

REMEDIATION STRATEGY

Lidl Great Britain Ltd
Victoria Road, Ruislip

Client: Lidl Great Britain Ltd

Remada Ltd
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Issue No	Date	Prepared By	Technical Review	Authorised
01	22.02.2022	J Jones <i>Joshua Jones</i>	P Dickinson <i>P.Dickinson</i>	G Jones <i>G Jones</i>
02 (update figures with new proposed layout)	28.02.2022	J Jones <i>Joshua Jones</i>	P Dickinson <i>P.Dickinson</i>	G Jones <i>G Jones</i>

1 INTRODUCTION

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to prepare a Remediation Strategy for a proposed extension of the existing car park and demolition of an existing *Bensons For Beds* store at Victoria Road, Ruislip, HA4 0QQ. This report was prepared in response to a pre-approval condition set out by the Local Planning Authority (Hillingdon Council) which required the submission of a Remediation Strategy. This Remediation Strategy has been prepared to address the condition relating to land quality and to present suitable mitigative measures where required. The proposed site layout is presented on **Figure 1**.

1.1 Proposed Development

Lidl proposes to demolish the existing *Bensons For Beds* and extend the existing store car park over the *Bensons For Beds* footprint. The proposed development layout indicates the car park extension will cover approximately 600m² and will be predominantly hardstanding with some rare soft landscaping around trees. The proposed development layout is presented on **Figure 1**.

1.2 Objectives

Remada have undertaken a Phase 1 Desk Study for the site which concluded that a Phase 2 Intrusive Ground Investigation was not required as there were no potential contaminant linkages associated with the proposed development and end-users. However, as part of the planning conditions for the site (8ic) a Remediation Strategy is required. The planning conditions for the extension of the car park are indicated below.

- 8 - (i) The development shall not commence until a scheme to deal with contamination has been submitted to and approved by the Local Planning Authority (LPA). All works which form part of the remediation scheme shall be completed before any part of the development is occupied or brought into use unless the Local Planning Authority dispenses with any such requirement specifically and in writing. The scheme shall include all of the following measures unless the LPA dispenses with any such requirement specifically and in writing:
- (a) A desk-top study carried out by a competent person to characterise the site and provide information on the history of the site/surrounding area and to identify and evaluate all potential sources of contamination and impacts on land and water and all other identified receptors relevant to the site;
 - b) A site investigation, including where relevant soil, soil gas, surface and groundwater sampling, together with the results of analysis and risk assessment shall be carried out by a suitably qualified and accredited consultant/contractor. The report should also clearly identify all risks, limitations and recommendations for remedial measures to make the site suitable for the proposed use; and
 - (c) A written method statement providing details of the remediation scheme and how the completion of the remedial works will be verified shall be agreed in writing with the LPA prior to commencement of each phase, along with the details of a watching brief to address undiscovered contamination. No deviation shall be made from this scheme without the express agreement of the LPA prior to its implementation.
- (ii) If during remedial or development works contamination not addressed in the submitted remediation scheme is identified an addendum to the remediation scheme shall be agreed with the LPA prior to implementation; and
- (iii) Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works have been carried out in full and in accordance with the approved methodology.
- (iv) No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination. Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority.
- REASON:
To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems and the development can be carried out safely without unacceptable risks to workers, neighbours and other off site receptors in accordance with Hillingdon Local Plan: Part 2 (January 2020) Policies - DME1 11: Protection of Groundwater Resources and DME1 12: Development of Land Affected by Contamination.

Whilst a Phase 2 Intrusive Ground Investigation was not undertaken, the Phase 1 Desk Study concluded that some confirmatory chemical samples should be taken post demolition of the *Bensons For Beds* to



assess the potential residual risk to human health and environmental receptors. Therefore, the objectives of this assessment are as follows:

- Summarise historical reporting;
- Satisfy planning condition 8ic;
- Define the works required to assess potential residual risk to human health and environmental receptors;
- Detail the method of work to be adopted for assessing the residual risk to human health and environmental receptors at the site.

1.3 Scope of Work

The scope and layout of this document has been designed in mind of the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

The scope of the work comprised:

- An assessment of previous site investigation work on-site;
- A review of regulatory correspondence pertaining to the proposed development;
- An update of earlier Conceptual Site Model;
- Defining the extent of contamination requiring remediation;
- An appraisal of the appropriate remediation technology;
- Detailing the scope of environmental and geotechnical remediation works to be implemented; and
- Defining verification and reporting requirements.

1.4 Summary of Previous Investigations

A summary of the available reports is tabulated below:

2013	<i>Phase 1 Preliminary Geoenvironmental Risk Assessment, Proposed Lidl Store, Victoria Road, Ruislip, Remada 276.01 November 2013</i>
2014	<i>Phase 2 Geoenvironmental Ground Investigation, Proposed Lidl Store, Victoria Road, Ruislip, Remada 276.02r1 August 2014</i>
2016	<i>Lidl Ruislip, Investigation at Former Comet Store, Letter Report 276.03 14th March 2016</i>
2022	<i>Phase 1 Site Investigation and Preliminary Risk Assessment, Lidle, Victoria Road, Ruislip Remada 952.01.01 February 2022</i>

1.5 Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.



2 BACKGROUND

2.1 Review of Previous Reports

No exploratory holes were undertaken within the location of the existing *Bensons For Beds* store as part of the 2013, 2014 and 2016 reports listed in **Section 1.4**, therefore they do not pertain to the location where construction works are required. On this basis, only the Remada Phase 1 Report from February 2022 has been reviewed.

2.1.1 Remada Phase 1 Report (2022)

Remada undertook a search of historical mapping, regulatory records and published geological information pertaining to the Lidl store. The pertinent findings are reproduced below:

Site Setting

The existing store and car park occupy an irregular plot off Victoria Road to the north and Stonefield Way to the east. The existing store footprint is rectangular in shape and occupies the majority of the western zone of site with delivery ramp and loading bay at its southern perimeter. A Bensons for Beds occupies an area of land approximately 600m² in the centre of site. The remainder of the site area form the Lidl and Bensons for Beds car park.

The site boundary to the north is formed by soft landscaping and Victoria Road, to the east by Stonefield Road, to the south by palisade fencing and to the west by wood and concrete fencing. Residential dwellings are located to the north and north-west, whilst the surrounding land to the east, south and west forms Victoria Road Industrial Estate.

Site History

The earliest available historical maps show the site as open fields until 1960 when an engineering works and metallizing works were developed on the site. The engineering works and metallizing works buildings remained on historical maps until 2021 whereby the site was shown in its present day layout with the Lidl store to the west, Bensons for Beds in the centre and the rest of the site used as car parking.

Geological Mapping

Published geological maps record that there are no superficial or artificial deposits recorded beneath the site and the site is underlain by London Clay bedrock, designated as Unproductive Strata. The site is not located within an area which may be affected by coal mining activity.

Radon

The site is located in a Lower Probability Radon Area and no radon protective measures are considered necessary.

Potential Sources of Contamination

The study identified a number of on-site potential sources of contamination, including the sites historical use as metallizing/engineering works, presence of made ground, current use as Lidl/Bensons For Beds store and car parking as well as the off-site historical and current use as Victoria Road industrial estate. A number of receptors were identified, including human health (workers and nearby residents) and the Roxbourne River.

Actions

An intrusive ground investigation was not recommended for the site as there was indicated to be no potential contaminant linkages, based upon the sources and the proposed end-use at the site. However, it was considered that it would be prudent to gather some soil samples from beneath the building post demolition of the Bensons for Beds for chemical analysis to assess the potential residual risk to human health and environmental receptors.



Further to this it would also be considered prudent to gather some samples of any crushed concrete/fill to submit for geotechnical classification tests.

2.2 Pre-Remediation Conceptual Site Model

The Conceptual Site Model presented in the Desk Study Report and subsequent Phase 2 report has been updated to form the Pre-Remediation Conceptual Model tabulated below in **Table 1**.



Potential Source Areas	Potential Contaminant of Concern	Pathways	Potential Receptor	Exposure Route (Human unless otherwise stated)	Potential Identified Linkage (unmitigated)	Findings of Ground investigation	Risk (Un-mitigated)	Proposed Remediation (Mitigation) Measures	Residual Risk Estimation
On-site Sources Made ground Metallizing works Engineering works Operation as Lidl store, Benson for Beds and car parking Off-site Sources Engineering works Blue Star Garage Copper tubing depot/warehouse Metalizing works Victoria Road industrial estate	Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH, hazardous ground gases (carbon dioxide and methane)	Disturbance due to construction plant causing direct contact, dusts, vapours.	Occupants of the development / building fabric	• Direct Soil Ingestion	• No	A ground investigation was not required as there were no identified potential contaminant linkages.	Negligible	None	Negligible
				• Indoor Dust ingestion	• No		Negligible	None	Negligible
				• Skin Contact with Soils	• No		Negligible	None	Negligible
				• Skin Contact with Dust	• No		Negligible	None	Negligible
		Direct Contact with occupants of the proposed development		• Inhalation of Outdoor Dust	• No		Negligible	None	Negligible
				• Inhalation of Outdoor Vapours	• No		Negligible	None	Negligible
				• Inhalation of Indoor Vapours	• No		Negligible	None	Negligible
				• Inhalation of ground gas	• No		Negligible	None	Negligible
		Permeation of water supply pipework	Adjacent residents during construction	• Inhalation of radon gas	• No		Negligible	None	Negligible
				• Ingestion via permeated water supply pipework	• No		Negligible	None	Negligible
		Leachate	Roxbourne River	• Migration in groundwater to Roxbourne River	• No		Negligible	None	Negligible

Table 1: Pre-Remediation Conceptual Model

Direct contact with subsurface soil and/or groundwater during redevelopment works are not assessed as part of the CSM. It is considered that risks to workers will be managed as part of any the redevelopment works at the site through the application of health and safety procedures, where required.



3 REMEDIATION OPTIONS & OBJECTIVES

3.1 Sampling Strategy & Methodology

An appraisal of remediation options has not been considered as there are no specific remediation requirements for the site other than the demolition of the existing *Bensons For Beds* and gathering some soil samples for confirmatory chemical and geotechnical testing.

3.2 Objectives

3.2.1 Environmental Remediation Objectives

The principal environmental remediation objectives are to:

- Identify, manage and assess unforeseen contamination;
- Gather soil samples for confirmatory chemical testing; and
- Construct hard – cover surfacing beneath car park.

3.2.2 Geotechnical Remediation Objectives

The principal geotechnical remediation objectives are to:

- Demolish existing *Bensons For Beds* store;
- Partially remove relic foundations to formation levels;
- Excavate, screen and replace existing made ground material beneath the existing *Bensons For Beds* store as engineered fill below the proposed car park; and
- Crush, screen and emplace existing demolition rubble for re-use as engineered fill.

4 REMEDIATION OUTLINE METHOD STATEMENT

4.1 General

A summary of remediation activities with cognisance to the proposed site layout is presented on **Figure 2**.

4.1.1 Remediation Formation Level

Formation levels for the remediation works are to be advised by the structural engineer in order to produce the development finished levels for the proposed car park as per **Figure 1**. It is not anticipated that any major change in levels is required.

4.1.2 Utilities

It is not anticipated that any new utilities will be required as part of the proposed works, however if they are the statutory service bodies should be consulted at an early stage with respect to the ground conditions within which the developer will install buried services in order to enable them to assess at an early stage any potential abnormal costs. It is possible that special water supply protective measures will be necessary but this should be confirmed with United Utilities at the earliest opportunity. Further advice is contained in UKWIR Report 10/WM/03/21 – ‘Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites’.

4.2 Sequence of Operations

4.2.1 Public Access

No public access is required to or through the site. However, the site requires full perimeter security fencing to be maintained throughout the demolition and construction works to prevent public access.

4.2.2 Demolition of Existing Building

The existing *Bensons For Beds* building requires demolition, any asbestos and asbestos containing material should be removed from the building prior to commencement of demolition. Any brick and concrete rubble should be crushed to produce 6F2 material suitable for re-use to achieve formation levels or stockpiled for later use.

4.2.3 Removal of Relict Floor Slabs

All brick and concrete rubble, ground floor concrete slabs and building foundations are to be excavated and crushed to produce 6F2 material to be used to achieve formation levels or stockpiled for later use.

4.2.4 Groundwater in Excavations

Any perched or shallow groundwater water that may collect in excavations is to be pumped out and either disposed at a suitably permitted facility or treated on- site and discharged to the public sewer system under licence / consent from the owner / operator of the public sewer system.

4.2.5 Drainage

All abandoned drainage runs encountered on-site during development works including those below the proposed footprint of the new car park must be chased out, excavated and removed from site. Water and sludges are to be pumped from the drainage system where necessary and disposed at a suitably licensed facility. United Utilities and / or the appropriate utility owner should be consulted with regards to any modifications to existing site drainage.



4.3 Soil Acceptance Criteria

4.3.1 Site Turnover, General Fill & Capping Geotechnical Requirements

Site won and imported soils shall conform with the Engineer's Specification which is to be provided by Lidl. Remada will undertake geotechnical testing of crushed concrete and demolition rubble to inform re-use criteria.

4.3.2 General Fill Chemical Requirements

Site won and imported soils shall not contain concentrations of contaminants greater than the LQM/CIEH S4UL Levels presented in **Table 2** below.

Remada will gather samples of the soils beneath the *Bensons For Beds* post demolition and removal of the floor slab to confirm the absence of any contamination as per recommendations of the Phase 1 Desk Study.

4.3.3 Unforeseen Contamination

In the event that unforeseen contamination is encountered during the works, the suspected material will be quarantined for analysis and results compared with assessment criteria prior to selection for re-use, treatment or disposal. Advice should be sought from an environmental / contamination specialist on such occasions to prevent unnecessary delays or misuse of soil materials.

4.4 Ground Obstructions

Further advice should also be sought if ground obstructions such as foundations, further basements etc associated with the former buildings on-site are encountered during the preparatory works; such obstructions might necessitate revised car park design. Any grubbed-out ground obstructions will need to be replaced with suitably compacted fill material such as 6F2 to an engineered specification.

4.5 Stockpile Management

It should be ensured that the groundworker understands the need for good materials management. Most notably the importance of not mixing different materials within a given stockpile; i.e. there should be separate marked stockpiles of: Topsoil; made ground; demolition crush, excess clean, natural soil arisings; general construction waste etc.



CLEA Category	mg/kg 1% SQM	Commercial mg/kg 2% SQM	mg/kg 6% SQM	Reference
Contaminant				
Antimony	7500	7500	7500	EIC/AGS/CL-AIRE 2010
Arsenic	640	640	640	LQM/CEH S4UL
Barium	22000	22000	22000	EIC/AGS/CL-AIRE 2010
Beryllium	12	12	12	LQM/CEH S4UL
Boron	240000	240000	240000	LQM/CEH S4UL
Cadmium	190	190	190	LQM/CEH S4UL
Chromium III	8600	8600	8600	LQM/CEH S4UL
Chromium VI	33	33	33	LQM/CEH S4UL
Copper	68000	68000	68000	LQM/CEH S4UL
Mercury (Elemental Hg 4)	58 ^{mg} (25.8)	58 ^{mg} (25.8)	58 ^{mg} (25.8)	LQM/CEH S4UL
Mercury (Inorganic Hg 2)	1100	1100	1100	LQM/CEH S4UL
Mercury (Methyl 4)	320	320	320	LQM/CEH S4UL
Molybdenum	18000	18000	18000	EIC/AGS/CL-AIRE 2010
Nickel	980	980	980	LQM/CEH S4UL
Lead	NC	NC	2300	DEFRA C4SL
Selenium	12000	12000	12000	LQM/CEH S4UL
Vanadium	9000	9000	9000	LQM/CEH S4UL
Zinc	730000	730000	730000	LQM/CEH S4UL
BTEX				
Benzene	27	47	90	LQM/CEH S4UL
Toluene	56000 ^{mg} (869)	110000 ^{mg} (1420)	180000 ^{mg} (4360)	LQM/CEH S4UL
Ethylbenzene	5700 ^{mg} (518)	13000 ^{mg} (1220)	27000 ^{mg} (2840)	LQM/CEH S4UL
O-Xylene	6600 ^{mg} (478)	15000 ^{mg} (1120)	33000 ^{mg} (2620)	LQM/CEH S4UL
M-Xylene	6200 ^{mg} (625)	14000 ^{mg} (1470)	31000 ^{mg} (3480)	LQM/CEH S4UL
P-Xylene	5900 ^{mg} (678)	14000 ^{mg} (1350)	30000 ^{mg} (3170)	LQM/CEH S4UL
TPH Aliphatics				
EC5-EC6	3200 ^{mg} (304)	5900 ^{mg} (558)	12000 ^{mg} (1150)	LQM/CEH S4UL
>EC6-EC8	7800 ^{mg} (144)	17000 ^{mg} (322)	40000 ^{mg} (736)	LQM/CEH S4UL
>EC8-EC10	2200 ^{mg} (78)	4800 ^{mg} (180)	11000 ^{mg} (451)	LQM/CEH S4UL
>EC10-EC12	9700 ^{mg} (48)	23000 ^{mg} (118)	47000 ^{mg} (283)	LQM/CEH S4UL
>EC12-EC16	59000 ^{mg} (34)	82000 ^{mg} (69)	90000 ^{mg} (142)	LQM/CEH S4UL
>EC16-EC35	1600000	1700000	1800000	LQM/CEH S4UL
>EC35-EC44	1600000	1700000	1800000	LQM/CEH S4UL
>EC44-EC70 (di+am)	28000	28000	28000	LQM/CEH S4UL
TPH Aromatics				
EC5-EC7 (Benzene)	26000 ^{mg} (1220)	46000 ^{mg} (2260)	86000 ^{mg} (4710)	LQM/CEH S4UL
>EC7-EC8 (Toluene)	56000 ^{mg} (869)	110000 ^{mg} (1420)	180000 ^{mg} (4360)	LQM/CEH S4UL
>EC8-EC10	3500 ^{mg} (613)	8100 ^{mg} (1500)	17000 ^{mg} (3580)	LQM/CEH S4UL
>EC10-EC12	16000 ^{mg} (364)	28000 ^{mg} (899)	34000 ^{mg} (2150)	LQM/CEH S4UL
>EC12-EC16	36000 ^{mg} (469)	37000	38000	LQM/CEH S4UL
>EC16-EC21	28000	28000	28000	LQM/CEH S4UL
>EC21-EC35	28000	28000	28000	LQM/CEH S4UL
>EC35-EC44	28000	28000	28000	LQM/CEH S4UL
>EC44-EC70 (di+am)	28000	28000	28000	LQM/CEH S4UL
PAH				
Naphthalene	190 ^{mg} (76.4)	480 ^{mg} (183)	1100 ^{mg} (432)	LQM/CEH S4UL
Acenaphthylene	83000 ^{mg} (86.1)	97000 ^{mg} (212)	100000	LQM/CEH S4UL
Acenaphthene	84000 ^{mg} (57)	97000 ^{mg} (141)	100000	LQM/CEH S4UL
Fluorene	63000 ^{mg} (30.8)	68000	71000	LQM/CEH S4UL
Phenanthrene	22000	22000	23000	LQM/CEH S4UL
Anthracene	520000	540000	540000	LQM/CEH S4UL
Fluoranthene	23000	23000	23000	LQM/CEH S4UL
Pyrene	54000	54000	54000	LQM/CEH S4UL
Benzo(a)anthracene	170	170	180	LQM/CEH S4UL
Chrysene	350	350	350	LQM/CEH S4UL
Benzo(b)fluoranthene	44	45	45	LQM/CEH S4UL
Benzo(k)fluoranthene	1200	1200	1200	LQM/CEH S4UL
Benzo(a)pyrene ⁽¹⁾	35	35	36	LQM/CEH S4UL
Indeno(1,2,3-c,d)pyrene	500	510	510	LQM/CEH S4UL
Dibenz(a,h)anthracene	3.5	3.6	3.6	LQM/CEH S4UL
Benzo(g,h,i)perylene	3900	4000	4000	LQM/CEH S4UL
Coal Tar ⁽¹⁾	15	15	15	LQM/CEH S4UL
Chloroalkanes & alkenes				
1,2-Dichloroethane (DCA)	0.67	0.97	1.7	LQM/CEH S4UL
1,1,1-Trichloroethane (TCA)	660	1300	3000	LQM/CEH S4UL
1,1,2,2-Tetrachloroethane (PCA)	270	550	1100	LQM/CEH S4UL
1,1,1,2-Tetrachloroethane (PCA)	110	250	560	LQM/CEH S4UL
Tetrachloroethane (PCE)	19	42	95	LQM/CEH S4UL
Tetrachloromethane (POM)	2.9	6.3	14	LQM/CEH S4UL
Trichloroethene (TCE)	1.2	2.6	5.7	LQM/CEH S4UL
Trichloromethane (Chloroform)	99	170	350	LQM/CEH S4UL
Chloroethene (Vinyl Chloride)	0.059	0.077	0.12	LQM/CEH S4UL
Explosives				
2,4,6-Trinitrotoluene (TNT)	1000	1000	1000	LQM/CEH S4UL
RDX	210000	210000	210000	LQM/CEH S4UL
HMX	110000	110000	110000	LQM/CEH S4UL
Pesticides				
Aldrin	170	170	170	LQM/CEH S4UL
Dieldrin	170	170	170	LQM/CEH S4UL
Atrazine	9300	9400	9400	LQM/CEH S4UL
Dichlorvos	140	140	140	LQM/CEH S4UL
alpha-Endosulfan	5600 ^{mg} (0.003)	7400 ^{mg} (0.007)	8400 ^{mg} (0.016)	LQM/CEH S4UL
beta-Endosulfan	6300 ^{mg} (0.00007)	7800 ^{mg} (0.0002)	8700	LQM/CEH S4UL
alpha-Hexachlorocyclohexane (HCH)	170	180	180	LQM/CEH S4UL
beta-Hexachlorocyclohexane (HCH)	65	65	65	LQM/CEH S4UL
gamma-Hexachlorocyclohexane (HCH)	67	69	70	LQM/CEH S4UL
Chlorobenzenes				
Chlorobenzene (MCB)	56	130	290	LQM/CEH S4UL
1,2-Dichlorobenzene (DCB)	2000 ^{mg} (571)	4800 ^{mg} (1130)	11000 ^{mg} (1040)	LQM/CEH S4UL
1,3-Dichlorobenzene (DCB)	30	73	170	LQM/CEH S4UL
1,4-Dichlorobenzene (DCB)	4400 ^{mg} (224)	10000 ^{mg} (540)	25000 ^{mg} (1280)	LQM/CEH S4UL
1,2,3-Trichlorobenzene (TCB)	102	250	590	LQM/CEH S4UL
1,2,4-Trichlorobenzene (TCB)	220	530	1300	LQM/CEH S4UL
1,2,5-Trichlorobenzene (TCB)	23	55	130	LQM/CEH S4UL
1,2,3,4-Tetrachlorobenzene (TeCB)	1700 ^{mg} (122)	3080 ^{mg} (304)	4400 ^{mg} (728)	LQM/CEH S4UL
1,2,3,5-Tetrachlorobenzene (TeCB)	49 ^{mg} (39.4)	120 ^{mg} (98.1)	240 ^{mg} (235)	LQM/CEH S4UL
1,2,4,5-Tetrachlorobenzene (TeCB)	42 ^{mg} (19.7)	72 ^{mg} (48.1)	96	LQM/CEH S4UL
Pentachlorobenzene (PeCB)	640 ^{mg} (43.0)	770 ^{mg} (107)	830	LQM/CEH S4UL
Hexachlorobenzene (HCB)	110 ^{mg} (0.20)	120	120	LQM/CEH S4UL
Phenols & Chlorophenols				
Phenols	440 ^{mg} (26000)	690 ^{mg} (30000)	1300 ^{mg} (34000)	LQM/CEH S4UL
Chlorophenols	3500	4000	4300	LQM/CEH S4UL
Pentachlorophenol (PCP)	400	400	400	LQM/CEH S4UL
Other				
Carbon Disulphide	11	22	47	LQM/CEH S4UL
Hexachlorobutadiene (HCB / HCBD)	31	66	120	LQM/CEH S4UL
Methyl tert-butyl ether	7500	13000	24000	EIC/AGS/CL-AIRE 2010

NC: No published criteria

vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.

sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets.

dir: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration)

(1): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo(a)pyrene.

Table 2: Imported Fill Acceptance Criteria

5 MONITORING & VERIFICATION PLAN

5.1 Main Remediation Works

5.1.1 General

A photographic record of all excavations and backfill operations will be maintained and compiled within a Verification Report. A photographic will be prepared by the Main Contractor for use by Remada in preparation of the Verification Report.

5.1.2 Engineered Ground & Imported Fill

Any engineered ground and imported fill will require testing to confirm it been correctly placed and suitably compacted in accordance with the Engineer's Specification. Records are to be provided to Remada for compilation in the Verification Report.

5.1.3 Soft Landscaping Areas

Topsoil imported for landscape shall not contain concentration of contaminants greater than **Table 2** and shall be tested at rate of one per 1000m³. Records are to be provided to Remada for compilation in the Verification Report.

5.1.4 Capping Material

Site won and imported capping material shall not contain concentration of contaminants greater than **Table 2** shall be tested at rate of one per 1000m³. Records are to be provided to Remada for compilation in the Verification Report.

5.1.5 Unforeseen Contamination

In the event that unforeseen contamination is encountered during the works, samples of the suspected soil or groundwater contamination shall be taken and submitted for laboratory analysis. The results will be assessed by Remada.

5.1.6 Sampling & Analysis

All verification sampling will be conducted by a suitably qualified and experienced geo-environmental engineer. Samples are to be tested at a UKAS and MCERTS accredited laboratory.

5.1.7 Waste Disposal Records

Any contaminated materials (including unforeseen contaminated soils) requiring removal from the site must be recorded and copies of Consignment notes or Duty of Care transfer notes must be retained by the Main Contractor for incorporation in the Verification Report.

5.2 Final Verification Report

On completion of the works a Verification Report will be compiled by Remada and submitted to Hillingdon Council to demonstrate that the remediation criteria have been met and to discharge relevant planning conditions. The report will describe the works that have taken place, present photographic records, laboratory analyses and waste disposal records.

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- NHBC Standards, 2019.
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- The Definition of Waste: Development Industry Code of Practice, CL:AIRE 2011.
- Guidance on the classification and assessment of waste (1st Edition v1.1) Technical Guidance WM3 2018.



STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received.

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

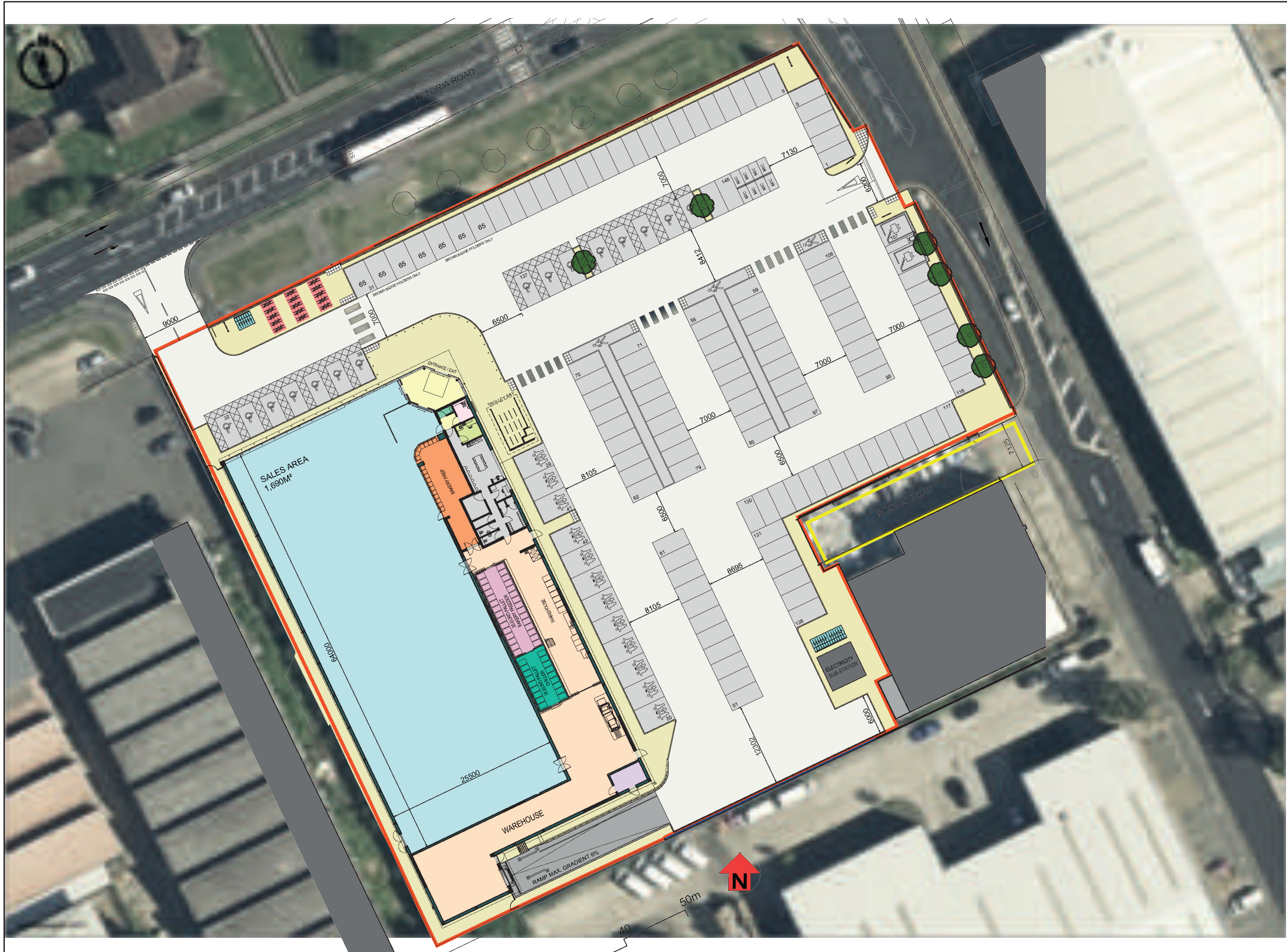
11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.



FIGURES



Legend

Notes
Proposed site layout plan reproduced from
KLH Architects 'Site Plan as Proposed'
drawing ref: 4908-0101 revision P07 issued on
4th August 2020.

Project Title
Victoria Road, Ruislip

Drawing Title
Figure 1 - Proposed Site
Layout

Client
Lidl Great Britain Ltd

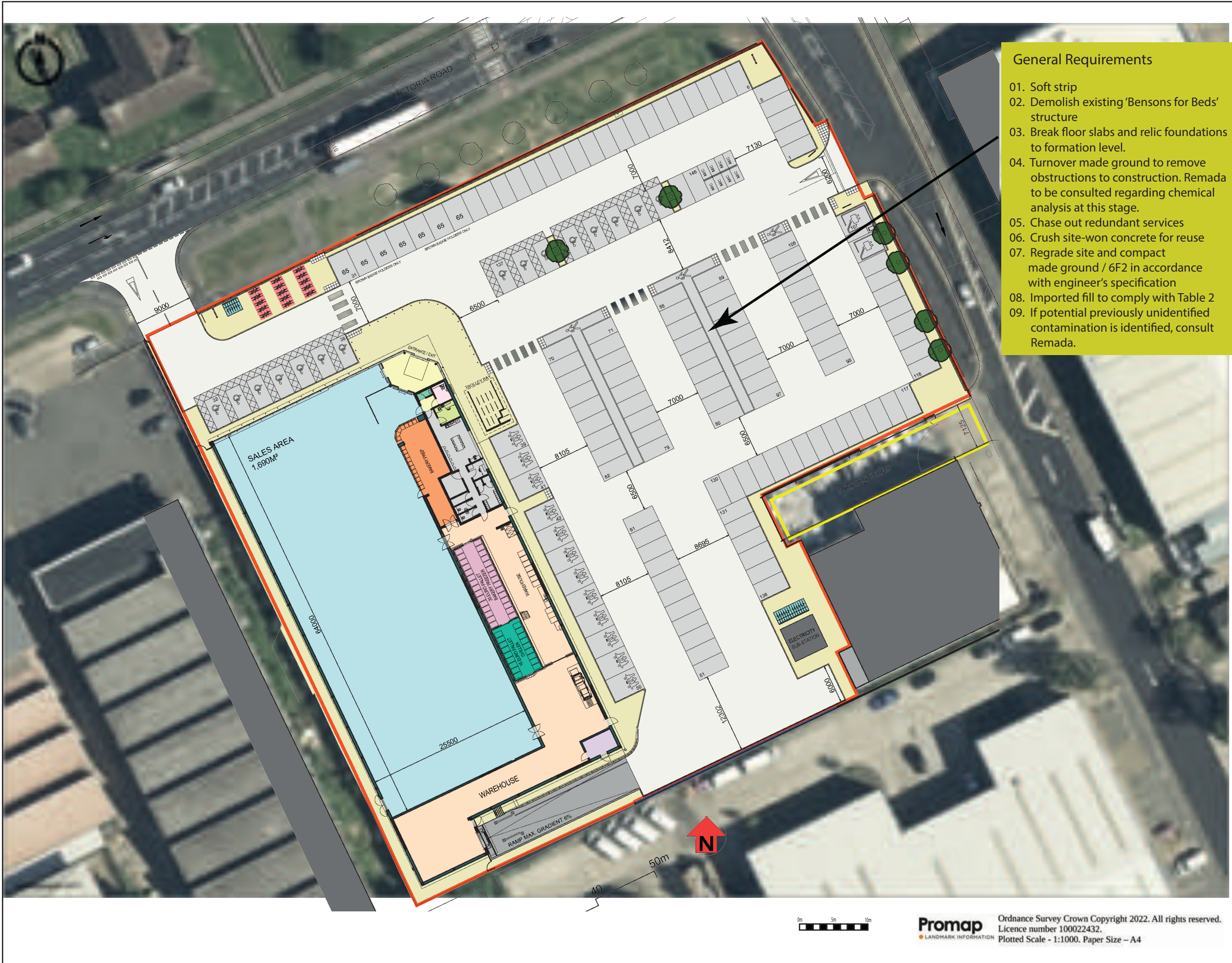
Scale	Drawn	Size
as shown	PD	A4
Date	Job No.	Drawing / Rev No
02.03.22	952	01

Remada



Promap
LANDMARK INFORMATION

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- General Requirements**
- 01. Soft strip
 - 02. Demolish existing 'Bensons for Beds' structure
 - 03. Break floor slabs and relic foundations to formation level.
 - 04. Turnover made ground to remove obstructions to construction. Remada to be consulted regarding chemical analysis at this stage.
 - 05. Chase out redundant services
 - 06. Crush site-won concrete for reuse
 - 07. Regrade site and compact made ground / 6F2 in accordance with engineer's specification
 - 08. Imported fill to comply with Table 2
 - 09. If potential previously unidentified contamination is identified, consult Remada.

Legend

Notes

Proposed site layout plan reproduced from KLH Architects 'Site Plan as Proposed' drawing ref: 4908-0101 revision P07 issued on 4th August 2020.

Project Title

Victoria Road, Ruislip

Drawing Title

Figure 2 - Remediation Strategy

Client

Lidl Great Britain Ltd

Scale

as shown

Drawn

PD

Size

A4

Date

02.03.22

Job No.

952

Drawing / Rev No

01

Remada