Land Science

RIVERSIDE ENTERPRISE CENTRE, HOVE, BN42 4AU

REMEDIATION VALIDATION REPORT

OSM CONSTRUCTION LIMITED

21ST FEBRUARY 2023

LS6744

Site:	**RIVERSIDE ENTERPRISE CENTRE, HOVE, BN42 4AU**
Title:	**REMEDIATION VALIDATION REPORT**
Project:	**COMMERCIAL DEVELOPMENT**
Client:	**OSM CONSTRUCTION LIMITED**
Date:	**21st FEBRUARY 2023**
Reference:	**LS 6744**
Version:	**A – final for issue**

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- New water main details
- Buried concrete specification
- Discovery Strategy (OSM construction and HP Civils)
- Waste Disposal details

1.0 INTRODUCTION

1.1 General

Land Science was instructed to undertake a Remediation Validation Report in relation to the proposed redevelopment at Riverside Enterprise Centre, Hove, BN42 4AU. The location is shown on Figure 1, which is centred at grid reference NGR TQ5245 1050.

1.2 Client

The Client for this appointment was OSM Construction Limited. This report may only be used by this named client and their directly appointed project team for the purposes set out in the report conditions. It was understood that the Client already owned the property, and that this investigation was not a pre-purchase appraisal.

1.3 Area Under Investigation

The area under investigation previously comprised a single-storey building and yard area previously used a boating club. The layout is indicated on Figure 2.

1.4 Form of Development

The proposed development comprised the installation of shipping containers stacked 2-high along the existing slab. Figure 3 illustrates the layout of the proposed redevelopment. The findings of this report may be not valid if the proposed development is altered.

1.5 Previous Investigations

The following previous Land Science reports relevant to the site were made available:

- Phase I Geotechnical and Geo-environmental Investigation, Land Science, April 2021
- Phase II Geotechnical and Geo-Environmental Investigation (LS5540, August 2021).

The Remediation Validation Report is based on the findings of the previous reports.

1.6 Scope of Work

Land Science were instructed to carry out a Remediation Validation Report, in relation to removing/reducing any potential risks to any sensitive receptors. The preferred remediation objectives) were as follows:

- Use of barrier pipes for all new potable water supply pipes.
- Upgrading of buried concrete specification.
- Any soil arisings must not be re-used on site and should be disposed off site.
- A Discovery Strategy should be followed during the development.

Details of how these were undertaken are provided in section 3.0.

It is understood that this report will be used inform planning conditions with regards to managing contaminated land risks as part of the development.

1.7 Standards

Where practicable, the investigation was undertaken in accordance with the following primary standards and guidance:

- Land Contamination Risk Management (LCRM) Environment Agency 2020
- BS10175:2011+A1:2013, Investigation of Potentially Contaminated Sites.
- National Planning Policy Framework, July 2018.
- Building Regulations Approved Document C: Site preparation and resistance to contaminants and moisture, HM Government, July 2013.
- NHBC Standards Chapter 4.1: Land Quality - Managing Ground Conditions, 2019.

Other technical sources have been cited in respect of specific aspects of the investigation, as referenced throughout the text.

2.0 REMEDIATION WORKS

2.1 Introduction

The site inspection visits undertaken by Land Science during the construction phase are provided in Appendix A, corresponding photographs are contained in Appendix B, and records of correspondence from OSM Construction Limited are in Appendix C.

2.2 Building Materials

The Phase II Assessment detailed that any new water supplier pipework should be upgraded to barrier pipework and that new buried concrete should also be upgraded.

2.2.1 New Potable Water Supply Pipework

The Phase II Assessment recommended that new buried plastics used for potable water supplies should be upgraded to resist chemical contamination. Metal or aluminium barrier pipework will be acceptable. No pipework should be laid where there is evidence of hydrocarbons.

OSM Construction Limited provided confirmation of the use of Protectaline barrier Pipe for new potable water supply pipework (See Appendix C).

2.2.2 New Buried Concrete

The Phase II Assessment recommended that new buried concrete is upgraded to resist chemical contamination.

OSM Construction Limited provided confirmation of the use of concrete with a Class DS-2 and an ACEC class AC-2.

2.3 Discovery Strategy

It was confirmed by OSM Construction Limited (client) and also the site contractor (see Appendix C) that the discovery strategy detailed with the Remediation Method Statement was followed and no further evidence of sources of contamination were encountered.

2.4 Waste Disposal

It is understood that all waste soil removed from the site has been disposed of appropriately. The groundwork (HPS Civils) undertook their own sampling and testing which gave a preliminary classification as Inert Waste. The following table provides a summary of the waste disposal details provided by OSM Construction Limited.

Classification	No. of loads	Approximate volume	Removed by	Disposal Facility	Dates removed
Inert	27	243 m^3	Penfold Verrall, Thistleworth Farm Cottage, Dial Post. Horsham, RH13 8NY Waste Carriers Licence – CBDU 88724	Biffa Waste Services Limited, Brookhurst Wood Landfill Site, Langhurst Road, Warnham, West Sussex, RH12 4QD	20th September 2022 to 22nd December 2022

3.0 REMEDIATION CONCLUSIONS

The inspections and laboratory testing detailed in the sections above indicated that the remedial works have been undertaken in accordance with the Remediation Method Statement (Land Science ref LS5540 dated August 2021) and the site is suitable for the proposed end use as commercial.

No long term monitoring requirements have been identified.

REPORT CONDITIONS

The Client

This report may also be used only by the client named in section 1 and their appointed project team for the purpose of design, obtaining planning, building regulations approval, and in connection with finance. This report must not be used by any other persons or for other purposes without express written agreement of Land Science.

General

Land Science takes all reasonable professional care in preparation of this report, using current standards and industry practice. However, the evaluation of ground conditions depends on an interpretation and extrapolation of the conditions revealed by a limited data set. The level of risk is related to the extent of investigation and no site is ever free of risk. The client should understand their risks and liabilities. We accept no liability whatsoever in respect of:

- The scope, extent or design of an investigation.
- Any conditions not directly revealed by the investigation.
- Published standards or methodologies used or adopted in this report.
- The opinion of any other party including any regulator, authority or stakeholder.
- Any dispute, claim or consequential loss arising from any findings of this report.
- Third party information and data.

This report relates solely to ground-related matters as set out in the objectives and makes no representation on other matters such as ecology, arboriculture, invasive plant species, the condition of buildings and structures, hazardous building materials such as insulation or asbestos, the locations of boundaries, unexploded ordnance, and or planning constraints etc. Further reports should be commissioned in this respect as appropriate.

Regulators and Approvals

This (and any other) report should be submitted to relevant authorities for their own assessments and to provide their approval or comments accordingly. This should be in good time before commencing on site in case additional work is to be carried out.

Standards, technical guidance and regulatory positions change over time and which may therefore affect the findings and recommendations made in this report; this should be verified by the client prior to any critical project milestones. Where this information is used in design, the designer should verify that the information is appropriate and has been used correctly.

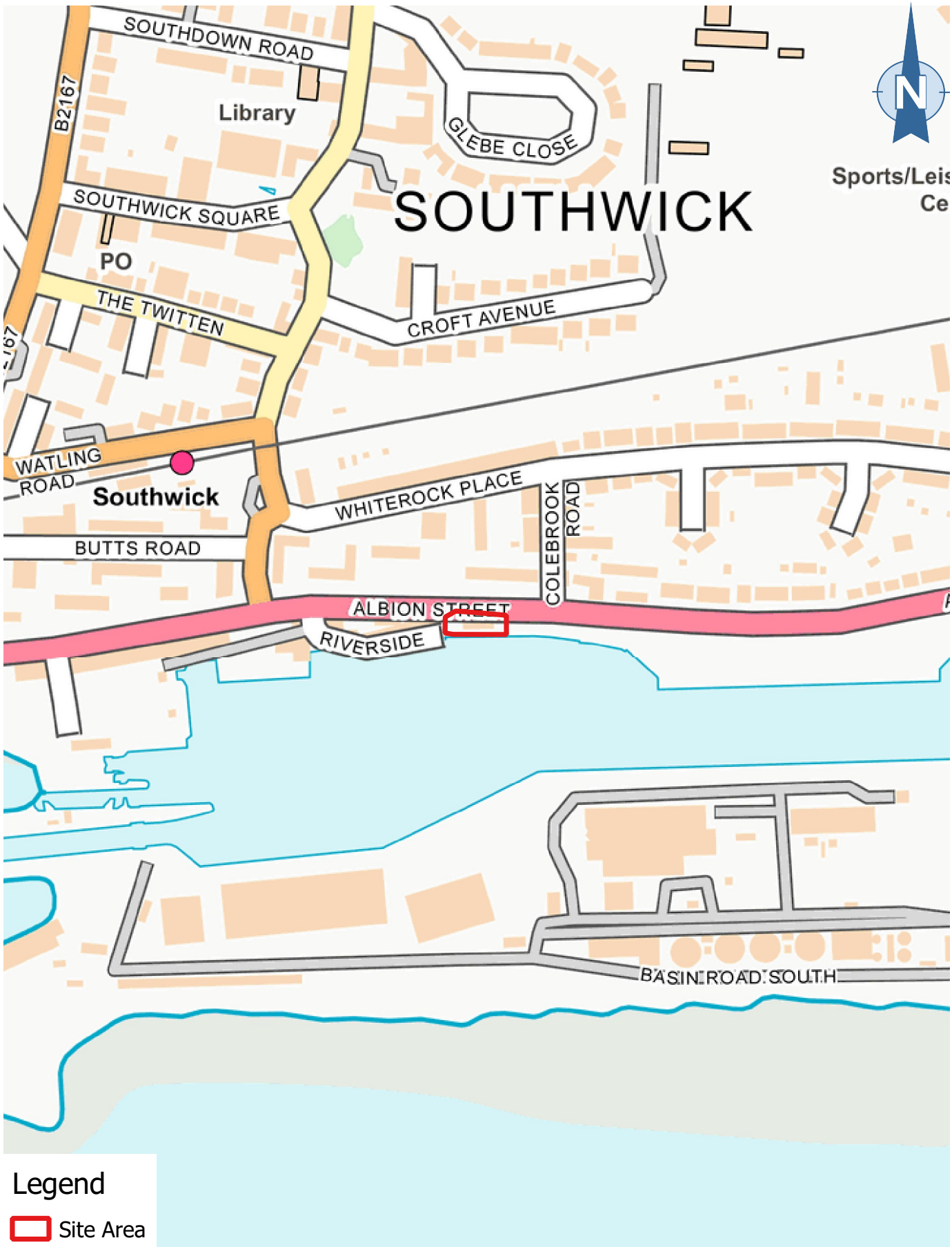
Variations with time

The report relates to conditions revealed at the time of the investigation and any monitoring visits. Some parameters may vary over time or seasonally; groundwater levels, ground gas compositions, or concentrations of contaminants are particularly variable in this respect. Further monitoring or verification should be considered as appropriate.

GLOSSARY OF TERMS

ACM	Asbestos Containing Material
BGS	British Geological Survey
BRE	Building Research Establishment
BS	British Standard
C4SL	Category 4 Screening Level
CBR	California Bearing Ratio
CDM	Construction Design and Management regulations
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLEA	Contaminated Land Exposure Assessment model
CSM	Conceptual Site Model
EA	Environment Agency
EQS	Environmental Quality Standards
FOC	Fraction of Organic Carbon
GAC	Generic Assessment Criterion
GQRA	Generic Quantitative Risk Assessment
mbgl	Meters Below Ground Level
NHBC	National House Building Council
mOD	Metres above Ordnance Datum
PAH's	Polycyclic Aromatic Hydrocarbons
PHE	Public Health England
PID	Photo-Ionisation Detector
PQRA	Preliminary Quantitative Risk Assessment
PSD	Particle Size Distribution Test
RMS	Remediation Method Statement
S4UL	Suitable for Use Level
SOM	Soil Organic Matter
SPZ	Source Protection Zone
SPT	Standard Penetration Test
SSSI	Sites of Special Scientific Interest
ST-WEL	Short Term Workplace Exposure Limit
SVOC's	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
TRRL / TRL	Transport Road Research Laboratory
TWA-WEL	Time Weighted Average Workplace Exposure Limit
UK HBF	United Kingdom House Building Federation
VOC's	Volatile Organic Compounds
WAC	Waste Acceptance Criteria

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Land Science	Title: Site Location		Reference: LS5540
	Project: Riverside Enterprise Centre, BN42 4AU		Figure: 1
	Client: MacConvilles Ltd		Date: 15/07/2021
	Prepared by: JG	Checked by: MR	Version: 02	Sheet: 1 of 1

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Telephone: 01444 882 084
Unit 10, 19 Albert Drive, Burgess Hill, West Sussex, RH15 9TN

Locations are indicative and not to scale

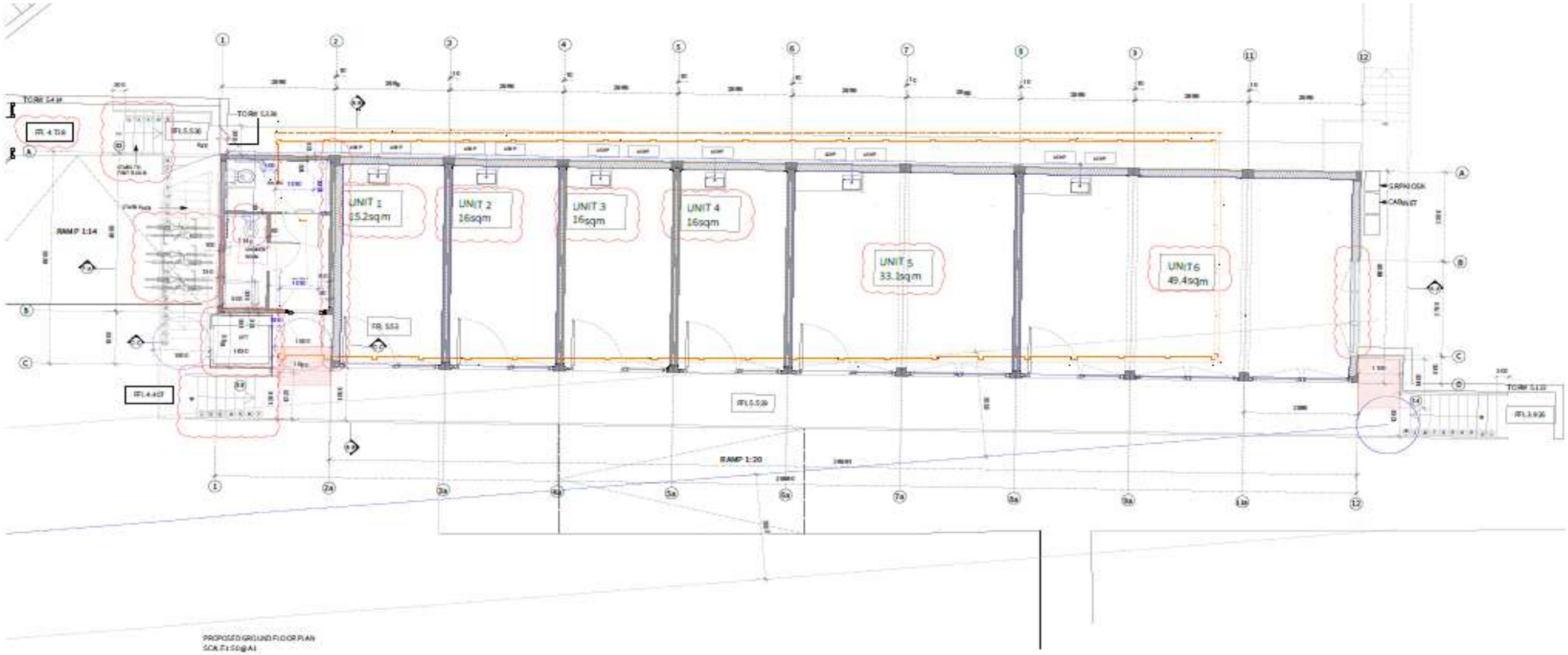
These maps courtesy of Google and The GeoInformation Group (2021)



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Land Science	Title: Exploratory Hole Location Plan	Reference: LS5540	Prepared by: JG
	Project: Riverside Enterprise Centre, BN42 4AU	Figure: 2	Checked by: MR
	Client: MacConvilles Ltd	Date: 15/07/2021	Version: 02

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Land Science	**TITLE:**	Proposed site plan	**REF:**	LS6744	**PREPARED:** ET
	PROJECT:	Riverside Enterprise Centre, Hove, BN42 4AU	**FIGURE:**	3	**CHECKED:** ET
	CLIENT:	OSM Construction Limited	**DATE:**	21/02/2023	**VERSION** v2

APPENDIX A

REMEDIATION INSPECTION SHEET

Date:	10th February 2023	**Site:**	Riverside Enterprise Centre, Hove, BN42 4AU
Progress			

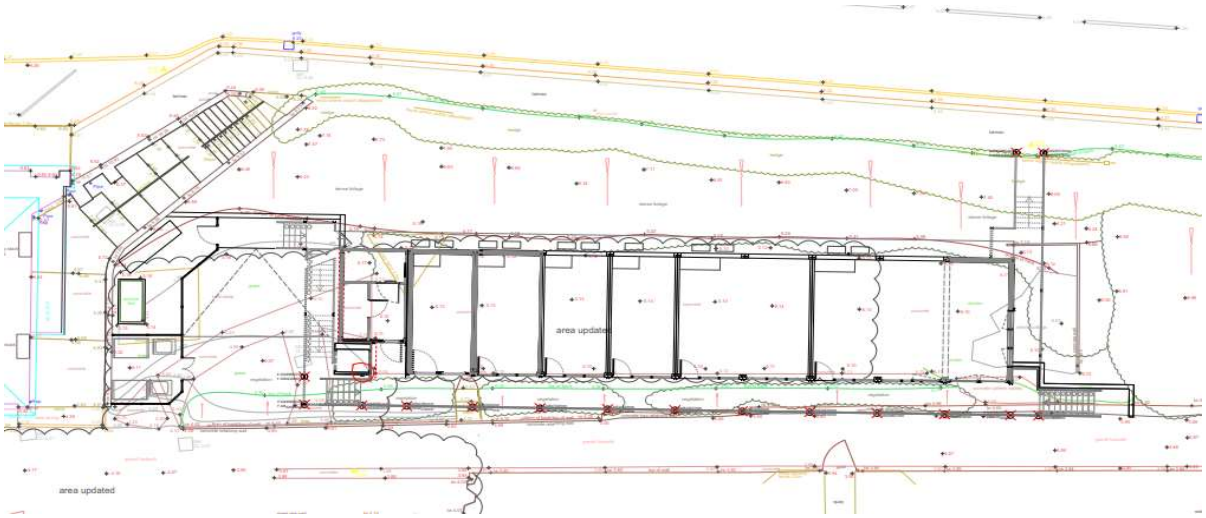
Inspection of the site

Land Science visited the site to undertake a general inspection of the site as it was undergoing development. The visit did not form part of the Discovery Strategy carried out by the client.

The shipping container units had been placed at the site and the services were currently being installed. The water pipework was noted as beign protectaline as specified within the RMS.

The sevice trenches and areas of exposed soils were inspected and no evidence of any visual or olfactpry evidence of contamination were noted and as a result no soil samples were taken for subsequent laboratory testing.

Plan



Samples Taken			**Actions Recommended & To Whom**
Name	**Depth**	**Description**	No further inspections required
None taken			

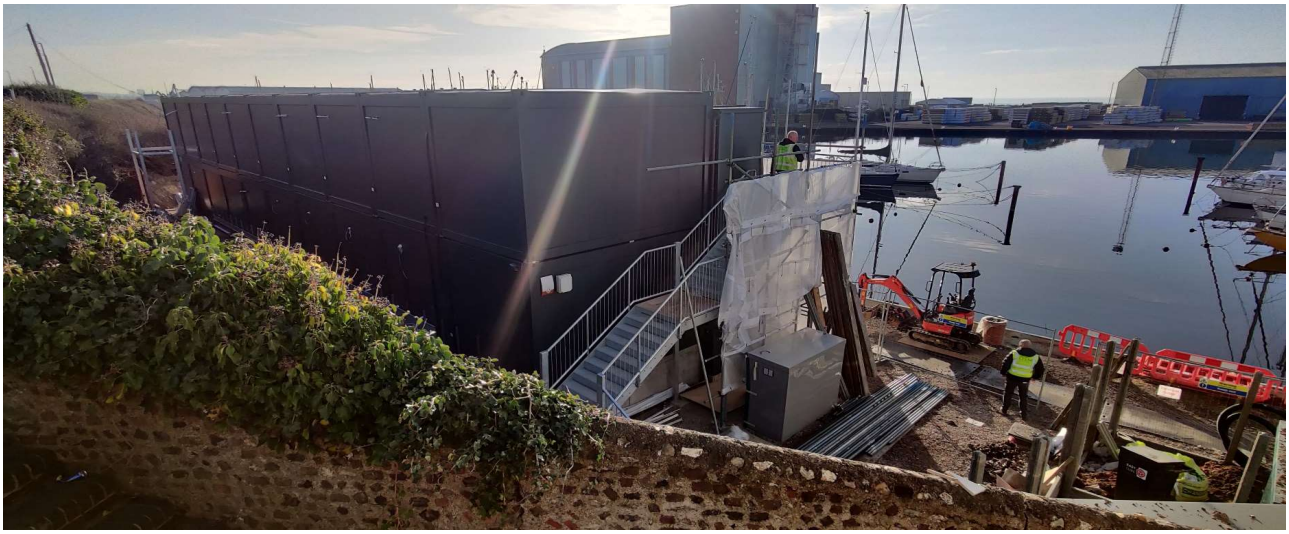
TITLE:	Remediation Inspection Sheet			**REF:**	LS 6744
PROJECT:	Riverside Enterprise Centre, Hove,BN42 4AU			**VERSION**	v1
CLIENT:	OSM Construction Limited				
PREPARED:	MR	**CHECK:**	MR	**DATE:** 10/02/2023	**SHEET No:** page: 1 of 1

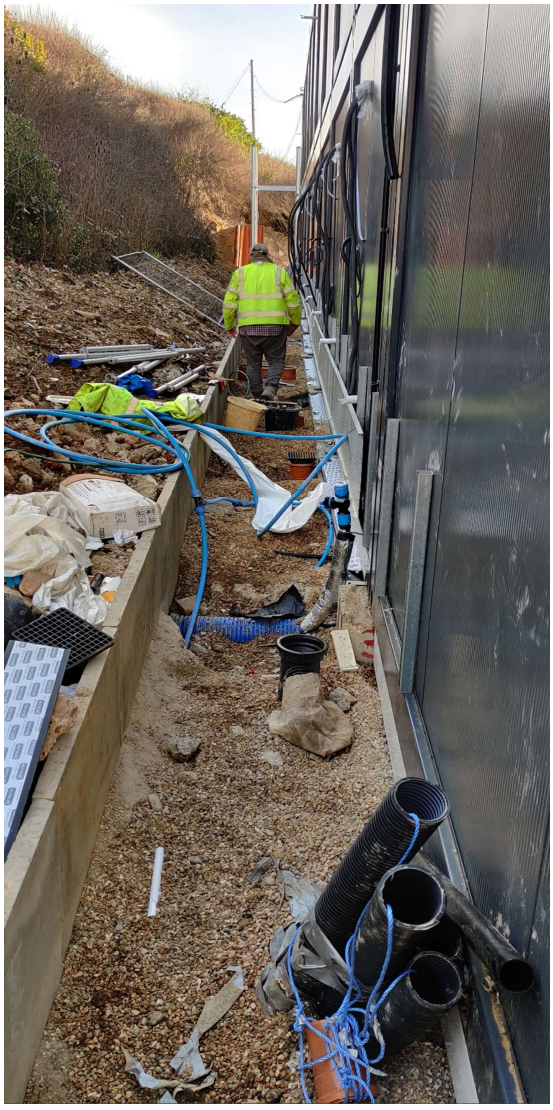
Land Science

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APPENDIX B







Land Science	**TITLE:**	Site Photographs				**REF:**	LS6744
	PROJECT:	Riverside Enterprise Centre, Hove, BN42 4AU				**Photos**	1 to 3
	CLIENT:	OSM Construction Limited				**DATE:**	10/01/2023
	CHECK:	MR	**CHECK:**	ET	**VERSION** V1	**SHEET:**	1 of 3







Land Science	**TITLE:**	Site Photographs				**REF:**	LS6744
	PROJECT:	Riverside Enterprise Centre, Hove, BN42 4AU				**Photos**	4 to 6
	CLIENT:	OSM Construction Limited				**DATE:**	10/01/2023
	CHECK:	MR	**CHECK:**	ET	**VERSION** V1	**SHEET:**	2 of 3