

# MURRAY RIX LIMITED

## REMEDIATION METHOD STATEMENT FOR PLOT 1, CENTRAL SOMERS TOWN, LONDON

Report No: 17-2642r(a)

August 2017

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**Report Title:** REMEDIATION METHOD STATEMENT FOR PLOT 1, CENTRAL SOMERS TOWN, LONDON

**Report No:** 17-2642r(a)


**Report Status:** Final

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## REMEDIATION METHOD STATEMENT FOR PLOT 1, CENTRAL SOMERS TOWN, LONDON

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**REMEDIATION METHOD STATEMENT FOR PLOT 1, CENTRAL SOMERS TOWN, LONDON**

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**1. INTRODUCTION**

- 1.1 The purpose of this report is to provide a remediation strategy and to set down the sequential operations proposed to address the remediation of contamination during the redevelopment of an existing community play area referred to as Plot 1, Central Somers Town, London. This report was prepared on instructions given by the Client, Neilcott Construction Ltd (Excel House, Cray Avenue, Orpington, Kent, BR5 3ST).
- 1.2 The site has been the subject of a Phase 1 Desk Study and two intrusive investigations as referenced below.
- Pell Frischmann Phase 1 Geo-environmental Desk Study Edith Neville Primary School and Children's Centre – A CIP Project, Camden. May 2013 R12794/G001A.
  - ESG Central Somers Town, London. Factual and Interpretative Report on Ground Investigation. Volume 1 Factual Report. Report No: D5061-15/1 September 2016.
  - ESG Central Somers Town, London. Factual and Interpretative Report on Ground Investigation. Volume 2 Interpretative Report. Report No: D5061-15/2 September 2016.
- 1.3 The remedial proposals presented in this report are to leave the site fit for its proposed end use for a new children's nursery with play areas and some soft landscaping, and a community area again with some soft landscaping. The layout of the proposed landscaping is included as Figure 2 and Figure 3, Appendix (i).

**2. SITE LOCATION AND SETTING**

- 2.1 The area under consideration comprises a children's play area, an outdoor fitness area and a community play project including sports pitches, which is located to the north west of Kings Cross St Pancras Station and north east of Euston Station, London as shown on Figure 1, Appendix (i). It should be noted that the desk study and investigation reports cover a larger area than Plot 1 including land to the east and south east.
- 2.2 Historically the site comprised residential properties until the houses were demolished in the late 1960s and replaced with a park. Full details are given in the Phase 1 Desk Study Report by Pell Frischmann.

**3. FINDINGS OF THE INVESTIGATIONS AND ASSESSMENTS**

- 3.1 The investigation undertaken by ESG Limited included analysis of made ground for a range of contaminants including heavy metals, Polyaromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH), phenol, cyanide, polychlorinated biphenyls (PCBs) and asbestos. Reference should be made to the reports of section 1.2 for full details of the site, the investigation carried out and the available test results.
- 3.2 The investigation did not indicate widespread contamination but loose asbestos fibres were identified in TP2. Also of note is that potential asbestos containing materials were recorded by ESG on adjoining land to the east and south east (WS7 and WS9) although no laboratory testing was undertaken to confirm the presence of asbestos in these locations.
- 3.3 Gas monitoring has also been carried out which does not appear to indicate the need for gas protection measures within the proposed development.

**4. REMEDIATION REQUIREMENTS**

- 4.1 The risk assessments included in the reports of Section 1.2 have indicated potential risks to end users as detailed below:

- Loose asbestos fibres in TP2.

In achieving effective remediation of the development area it will be necessary to break the source-pathway-receptor pollution linkages. The pathways which have been identified as of concern to end users are most relevant in any areas of soft landscaping. Where the contamination is present beneath buildings, paving, other hard cover, and artificial surfaces then risks to end users are reduced or negated and remedial action may not be necessary.

Risks to construction works and future maintenance personnel may exist where asbestos fibres or asbestos containing materials are present. An asbestos management plan should be put in place for the construction phase as a minimum precaution. Further investigation and assessment of asbestos containing materials and asbestos quantities is considered prudent in order to establish appropriate methods of management/mitigation during the construction phase. An asbestos in soils management plan may be required to detail how groundworks should be carried out. Particular consideration may need to be given to the design of drainage measures beneath permeable surfaces to limit the spread of any contamination including asbestos fibres. Additional remedial measures may be required if asbestos is found elsewhere at the site, such remedial measures could include removal of impacted made ground, screening of made ground to remove bulk asbestos product

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and ensure residual asbestos concentrations within soil are within a suitable limit, and encapsulation of residual asbestos below a suitable capping layer including a geotextile membrane.

- 4.2 In order to remediate the site the following measures are currently proposed:
- Removal of the made ground locally around TP2 where asbestos was identified by ESG. Check testing will be required to ensure only suitable materials remain on site.
  - In areas of soft landscaping a suitable thickness of clean inert soils is to be placed to provide a cover between end users and the underlying soils. A cover thickness of 300mm would be considered appropriate in conjunction with a geotextile membrane.
- 4.3 Following clearance of the site an inspection should be undertaken by a suitably experienced Engineer to identify any further potential sources of contamination and to confirm that the foregoing remedial approach is still appropriate.
- 4.4 Following the remedial works proposed in section 4.2 above and any additional testing and assessments it may be appropriate to adopt normal water supply pipes rather than barrier pipe. However, advice should be sought from the water supply company regarding the specification of appropriate water supply pipes. Details of the water supply pipe should be forwarded to the Local Authority for their records.
- 4.5 Any materials excavated and removed from the site should be disposed of at a suitably licensed disposal facility. Copies of all conveyance and disposal notes should be retained for inclusion in the validation report.
- 4.6 Any topsoil or additional materials imported to site for use in soft landscaping areas will need to be independently sampled and tested to confirm they are uncontaminated and fit for purpose. Details of the recommended testing suite and acceptance criteria are included in Appendix (iii).
- 4.7 The remedial works will need to be checked and validated by an Independent Engineer and as in section 6.2 below, a validation report will need to be drawn up on completion of the work.
- 4.8 If any unexpected contamination is encountered during the works these will be reported to the Engineer and the Local Authority so that any additional works necessary can be agreed. An asbestos discovery plan should be drawn up to ensure any such materials are dealt with in a safe and appropriate manner.
- 4.9 All remediation works will be carried out to the satisfaction of the Local Authority.

**5. ENVIRONMENTAL PROTECTION**

- 5.1 There are requirements for site works to comply with all relevant guidance and legislation. In particular, attention is drawn to the HSE Document 'Protection of workers and the general public during development of contaminated land'.
- 5.2 Reasonable steps should be taken to reduce the risk of raising dust caused by the excavation and movement of site materials during the works. This is to reduce the risk to site operatives and to reduce the risk of nuisance to neighbouring properties.
- 5.3 There is a standing requirement to ensure that all reasonable precautions are taken to prevent pollution arising from remedial and associated works. No potentially polluting materials or liquids are permitted to enter any controlled water. This includes groundwater and surface water. Works should be undertaken in such a manner as to prevent this occurring or to prevent any other pollution event. Excavated materials must be stockpiled on an impermeable surface to prevent contamination of underlying soils. Water draining from stockpiles must be prevented from entering excavations or contaminating surface soils.

**6. CERTIFICATION OF WORKS**

- 6.1 The remediation works will be inspected and overseen by a suitably qualified and experienced independent Engineer.
- 6.2 On completion of the works a validation report should be compiled for submission to the local authority. The validation report should include the following information:
- The sequence of operations undertaken in remediation of the site.
  - Records of inspections undertaken.
  - Records of materials excavated, the location of the excavation(s) and any testing carried out.
  - The destination and volumes of materials removed from site, together with details of the consignment and disposal notes.
  - The volume, source and independent chemical analysis of any materials imported to site.
  - Photographic record.
  - Details of all other matters that come to light during the works.
  - A statement on the suitability of the site for end use and that the remediation has been carried out to the desired standard.

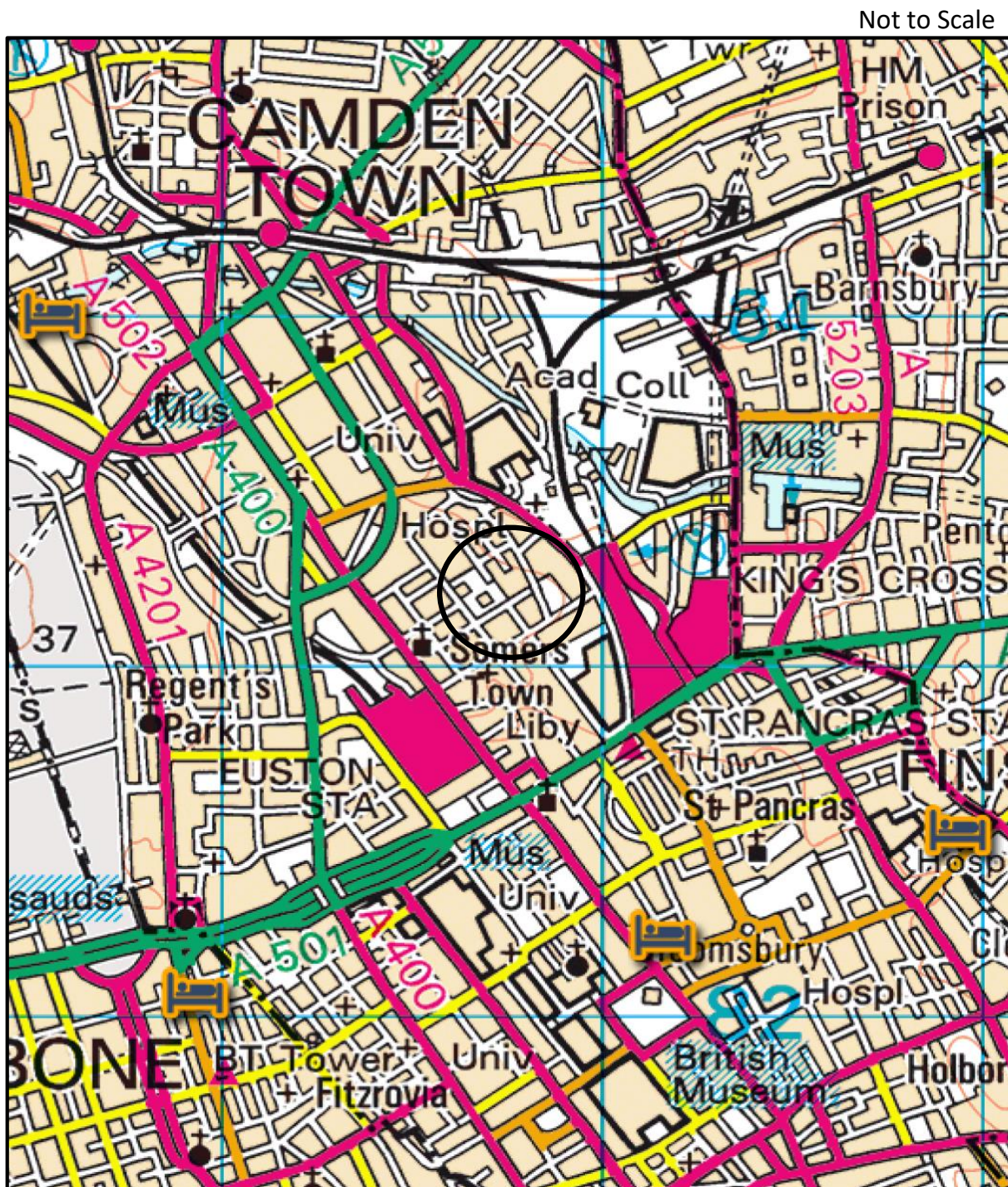
- The report should be compiled in general accordance with the requirements of CLR11 and the EA Verification of Remediation of Land Contamination SC030114/R1.



R. Jones BSc, MSc, C Geol, FGS



## Appendix (i) Figures



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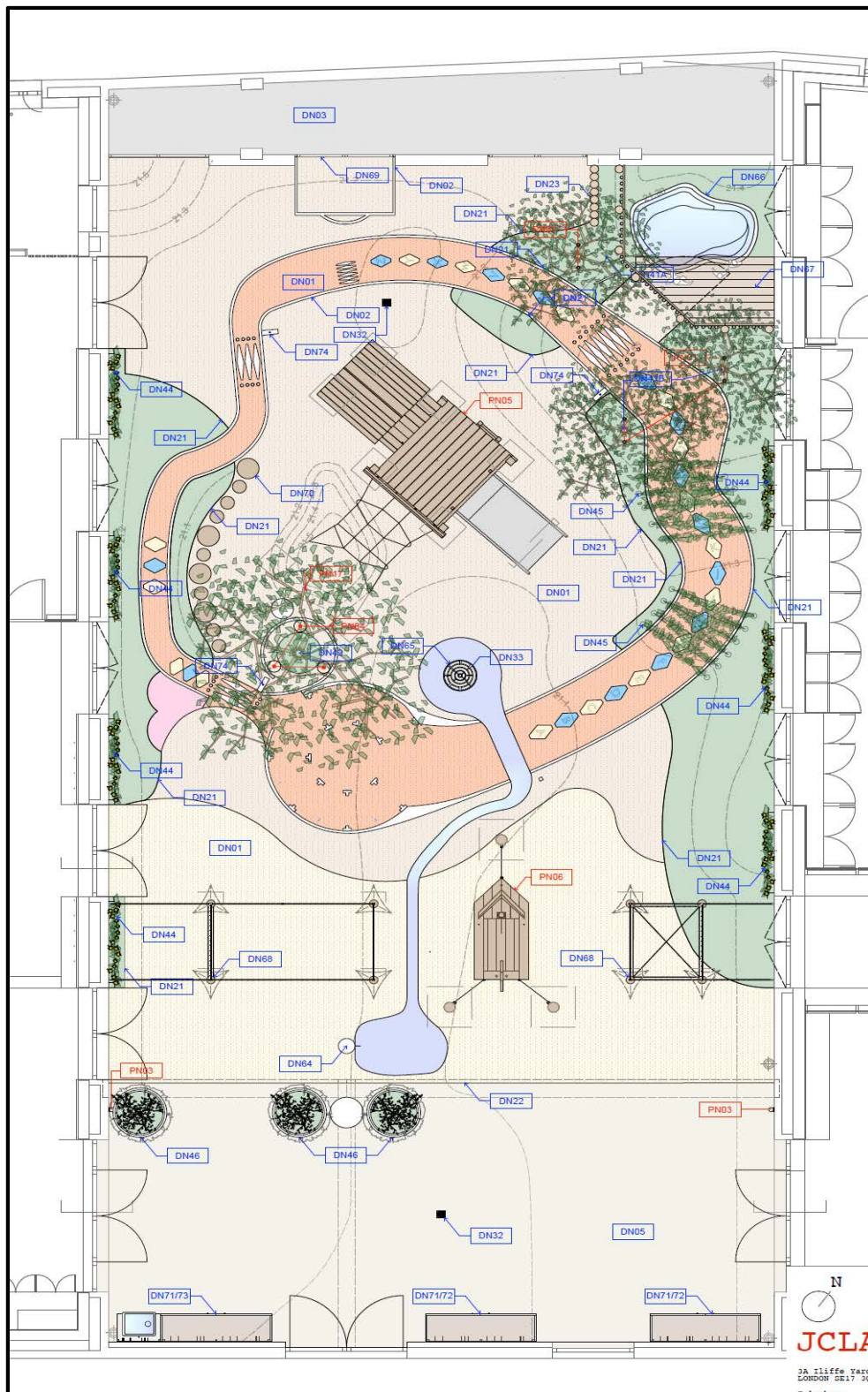
**Location:**

Plot 1  
Central Somers Town  
London

**Murray Rix:**

**Job No:** 17-2642r(a)  
**Date:** August 2017  
**Figure 1** Site Location Plan





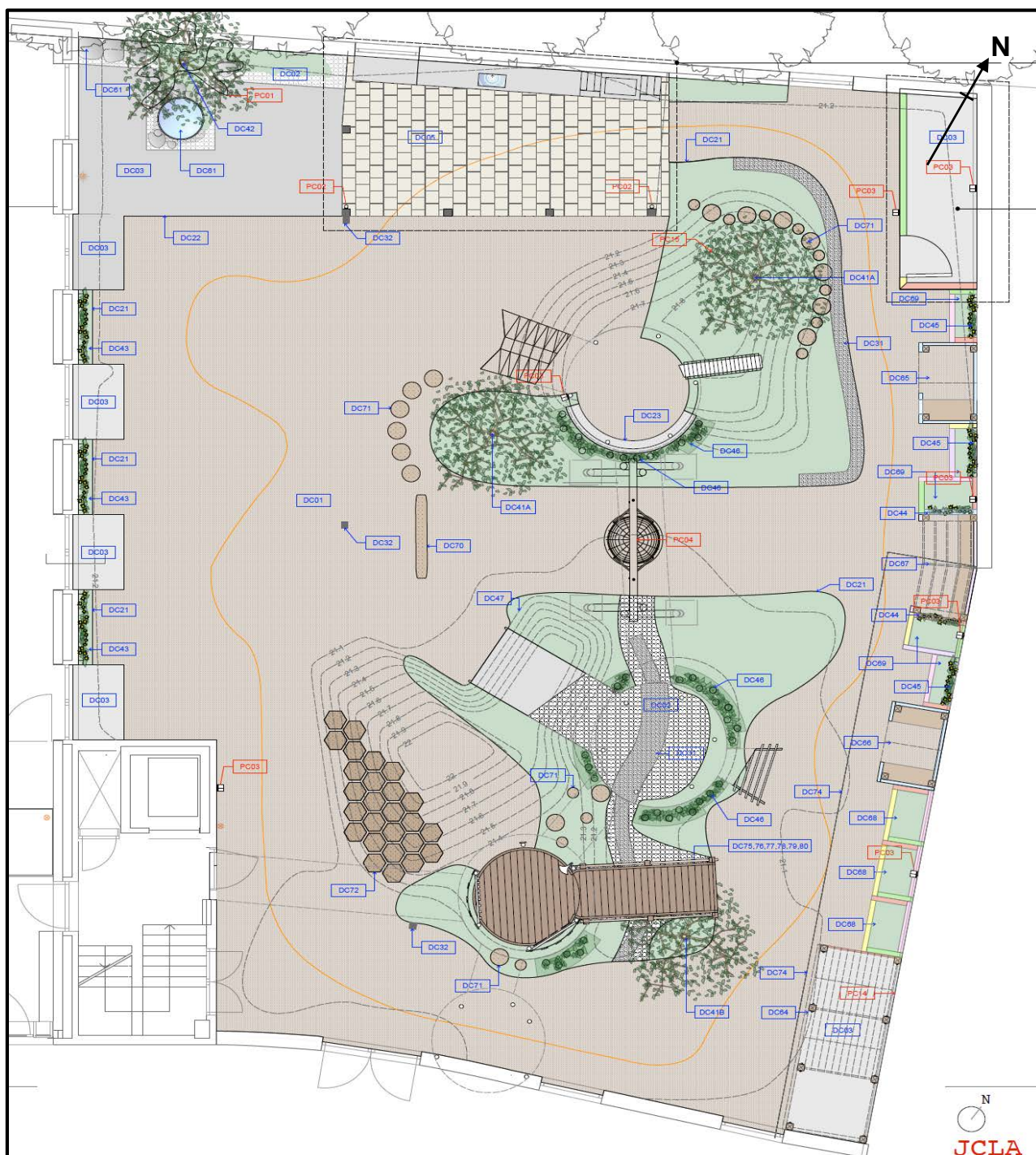
Not to Scale



Extract from JCLA  
Drawing No:  
ST065.F.001.NL dated  
27.01.17 Nursery  
Playground  
Landscape Plan

<b>Location:</b>	Plot 1 - Proposed Nursery	<b>Murray Rix:</b>	
	Central Somers Town	<b>Job No:</b>	17-2642r(a)
	London	<b>Date:</b>	August 2017
		<b>Figure 2</b>	Proposed Plan

Not to Scale



Extract from JCLA Drawing No: ST065.F.01.CL dated 27.01.17 Community Landscape Plan

**Location:**

Plot 1 - Community Space  
Central Somers Town  
London

**Murray Rix:**

**Job No:** 17-2642r(a)

**Date:** August 2017

**Figure 3** Proposed Plan

**Appendix (ii)**  
**Sampling Suite and Acceptance Criteria for Imported Materials**



## Details of Recommended Testing Suite for Imported Materials and Acceptance Criteria

### Heavy Metals

Contaminant	Acceptance Criteria (mg/kg)
Arsenic	37
Cadmium	11
Chromium VI	6
Elemental Mercury	1.2
Lead	200
Selenium	250
Copper	2400
Nickel	180
Zinc	3700

### Speciated PAH

Contaminant	Acceptance Criteria (mg/kg)
Acenaphthene	510
Acenaphthylene	420
Anthracene	5400
Benzo(a)Anthracene	11
Benzo(a)Pyrene	2.7
Benzo(b)Fluoranthene	3.3
Benzo(k)Fluoranthene	93
Benzo(ghi)Perylene	340
Chrysene	22
Dibenz(ah)Anthracene	0.28
Fluoranthene	560
Fluorene	400
Indeno(123cd)Pyrene	36
Naphthalene	5.6
Phenanthrene	220
Pyrene	1200

### Asbestos

Contaminant	Acceptance Criteria
Asbestos	None Detected

### TPH CWG Analysis

Contaminant	Acceptance Criteria (mg/kg)
TPH C5-6 aliphatic	78
TPH C6-8 aliphatic	230
TPH C8-10 aliphatic	65
TPH C10-12 aliphatic	330
TPH C12-16 aliphatic	2400
TPH C16-21 aliphatic	92000
TPH C21-35 aliphatic	92000
TPH C6-7 aromatic	140
TPH C7-8 aromatic	290
TPH C8-10 aromatic	83
TPH C10-12 aromatic	180
TPH C12-16 aromatic	330
TPH C16-21 aromatic	540
TPH C21-35 aromatic	1500

The acceptance criteria assume a soil organic matter content of 2.5% and are based on the most stringent criteria for a residential end use with uptake of homegrown vegetables. If a higher organic matter content is measured the acceptance criteria may be varied in line with the LQM/CIEH 2014 guidelines.

In the absence of TPH CWG Analysis the following criteria may be considered acceptable.

### Banded TPH Analysis

Determinand	Acceptance Criteria (mg/kg)
TPH EC 10-12	180
TPH EC 12-16	330
TPH EC 16-21	540
TPH EC 21-35	1500
TPH EC 35-40	1500

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