



ENVIRONMENTAL CONSULTING LTD.

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26th November 2015

ref: A10635/151120/L1

John Black,
PMC Construction,
106 Queen's Road,
Portsmouth,
PO2 7NE

By Email John.black@pmnconstruction.co.uk

Dear John,

RE: St Georges Walk, Waterlooville - Remediation Method Statement

Please find attached OEC Report A10635/151120/L1 detailing the Remediation Method Statement for the necessary remedial works at the above site.

If you have any questions, please do not hesitate to contact us.

Yours sincerely

For Omnia Environmental Consulting Ltd.

Kate Duggan
Graduate Geo-Environmental Consultant

Dr. Adrian King
Senior Consultant



REMEDIATION METHOD STATEMENT

Site Address	St Georges Walk, Waterlooville, PO7 7TU
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This Remediation Method Statement (RMS) has been prepared following a supplemental environmental site investigation completed at the above site. The results of the site investigation are contained within OEC Report A10635 L151119 entitled 'St Georges Walk, Waterlooville Letter Report' and dated November 2015. The RMS also takes into account findings of the Geo-Environmental Services Limited report (Ref: GE10739-GIR-JUN15) dated June 2015.

1.0 Background

The original report identified the presence of elevated concentrations of lead and the presence of asbestos fibres within near surface soils across the site and recommended that further works were undertaken to determine whether asbestos containing material was present within near surface soils in proposed areas of soft landscaping. OEC undertook a supplementary site investigation (Ref: A10635/151119/L1) to determine whether asbestos was present within near surface soils in areas of proposed soft landscaping which could pose a significant risk to future site users.

Current guidance set out in CIRIA C733 – “Asbestos in soil and made ground: a guide to understanding and managing risks” recommends that where asbestos is present at privately-owned housing, that a depth of 0.60 – 1.00m of cover may be required in order to provide adequate protection, based upon the requirement for double digging in garden areas.

However, given that asbestos fibres were not identified within areas of proposed soft landscaping, OEC considered that the full cover system thickness stipulated within CIRIA C733 would not be required, although an active pollution linkage to elevated concentrations of lead is considered to be active, and it was recommended that limited remedial works were undertaken within areas of propose soft landscaping.

2.0 Remedial Works

It is considered that remedial works are undertaken within areas of proposed soft landscaping. The extent of the necessary remedial works are set out in Figure 1.0.

Within all areas of soft landscaping, Made Ground should be excavated to a depth of 300mm bFGL with arisings being disposed of to a licensed waste disposal facility via a licensed waste carrier, with all waste transfer notes being retained.

It is recommended that a geotextile is placed within the excavation to serve as a marker layer and to prevent the mixing of the Made Ground and clean imported soils.

Excavations should be backfilled with chemically suitable inert soil complying with the Screening Values set out in Table A1.

The outlined remediation strategy should be agreed with the local authority before adoption on site.

3.0 Validation

Remedial works will require validation to ensure the chemical suitability of imported soils and confirm the thickness of the cover system. Validation should comprise of the advancement of a hand dug trial pit to a depth of 0.30m bgl within areas of soft landscaping with confirmation of capping thickness through photographic records. The advancement of hand excavated pits will also facilitate the collection of soil samples for laboratory testing to confirm chemical suitability.

4.0 Reporting

The results of the validation and details of remediation undertaken should be detailed in a Validation Report for the site. The report should provide the following information:

- Details of remediation undertaken;
- Results of validations;
- Site photographs;
- Details of imported top and sub soil;
- Waste disposal notes; and,
- Details of any additional contamination identified and actions taken.

On completion, the Validation Report should be submitted to the local authority for approval as part of the planning process.

5.0 Discovery Strategy

Should additional evidence of any unexpected contamination be identified during the development of the site contact should be made with a suitably qualified Environmental Consultant. As determined appropriate by the Consultant, further investigation and sampling may be required to determine the appropriate actions required.

Table A1 – Chemical Specification for Imported Top and subsoil

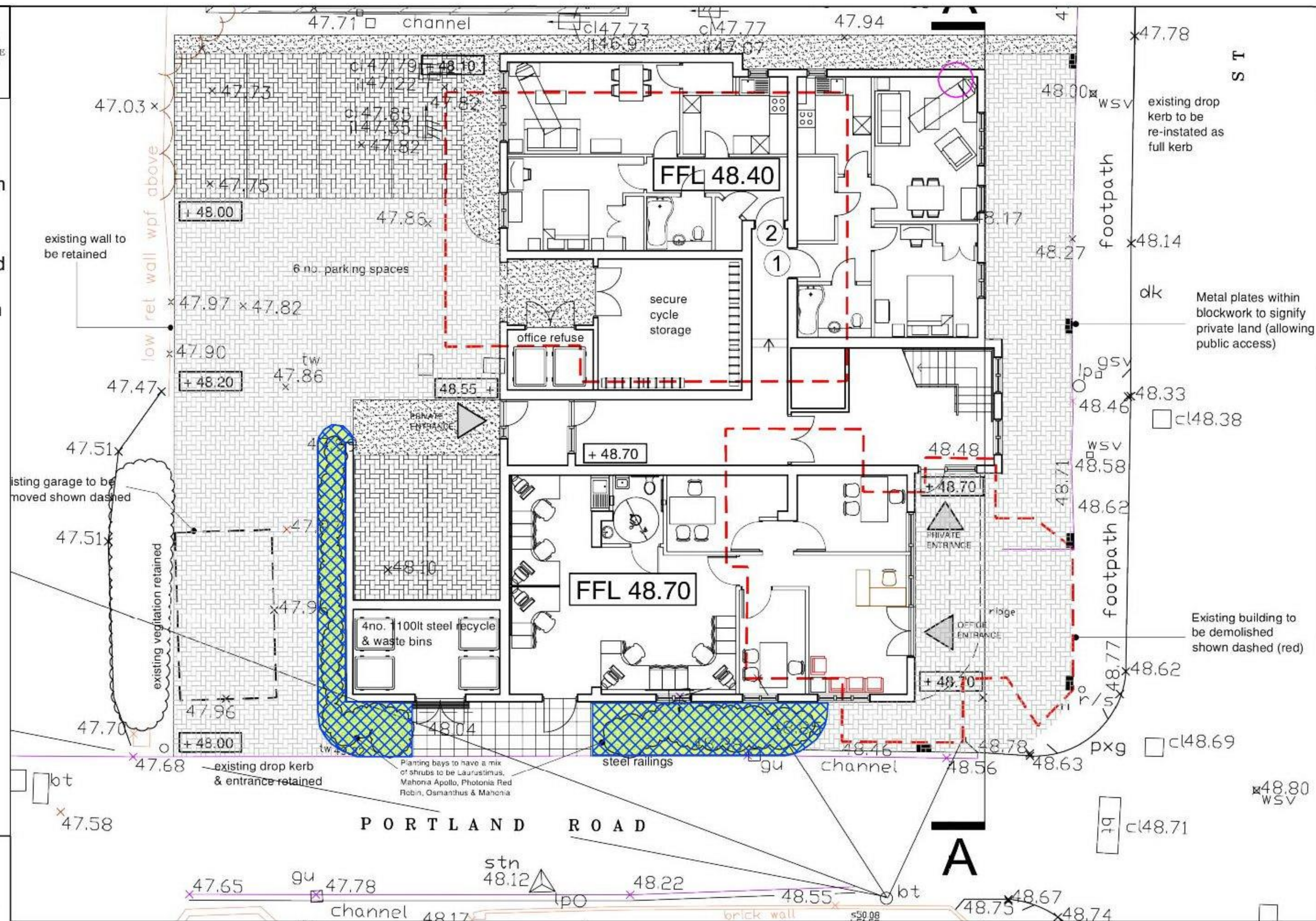
Constituent	Unit	GAC	Origin of Risk Assessment Value
Arsenic	mg/kg	37	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Arsenic
Beryllium	mg/kg	1.7	LQM CIEH Suitable for Use Levels (S4UL) 2015
Boron	mg/kg	290	
Cadmium	mg/kg	11	
Chromium VI	mg/kg	6	
Chromium III	mg/kg	910	
Lead	mg/kg	200	Category 4 Screening Level (C4SL) utilising exposure parameters from CLEA SR3 report.
Mercury	mg/kg	40	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Mercury
Nickel	mg/kg	180	LQM CIEH Suitable for Use Levels (S4UL) 2015
Selenium	mg/kg	250	
Copper	mg/kg	2400	
Zinc	mg/kg	3700	
Vanadium	mg/kg	410	
Asbestos	%	Non detect	Omnia derived Tier 1 value
Phenol	mg/kg	280	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Cyanide	mg/kg	791	CLEA 1.04 OEC Derived Value
Naphthalene	mg/kg	2.3	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Acenaphthylene	mg/kg	170	
Acenaphthene	mg/kg	210	
Fluorene	mg/kg	170	
Phenanthrene	mg/kg	95	
Anthracene	mg/kg	2400	
Fluoranthene	mg/kg	280	
Pyrene	mg/kg	620	
Benzo(a)Anthracene ¹	mg/kg	7.2	
Chrysene	mg/kg	15	
Benzo(b)Fluoranthene	mg/kg	2.6	
Benzo(k)Fluoranthene	mg/kg	77	
Benzo(a)Pyrene	mg/kg	2.2	

Constituent	Unit	GAC	Origin of Risk Assessment Value
Indeno(123-cd)Pyrene	mg/kg	27	
Dibenzo(a,h)Anthracene	mg/kg	0.24	
Benzo(ghi)Perylene	mg/kg	320	
Banded TPH			
Aliphatic EC 5-6	mg/kg	42	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM, utilising the most conservative of the Ali/Aro chain lengths.
Aliphatic EC >6-8	mg/kg	100	
Aliphatic EC >8-10	mg/kg	27	
Aromatic EC> 10-12	mg/kg	74	
Aromatic EC> 12-16	mg/kg	140	
Aromatic EC> 16-21	mg/kg	260	
Aromatic EC> 21-35	mg/kg	1100	
Aromatic EC> 35-44	mg/kg	1100	

Attachment 1

Figures

Upon placement of membrane, to be backfilled with chemically suitable topsoil soil at least 300mm thickness.



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OMNIA
ENVIRONMENTAL CONSULTING LTD.

Job Title:

St. Georges Walk

Client:

PMC Construction &
Development Ltd.

Project No:

A10635

Date:

28/10/2015

Drawn By:

D. Pokoj

Authorised By:

T.Mitchell

Scale:

Notes:

DrawingTitle:

Figure 1. Remediation