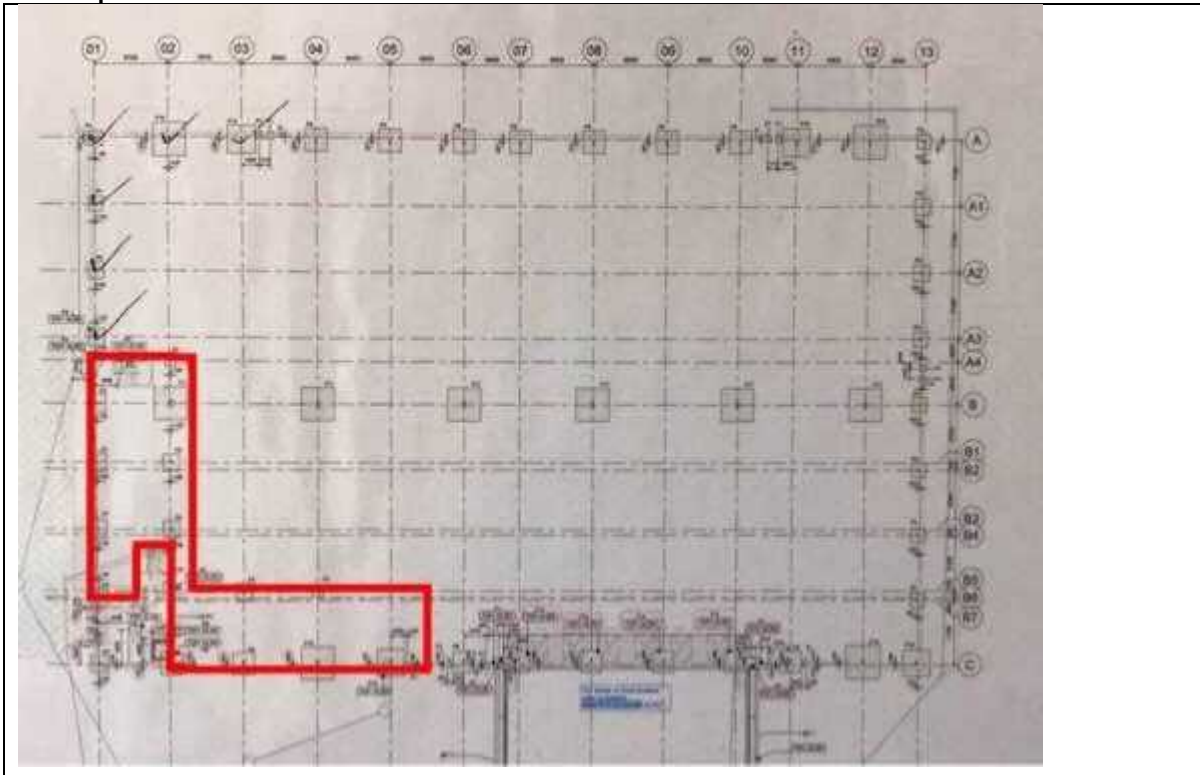
Main Contractor Name: Wilten Construction		Date: 12/12/2025
Site Name: Knowsley Industrial Park, Liverpool		Temp: 8 °C
		Installer: ACS Linings
Postcode: L33 7UF	Surveyor: Dan Squire (TGPV) (NVQ 4)	
Building Reference/Unit No:	Imagination 02	
Area Inspected:	Main floor under mezzanine line out. Gridlines 1-2 / A4-B6 & 2-5 / B6-C. See Marked Up Plan	
Description of Works:	MEC Environmental carried out a thorough inspection of the gas membrane. The membrane is lined across the denoted areas upon a rolled aggregate. MEC did not inspect the full substrate due to the works being completed prior to the inspection. The membrane lap joints have been welded using a combination of a uni-plan auto welder and hand held leister welder. The membrane is detailed to the perimeter cladding rail using HS Butyl Tape. MEC were not provided drawings to reference the perimeter detailing method. All pipes and stanchions have been detailed using Juta GP SAM with heat and pressure applied.	
Sub-Grade Preparation:	The subgrade had already been covered prior to our inspection and therefore has not been inspected by MEC Environmental	
Result of Inspection:	N/A	
(Section 1, Materials and Method of Seal)		
Gas Membrane Name: Juta Titanflex membrane		
Other Products Used: Juta GP SAM & HS Butyl Tape		
Perimeter Seal Method: The membrane has been sealed to the cladding rail with double sided butly tape		
Service Entry Seal Method: The external of the pipe/ducts have been sealed using strips of self-adhesive gas membrane, this is an approved and recognised method in CIRIA C735		
Stanchion Seal Method: The stanchions have been sealed using strips of self-adhesive gas membrane, this is an approved and recognised method in CIRIA C735		
Material Jointing Method: The membrane has been overlapped sufficiently to achieve a sound joint, the joint is clean and dry and has been joined by means of welding with a hot air automatic welding machine, the width of the welded joint is a minimum of 30mm.		
Others Please List: N/A		
(Section 2, Testing and Inspection Method)		
Leak/Hole Detection	MEC Environmental Ltd carried out a thorough Visual Inspection to the available area at the time of our inspection	
Joint Testing	The surveyor carried out Probe testing as per the method prescribed in ASTM D4437 to all detailing work, detailing work is defined as any part of the installation that includes a joint in the membrane, this includes but is not limited to pipes/ducts, stanchions, wind posts, braces, field seams, masonry abutments, tanking, door thresholds and the like	
(Section 3, Defects List)		Action Required

No defects were recorded during the inspection of the completed works. The Installers made their own CQA patch repairs using Juta Titanflex membrane and hand welded it in place.

N/A

Site have made 4no pin holes in the membrane for their shuttering which will require patching once the pins are removed. Site have been informed and will patch repair themselves and take photographic evidence to cover under their own CQA. Alternatively they can contact MEC for a re inspection upon request.

Area Inspected



Gas Membrane Overview



Gridlines 1-2 overview



Gridlines 2-5 overview

Subgrade Photos



Compact substrate visible for inspection

Materials Used



HS butyl tape



Juta GP SAM



Juta Titanflex

Perimeter Detail



Perimeter detailing



Perimeter detailing



Perimeter detailing



Perimeter detailing



Perimeter detail testing

Pipe and Duct Seals



Pipe detailing



Pipe detailing



Pipe detail testing

Stanchions and Columns Seals



Stanchion detailing



Stanchion detailing



Stanchion detailing



Stanchion detailing



Stanchion detailing



Stanchion detailing



Stanchion detail testing

Testing of Joints



Welded lap joint testing

Additional Photos



Membrane welded to the existing
membrane with Titanflex patch
repairs made to damages

Appendix F – Mains Water Pipe (statutory undertaker approval)

Alan Crossfield

From: Rachel Nead <rachel.nead@hvss.uk.com>
Sent: 09 December 2025 12:54
To: Ben Harrison
Cc: James Potts; Justin Watts
Subject: RE: IM2 Knowsley - Water connection
Attachments: Hydrostatic Pressure Testing Guidance Leaflet.pdf; Disinfection Guidance Leaflet.pdf; Summary of Requirements PDF.pdf; Developer guidance booklet.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Ben,

Following today's inspection, your pipework has passed. This has been passed over to be planned in for connection.

Please see attached details to pass on for the pressure testing and chlorination of your pipework.

Once we have a connection date I will advise the date to carry out these works.

Kind Regards,

Rachel Nead

Senior Project Manager

M: 07719 512511

W: www.hvss.uk.com

 **ELECTRICITY ♦ GAS ♦ WATER ♦ FIBRE**

**Contact**
01604 781107
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**Midlands Office:**
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Telford Way Industrial Estate,
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Leeds LS12 6UB



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From: Rachel Nead <rachel.nead@hvss.uk.com>
Sent: 08 December 2025 18:50
To: Ben Harrison <BenHarrison@wilten.co.uk>
Cc: James Potts <JamesPotts@wilten.co.uk>; Justin Watts <JustinWatts@wilten.co.uk>
Subject: Re: IM2 Knowsley - Water connection

Hi Ben,

The inspection is booked for tomorrow which I understood to be the date requested on site at the previous inspection.

As discussed I have not been aware of such a lead time for a permit.

Once you have passed the inspection this will then go to the UU planning team.

Thanks
Rachel

Sent from [Outlook for iOS](#)

From: Ben Harrison <BenHarrison@wilten.co.uk>
Sent: Monday, December 8, 2025 6:46 pm
To: Rachel Nead <rachel.nead@hvss.uk.com>
Cc: James Potts <JamesPotts@wilten.co.uk>; Justin Watts <JustinWatts@wilten.co.uk>
Subject: IM2 Knowsley - Water connection

Hi Rachel,

No one was onsite to inspect today from united utilities, I thought we had an inspection booked today ?

The risk of us not getting water on is a major concern. Especially when UU are advising a 3/4month lead in (which I only found out at the end of November). Could you please confirm the points below:

1. When will UU be onsite to undertake an inspection, we are ready now and have been since Friday 5th December.
2. Once this inspect passes when will UU carry out the connection and give us live water ?

Ben Harrison
Site Manager

Please note, our offices will be closed from close of business on Friday 19th December 2025 for the Christmas period, returning on Monday 5th January 2026.

Telephone: 01858 457242

Mobile: 07883 891614

Email: benharrison@wilten.co.uk

Address: Wilten Construction Ltd, 8 The Point, Rockingham Road,
Market Harborough, Leicestershire, LE16 7QU

Check out our website <http://www.wilten.co.uk/>



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