

REMEDIATION VERIFICATION

SOLIS MEWS

256 Field End Road



Report produced in relation to planning application ref: 73733/APP/2019/3766 section 7C.

Date 07/01/2021

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1.0 Introduction

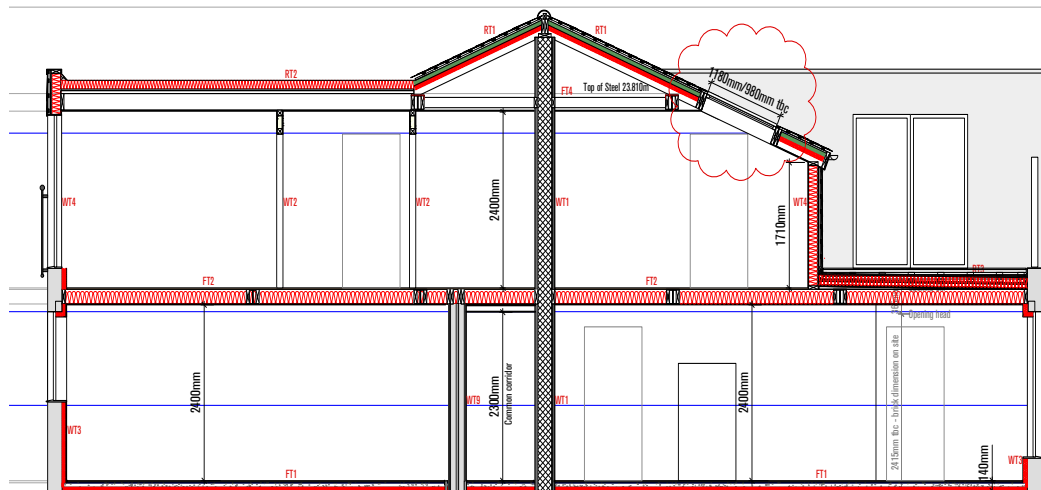
The Verification Report has been prepared in accordance with the Verification of Remediation of Land Contamination guidance produced by the Environment Agency⁴ to document the remedial and verification works undertaken at the site to date. This report should be read in conjunction with the Remediation Plan, and has been produced to discharge planning application ref: 73733/APP/2019/3766 section 7C.

The site is a relatively modern building located within Eastcote Town Centre to the rear of taller office buildings along Field End Road and is near to local bus stops and Eastcote Rail Station.

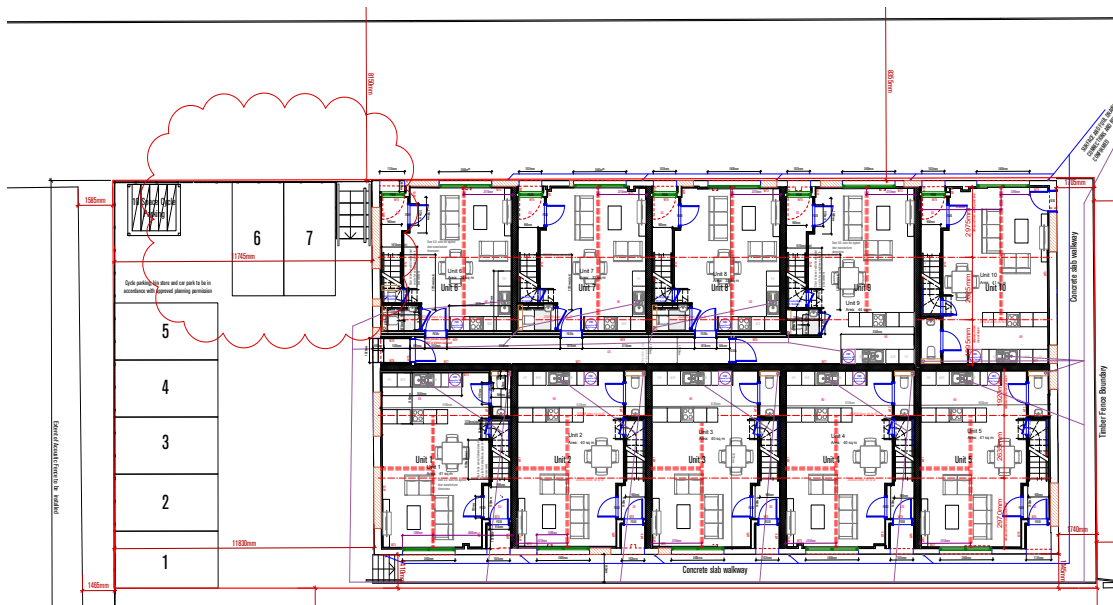


The building is two storey, with accommodation contained within its pitched roof, and sits to the rear of 260 Field End Road and is accessed via a private access road. The existing internals are to be demolished and internally fitted out to provide new accommodation.

A new roof will be installed providing additional inhabitable space a first floor with the introduction of new timber dormers shown below.



Externally there is limited works but these include new surface water and foul drainage connecting to the existing system. The external area will be made up to bring the level to the access road and provide a new hardstanding area for the storage bins and car parking. The surface finish to the walkways is to be concrete slabs and the carpark area is to be tarmac.



Two phases of ground investigation have been undertaken at the site and initial Phase 2 geo-environmental investigation by Your Environment. The ground investigation carried out, comprised sample boreholes. Soil samples were recovered for testing and chemical and waste classification purposes.

The ground investigations identified no serious land quality issues at the site. Remedial measures were designed to address the risks presented by the identified contamination and documented in detail in a Remediation Plan. The scope of the proposed remedial measures and the brief of the verification works were detailed within the Remediation Plan.

The purpose of this Remediation Verification report is therefore to provide certification that appropriate management of the issues identified during the previous site investigations has taken place to a satisfactory standard and that the site is suitable for use.

Objectives

The objectives of the remediation validation works are to ensure:

- Appropriate management of the remediation works to mitigate against accidental releases of potentially polluting materials (such as contaminated run-off) into nearby roads and drains;
- Validation of any imported topsoil and subsoil for use in soft landscaping within planters, to be tested against a backfill specification;
- Management of any 'unforeseen' potentially hazardous materials or areas of ground contamination; and
- Appropriate management and off-site disposal of any hazardous, not hazardous and inert soils depending the suitability for reuse and waste classification.
- Site visit records and photographic records from the watching brief;
- Site visit records and photos from visits completed by a Geo-Environmental Consultant;
- Duty of care records for disposal of waste material including the landfill site(s) or disposal facility where the material has been disposed and a copy of the Contractor's current waste carrier's licence (to be provided by Contractor);
- Records and test certificates relating to the management and disposal or unforeseen contaminants and/or ACMs (if any);
- Details of source and chemical test results for imported materials; and
- Confirmation of water supply pipe materials installed.

This Remediation Verification report has been prepared using information collated throughout the remediation process, applying guidance and best practice which was available at the time of remediation planning/implementation only. No liability is extended to any information which has become available since remediation works have been carried out, as dated in this report.

2.0 Phase 2 summary

A brief summary of the findings of these investigations is given below, however full reference should be made to both reports as appropriate.

Risks to human health

With the exception of the limited depth of Made Ground identified, no visual and/or olfactory evidence of potential contamination was noted within any soils encountered during the SI works undertaken, which focussed in the proposed private garden areas and also underneath the footprint of the proposed dwellings.

All of the selected soil samples from the SI which were submitted for the range of inorganic and organic analyses have returned concentrations below the available SGVs and LQM guidance values for each determinant which were adopted as Generic Assessment Criteria (GAC) within YE's risk assessment for the site.

Therefore, it would be reasonable to conclude that there is no risk to human health receptors.

Risks to controlled waters

A low risk has been assessed based on the lack of exceedances from the water samples analysed when compared to UK Drinking Water Standards (DWS).

Risks to plants and wildlife

A negligible risk has been attributed given the concentrations of phytotoxic contaminants below elevated concentrations often below the limit of detection returned.

Risks to site workers

Despite the absence of returned elevated concentrations of determinants precautions should be taken to minimise exposure of site workers during ground works through the implementation of site safety procedures and the use of suitable personal protective equipment (PPE). Such precautions should include, but not be limited to:

- Personal hygiene, washing and changing procedures
- Availability of site welfare;
- Provision of PPE appropriate to the task; and
- Daily safety briefings and toolbox talks.

All site works will be undertaken in accordance with the guidelines prepared by the Health and Safety Executive (1991) and all work will be carried out in accordance with the Principal Contractor's Health and Safety Plan.

Risks to proposed structures

Based on the maximum calculated GSV of 0.0176l/hr, the site was below the threshold given by CIRIA C665 for Situation B and is characterised as 'Green' in which the site would be characterised by BS8485:2019 for a Type A building and as 'very low risk'. Based on this data, the indication is that there is a negligible gas regime identified. As a consequence, gas protection measures are not considered necessary to be incorporated into the proposed development

Phase 2 Risk Summary

In summary, the proposed development will have very little impact on the site. There will be very limited ground works to small areas of drainage and in most cases there will be type brought to the site to make up levels. Therefore the risks to end users and other receptors are considered very low.

Phase 2 Conceptual site model and quantative risk assessment

The Conceptual Site Model has been re-formulated based upon the results from the SI in accordance with BS10175:2015. It aims to provide information regarding the sources of contamination and the pathways in which contamination can migrate to a vulnerable receptor, all of which need to be present for there to be a risk. This is in relation to the proposed end use being classified as ‘residential without homegrown produce’. The following linkages have been identified:

Contaminant Source	Pathways	Receptor	Potential Severity	Probability of Risk	Level of Risk	Justification
On Site: Made Ground soils on site containing Hydrocarbons (TPH, PAH) Heavy metals, phenols, BTEX, MTBE, OCPs and OPPS.	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Medium	Unlikely	Low ●	A low risk is assessed due to the lack of identified exceedances from the site investigation. Furthermore, there are no areas of soft landscaping within the redevelopment.
		Construction Workers	Medium	Unlikely	Low ●	Construction workers are likely to come into direct contact with soils during groundworks. Safe working practices should be implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from contact with soils and shallow/perched groundwater.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Mild	Low Likelihood	Low ●	A low risk is assessed given the lack of exceedances returned from the water samples analysed.
	Permeation of plastic water pipes	Construction materials, future end users and site visitors	Medium	Unlikely	Low ●	There were no exceedances for any of contaminants tested in the laboratory analysis, so the risk posed to the permeation of the pipes is low. Provision of water supply pipes and connectors formed from proprietary “barrier pipe” materials (eg polyethylene-aluminium-polyethylene) may be required by the water supply company.
On site: Phytotoxic Contamination.	Uptake	Plant and Wildlife	Mild	Low Likelihood	Low ●	Negligible risk given the returned laboratory results which indicates there to be no significant concentrations of phytotoxic contamination.
On Site: Asbestos at/near ground surface in made ground soils.	Inhalation of fibres in airborne dust	Future end users and site visitors	High	Low Likelihood	Low ●	Although screening has revealed no asbestos to be present within the samples analysed from exploratory holes undertaken, it cannot be guaranteed that asbestos is not present within the soils across the site.
		Construction Workers	High	Low Likelihood	Low ●	Asbestos fibres have not been identified in the samples returned from laboratory analysis. However, Safe working practices should be

						implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from asbestos in soils.
On Site: Gases (CH ₄ , CO ₂) from on site Made Ground.	Gas migration and build up within buildings (explosion/asphyxiation risk)	Future end users and building structures.	High	Low Likelihood	Low ●	A low risk is assessed based on the calculated GSV of 0.0176l/hr, the site was below the threshold given by CIRIA C665 for Situation B and is characterised as ‘Green’. Therefore, no gas protection measures are considered necessary.
Off Site: Limited off site development.	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Mild	Unlikely	Low ●	A low risk is assessed based on the lack of exceedances from the groundwater samples analysed.
	Inhalation of vapours	Future end users and site visitors	Medium	Low Likelihood	Low ●	A low risk is assessed based on the lack of volatile compounds detected and the results of the ground gas monitoring.
Off Site: Gases (CH ₄ , CO ₂ , H ₂ S) from off site Made Ground.	Gas migration and build up within buildings (explosion/asphyxiation risk)	Future end users and building structures.	High	Low Likelihood	Low ●	A low risk is assessed due to the returned gas monitoring results which indicated that there is no gas regime at the site.

Table 8: Updated Conceptual Site Model and Risk Assessment

3.0 Remediation strategy summary

The following recommendations are based on the results of chemical laboratory testing to date and form part of our remediation strategy and subsequent validation report.

Ground gas

Based on the maximum calculated GSV of 0.0176l/hr, the site was below the threshold given by CIRIA C665 for Situation B and is characterised as ‘Green’. Based on this data, the indication is that there is a negligible gas regime identified. As a consequence, gas protection measures are not considered necessary to be incorporated into the proposed development.

Watching brief

A watching brief should be maintained by the Main Contractor at all times during the groundworks stage. Should any unforeseen contamination, such as oils or soils/groundwater with an unusual colour or odour, be encountered during groundworks then the following procedure should be implemented:

- Work to cease in that area to prevent exposure to ground workers and potential contaminants being spread around;
- Notify a Geo-Environmental Consultant, to attend site and sample material; and
- Notify the Environmental Health Department / Contaminated Land Officer(s) of the Local Planning Authority.

If the nature and extent of the contamination is unmanageable under the procedure set out above, then a suitable management, mitigation or remediation procedure will be agreed with the CLO. However, this is considered unlikely at this particular site.

Asbestos

Although screening has revealed no asbestos to be present within the samples analysed from exploratory holes undertaken, it cannot be guaranteed that asbestos is not present within the soils across the remainder of the site. Consequently, we would recommend that a watching brief be adopted with regards to the site for the potential of finding any Asbestos Containing Materials (ACMs). If any ACMs are identified these need to be dealt with accordingly in relation to the Hazardous Waste Regulations 2005.

Services

If new services will be installed as part of the redevelopment of the site, we would recommend the local water board be contacted to determine their specification for the type of pipework which should be used on this site.

All services and in particular potable water supply pipework should comprise of material that is resistant to attack and degradation to chemical attack.

Further information can be found within the published guidance for the '*Selection of Water Supply Pipes to be used in Brownfield Sites*', issued in January 2011 by the UK Water Industry

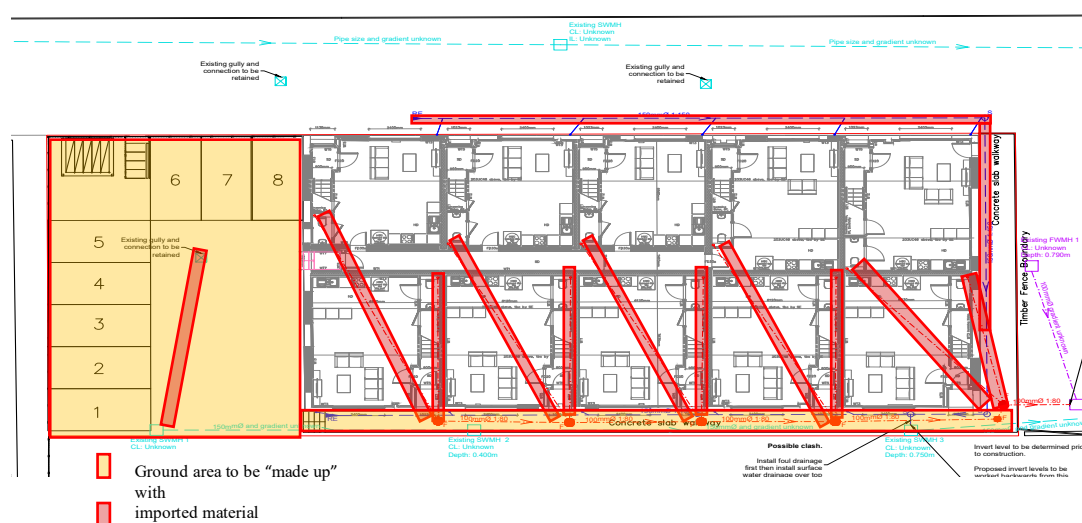
Surface water

It should be noted that the Environment Agency does not recommend that soakaways be placed within Made Ground, potentially contaminative land or in ground previously identified as contaminated.

4.0 Remediation & validation approach

Introduction

This chapter collates all the factual information from the remediation and verification works and provides a summary of the actual methodology under which the works were completed. L-L-O Construction Limited and their appointed subcontractors carried out the remedial works. Works were carried out at suitable stages of the development programme, which extended from June 2020 until August 2020 (excavation works).



Remediation Methodology

New drainage works

The ground works contractor was appointed for the works on 24th August 2020. Within the appointment was the allowance for a “watching brief” whilst the excavation works took place.

In order to accommodate new foul drainage areas of the site were excavated although only to limited depths ranging from 0.6 m to 0.1m. Where ground was excavated as much as possible was returned limiting the amount to be removed from site.





The works were inspected by our Structural Engineers on the 31st August and the 7th September 2020 to ensure the design was in accordance with the approved design shown on PRP drawing 81475/101/P2.

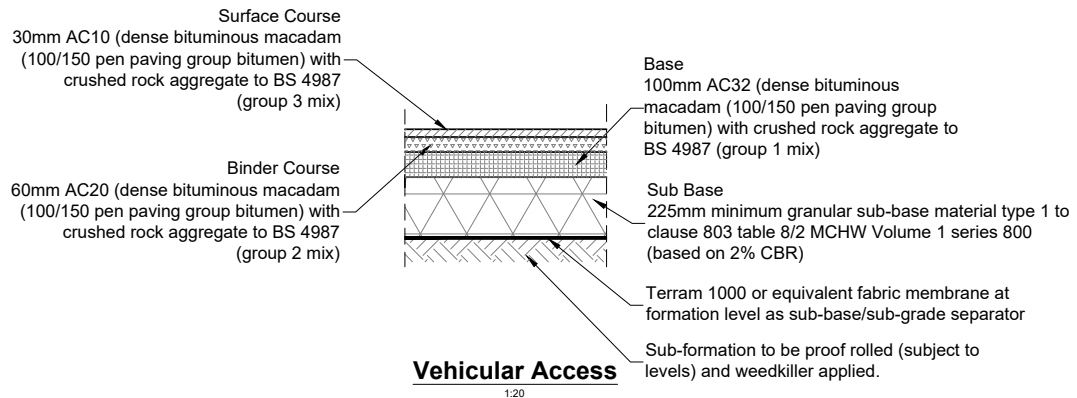
External Car Park Area

The works were started to the car park area on the 9th November 2020 by our ground works contractor. Again a watching brief was employed to monitor any areas of contamination during all the works. A depth of 250mm was removed from the site area, but most of this was the additional type 1 added before the construction works started. The material was excavated and then removed by a licensed waste carrier.



Once the redundant material was removed the area was proof rolled and a geotextile membrane was added to the whole site area. Following on from this type 1 was imported and compacted in accordance with the PRP specification shown below.

PRP detail for new car park area



New water main barrier pipe



As recommended by Affinity Water the new water main has been installed utilising a barrier pipe as can be seen in the photograph and identified by the black strip.

5.0 Site condition

All works were correctly managed in accordance with the recommendations contained in the consultant's report YE8240.

During the watching brief to both elements of the works no hazardous material was found.

All excess materials were removed by a licensed waste carrier.

Duty of care documentation is contained in the appendices.

Records were kept during the works and some of the photographs are contained within this report.

All areas excavated were reinstated using geotextile and with graded material.

The surface water for the project is connected to the Thames Water mains surface water so there are no on-site soakaways.

The new water main supply to the project is a 63mm barrier pipe in accordance with Affinity Water's requirements.

APPENDICES

Appendix A: Waste transfer note

Crushed Concrete Type 1 & 2 Grading Muck Away, Topsoil, Bulk Filling Materials,
Grab & Tipper Hire, Crusher, Screener & Machine Hire



WASTE LICENCE No. CB/DU113448

Thames Materials Ltd

Thames House, 4 Sarum Complex,
Salisbury Road, Uxbridge,
Middlesex, UB8 2PZ
Tel: 020 8840 7233 (Head Office)
Email: info@thamesmaterials.com
Web: www.thamesmaterials.com

Combined Conveyance & Controlled Waste Transfer Note

DATE 17 12 20	VEHICLE REGISTRATION EY20 YTO	NAME OF PERSON IN CHARGE OF VEHICLE JON NOLAN
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CUSTOMER & SITE ADDRESS: ARMY J BLAIR
5 SUNNING DALE AVE

DISPOSAL ADDRESS: FW4

No. 10717097

VOLUME	DESCRIPTION OF WASTE	VOLUME (TONNES)	
C. METRES 15	SOIL AND STONE	GROSS WEIGHT	
WASTE CATEGORIES	C&A Away	TARE WEIGHT	
☒ INERT	☐ 17.05.04 Soil & Stone from construction	NET WEIGHT	
☐ NON-HAZARDOUS	☐ 17.01.01 Concrete	TOTAL	
☐ HAZARDOUS	☐ 01.01.02 As dug ballast		
SIC Code:	☐ 17.03.02 Asphalt breakout		
41.2	☐ 17.04.07 Mixed Metal		
	☐ 17.01.07 Mixed hardcore from construction		
	☐ 17.02.01 Timber		
	☐ 17.09.04 Mixed construction waste (timber, plastic, concrete, packaging & metal)		

N.B. To Customers, Authorised Agents, Representatives, or Responsible Persons signing this Delivery Ticket. This is in your interest - please read this ticket carefully, and inspect that everything is to your satisfaction before finally signing this receipt note. We regret we cannot under any circumstances entertain any claims once the vehicle has left the site and a clear signature has been given.

Certified that the above particulars are true and relate to the arising materials and waste being conveyed or disposed of in pursuance of the sale

By signing below I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulation 12 of the waste (England and Wales) Regulations 2011.

RECEIVED BY (PRINT NAME) Luke Wilson DATE 17/12/20

(SIGNATURE)

CUSTOMERS ORDERING VEHICLES OFF THE PUBLIC ROAD DO SO ENTIRELY ON THEIR OWN RESPONSIBILITY
We cannot accept responsibility for damage caused by our vehicles delivering or disposing to your site

Appendix B: Waste carrier license

Certificate of Registration under the Waste (England and Wales) Regulations 2011

Regulation authority

Name	
Address	National Customer Service Centre 99 Parkway Avenue Sheffield S9 4WF
Telephone number	03708 506506

The Environment Agency certify that the following information is entered in the register which they maintain under regulation 28 of the Waste (England and Wales) Regulations 2011.

Carriers details

Name of registered carrier	THAMES MATERIALS LTD
Registered as	An upper tier waste carrier and dealer
Registration number	CBDU113446
Address of place of business	THAMES MATERIALS LTD SALISBURY ROAD UXBRIDGE UB8 2RZ
Telephone number	01225777686
Date of registration	7 June 2019
Expiry date of registration (unless revoked)	17 July 2022

Making changes to your registration

Your registration will last 3 years and will need to be renewed after this period. If any of your details change, you must notify us within 28 days of the change.

You can do this by calling the Environment Agency.