Remediation Method Statement & Environmental Management Plan

Fox Primary School
Kensington Place
London
W8 7PP

Document Ref : C326E.RBK RMS-EMP-01 Rev 3 [FINAL]

15th May 2015
Document Type: Remediation Method Statement & Environmental Management Plan

Description: Site Enabling Works including Excavation & Disposal of
Asbestos Contaminated Soils

Site: Fox Primary School
Kensington Place
London
W8 7PP

Prepared by: Jamie Mitchell
Soilfix (East) Limited
23 Bellingham Lane
Rayleigh
Essex, SS6 7ED
Tel. (01268) 502272

Reviewed by: Steve Jackson
Soilfix (East) Limited
23 Bellingham Lane
Rayleigh
Essex, SS6 7ED
Tel. (01268) 502272

Client: Royal Borough of Kensington & Chelsea

Document Ref: C326E.RBK RMS-EMP-01 Rev3

Issued: 15th May 2015

<table>
<thead>
<tr>
<th>Document Ref</th>
<th>Revision;</th>
<th>Date;</th>
<th>Note;</th>
</tr>
</thead>
<tbody>
<tr>
<td>C326E.RBK RMS-EMP</td>
<td>REV 3</td>
<td>15.05.15</td>
<td>FINAL</td>
</tr>
</tbody>
</table>

Author; [Signature]
Approved by; [Signature]
## CONTENTS

1 Introduction .......................................................................................................................... 5
  1.1 Introduction .......................................................................................................................... 5
  1.2 Objectives ............................................................................................................................ 5
  1.3 Roles & Responsibilities ....................................................................................................... 6

2 Background ............................................................................................................................. 7
  2.1 Site Location & Description .................................................................................................. 7
  2.2 Geology ................................................................................................................................ 7
  2.3 Hydrogeology & Hydrology .................................................................................................. 7
  2.4 Summary of Contaminants in Soil Distribution ................................................................. 7
     2.4.1 Asbestos Containing Materials ...................................................................................... 7
     2.4.2 Other Contaminants ...................................................................................................... 8
  2.5 Summary of Contaminants in Groundwater ....................................................................... 9
  2.6 Summary of Associated Remediation & Enabling Works .................................................. 10
     2.6.1 Site Enabling / Demolition Works: ............................................................................. 10
     2.6.2 Embankment Excavation & Remediation Works to the Playground: ......................... 10
     2.6.3 Temporary Works: ....................................................................................................... 11
     2.6.4 Site Verification, Monitoring & Reporting: .................................................................. 11

3 Start-up Procedure .................................................................................................................. 12

4 Methodology of Works .......................................................................................................... 13
  4.1 Introduction .......................................................................................................................... 13
  4.2 Site Set Up ........................................................................................................................... 13
  4.3 Site Specific Hazards .......................................................................................................... 13
  4.4 Buried Utility Survey .......................................................................................................... 14
  4.5 Tree Vegetation Clearance ................................................................................................. 14
  4.6 Demolition of Structures and Retaining Walls ................................................................... 14
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7</td>
<td>Erection of Hoarding Gates</td>
<td>16</td>
</tr>
<tr>
<td>4.8</td>
<td>Controlled Excavation &amp; Disposal of Soils from Embankment</td>
<td>16</td>
</tr>
<tr>
<td>4.9</td>
<td>Management of Asbestos in Soils</td>
<td>17</td>
</tr>
<tr>
<td>4.10</td>
<td>Controlled Excavation &amp; Disposal from Soils in Playground</td>
<td>18</td>
</tr>
<tr>
<td>4.11</td>
<td>Temporary Retainment Works</td>
<td>18</td>
</tr>
<tr>
<td>4.12</td>
<td>Survey &amp; Validation Sampling of Excavations</td>
<td>19</td>
</tr>
<tr>
<td>4.13</td>
<td>Waste Disposal</td>
<td>19</td>
</tr>
<tr>
<td>4.14</td>
<td>Stockpile Management</td>
<td>19</td>
</tr>
<tr>
<td>4.15</td>
<td>Discovery Strategy for Unexpected Ground Conditions</td>
<td>20</td>
</tr>
<tr>
<td>4.16</td>
<td>Traffic Management</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>Health &amp; Safety Management</td>
<td>22</td>
</tr>
<tr>
<td>5.1</td>
<td>General Health &amp; Safety Management</td>
<td>22</td>
</tr>
<tr>
<td>5.1.1</td>
<td>Personnel Requirements</td>
<td>22</td>
</tr>
<tr>
<td>5.1.2</td>
<td>Site task requirements</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>Environmental Management Plan</td>
<td>24</td>
</tr>
<tr>
<td>6.1</td>
<td>Introduction &amp; Standards Setting</td>
<td>24</td>
</tr>
<tr>
<td>6.2</td>
<td>Noise</td>
<td>24</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Methodology</td>
<td>25</td>
</tr>
<tr>
<td>6.2.2</td>
<td>Baseline Monitoring</td>
<td>25</td>
</tr>
<tr>
<td>6.2.3</td>
<td>Operational Monitoring</td>
<td>25</td>
</tr>
<tr>
<td>6.2.4</td>
<td>Noise Control Measures</td>
<td>25</td>
</tr>
<tr>
<td>6.2.5</td>
<td>Action Levels</td>
<td>26</td>
</tr>
<tr>
<td>6.2.6</td>
<td>Emission Action Plan</td>
<td>26</td>
</tr>
<tr>
<td>6.3</td>
<td>Dust – General Environmental Dust</td>
<td>27</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Methodology</td>
<td>27</td>
</tr>
<tr>
<td>6.3.2</td>
<td>Baseline Monitoring</td>
<td>27</td>
</tr>
<tr>
<td>6.3.3</td>
<td>Operational Monitoring</td>
<td>27</td>
</tr>
<tr>
<td>6.3.4</td>
<td>Dust Control Measures</td>
<td>28</td>
</tr>
</tbody>
</table>
6.3.5 Trigger Levels ............................................................................................................................ 28
6.3.6 Action Levels ................................................................................................................................ 28
6.3.7 Emission Action Plan .................................................................................................................... 28

6.4 Dust – Respirable Fibres including Asbestos ................................................................................ 29
   6.4.1 Introduction ................................................................................................................................ 29
   6.4.2 Methodology ................................................................................................................................ 29
   6.4.3 Baseline Monitoring ....................................................................................................................... 30
   6.4.4 Operational Monitoring ................................................................................................................ 30
   6.4.5 Dust / Fibre Control Measures ....................................................................................................... 31
   6.4.6 Trigger Levels .............................................................................................................................. 31
   6.4.7 Action Level ................................................................................................................................ 31
   6.4.8 Emission Action Plan .................................................................................................................... 31

6.5 Supplementary Environmental Monitoring - Lead ........................................................................... 32

6.6 Volatile Organic Compounds, Gases and Odours ........................................................................... 33
   6.6.1 Methodology ................................................................................................................................ 33
   6.6.2 Baseline monitoring ....................................................................................................................... 33
   6.6.3 Operational Monitoring ................................................................................................................ 33
   6.6.4 Emission Control Measures .......................................................................................................... 33
   6.6.5 Emissions Action Plan ................................................................................................................... 33

6.7 Groundwater & Surface Water ......................................................................................................... 34
   6.7.1 Emission Control Measures .......................................................................................................... 34
   6.7.2 Emissions Action Plan ................................................................................................................... 34

7 Site Records & Completion Report ..................................................................................................... 35

Appendices

Appendix A Drawings
Appendix B Golder Associates Hazardous Materials Survey
Appendix C Risk Assessments & Method Statement for Demolition Works (Gilpin Demolition)
Appendix D Discovery Strategy for Unexpected Ground Conditions
1 Introduction

1.1 Introduction

Soilfix (East) Limited (Soilfix) has been contracted by the Royal Borough of Kensington & Chelsea (RBKC) to carry out site enabling works at Fox Primary School, Kensington Place, London, W8 7PP (the ‘Site’).

RBKC has been granted planning permission to redevelop the Site to increase the school capacity. An area of earth bank within the redevelopment has been identified as an area which requires removal to facilitate construction. This earth bank area ("the Embankment") currently provides a partially screened outdoor learning area, with dense foliage, vegetation and raised planting beds creating a mini eco-habitat / green space which is used by school children. Other areas of soft landscaping requiring remediation are distributed in playground and raised planter areas to the north, east and south of the school building ("the Playground").

Site enabling works are required by a specialist contractor prior to handover to a Main Build Contractor (Galliford Try) who will carry out the site redevelopment works.

This remediation method statement and Environmental Management Plan (RMS & EMP) has been developed to support the site enabling works involving soils identified to contain trace quantities of asbestiform fibres (termed asbestos contaminated soils or ACS), as well as small quantities of bulk asbestos containing materials (ACM’s) that may potentially be encountered locally in excavated Made Ground. The risk associated with the trace quantities currently identified is not such that a licensed asbestos contractor is required to carry out the works. However to comply with the Control of Asbestos Regulations (CAR) 2012, the works do need to be notified to the Health & Safety Executive (HSE) under a Notifiable Non-Licensable Works (NNLW) Notification and works managed accordingly.

Soilfix has liaised with the HSE regarding the proposed works and associated monitoring / controls to be implemented. The HSE confirmed the measures in place to be satisfactory and that the works can proceed under an NNLW Notification. To comply with the NNLW notification, the works need to be carried out in accordance with a Site Specific Risk Assessment and Method Statement to demonstrate compliance with CAR2012 and approved Code of Practice Control of Asbestos Regulations 2012 (CAR 2012), Approved Code of Practice (L143) - "Work with Materials Containing Asbestos".

In addition to CAR2012 and supporting Code of Practice, this method statement has also been compiled with due regard for CIRIA Publication C733 “Asbestos in Soil and Made Ground: a Guide to Understanding and Managing Risks” to provide a robust approach to both health and safety as well as environmental monitoring and management.

Additional aspects of the Site Enabling works, including site clearance, hazardous materials removal, demolition, temporary works, environmental monitoring & controls are also discussed in this over-arching method statement. In the case of hazardous materials removal, this comprises the controlled removal of all materials containing lead-based paints either prior to (as much as reasonably practicable) or during the demolition works, fully in accordance with the Control of Lead at Work (CLAW) Regulations 2002.

1.2 Objectives

The principle objectives of the work are set out below:

- Safely remove all materials identified to contain lead-based paints fully in accordance with CLAW 2002, prior to (where practicable) and during demolition works;
• Safely demolish and remove three redundant structures (namely the toilet block, cottage building and boundary wall) to facilitate ongoing works;

• Safely remove any asbestos contaminated soils from the site strictly in accordance with CAR 2012 and dispose of them to a suitably licenced facility in accordance with the Duty of Care requirements of the Environmental Protection Act (1990);

• Remove the embankment area down to the existing ground level in a controlled manner with appropriate temporary support;

• Safely remove contaminated soils from the playground areas;

• To ensure that all works minimise disruption and associated nuisance to existing school staff/pupils and surrounding resident to as low as reasonably practicable;

• To ensure that environmental emissions associated with noise, dust, respirable fibres and odour is robustly managed and monitored as low as reasonably practicable and below prescribed limits;

• To leave the site in a suitable condition ready for the subsequent works due to commence by the main contractor for the redevelopment works.

1.3 Roles & Responsibilities

Roles and responsibilities of all parties involved in the project are listed in Table 1 below:

<table>
<thead>
<tr>
<th>Name of party</th>
<th>Responsible Person(s)</th>
<th>Function / Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC Harris</td>
<td>Christian Beal</td>
<td>Project Manager</td>
</tr>
<tr>
<td>Golder Associates</td>
<td>Giles Murray / Jeff Thornton, Senior Consultants</td>
<td>Independent Environmental Consultants</td>
</tr>
<tr>
<td>Soilfix (East) Limited</td>
<td>(Richard Mabe &amp; Steve Jackson, Directors)</td>
<td>Enabling Works Contractor</td>
</tr>
<tr>
<td></td>
<td>Peter Rowe (Site Manager)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chris Ball (Assistant Site Manager)</td>
<td></td>
</tr>
<tr>
<td>Environment Agency</td>
<td>-</td>
<td>Controlled Waters / Waste Management Regulator</td>
</tr>
<tr>
<td>Royal Borough of Kensington &amp; Chelsea</td>
<td>Vernon Gibbons</td>
<td>RBKC Project Manager</td>
</tr>
<tr>
<td></td>
<td>Nayani Chandran</td>
<td>RBKC Contaminated Land Officer</td>
</tr>
<tr>
<td>Galliford Try</td>
<td>TBA</td>
<td>Main Contractor responsible for the development of the site after enabling works have been completed.</td>
</tr>
<tr>
<td>Fox Primary School</td>
<td>Paul Cotter (Head Teacher) &amp; Harry Williams (Site Manager)</td>
<td>Existing Site Users</td>
</tr>
</tbody>
</table>


2 Background

2.1 Site Location & Description

The site address is:

Fox Primary School, Kensington Place, London. W8 7PP

National Grid Reference: TQ 25246 80272

Site Area: 0.85 Hectares (approx.)

2.2 Geology

Golder completed the preliminary environmental assessment in May 2013 which concluded that the Embankment dates from the nineteenth century.

The Embankment is an historical feature shown to be present on the 1879 historic map. It formed earthworks associated with the West Middlesex Waterworks Reservoir. Based on boreholes and shallow trial pits excavated across the Embankment, ground conditions comprise Made Ground, the base of which was only identified in one borehole at 3.1mbgl (BHGA13-1). The natural underlying strata of firm, becoming soft to firm, locally tight grey and orange brown mottled sandy silty CLAY was encountered at this location/depth.

The soils making up the Embankment comprised brown and grey clays and silts. Shallow soils in the northern and central areas of the embankment are relatively organic rich (leaf litter, bark chips, rootlets). There is more evidence of anthropogenic materials typically within the upper 0.5 m of the ground profile and the frequency of these materials decreases with depth.

The southern end of the Embankment has been developed as an allotment with raised planting beds and areas of decorative aggregate. There is evidence of imported compost in the raised beds and intermixing between the compost and Made Ground sub-soil. Raised beds typically have no liner or base and are formed using sleepers laid directly onto the Made Ground sub-soil and therefore susceptible to mixing of placed compost and sub-soil.

2.3 Hydrogeology & Hydrology

No groundwater was encountered in any of the boreholes over the timescale that the boreholes were open for.

2.4 Summary of Contaminants in Soil Distribution

This summary provides an overview of the contaminants discovered during Golder’s investigative works.

2.4.1 Asbestos Containing Materials

Shallow soil samples collected from the Embankment were found to contain asbestos fibres and contaminants at concentrations exceeding published generic assessment criteria.

Asbestos fibres and bulk asbestos materials (asbestos cement and insulation) were detected in shallow soils throughout the Embankment. Based on the work undertaken, neither asbestos in soils or asbestos bulk
materials were observed or detected by the laboratory at depths greater than 0.5mbgl. Laboratory analysis undertaken to quantify the amount of asbestos in soils has reported the mass to be <0.001 % by weight.

Asbestos fibres were also identified in shallow soils in some raised beds in the allotment area. Laboratory analysis undertaken to quantify the amount of asbestos in soils has reported the mass to be <0.001 % by weight. The source/origin of the asbestos fibres throughout the Embankment is not clear, however Asbestos cement shuttering is partially buried in the ground within the chicken pen which is the likely source of cement fragments in this area. The source of Asbestos fibres and insulation material is unknown, however a small palm-sized pocket of fibrous material containing Amosite was identified at a single location within the Embankment.

Based upon the soil sample analysis there is unlikely to be significant airborne concentrations of asbestos associated with Embankment soils. This is evidenced by the results of air testing undertaken in this area which were confirmed below laboratory limits of quantification using Scanning Electron Microscopy (SEM) based methods. However, precautionary control measures were implemented by RBKC to minimise risk of exposure, including restricted access to the Embankment and placement of a temporary geo-membrane cover in accessible areas.

2.4.2 Other Contaminants

Concentrations of other contaminants of concern in allotment/raised beds were below the conservative GAC. Some soil samples in other Embankment areas exceeded conservative GAC for residential properties with consumption of home grown produce, as follows:

- Vanadium in 3 samples and is equal to the GAC in one sample;
- Lead in 2 samples;
- Benzo(a)pyrene in 7 samples;
- Benzo(a)anthracene in 3 samples;
- Chrysene exceeds in 2 samples;
- Benzo(b)fluoranthene in 2 samples;
- Indeno(123-cd)pyrene in 2 samples; and,
- Dibenz(ah)anthracene in 2 samples.

The following conclusions can be drawn from the phases of investigation carried out in the Playground areas:

- Based on shallow pits excavated within the raised beds and planters in both Playground areas, ground conditions comprise a topsoil of predominantly imported compost which also contained varied amounts of sub-soil material. The sub-soil in these beds/planters included anthropogenic materials including brick and glass fragments. The thickness of imported compost varied and sub soil was present in all locations;
- No bulk asbestos materials have been identified in shallow soils sampled in these areas. Several samples recorded asbestos fibres in soils which were quantified either at or below the laboratory detection limit of 0.001% by weight;
- The source/origin of the asbestos fibres throughout the raised beds/planters is not clear; however, it appears likely to be associated with sub-soil materials and not from imported compost;
Based upon the presence of organic compost on the surface of the raised beds/planters and soil sample analysis results there are unlikely to be in significant airborne concentrations of asbestos associated with Embankment soils. This is evidenced by the results of air testing undertaken in this area; and,

- Concentrations of other contaminants of concern in allotment/raised beds were below the conservative GAC and based on the investigation in this area do not pose an unacceptable risk to Site users;

- Based upon an assessment of risks associated with ACS identified within the Playground Areas, controlled excavation of these materials to a depth of 650mm below surface level. Due to the area being redeveloped it won’t be necessary to replace the area with clean imported soil.

**2.5 Summary of Contaminants in Groundwater**

Groundwater, where encountered, was recorded at a depth of between 2.8 and 5.3mbgl during investigation works carried out by Golder during April 2015 (Reference 14514220446/B.0 Fox School GQRA). 2nr locations were confirmed to be dry.

Only slightly elevated contamination by Cadmium (BH04), Methyl-Tertiary Butyl Ether and TPHC6-8 (BH01) was detected in groundwater samples recovered by Golder. Based upon the site setting Golder concluded that these low concentrations are considered to be of limited significance. Groundwater will not be encountered during the site enabling works.
2.6 Summary of Associated Remediation & Enabling Works

The scope of works covered by this RMS & EMP include:

2.6.1 Site Enabling / Demolition Works:

- Establishment of site compound, segregation / barrier fencing, pedestrian fencing/exclusion zones, environmental monitoring & control measures;
- Establishment of environmental monitoring & control measures to manage risk from noise, dusts etc.;
- Identification and protection (where necessary) existing features to be retained including monitoring boreholes and on-site drainage infrastructure;
- Relocation of equipment / furniture from Embankment and other areas to facilitate ongoing works;
- Felling / shredding of trees, shrubs & other features from embankment to facilitate ongoing works;
- Removal of tree stumps from embankment and disposal or shredding as appropriate;
- Controlled demolition of Fox Cottage, Toilet Block and boundary wall along Kensington Place to allow sufficient safe working space for ongoing soils excavation & disposal. Segregation / removal of rubbish and recyclable materials off-site;
- Lowering of northern embankment and controlled demolition of a sufficient proportion of the northern site boundary where required wall to provide sufficient working space for HGV access / parking during remediation works;
- Controlled demolition of the existing retaining wall (retaining The Embankment soils) running east-west along Kensington Place due to soil removal in The Embankment area (containing tie-anchors); and,
- Erect temporary fencing with polythene and/or debris mesh as appropriate to work locations and timber hoarding with 6m wide double access gate along line of closed footpath (following demolition of the boundary wall / cottage) to required specification. Additionally timber hoarding is to be erected along the entire length of the embankment to prevent unauthorised access as well as surrounding the Main Contractor’s compound area to segregate the northern playground from the works.

2.6.2 Embankment Excavation & Remediation Works to the Playground:

- Carry out controlled, selective excavation of all Made Ground soils within the embankment to a formation level of 30.75m AOD, including soils contaminated with ACMs. Segregate differing waste classifications for separate off-site disposal / treatment in accordance with the Landfill Regulations 2005, where appropriate;
- Remove all excavated Made Ground soils off-site fully in accordance with Waste Duty of Care, providing a complete audit trail of appropriately licensed waste carriage, waste receivers etc.
- Carry out targeted excavation of asbestos contaminated soils from remaining identified areas of impact in the playground areas – materials to be segregated and disposed off-site as above;
- Carry out robust environmental monitoring and controls to demonstrate the works do not pose a risk to workers, Fox School Staff and pupils, as well as the surrounding public; and,
Civilise, level & ram the excavated embankment area upon completion of works, including the formation of a shallow gradient tied into the existing footpath for future construction access, or with shallow retainment as required by the Main Contractor.

2.6.3 Temporary Works:

- Provide temporary protection to the existing footpath along Kensington Place to facilitate access for HGVs;
- Carry out temporary works in accordance with the Enabling Works Structural Specification and the Contractors own Temporary Works design to facilitate safe excavation of soils from The Embankment without compromising structural integrity of adjacent retaining walls. All such works to comply with Party Wall Agreement reached with neighbouring landowner(s) – to be secured by RBKC in advance of the works; and,
- Design and install temporary propping to the exposed retaining wall sections on the north-western and southern elevations upon completing excavation works. The propping solution is to be approved ahead of installation and left in-situ for handover to the Main Contractor who will carry out necessary repairs and refurbishments to the retaining walls as deemed appropriate.

2.6.4 Site Verification, Monitoring & Reporting:

- Carry out regular documented monitoring of noise, general environmental dust, odours & respirable fibres during the works;
- Carry out supplementary periodic monitoring and surface screening for lead in air and on selected surfaces prior to, during and upon completion of works. This is to be carried out independently by Golder on behalf of RBKC;
- Carry out verification testing to the satisfaction of RBKC Contaminated Land Officer of residual in-situ soils left following remediation, as well as imported clean materials at the required frequency;
- Carry out a trial pitting exercise to investigate the foundations supporting retaining walls at required locations. The information gained from this exercise will be incorporated into the final propping / retaining wall design;
- Provide a watching brief during the works by a structural engineer to inspect the retaining walls prior to, during and upon completion of soils excavation works to ensure these boundary features do not present a safety risk and for inclusion in the report for inclusion in the Health & Safety File; and,
- Carry out progress and an as-built survey of all works to support completion reporting.
3 Start-up Procedure

To comply with CAR2012, due to the trace concentrations of ACM currently identified in the vast majority of soils (only 1nr location identified an incidental fragment of fibrous material), due to the lower risk associated with these materials (compared to bulk friable ACM’s such as lagging or insulation board) the works will be carried out under a Notifiable Non-Licensable Works (NNLW) submitted to the Health & Safety Executive (HSE) by Soilfix. The NNLW does not require the Contractor to hold a licence to undertake works involving ACM, however CAR2012 requires the Contractor to have a satisfactory level of competence to work with asbestos, and adopt robust control measures that reflect the degree of risk of working with such materials.

Due to the sensitivities associated with the project, during the advanced project planning process Soilfix has liaised with the HSE Asbestos Licensing Principal Inspector regarding the proposed works and associated monitoring / controls to be implemented. The HSE confirmed the measures in place to be satisfactory and that the works can proceed under an NNLW Notification based upon the current understanding of ACMs in the embankment. A Discovery Strategy was agreed with the HSE in the event that unforeseen, more extensive areas of fibrous ACMs are encountered, as discussed in Section 4.15.

Before commencing works, the Soilfix Site Manager will ensure that all relevant information is made available by the client and has been reviewed:

- Site induction by Soilfix to all site operatives to outline site specific procedures including emergency procedures, site specific hazards;
- As identified above, complete a service scan to confirm location of ALL live services that exist within the working area. It is believed that no services exist within the bund, with the exception of drainage that is within the southern sector below excavation level;
- Prior to excavation and processing of ACM contaminated soils, a 3-stage decontamination unit will be established for access/egress to the quarantined work zone. This is noted within attached site layout plan;
- Prior to any excavation works being undertaken, all service drawings shall be observed to assess the potential for live, temporarily dormant or dead / abandoned services. A buried utility trace will also be carried out to ascertain the location and potential depth of live services – also to identify the location of an existing live gas main that will be disconnected prior to works;
- Prior to commencement of intrusive excavation works, the area will also be scanned with a cable avoidance tool, and site staff shall remain vigilant during excavation for suspected live services;
- A Refurbishment & Demolition (R&D) Survey as well as Hazardous Materials Survey will have been carried out to Fox Cottage and the Toilet Block prior to demolition; and,
- Prior to commencing any works, a detailed photographic summary will be undertaken to record the pre-works condition including all retaining walls, footpaths, roadways, infrastructure etc. This record will be supplemented by a pre-start condition survey of existing retaining walls by a fully qualified structural engineer. Subject to agreement on access, the engineer’s survey will include exposed retaining walls on the opposite side to the Fox site.
4 Methodology of Works

4.1 Introduction

All works carried out by Soilfix will be carried out in accordance with relevant legislation and approved Codes of Practice (ACoPs). In particular HSE Document HSG66 ‘Protection of workers and the general public during the development of contaminated land’ to prevent pollution and associated nuisance from remedial and associated works.

All visitors to the site and site personnel will be inducted by the Soilfix Site Manager, supplemented by a review of relevant Soilfix method statements, risk assessments, site specific rules and associated control measures to be implemented for specific tasks.

An induction register will be maintained in the site office. Risk Assessments and Method Statements will be produced and disseminated for all appropriate tasks and hazards. Personal protective Equipment (PPE) and Respiratory Protective Equipment (RPE) will be worn as and when required.

4.2 Site Set Up

A site compound area with contractors parking will be established to provide ‘dirty’ / ‘clean’ segregation of the works, with the following welfare facilities established to comply with CDM Regulations:

- Site Office with full first aid facilities;
- Canteen / Drying Room;
- 2+1 Toilet Block hot/cold running water; and
- Lockable Store.

Relevant safety signage will be placed around the safety fencing to warn persons of works and inherent hazards involved.

All fuel storage will be bunded to 110% of capacity and spill kits provided in the case of spillage/leakages.

A general site setup plan showing the work areas, welfare facilities, segregation etc. is included in Appendix A.

4.3 Site Specific Hazards

The following site specific hazards have been identified by Soilfix during the initial site visit and subsequent risk assessments carried out:

- Unauthorised entry to working area during works in particular school children;
- Slips, trips & falls on uneven ground;
- Potential for live services within the works area;
- Potential for operatives and unprotected personnel being exposed to ACM fibres if uncontrolled;
- Potential falls from height (plant & personnel);
- Potential collapse of excavation batters and open edges, also retaining walls exposed during excavation; and,
- Environmental & personnel issues associated with works, namely noise, general dust, lead, odours and vibration.
Copies of the proposed site layout plans with work areas and environmental monitoring points are included as Drawings C326E/SF007 in Appendix A.

4.4 Buried Utility Survey
A subsurface utility survey will be carried out using a specialist sub-contractor (Solum Surveying Ltd) prior to commencing intrusive excavation works.

4.5 Tree Vegetation Clearance
Prior to commencing tree clearance, a nesting bird survey will be carried out by a competent ecologist engaged by RBKC.

Following Clearance of identified trees will thereafter be carried out using a site specific risk assessment and method statement by a licensed arboriculturist (KPS Contractors) – this will involve controlled cutting and lowering of branches and trunks by qualified & experienced operatives wearing harnesses fixed to lanyards. All trees/shrubs will be cleared and shredded using on-site plant for removal to an off-site recycling facility. Drawing No SF-001 is included in Appendix A which showing locations of trees which are to be cut down.

4.6 Demolition of Structures and Retaining Walls
Demolition of the Boundary Wall, Cottage Building and Single Storey Toilet block will be carried out in a controlled manner by a specialist demolition sub-contractor (Gilpin Demolition) acting on behalf of Soilfix, following submittal and approval of a Section 80 Demolition Notice to RBKC and receipt of a Section 81 Notice.

A refurbishment & demolition survey has been carried out to Fox Cottage and the Toilet block by OHS Limited acting on behalf of RBKC (Report Ref C-39091_Rev1 dated 27.02.15). This survey has confirmed both buildings to be free from asbestos containing materials.

In addition, as a precautionary measure RBKC has commissioned Golder to carry out a Hazardous Materials Survey of both buildings to identify construction materials that potentially contain hazardous substances such as lead-based paints. The Hazmat survey (copy included in Appendix B) identified various paint coverings and roofing materials that contained varying concentrations of lead within Fox Cottage and the Toilet Block. Following discussion with Golder and Gilpin Demolition, the procedures to be adhered to for safe removal of all lead-containing materials and general dust are summarised below:

- Controlled, manual removal of all materials containing lead-paint finishes such as window sills, doors, frames etc. as part of the soft-stripping phase of demolition works, as much as reasonably practicable. Transfer of materials to a covered waste skip for removal off-site;
- Planned demolition and removal of the Fox Cottage building during the half-term to mitigate the greatest potential risk of exposure of school children and staff to lead in dusts. Likewise, as a minimum, demolition waste containing lead-based finishes will be removed off-site during the half term;
- The majority of lead-paint finishes on internal walls were confirmed to be covered with more recent non-lead containing paints (therefore sealed), however a limited number of walls (2 No.) within Fox Cottage has exposed green lead paint at surface – this will be coated with a water / surfactant mixture to seal prior to mechanical demolition and this masonry sprayed down prior to / during demolition of these during half term;
- Stringent controls over airborne dusts during mechanical demolition in particular where remnant lead-based finishes on walls are identified, through use of dust suppression measures during demolition, sorting and loading of materials into waste skips. Fine water spray suppression will be carried out both from above using a mobile access platform and from ground level using a demolition operative;

- Use of temporary high heras fencing around the demolition works area covered with polythene flush with ground level to contain potential dust emissions. A scaffold platform will be erected along the gable end of Fox Cottage fronting Kensington Place to protect against potential collapse of this wall – this will be covered with debris mesh to contain potential dust emissions;

- Hot-cutting of steel with painted finishes will be avoided as much as practicable due to potential for release of lead-containing vapours, instead using cold-cutting methods such as hydraulic shear attachments. No hot cutting of steelwork containing surface lead-based coatings will be carried out to mitigate potential risks associated with lead vapours;

- Exposed surfaces in close proximity to demolition works to either be covered with polythene or regularly cleaned to remove surface dusts – surfaces will be regularly inspected by Soilfix / Golder during the course of demolition works;

- Upon completion of demolition works, surface hard standing and remaining walls in the works area to be cleaned – due to the significant dilution afforded by water cleaning waters will be channelled into the site drainage system, however if lead swab concentrations are confirmed by Golder to be above action levels these areas will be cleaned using a H-Type vacuum instead;

- All access / egress to and from the demolition works area to be controlled to prevent transfer of dusts or debris into clean working areas, through use of a boot-wash and maintaining protective overalls in the work area (or use of disposable coveralls where appropriate);

- Watching brief provided during demolition works by Soilfix (as Principal Contractor) and Golder (as clients representative) with qualitative / quantitative monitoring for general environmental dusts carried out by Soilfix – targeted cleaning to be carried out where necessary; and,

- Static air sampling for lead, monitoring for dust and swab sampling for lead in settled dusts will be undertaken by Golder prior to demolition, at regular intervals during demolition, and upon completion of demolition. This will allow assessment of requirement for additional controls and / or targeted cleaning. Further details of supplementary monitoring are provided in Section 6.5.

Reference should be made to the Risk Assessment and Method Statements compiled by Gilpin Demolition to carry out the works, together with an amended HazMat Summary to include methods of removal - copies of which are included in Appendix C. Demolition will be carried out in accordance with these documents using specialist plant & equipment operated by trained, competent demolition site operatives under the supervision of a full-time certified Demolition Supervisor (CCDO).

As discussed above, due to the close proximity of the gable end wall of Fox Cottage adjoining Kensington Place, scaffold protection will be erected to mitigate the potential risk of this wall collapsing during demolition. The scaffold will be covered with debris mesh on the outer face to protect against potential dust emissions.

The primary demolition works to remove the boundary wall fronting Kensington Place and the overhead canopy will created working space for demolition of Fox Cottage. A wheeled 360 excavator (rubber-duck) fitted with hydraulic rotating selector grab will be utilised to undertake systematic and controlled demolition,
with this machine positioned in the playground area during half-term to demolish Fox Cottage. To create sufficient working space for the demolition, the boundary wall along Kensington Place (adjoining playground area) will be systematically demolished and removed off-site with the playground surface protected using mats.

As discussed above, when the demolition works are being completed, stringent control over dust and windblown debris will be managed at all times, through segregation of materials and prompt transfer to covered skips, also frequent dust suppression during the course of the works - in particular during mechanical demolition of the buildings to mitigate the potential for releases of trace lead-containing dusts.

Dust suppression will utilise hosing deployed with a fine mist to reduce the potential for generation of surface water in the works area during demolition – any accumulating waters will be channelled to the on-site drainage system (note - the high volume of water utilised during dust suppression will provide significant dilution of trace lead concentrations).

Fox Cottage will be systematically demolished and differing materials segregated during this process to optimise space available. All bricks, blocks, concrete etc. will be segregated for removal off-site for recycling – where lead-based coatings are present within building masonry copies of the results from the HazMat survey will be provided to the receiving facility, and if considered excessive, will be segregated for removal as non-hazardous waste with general construction & demolition (C&D) waste.

The boundary wall fronting Kensington Place in front of The Embankment will be carefully cropped down using the 360 excavator as the soil excavation works behind this feature progress, due to the historic retrospective structural measures that are apparent (i.e. no wall anchors or ties will be removed before that section of wall is reduced). The adjacent footpath will need to remain closed at all times during these works, with appropriate signage displayed to divert pedestrians to the opposite footpath.

The internal block retaining wall will also be systematically reduced as the soil excavation works progress and segregated for separate removal off-site.

4.7 Erection of Hoarding Gates

Timber hoarding will be constructed along the routes of drawing No. BAS-PL-A-X-072 Rev P1 using FSC approved timber using a specialist sub-contractor in accordance with their site specific risk assessment and method statement. This will include a 6m wide double gate at the site entrance.

All hoarding will be well constructed with top and bottom skirts, timber batons and painted on the outside.

4.8 Controlled Excavation & Disposal of Soils from Embankment

Works to enable access for HGVs to remove the bulk of soils from the embankment will need to be carried out – this includes the lowering of the boundary wall adjacent to Kensington Place as discussed above. Following removal of tree and shrub vegetation as well as any furniture currently situated on the Embankment, soil excavation works can progress.

A point will be agreed to saw-cut two vertical "slots" and break into the existing block wall to reveal the soils behind and pull onto the hard standing area, to allow the excavator to form a ramped access. The gradient of this access will be to a safe angle of repose to ensure safe access/egress of the excavator. The 360 excavator will firstly cut a level platform for safe operation and will position tracks parallel to the two retaining walls at all times. A pedestrian exclusion zone will also be established at playground level to prevent any persons standing within the working radius of the machine.
To ensure safe access to site staff, temporary fencing will be established along the toe of the embankment, possibly off-set by a distance of 1m from the top of the block wall to ensure risks of falls from height are negated.

Soils will thereafter excavated in a controlled, sequential manner with the upper 1.0m of the embankment profile excavated in the first instance (due to greatest potential for encountering ACM contaminated Made Ground). The formation will be inspected and additional verification samples collected to supplement the existing dataset which showed no ACM’s to be present below this depth. Soil samples will be collected by an experienced site engineer for asbestos screening at a UKAS accredited laboratory, to confirm full compliance with waste duty of care. Excavation will thereafter be continued in a controlled manner to the basal formation level in accordance with the sequence highlighted in Drawing C326E/SF-006 included in Appendix A.

Soils will initially be loaded directly into self-sheeting tipper lorries situated on the former footprint of the cottage which will be marshalled at all times. Once sufficient space has been established (and the boundary wall removed) a recess will be established for parking the tipper lorry within the site during loading with the footpath closure in place.

Upon completing excavation of the Embankment to the required formation (30.75m AOD which is 0.25m below existing ground level), verification sampling will be carried out at a frequency of 1x representative sample per 50m² (circa 15 nr samples across 750m²) for the same suite of determinants carried out by Golder in the April 2015 investigation together with asbestos, as summarised below:

- Heavy Metals (As, Ba, Be, Cd, Cr(tot), Cu, Pb, Hg, Ni, Se, V, B (water soluble), Zn;
- USEPA 16 priority PAH compounds with total PAH; and,
- Asbestos Screen

This testing suite and frequency will be subject to agreement with RBKC Contaminated Land Officer prior to commencement.

To supplement the above, a final round of reassurance air testing will be carried out at the basal formation for respirable fibres to provide ‘clearance’ testing of the completed Embankment excavation – the method to be adopted is discussed further in Section 6.4.

4.9 Management of Asbestos in Soils

A self-contained decontamination unit confirming to HSG247 (Asbestos – the Licensed Contractors Guide) will be established in close proximity to the working areas. It will include “clean” and “dirty” zones and showers. Under the pre-notified NNLW, the decontamination unit will be utilised as a ‘transit unit’ only. It will not be mandatory for personnel to use the showers during transit.

Operatives carrying out the removal of ACM will enter the decontamination unit via the clean end where they will store clean boots, clothing, etc. They will then pass through the unit into the dirty end where they will put on GREY or BLUE disposable coveralls, half face respiratory fitted with a high efficiency (P3) filter and boots. Operatives will then exit the decontamination unit through the dirty door and make their way to the working area. The P3 respirator will be worn until all ACS have been removed, or as dictated by workplace exposure monitoring confirming no risk to site workers from exposure to asbestos fibres.

If required, the decontamination unit will be powered by its own generator or that of the self-contained welfare unit via an extension lead. The water is fed via a storage tank housed in the unit itself. Boot-wash’s
will be located at the working area and where there is a suspicion of contamination present used prior to continuing to the decontamination unit.

The area will be carefully excavated in nominal lifts under the supervision of the Soilfix site supervisor supported by the site engineer. Movement of soils will be reduced to a practicable minimum using excavator only to reduce risks of fibre release as well as preventing plant traffic at an elevated height. Soils to be removed off site will be carefully loaded into 8-wheeled tipper Lorries using a licensed haulier, and transported under appropriate Duty of Care to an appropriately permitted waste facility.

All Lorries will be sheeted prior to leaving site, and care will be taken to prevent transfer of mud / debris onto roadways. A road-sweeper will be deployed as required to maintain Kensington Place in a clean condition.

The supervisor will be mindful of prevailing wind direction and work upwind of the excavation. To manage the potential for dust emissions, dampening down of soils to be excavated or loaded onto tipper Lorries will be carried out, and/or deployment of fine-mist dust suppression measures. Where incidental fragments of visible ACM’s are observed or extremely dry soils, a fine water mist will be sprayed onto the materials prior to and during excavation using a hand-held sprayer to further manage potential fibre releases.

4.10 Controlled Excavation & Disposal from Soils in Playground

Areas of flower beds and raised planters requiring remediation will be identified and temporary fencing with polythene screens erected around the demarcated work areas – this will establish clear transit routes for soils to be transferred to the cleared Embankment Area for removal off-site.

The planters will be cleared of vegetation and excavated in a controlled manner using a rubber tracked 360 with soils transferred to a dumper for removal to the soil disposal area. Care will be taken to ensure no visible dusts are emitted with suppression measures as per above. Air monitoring for reassurance purposes will also be carried out as per Section 6.4 below. Upon completion of excavation works, the formation will be inspected (to 650mm below surface level), sides of kerbs or planters cleaned of loose debris prior to verification sampling.

Soils at the basal formation will be subjected to verification testing at a frequency of 1 composite sample per 5m² for the suite of determinants listed in Section 4.8. This testing suite and frequency will be subject to agreement with RBKC Contaminated Land Officer prior to commencement.

4.11 Temporary Retainment Works

A temporary retention solution will be installed on the boundary walls exposed along Zones B and C in accordance with a Temporary Works Design with calculations carried out by RSK/Mabey Hire on behalf of Soilfix. The design is based upon the NPS Group details, to include 2nr rows of raking props fixed to the wall at an upper and lower level, at 2m centres. The raking props will be fixed to struts bolted into the walls as the soils are lowered during Embankment excavation, anchored by an appropriately sized concrete block cast in-situ for additional strength. The sequence of propping installation will be subject to a detailed method statement to ensure the boundary walls are not at risk of collapse during the works – likely to comprise a sequential installation and/or on a ‘hit and miss’ basis to allow soils to be removed without significant impediment.
4.12 Survey & Validation Sampling of Excavations

Validation sampling of the base of the embankment shall be undertaken by the Soilfix Remediation Engineer under the supervision of Golder for the purposes of recording the soil conditions remaining at the site.

Following the collection of validation samples, the excavation extents, levels and sample locations shall be subjected to detailed topographical survey by a survey engineer to calculate the volume of excavation and provide a survey of the completed excavation.

It should be noted that the analytical results of this validation sampling will not form a basis for extending the excavations, as such any backfilling required can commence immediately after validation sampling and topographical survey.

4.13 Waste Disposal

Soils will have been segregated during excavation into three different waste classifications, namely:

- Hazardous Classified Soils – EWC Code 17 05 03* Soils and Stones Containing Dangerous Substances
- Non-Hazardous Soils - EWC Code 17 05 04 Soils and Stones other than those mentioned in 17 05 03
- Inert Soil & Stone- EWC Code 17 05 04 Soils and Stones other than those mentioned in 17 05 03

All waste disposal will be carried out fully in accordance with Section 34 of the Environmental Protection Act (Duty of Care), with all loads accompanied by a completed Soilfix waste consignment note signed by the waste producer, waste carrier and waste receiver. Soilfix will ensure that all waste carriers licence and the receiving facility waste permit is current, valid and ‘fit for purpose’ for the particular waste classification.

Each consignment note will be completed to provide relevant information including waste description, EWC Code, quantity of waste, transport method, carrier details & licence no., disposal facility, permit references.

In order to demonstrate full Duty of Care, copies of all relevant permits/licences for the transportation and disposal of wastes will be submitted to Golder in advance of waste disposal operations and included within the Site File.

All hazardous wastes removed off-site will be accompanied by a completed / signed Soilfix Hazardous Waste Consignment Note, and the site will be registered as a Hazardous Waste Producer with the Environment Agency. Any non-hazardous/inert wastes will be accompanied by a standard Soilfix Consignment Note.

A waste disposal duty of care schedule will be compiled upon completion of works to capture all relevant disposal information, for inclusion in the Verification Report with scanned copies of all consignment notes and landfill receipt tickets.

4.14 Stockpile Management

Due to limited space available on site, stockpiling will be kept to a practical minimum and be kept mechanically sealed or covered when not being worked. However, should they be required individual stockpiles will be no greater than 2m in height to ensure control over potential fugitive emissions.

Stockpiles of differing waste disposal classification will be uniquely identified on site with ID boards, detailing stockpile ID, waste classification and date of any samples taken where appropriate.
4.15 Discovery Strategy for Unexpected Ground Conditions

Whilst the investigations previously undertaken on the site are considered to be thorough it remains possible that unexpected soil conditions may be encountered during the process of breaking out and remediation. Examples may include additional areas of gross ACM contamination, potentially licensable works or type of contamination not previously identified as well as possible buried services or land drains.

Where such unexpected conditions are encountered the following approach will be taken:

- Banksman to cease excavation works immediately and advise the Soilfix Management Staff;
- Soilfix Manager to inspect the materials and notify Soilfix Directors and the Project Environmental Consultants (Golder Associates) of materials encountered;
- If required (i.e. lagging or insulation board fragments are present rather than cementitious materials), Golder to attend site to carry out further investigation of the type / extent of asbestos contamination in conjunction with Soilfix. Works to be carried out using comprehensive dampening down with a sprayed water / surfactant mixture;
- Area to be temporarily covered with soils or sheeting, with orange netlon fencing erected around the area of asbestos contamination and appropriate warning signage displayed;
- Golder / Soilfix to request a waiver of the standard 14-day Notification for Licensable Work from the HSE to address the area in a timely and safe manner – the HSE has confirmed to Soilfix they have no objection to granting a 14-day waiver due to the nature of works, location and sensitivity of the site;
- Soilfix Directors / Golder to confirm if other areas (with no visible insulation material) can be progressed under normal working procedures as per NNLW Notification
- Removal of asbestos contamination carried out by Soilfix’s sub-contracted Licensed Asbestos Contractor fully in accordance with CAR2012 and the protocols set out in their licence to comply with these regulations;
- Reassurance air testing to be carried out during removal works to accord with CAR2012; and,
- A record will be produced and held on site (with copies provided to Golder), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

In the event that other unforeseen contamination is encountered during the works (other than ACM’s), the same procedure as outlined above will be adopted with appropriate monitoring & controls implemented to suit the particular hazard.

A flow chart summarising Soilfix’s discovery strategy for unexpected ground conditions, together with a procedure in the event unforeseen ACM contamination with associated responsibilities is encountered is included in Appendix D.
4.16 Traffic Management

Details of Traffic Management measures to be implemented at various stages of work are highlighted on Drawings SF-001-SF-006 in Appendix A of this document. A standalone Detailed Traffic Management Plan (DTMP) has been submitted separately to RBKC Highways in support of the planning permission for the works.
5 Health & Safety Management

5.1 General Health & Safety Management

5.1.1 Personnel Requirements

All works will be carried out in close liaison with Golder who are fulfilling the role as Principal Contractor under Construction Design Management (CDM) Regulations 2007. The works will be managed and overseen by a full-time Soilfix Site Manager (Peter Rowe) supported by a full-time Assistant Site Manager, both of whom carry CITB site manager’s safety training scheme (SMSTS) or equivalent, supported by First-Aid at Work (FAW) accreditations and up to date asbestos awareness training.

The Soilfix site management team has the responsibility to undertake all works in a safe, managed and controlled manner at all times.

All persons attending site and operating plant shall be 100% compliant with CSCS/CPCS accreditations as required.

The following Personal Protective Equipment (PPE) is required during works as a minimum:

- Hard Hat
- Hi-vis vest or jacket
- Safety Boots with steel toecap and midsole
- Protective Eyewear (during breaking out or as discipline dictates)
- Ear protection (as discipline dictates)
- Protective Gloves (as discipline dictates)
- Disposable Protective coveralls (as discipline dictates)
- Respiratory protective equipment (RPE – generally a half-face respirator with A2 specification filter as required, with the exception of RPE procedures during remedial excavation as discussed in Section 5.2).

All personnel are adequately trained in the use of any PPE equipment supplied.

Soilfix believes that drug or alcohol misuse is unacceptable under any work-related circumstances. We have a zero tolerance level to drugs and alcohol misuse in the workplace.

All working boundaries shall be established with relevant safety signage displayed, and a Muster Point established for emergencies. An exclusion zone will be established for all non-essential staff during specific work activities, with fencing, signage and procedures for entry by authorised personnel. This will be regularly discussed during tool-box talks on-site.

5.1.2 Site task requirements

The following specific site requirements have been stipulated by Soilfix for all work activities:

- All lifting equipment to have certificate of thorough examinations available prior to commencement of works;
- If auto-quick hitches are used, the competent (CPCS) driver must have training record for this;
- All excavations must be suitably protected by maintaining an equal distance from edge of excavation by how deep it is. Exception to this rule is where edge protection is secured into the ground.
• A cable avoidance tool with generator (where required) must be calibrated with evidence of this available before excavation, or areas scanned by a service trace company on behalf of Soilfix;

• Site hours of work are 0800 Mon to 1800 Fri or as stipulated by the planning permission granted by RBKC;

• COSHH Assessments are required for materials to be utilised in the works (Gasoil, Lubricating Oil, Petrol) as well as asbestos containing materials, lead-containing materials and silica dust that may be uncovered or generated by the works; and,

• Noise assessment shall be made for all works giving rise to excessive noise levels. Should excessive noise levels be recorded at the most sensitive site boundary, additional control measures may need to be taken such as erection of timber hoarding and/or locating stockpiles on the northern boundary to dampen noise levels.
6 Environmental Management Plan

6.1 Introduction & Standards Setting

The purpose of the Environmental Management Plan (EMP) is to set out the procedures for management and monitoring of potential fugitive emissions arising from the works, as well as action plans in the event of an exceedance being observed or recorded.

In addition to the Golder specification document, general over-riding health and safety legislation (Health & Safety at Work etc. Act 1974, Management of Health & Safety at Work Regulations, CDM etc.), the works will adhere to appropriate specific legislation and approved codes of practice (ACOP) for such works, and relevant guidance documents, comprising *inter alia*:

- HSE Publication HSG66 “Protection of Workers and the General Public during the Redevelopment of Contaminated Land”
- The Control of Lead at Work Regulations 2002 – Approved Code of Practice and Guidance
- CIRIA Special Publication 102 (SP 102), “Remedial Treatment for Contaminated Land Volume II”
- BS6187 : 2000 “Code of Practice for Demolition”
- Control of Substances Hazardous to Health (COSHH) Regulations (2002)
- Control of Asbestos at Work (CAR) Regulations 2012
- The Lifting Operations & Lifting Equipment Regulations 1998 (LOLER)
- The Provision and Use of Work Equipment Regulations 1995 (PUWER)
- The Working at Height Regulations 2005
- The Vibration at Work Regulations 2005
- Environmental Protection Act 1990 & Associated Regulations

All environmental monitoring & controls implemented will be recorded by the Soilfix site supervisor in the daily Site Diary. This will include a recording of prevailing weather conditions derived from the Met Office Website on that day (wind direction, wind speed, barometric pressure, and rainfall). The weather forecast will also be utilised to proactively plan and manage required environmental monitoring and controls, in particular in relation to potential dust and vapour / odour emissions.

6.2 Noise

The works have the potential to generate noise emissions due to the operation of plant (excavators, dumpers, breakers) which have the potential to cause detrimental impact on receptors outside the excavation areas.
6.2.1 Methodology

Qualitative Monitoring:
Routine noise monitoring will be carried out at the designated environmental monitoring locations by the Soilfix Site Manager and visiting management staff, using the following qualitative assessment criteria shown below:

- **A** = Normal conversation possible at 2m
- **B** = Conversation possible with raised voices
- **C** = Shouting required to hear at 2m distance

Quantitative Monitoring:
Quantitative monitoring will be carried out using a portable hand held noise meter at the proposed boundary monitoring points shown on Drawing C326E-SF007 included in Appendix A. The portable noise monitor will be placed at each monitoring location on a daily basis and during each new site activity. All measurements and observations will be recorded in the Environmental Diary.

**Frequency**: Daily during normal site operation and at the start of each new activity.

**Experience**: Staff undertaking monitoring will be required to demonstrate a suitable level of competence. The monitoring protocol will be reviewed and adapted as necessary during the currency of the site works.

6.2.2 Baseline Monitoring
Baseline noise monitoring will be carried immediately prior to site works during normal (school) times.

6.2.3 Operational Monitoring
Operational noise monitoring will be carried out daily.

6.2.4 Noise Control Measures
Precautions deemed sensible and practical to prevent noise nuisance to neighbouring receptors will be undertaken. The following standard control measures will help to reduce unacceptable noise emissions:

- Operations shall be limited to Mon – Fri : 8.00am to 6 pm and Sat 8 am to 1 pm;
- Any plant and equipment will be modern, to current EU compliance standards and fitted with silencers where possible;
- Plant / machinery will be thoroughly maintained to prevent any noise being created due to loose / old parts;
- Wherever practical, welfare, plant and working areas will be located away from the site boundaries;
- Plant & machinery to be switched off when not in use, additionally any waste disposal lorry engines will be turned off when parked or being loaded; and,
- Site personnel will refrain from any unnecessary loud shouting.
6.2.5 Action Levels

Qualitative Monitoring:

Should qualitative assessment thresholds exceed Category A and progress into Category B as per 6.2.1 above, but only for short periods no further action will be taken. If Category B is observed for long periods or Category C is reached then existing noise mitigation measures will be reviewed and additional measures implemented where necessary to control emissions.

Quantitative Monitoring:

Proposed noise action levels at the boundary monitoring locations are as follows;

- 75 dB LAeq

The 75 dB Action level has been adopted based on the commonly accepted DoE Advisory Leaflet (AL) 72, which indicates that for urban areas near main roads 75 dB is an acceptable external facade noise level for occupied buildings over the working day.

6.2.6 Emission Action Plan

Should the Action Level be exceeded then works will cease and alternative procedures, noise abatement measures and/or equipment will be implemented. These may include:

- Limit the duration(s) of more significant noise emitting activities (e.g. demolition of structures to reduce the impact at a boundary location; and,
- Consider an alternative type / specification of mobile plant if elevated noise emissions persist above the Action Level, or a silencer fitted, where practicable to do so.
6.3 Dust – General Environmental Dust

Remedial excavations, treatment and stockpiling of soils have the potential to create dust emissions.

6.3.1 Methodology

Both qualitative and quantitative dust monitoring is proposed at the 5 boundary monitoring points MP1 to MP5 shown on drawing C326E-SF-007 in Appendix A.

**Qualitative** assessments include a visual appraisal of dust concentrations by site staff. Visual assessments will be based on the assessment criteria stipulated below:

- Category A – Not noticeable
- Category B – Slight dust (on-site)
- Category C – Moderate dust (on-site)
- Category D – Unacceptable dust (migrating offsite).

**Quantitative** monitoring will include the use of ‘Frisbee’ dust collectors deployed at 4 of the 5nr boundary locations. Collected dust will be dispatched fortnightly for laboratory weighing and particle size analysis. Measured dust deposition rates will be compared to the guideline values set out in ‘Suggested guidelines for deposited ambient dust’, Vallack HW and Shillito DE, Atmospheric Environment Vol 32 No. 16, pp 2732-2744, 1998.

**Frequency:**

**Qualitative:** Daily visual assessments will be undertaken and recorded in the Environmental Diary during installation and setup works as well as during demolition excavations, off-site disposal and reinstatement works.

**Quantitative:** Fortnightly collection of recovered samples from Frisbee dust deposit gauges.

**Experience:**

**Qualitative:** Staff undertaking monitoring will be required to demonstrate a suitable level of competence. This will generally require as a minimum a relevant degree and 3 months relevant experience or two years relevant site experience on remediation projects.

**Quantitative:** Sampling & analysis of dusts to be undertaken by Soilfix’s specialist sub-contractor (RSK Geoconsult).

6.3.2 Baseline Monitoring

**Qualitative:** Visual assessment will be carried out prior to the start of works for comparison to the subsequent levels during the site set-up and remediation activities.

**Quantitative:** No baseline quantitative monitoring will be carried out prior to start of works, as published dust deposition rates are to be used for comparison with recorded concentrations during the remediation works.

6.3.3 Operational Monitoring

Operational (Qualitative) dust monitoring will be carried out daily.

As discussed above, fortnightly collection of recovered dust samples will be analysed in the laboratory by RSK.
6.3.4 Dust Control Measures

In order to minimise the potential for dust emissions, the following measures may be employed during the remediation works:

- Excavation and stockpiling works to be undertaken in a systematic, controlled manner;
- Damping down of excavation areas, treatment areas and haul roads as required, using either dust suppression bowsers or fine mist spray systems deployed along the perimeter of the embankment excavation to act as a dust suppression “curtain”;
- Stockpiles or exposed excavations sealed or covered where necessary;
- Any vehicles used for disposal of materials offsite to be sheeted to prevent fugitive dust emissions.

6.3.5 Trigger Levels

**Qualitative:** If a Category C Condition is observed, further monitoring or remedial actions will be implemented to suppress dusts.

**Quantitative:** If dust concentrations are consistently in excess of 150 mg m⁻² day⁻¹ (the ‘complaints possible’ guideline for residential areas cited in Vallack and Shillito (1998)), a review of procedures to further minimise dust generation is required.

6.3.6 Action Levels

**Qualitative:** If a Category D Condition is observed, excavation or soil treatment operations will cease in the area of concern and appropriate remedial actions implemented to suppress the dust issue.

**Quantitative:** If dust concentrations are consistently in excess of 200mg m⁻² day⁻¹ (the ‘complaints likely’ guideline for residential areas cited in Vallack and Shillito (1998)), works should cease in the area of concern and mitigation measures should be re-evaluated to ensure dust is properly controlled.

6.3.7 Emission Action Plan

Should the Trigger Level be exceeded, the following emissions action plan will be implemented:

- Dust suppression measures (dowsing with water, sealing/covering stockpiles etc.) will take place as a matter of course throughout all works, however will be increased in scope in the case of elevated levels of dust generation;
- Consideration will be given to mechanically sweeping haul routes if practicable to do so to remove surface dusts;
- The frequency of dust monitoring using the Frisbee dust gauges will be increased to weekly until results are confirmed to fall below the Trigger Level; and,
- The frequency of qualitative dust monitoring will also be increased to at least twice daily.

Should the Action Level be exceeded, the following emissions action plan will be implemented:

- A change of working procedures will be considered to further reduce dust emissions, with dust suppression measures implemented at all times until monitoring confirms otherwise; and,
- Should the dust emissions persist, works will cease and the local authority environmental health officer and local EA Environment Officer be consulted as to an appropriate way forward.
6.4 Dust – Respirable Fibres including Asbestos

6.4.1 Introduction

Asbestos containing materials (ACM’s) have been identified in the Embankment and planted areas typically at trace concentrations, however a small identified pocket of fibrous material was encountered at shallow depth in the Embankment.

Excavation, treatment and stockpiling of asbestos-contaminated soil (ACS) has the potential to create airborne asbestos dust. Reassurance air monitoring will therefore be undertaken during the handling of asbestos-contaminated soils and a decontamination / hygiene unit will be present on site to control personnel access / egress to / from the quarantined works areas.

All works will be carried out strictly in accordance with the Control of Asbestos Regulations (CAR) 2012 and the following codes of practice:

- Asbestos in Soil and Made Ground : A Guide to Understanding and Managing Risks – CIRIA C733, published 2014; and,

6.4.2 Methodology

Periodic quantitative airborne respirable fibre monitoring will be carried out for reassurance purposes at the nearest 3 monitoring points to the work area indicated on Drawing SF-007 included in Appendix A. This will be supplemented by workplace monitoring and personal monitoring of workers carrying out remediation works.

Frequency:

- Reassurance air testing periodically during excavation/disposal of any fill materials containing ACM’s, initially for a 2 hour pumping intervals to prove appropriate method thereafter reduced to 1 hour pumping intervals during routine monitoring;
- Monitoring will be carried out prior to commencing the main phase of excavation to prove the method of controlled excavation (as above), initially daily for the first week of excavation and periodically thereafter (3 times per week during the second week of excavation / disposal works and 2 times per week thereafter subject to satisfactory results below thresholds); and,
- Duplicate samples will be collected with an increased duration / air volume at the onset of any excavation / disposal activities at the most sensitive or down-wind boundary for SEM analysis as discussed in Section 6.4.4. (2No. Locations on 3 separate monitoring occasions).

Should the control limits stipulated below be exceeded, the frequency of air monitoring will be increased accordingly.

Experience:

An independent UKAS accredited analyst from REC will carry out all reassurance air testing on behalf of Soilfix. Suitably qualified and experienced analysts from ETC will carry out the SEM analytical testing of recovered samples.
6.4.3 Baseline Monitoring

Baseline monitoring will be carried out prior to start of works for comparison to the subsequent levels during the site set-up and remediation activities. A baseline reassurance air monitoring exercise will be undertaken using pump samplers deployed by a UKAS accredited analyst at the site boundary.

Baseline monitoring using Scanning Electron Microscopy (SEM) analysis has already been carried out by Golder to determine the background respirable fibre / asbestos concentration at a much lower limit of quantification (LoQ). This method of monitoring is discussed in Section 6.4.4 below.

For supplementary purposes, a visual assessment of airborne dusts will be carried out prior to start of works and recorded in the Environmental Diary for comparison to the subsequent levels during the remediation activities.

6.4.4 Operational Monitoring

Workplace Exposure Monitoring

To comply with CAR 2012, during excavation and processing works for ACM contaminated soils, reassurance air sampling will be undertaken for respirable fibres by a sub-contracted UKAS accredited analyst (REC Asbestos). The air monitoring will be carried out using Phased Contrast Microscopy (PCM) in accordance with HSG248 WHO Reference Method as per MDHS 39/4: Asbestos – the analysts guide for sampling, analysis and clearance procedures, and UKAS accredited method ASB/02.

The sampling strategy adopted will depend on the analyst’s opinion on as to where asbestos fibres may have become airborne, and as a minimum will be undertaken at a minimum of 4no. perimeter locations around the working area, 1no. Workplace location directly adjacent to the work area and personnel sampler pumps on operatives. The specification of reassurance air sampling pump is the JD16T model with an adjustable design flow rate of 8 – 18l/min, deployed with telescopic mast such that the sampling inlet is at least 1.0m from ground level.

Copies of all air test records will be maintained in the Site File for inspection by Golder or other RBKC representatives.

Supplementary Environmental Monitoring

CIRIA C733 states that background concentrations in the general environment can be 0.0001f/ml or less, and assessing potential risks requires measurements with lower LoQ and better fibre discrimination than ‘reassurance-based’ air monitoring methods.

Soilfix has developed a practicable, cost effective yet technically robust approach to satisfying the recommendations set out in CIRIA C733 in collaboration with REC and the Experimental Techniques Centre (ETC) of Brunel University. During ‘standard’ workplace air monitoring visits a duplicate air pump is deployed at the location discussed above and operated over a longer duration to recover an increased volume of air (~960,000ml) across the cellulose filter.

The cellulose sample filter is submitted to ETC’s UKAS accredited laboratory for examination by SEM and energy dispersive x-ray analysis for the presence and number of respirable fibres, with differentiation between asbestos and non-asbestos fibres. Using this method ETC can report an airborne respirable fibre concentration to <0.0003f/ml. Whilst this LoQ is slightly above the environmental background suggested in CIRIA C733, it is significantly lower than the workplace exposure limit set by CAR2012 and considered to be as low as reasonably practicable. However, due to the distinction achieved between asbestos and non-
asbestos fibres, the ‘Environmental Background’ LoQ of <0.0001f/ml is effectively achieved with no asbestos fibres detected in either sample on both monitoring occasions.

6.4.5 Dust / Fibre Control Measures

The following measures will limit dust (with potential asbestos fibre) generation during the remediation works:

- All reasonable measures to control dusts including fine mist suppression (using rotary atomiser ‘Foggers’ or a perimeter misting system) will be taken to suppress dust arising from excavation and processing works;
- Extremely dry and dusty materials will be dampened down prior to and during excavation to control dust/fibre emissions at source using a portable sprayer with fine water mist; and,
- Excavation works to be undertaken in a systematic, controlled manner designed to minimise the generation of asbestos dust as much as practicable. Soilfix’s Site Manager will oversee all operations.

6.4.6 Trigger Levels

The Trigger value for recorded respirable fibre concentrations (time-weighted average) is as follows:

- >0.1fibres/ml air at the work location recorded during personal or workplace reassurance air testing, equivalent to the occupational exposure standard (CAR 2012) for potentially mixed asbestos fibres where workers have protective equipment; and,
- >0.01fibres/ml at the boundary monitoring locations recorded during reassurance air testing, being a more stringent level for more sensitive off-site receptors of varying age groups (National Occupational Health and Safety Council, Code of Practice for the Safe Removal of Asbestos, NOHSC:2002(2005)).

6.4.7 Action Level

The Action value for recorded respirable fibre concentrations (time-weighted average) is as follows:

- >0.01fibres/ml at the boundary monitoring locations recorded during reassurance air testing, being a more stringent level for more sensitive off-site receptors of varying age groups (National Occupational Health and Safety Council, Code of Practice for the Safe Removal of Asbestos, NOHSC:2002(2005)).
- Exceedance of the recorded baseline respirable fibre concentration determined using SEM analysis (by Golder and Soilfix).

6.4.8 Emission Action Plan

Should a Trigger Level be exceeded, the following emissions action plan will be implemented:

- Control measures being implemented at the time reviewed;
- Dust suppression measures (dowsing with water or fine mist spray) will take place as a matter of course throughout all works, however will be increased in scope in the case of elevated levels of dust generation; and,
- Frequency of reassurance air testing increased until such time the analyst considers the additional control measures have proven effective to reduce respirable fibre concentrations below the Trigger level.

Should the Action Level be exceeded, the following emissions action plan will be implemented:

- Works to cease immediately and control measures reviewed;
• A change of working procedures will be implemented to further reduce dust/fibre emissions, with dust suppression measures implemented at all times until monitoring confirms otherwise;

• Frequency of reassurance air testing increased until such time the analyst considers the additional control measures have proven effective to reduce respirable fibre concentrations below the Trigger level;

• Repeat SEM analysis carried out following increased control measures; and,

• Should the dust/fibre emissions persist, works will cease immediately and Golder together with the RBKC Environmental Health officer will be consulted as to an appropriate way forward.

6.5 Supplementary Environmental Monitoring - Lead

Static air sampling for lead, monitoring for dust and swab sampling for lead in settled dusts will be undertaken by Golder prior to demolition, at regular intervals during demolition, and upon completion of demolition.

Sampling will be undertaken within the working area, outside of the working area in external areas and within the main school building. Concentrations of lead in air will be assessed in relation to the UK/European air standard and background conditions. Concentrations of lead in settled dust will be considered in the context of background conditions and North American and Australian guidance for indoor and outdoor lead concentrations in dust; there is no guidance for the assessment of settled dust on surfaces in the UK.

Settled dust concentrations will be used to trigger additional sampling and analysis, targeted cleaning and employment of additional controls to demolition, if necessary.
6.6 Volatile Organic Compounds, Gases and Odours

It is not expected that VOC’s or any gases or odours should be encountered during the works. However, qualitative methods following will be used to monitor any odours or gases whilst excavation is taking place. If any are observed than it may be necessary to employ quantitative methods.

6.6.1 Methodology

Qualitative monitoring will be used throughout the remediation works.

Qualitative monitoring will comprise olfactory assessments compared against the assessment criteria stipulated below:

- Category A – Odours not noticeable
- Category B – Slight odour perceptible
- Category C – Moderate odour (mitigation considered)
- Category D – Unacceptable odour (mitigation required).

**Frequency**: Monitoring to be undertaken daily during excavation.

**Experience**: Staff undertaking monitoring will be required to demonstrate a suitable level of competence. This will generally require as a minimum a relevant degree and 3 months relevant experience or two years relevant experience.

6.6.2 Baseline monitoring

Not required prior to works.

6.6.3 Operational Monitoring

**Qualitative Monitoring**: Routine qualitative visual assessments of fugitive odour/vapour emissions will be undertaken at each of the environmental monitoring points and recorded in the Environmental Diary.

6.6.4 Emission Control Measures

Proposed control measures to protect odours (where required) are as follows:

- Limit extent of excavation area where any odorous soils are encountered;
- Keep odorous soils covered overnight; and,
- Use of an odour suppressant in the fine-mist system to mitigate odour as well as dust / fibres.

6.6.5 Emissions Action Plan

If any potential for odours are recorded by either Soilfix or Golder during the works, then the following actions will be taken:

- Potential source of odours to be investigated immediately by Soilfix Remediation Engineer together with Golder;
- Additional mitigation measures put in place as deemed necessary to prevent odour emissions (increase dosage or strength of odour suppressant or topographically spray directly onto soils); and,
- Increase frequency of olfactory monitoring.
6.7 Groundwater & Surface Water

Whilst the risk to underlying groundwater is considered to be low, emissions from the remediation works to groundwater receptors may be possible via surface runoff and will need to be effectively controlled adopting industry best practice.

There are no surface watercourses in the immediate vicinity of the remediation site, therefore no surface water monitoring will be required.

6.7.1 Emission Control Measures

Proposed control measures to protect controlled water receptors are as follows:

- Oil and chemical spill kits (to include booms, absorbent pads and granules) to be maintained on site in close proximity to remediation areas and surface water receptors. Spill kits to be kept with all plant and checked regularly.

6.7.2 Emissions Action Plan

If any potential for detrimental impacts on controlled waters receptors are recorded by either Soilfix or Golder during the remediation works, or if any leaks or spills are detected from plant and equipment, then the following actions will be taken:

- Emergency spill response to be actioned if required by Soilfix site team under direction of Site Manager;
- Potential causes to be investigated immediately by Soilfix Environmental Engineer and Site Manager together with Golder;
- Additional mitigation measures put in place as deemed necessary to prevent further detrimental impact prior to works (e.g. booms);
- Golder to undertake additional monitoring and sampling of affected area; and,
- Subject to the outcome of additional monitoring/investigation, discussion will be held with Golder and the Environment Agency as to whether additional remedial action (other than the existing remediation works) needs to be undertaken.
7 Site Records & Completion Report

The following records will be maintained on site throughout the works:

- Daily site log shall be completed by Soilfix site staff, and referenced on site;
- Materials tracking sheet completed during all excavation and disposal operations;
- Environmental monitoring information;
- Excavation inspections register;
- Copies of all consignment notes of materials removed off-site; and,
- Photographic record of the works which will be provided to the client with all other site survey information.

A Contractors Completion Report will be compiled by Soilfix on completing the remedial works. This report, which will form an Appendix to the main Verification Report to be compiled by Golder, will include:

- Summary of works completed, including excavation extents, depths & volumes, off-site disposal tonnages for each classification and facility, material import types / volumes, site reinstatements completed etc.;
- Completed Environmental Diary sheets with monitoring results
- Photographic record of works;
- ‘As-built’ Topographical Survey of completed site formation
- Copies of air-monitoring certificates;
- Waste duty of care (Duty of Care Register and all waste consignment notes);
- Results of chemical analysis for waste classification, imported materials and basal validation samples;
- Copies of all structural design calculations for temporary / permanent retaining works;
- Details of any unforeseen circumstances or deviations from the Remediation Specification appropriate mitigation measures taken.
Appendix A
Drawings
LEGEND

- FOX PRIMARY SCHOOL
- MASTER PLAN

**STRUCTURES TO BE DEMOLISHED**
**STRUCTURES TO REMAIN**
**EARTHWORK EXCAVATION AREA (PHASE 1)**
**EXCAVATION AREA (PHASE 2A)**
**EXCAVATION AREA (PHASE 2B)**
**TREES TO BE REMOVED**
**TEMPORARY SCHOOL ACCOMMODATION**
**SOLID LINE OF HOARDING**
**TEMPORARY SITE FENCING (HEARAS)**
**ADVANCED REMEDIAL EXCAVATION**

*NOTE: THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.*
NOTE: THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.
NOTE - THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.
NOTE: THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.
NOTE: THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.
NOTE: THIS DRAWING IS INDICATIVE AND SHOULD NOT BE USED FOR SCALING PURPOSES OR ANY OTHER PURPOSE OTHER THAN TO ILLUSTRATE TRAFFIC MANAGEMENT IN AND AROUND THE SITE.
Appendix B

Golder Hazardous Materials Survey
FOX SCHOOL, KENSINGTON PLACE, KENSINGTON, LONDON W8 7PP

Lead Survey - Fox School Toilet Block and Fox Cottage

Submitted to:
Royal Borough of Kensington and Chelsea
Town Hall
Hornton Street
London
W8 7NX

Report Number 1451420446.501/B.1
Distribution:
Royal Borough of Kensington and Chelsea- 1 pdf
Golder Associates (UK) Ltd - 1 pdf
Executive Summary

Golder Associates (UK) Ltd (‘Golder’) has been requested by the Royal Borough of Kensington and Chelsea (‘RBKC’) to undertake a survey of lead containing materials in the toilet block within Fox Primary School and Fox Cottage, Kensington Place, Kensington, London W8 7PP (the ‘Site’).

The works have been completed in accordance with Golder’s proposal P4514220446/2/V.0 dated 26 February 2015 and are subject to the Terms of Appointment submitted with the proposal and agreed between Golder and RBKC on approval of the proposal. All information contained within this report should be read in the context of these documents and in the context of the Study Limitations presented in this report.

The survey was undertaken on 13 March 2015 by experienced Golder surveyors. An additional inspection was undertaken in April 2015 and a single sample of blue paint collected.

The results show that painted surfaces within the toilet block and Fox Cottage contain lead at varying concentrations. The findings are summarised below:

<table>
<thead>
<tr>
<th>Material</th>
<th>Location</th>
<th>Lead Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior window and door frames (metal and wooden)</td>
<td>Fox Cottage</td>
<td>High lead content &gt;4,000 mg/kg</td>
</tr>
<tr>
<td>Interior window sills and ‘rear’ door (wooden)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior railings / gates bordering the pavement of Kensington Place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead flashing around windows and to roof</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green paint to original walls throughout ground &amp; first floor rooms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hidden beneath white and blue paint finishes in all rooms except the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ground floor office where it is exposed on two exterior walls.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel beams exposed under skylight in Store</td>
<td>Toilet Block</td>
<td>Medium lead content 2,000 – 4,000 mg/kg</td>
</tr>
<tr>
<td>Wooden door to Store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal and external metal window frames on eastern wall of boy’s toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Rear’ door step</td>
<td>Fox Cottage</td>
<td>Medium lead content</td>
</tr>
<tr>
<td>Lagged pipes in Store</td>
<td>Toilet Block</td>
<td>2,000 – 4,000 mg/kg</td>
</tr>
<tr>
<td>Metal railings / covered walkway</td>
<td>Fox Cottage</td>
<td>Low lead content, 600 – 2,000 mg/kg</td>
</tr>
<tr>
<td>Narrow diameter pipes and hangers in Store</td>
<td>Toilet Block</td>
<td></td>
</tr>
<tr>
<td>Wooden frame and shelves of cupboard in Store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wooden interior and exterior window frames and sills including exterior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>soffit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wooden surrounding fire doors to Main School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream paint behind plaster in corridor and behind buttress.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Also behind egg shell paint in boy’s toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior metal window frames</td>
<td>Fox Cottage</td>
<td>Negligible lead content &lt;600 mg/kg</td>
</tr>
<tr>
<td>Exterior brickwork and mortar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large diameter pipes and hangers in Store and Boy’s toilet</td>
<td>Toilet Block</td>
<td></td>
</tr>
<tr>
<td>Walls in Store and Corridor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface layer of paint in boy’s toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rainwater pipes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior brickwork and mortar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note: it is presumed that metal windows and doors also contain lead, these were not sampled

Information on the lead content of paints applied to various materials in structures planned to be demolished should be provided to the works contractors so they can review the demolition methodology and implement control measures to minimise the spread of lead in dusts during the works.
Study Limitations

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

This report has been prepared for the Royal Borough of Kensington and Chelsea (the ‘Client’) for the purpose of undertaking a lead survey pursuant to its appointment of Golder Associates (UK) Ltd (‘Golder’) to act as Consultant. Save for the Royal Borough of Kensington and Chelsea, no duty is undertaken or warranty or representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out. Regard should be had to the agreement between Golder and the Client dated 26 February 2015, when considering this report and reliance to be placed on it.

All work carried out in preparing this report has used, and is based upon, Golder’s professional knowledge and understanding of current (May 2015) relevant UK and European Community legislation, standards, and guidance. Changes in the legislation, standards, and guidance may cause the opinion, advice, recommendations or conclusions set out in this report to become inappropriate or incorrect. However, in giving its opinions, advice, recommendations and conclusions, Golder has considered pending changes to environmental legislation and regulations of which it is currently aware. Following delivery of this report, Golder will have no obligation to advise the Client of any such changes, or of their repercussions.

Golder acknowledges that it is being retained, in part, because of its knowledge and experience with respect to environmental matters. Golder will consider and analyse all information provided to it in the context of Golder’s knowledge and experience and all other relevant information known to Golder. To the extent that the information provided to Golder is not inconsistent or incompatible therewith, Golder shall be entitled to rely upon and assume, without independent verification, the accuracy and completeness of all such information and Golder shall have no obligation to verify the accuracy and completeness of such information.

The content of this report represents the professional opinion of experienced environmental consultants. Golder does not provide specialist legal advice and the advice of lawyers will be required.

In the Executive Summary, Golder has set out its key findings. However, other parts of this report will often indicate the limitations of the information obtained by Golder and therefore any advice, opinions or recommendations set out in the Executive Summary ought not to be relied upon until considered in the context of the whole report.
# Table of Contents

1.0 **INTRODUCTION**........................................................................................................................................................... 1  
   1.1 Terms of Reference.......................................................................................................................................... 1  
   1.2 Context and Objectives............................................................................................................................... 1  

2.0 **SURVEY WORK**........................................................................................................................................................ 1  
   2.1 Scheduling of Works..................................................................................................................................... 1  
   2.1.1 Suspect Lead Containing Materials ............................................................................................. 1  

3.0 **RESULTS** ................................................................................................................................................................. 2  

4.0 **RECOMMENDATIONS**.............................................................................................................................................. 3  

---

**APPENDICES**

**DRAWINGS**

**APPENDIX A**  
Photograph Results – Fox Cottage

**APPENDIX B**  
Photograph Results – Toilet Block

**APPENDIX C**  
Laboratory Results
1.0 INTRODUCTION

1.1 Terms of Reference

Golder Associates (UK) Ltd (‘Golder’) has been requested by the Royal Borough of Kensington and Chelsea (‘RBKC’) to conduct a survey of lead containing materials in the Toilet Block of Fox School and Fox Cottage, Kensington Place, Kensington, London W8 7PP (the ‘Site’) (Drawings 1 and 2).

The works have been completed in accordance with Golder’s proposal P4514220446/2/V.0 dated 26 February 2015 and are subject to the Terms of Appointment submitted with the proposal and agreed between Golder and RBKC on approval of the proposal. All information contained within this report should be read in the context of these documents and in the context of the Study Limitations presented in this report.

1.2 Context and Objectives

It is understood that RBKC is planning to undertake development works at the Site, including demolition of the Toilet Block and Fox Cottage. As part of this work RBKC wishes to understand the lead content of materials within the structures planned for demolition and provide this information to the appointed works contractors so necessary working methods and controls can be implemented during building demolition.

The objective of this work is as follows:

- Assessment of potential lead containing materials (e.g. lead-based paint). If observed: sampling of potential lead-based paint materials.

2.0 SURVEY WORK

The survey was undertaken by experienced Golder surveyors on 13 March 2015 with a further inspection in April 2015. A Method Statement was developed by Golder before undertaking the survey work.

2.1 Scheduling of Works

A summary of key activities is provided below:

- 13 March 2015, 16.00 – 16.30: mobilisation to site, sign onto Golder health and safety plan / method statements, walkthrough survey areas with School and RBKC representatives;

- 13 March 2015, 16.30 – 19.00: undertake visual walkthrough of the toilet block and develop sampling plan, collection of samples of suspect lead containing materials, repair sample locations and photograph materials;

- 13 March 2015, 19.00 – 21.00: undertake visual walkthrough of Fox Cottage and develop sampling plan, collection of samples of suspect lead containing materials, repair sample locations and photograph materials;

- 13 March 2015, 21.00: demobilise from Site; and

- April 2015: Visit to inspect surface finishes and collect 1 additional sample.

2.1.1 Suspect Lead Containing Materials

During the walkthrough the following suspect materials were observed and representative samples from these Homogeneous Sample Groups (HSGs) were taken from the toilet block and Fox Cottage:

- Paint to interior and exterior window and door frames (metal and wooden);

- Paint to interior and exterior window sills and soffit board (wooden);
Paint to interior doors and cupboards including shelving and architrave surrounds;
- Paint to a variety of lagged and unlagged pipework;
- Paint to walls;
- Paint behind plastered walls;
- Paint to steal beams;
- Paint to rainwater down pipes;
- Paint to exterior railings / gates; and
- Building brickwork and mortar.

Presumed lead flashing was observed around windows and to the roof, chimney and vent pipe on Fox Cottage. Similarly, it is presumed that metal framed windows and doors in both structures contain lead. These materials were not sampled.

Twenty five samples were collected during the survey as follows:
- Samples FC HSG1 to HSG10 from Fox Cottage; and
- Samples TB HSG1 to HSG 15 from the Toilet Block.

Sample locations are shown in Drawing 1 and 2.

Photographs of representative HSGs are shown in the results tables in Appendix A and B.

The samples were transported to Jones Environmental Laboratory, Unit 3, Deeside Point, Deeside Industrial Park, CH5 2UA and analysed for total lead content by ICP-OES following acid digestion using Aqua Regia refluxed at 112.5 °C.

Certificated laboratory results are presented in Appendix C.

## 3.0 RESULTS

The results show that painted surfaces within the toilet black and Fox Cottage contain lead at varying concentrations.

Appendices A and B show photographs of each Homogeneous Sample Group, the materials sampled, the laboratory result and interpretation.

The findings are summarised below:

<table>
<thead>
<tr>
<th>Material</th>
<th>Location</th>
<th>Lead Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior window and door frames (metal and wooden)</td>
<td>Fox Cottage</td>
<td>High lead content</td>
</tr>
<tr>
<td>Interior window sills and ‘rear’ door (wooden)</td>
<td></td>
<td>&gt;4,000 mg/kg</td>
</tr>
<tr>
<td>Exterior railings / gates bordering the pavement of Kensington Place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead flashing around windows and to roof</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green paint to original walls throughout ground &amp; first floor rooms. Hidden beneath white and blue paint finishes in all rooms except the ground floor office where it is exposed on two exterior walls.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Location</td>
<td>Lead Content</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Steel beams exposed under skylight in Store</td>
<td>Toilet Block</td>
<td></td>
</tr>
<tr>
<td>Wooden door to Store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal and external metal window frames on eastern wall of boy's toilet</td>
<td>Toilet Block</td>
<td></td>
</tr>
<tr>
<td>'Rear' door step</td>
<td>Fox Cottage</td>
<td>Medium lead content 2,000 – 4,000 mg/kg</td>
</tr>
<tr>
<td>Lagged pipes in Store</td>
<td>Toilet Block</td>
<td>2,000 – 4,000 mg/kg</td>
</tr>
<tr>
<td>Metal railings / covered walkway</td>
<td>Fox Cottage</td>
<td>Low lead content, 600 – 2,000 mg/kg</td>
</tr>
<tr>
<td>Narrow diameter pipes and hangers in Store</td>
<td>Toilet Block</td>
<td>Low lead content, 600 – 2,000 mg/kg</td>
</tr>
<tr>
<td>Wooden frame and shelves of cupboard in Store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wooden interior and exterior window frames and sills including exterior soffit</td>
<td>Toilet Block</td>
<td>Low lead content, 600 – 2,000 mg/kg</td>
</tr>
<tr>
<td>Wooden surrounding fire doors to Main School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream paint behind plaster in corridor and behind buttress. Also behind egg shell paint in boy's toilet</td>
<td>Toilet Block</td>
<td>Low lead content, 600 – 2,000 mg/kg</td>
</tr>
<tr>
<td>Interior metal window frames</td>
<td>Fox Cottage</td>
<td></td>
</tr>
<tr>
<td>Exterior brickwork and mortar</td>
<td></td>
<td>Negligible lead content &lt;600 mg/kg</td>
</tr>
<tr>
<td>Large diameter pipes and hangers in Store and Boy’s toilet</td>
<td>Toilet Block</td>
<td></td>
</tr>
<tr>
<td>Walls in Store and Corridor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface layer of paint in boy’s toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rainwater pipes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior brickwork and mortar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: it is presumed that metal windows and doors also contain lead, these were not sampled.

UK guidance (Department of the Environment Circular 22/82 ‘Lead in the Environment’ and Building Research Establishment Information Paper IP12/85 ‘Lead Driers in Paint’) on lead content in paints is qualitative and defines the lead content as high, medium, low or negligible as follows:

- High lead content: > 4,000 mg/kg;
- Medium lead content: 2,000 – 4,000 mg/kg;
- Low lead content: 600 – 2000 mg/kg; and
- Negligible lead content: <600 mg/kg.

The United States Environmental Protection Agency (EPA) and United States Housing and Urban Development (HUD) define LBP as paint containing 5,000 mg/kg of lead or greater. The United States Consumer Protection Safety Commission (CPSC) defines LBP as paint containing 90 mg/kg of lead or greater.

### 4.0 RECOMMENDATIONS

Information on the lead content of paints applied to various materials in structures planned to be demolished should be provided to the works contractors so they can review demolition methodology and control measures where necessary.
LEAD SURVEY - FOX SCHOOL

Report Signature Page

GOLDER ASSOCIATES (UK) LTD

Giles Murray  Jeff Thornton
Senior Environmental Consultant  Project Manager

Date: 5 May 2015

GM/JT/cr

Company Registered in England No. 1125149
At Attenborough House, Browns Lane Business Park, Stanton-on-the-Wolds, Nottinghamshire NG12 5BL
VAT No. 209 0084 92
Golder, Golder Associates and the GA globe design are trademarks of Golder Associates Corporation.
APPENDIX A
Photograph Results – Fox Cottage
## APPENDIX B
Photograph Results Fox Cottage

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC HSG1</td>
<td>White paint to metal window and door frames (internal paint)</td>
<td>132 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td></td>
</tr>
<tr>
<td>FC HSG2</td>
<td>Paint to wooden window sills throughout cottage (white over cream over pale green paint)</td>
<td>7,287 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>
## Photograph Results Fox Cottage

### Sample Reference | Description | Lead Result | Interpretation | Photograph of HSG (Homogeneous Sample Group) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FC HSG3</td>
<td>Painted door, western wall, white paint over blue paint</td>
<td>19,030 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG3" /></td>
</tr>
<tr>
<td>FC HSG4</td>
<td>Green paint to original walls throughout ground &amp; first floor rooms. Hidden beneath white and blue paint finishes in all rooms except the ground floor office where it is exposed on two exterior walls (shown in the photograph).</td>
<td>6,734 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG4" /></td>
</tr>
<tr>
<td>Sample Reference</td>
<td>Description</td>
<td>Lead Result</td>
<td>Interpretation</td>
<td>Photograph of HSG (Homogeneous Sample Group)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------</td>
<td>---------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>FC HSG5</td>
<td>Exterior white paint to wooden window sill and metal window frames</td>
<td>34,720 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG5" /></td>
</tr>
<tr>
<td>FC HSG6</td>
<td>Red paint to door step to western door</td>
<td>2,864 mg/kg</td>
<td>Medium lead content 2,000 – 4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG6" /></td>
</tr>
</tbody>
</table>
## Photograph Results Fox Cottage

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC HSG7</td>
<td>Exterior brickwork and mortar</td>
<td>39 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td><img src="image" alt="Photograph of Exterior Brickwork" /></td>
</tr>
<tr>
<td>FC HSG8</td>
<td>Black paint to metal railings, covered walkway</td>
<td>1,209 mg/kg</td>
<td>Low lead content 600 - 2000 mg/kg</td>
<td><img src="image" alt="Photograph of Black Paint" /></td>
</tr>
</tbody>
</table>
### APPENDIX B
Photograph Results Fox Cottage

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC HSG 9</td>
<td>Black paint to pavement railings and gate</td>
<td>5,703 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG" /></td>
</tr>
<tr>
<td>FC HSG 10</td>
<td>Blue paint throughout internal walls, common beneath white paint. On original walls the white and blue paints are commonly over a green paint which has high lead content.</td>
<td>&lt;5 mg/kg</td>
<td>-</td>
<td>No photo available (blue paint is beneath other modern finishes)</td>
</tr>
<tr>
<td>-</td>
<td>Lead flashing to chimney, bay windows, locally to vent pipe and roof margins</td>
<td>-</td>
<td>High lead content</td>
<td><img src="image" alt="Photograph of HSG" /></td>
</tr>
</tbody>
</table>
APPENDIX B
Photograph Results – Toilet Block
# APPENDIX C
Photograph Results Toilet Block

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB HSG1</td>
<td>White paint to large diameter pipe and hangers</td>
<td>25 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td></td>
</tr>
<tr>
<td>TB HSG2</td>
<td>Paint to small diameter pipe and hangers</td>
<td>1,009 mg/kg</td>
<td>Low lead content 600 – 2,000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX C
Photograph Results Toilet Block

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB HSG3</td>
<td>White paint to steel beams at sky light</td>
<td>18,680 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image3" alt="Photograph of HSG3" /></td>
</tr>
<tr>
<td>TB HSG4</td>
<td>White gloss paint in cupboard – frame and shelves</td>
<td>1,781 mg/kg</td>
<td>Low lead content 600 – 2,000 mg/kg</td>
<td><img src="image4" alt="Photograph of HSG4" /></td>
</tr>
<tr>
<td>Sample Reference</td>
<td>Description</td>
<td>Lead Result</td>
<td>Interpretation</td>
<td>Photograph of HSG (Homogeneous Sample Group)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------</td>
<td>-------------</td>
<td>--------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>TB HSG5</td>
<td>Cream paint beneath lagged pipes</td>
<td>2,730 mg/kg</td>
<td>Medium lead content 2,000 – 4,000 mg/kg</td>
<td><img src="image" alt="Image of HSG5" /></td>
</tr>
<tr>
<td>TB HSG6</td>
<td>Paint to walls in cupboard</td>
<td>62 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td><img src="image" alt="Image of HSG6" /></td>
</tr>
</tbody>
</table>
## APPENDIX C
Photograph Results Toilet Block

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB HSG7</td>
<td>White paint to wooden windows (interior), white over white.</td>
<td>932 mg/kg</td>
<td>Low lead content 600 – 2,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG7" /></td>
</tr>
<tr>
<td>TB HSG8</td>
<td>Paint to walls, white over blue</td>
<td>17 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td><img src="image" alt="Photograph of HSG8" /></td>
</tr>
</tbody>
</table>
## APPENDIX C
Photograph Results Toilet Block

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB HSG 9</td>
<td>Blue paint to fire door to store (blue over green)</td>
<td>5,941 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image1.jpg" alt="Photograph of TB HSG 9" /></td>
</tr>
<tr>
<td>TB HSG 10</td>
<td>White gloss paint to fire door surround, adjoining main school</td>
<td>920 mg/kg</td>
<td>Low lead content 600 - 2,000 mg/kg</td>
<td><img src="image2.jpg" alt="Photograph of TB HSG 10" /></td>
</tr>
<tr>
<td>Sample Reference</td>
<td>Description</td>
<td>Lead Result</td>
<td>Interpretation</td>
<td>Photograph of HSG (Homogeneous Sample Group)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>----------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>TB HSG 11</td>
<td>Cream paint (slightly textured) behind buttress and behind plaster to eastern wall. Also present behind HSG12 in boy’s toilet</td>
<td>700 mg/kg</td>
<td>Low lead content 600 - 2,000 mg/kg</td>
<td><img src="image1" alt="Photograph of HSG 11" /></td>
</tr>
<tr>
<td>TB HSG 12</td>
<td>White egg shell finish paint to walls in boy’s toilet</td>
<td>25 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td><img src="image2" alt="Photograph of HSG 12" /></td>
</tr>
<tr>
<td>Sample Reference</td>
<td>Description</td>
<td>Lead Result</td>
<td>Interpretation</td>
<td>Photograph of HSG (Homogeneous Sample Group)</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------</td>
<td>-------------</td>
<td>------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>TB HSG 13</td>
<td>White paint to metal windows on eastern wall</td>
<td>13,230 mg/kg</td>
<td>High lead content &gt;4,000 mg/kg</td>
<td><img src="image" alt="Photograph of HSG 13" /></td>
</tr>
<tr>
<td>TB HSG 14</td>
<td>Black paint to rainwater downpipes</td>
<td>390 mg/kg</td>
<td>Negligible lead content &lt;600 mg/kg</td>
<td><img src="image" alt="Photograph of HSG 14" /></td>
</tr>
</tbody>
</table>
## Photograph Results Toilet Block

<table>
<thead>
<tr>
<th>Sample Reference</th>
<th>Description</th>
<th>Lead Result</th>
<th>Interpretation</th>
<th>Photograph of HSG (Homogeneous Sample Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB HSG 15</td>
<td>White paint to exterior wooden window sills and soffit</td>
<td>792 mg/kg</td>
<td>Low lead content 600 - 2,000 mg/kg</td>
<td><img src="image" alt="Photograph" /></td>
</tr>
</tbody>
</table>
APPENDIX C
Laboratory Results
Twenty four samples were received for analysis on 16th March, 2015 of which twenty four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied. All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Lee-Boden BSc
Project Manager

Bob Millward BSc FRSC
Principal Chemist

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.
Client Name: Golder Associates Ltd
Report: Solid
Reference: Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub
Location: Jeff Thornton
Contact: JE Job No.: 15/4917

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>FC HSG1</th>
<th>FC HSG2</th>
<th>FC HSG3</th>
<th>FC HSG4</th>
<th>FC HSG5</th>
<th>FC HSG6</th>
<th>FC HSG7</th>
<th>FC HSG8</th>
<th>FC HSG9</th>
<th>TB HSG1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COC No / misc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containers</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Sample Date</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
</tr>
<tr>
<td>Batch Number</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Date of Receipt</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
</tr>
<tr>
<td>Lead</td>
<td>132</td>
<td>7287^A</td>
<td>19030_D</td>
<td>6734_A</td>
<td>34720_E</td>
<td>2864_A</td>
<td>2864_A</td>
<td>1209</td>
<td>5703_A</td>
<td>25</td>
</tr>
</tbody>
</table>

Please see attached notes for all abbreviations and acronyms.
<table>
<thead>
<tr>
<th>J E Sample No.</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>TB HSG2</td>
<td>TB HSG3</td>
<td>TB HSG4</td>
<td>TB HSG5</td>
<td>TB HSG6</td>
<td>TB HSG7</td>
<td>TB HSG8</td>
<td>TB HSG9</td>
<td>TB HSG10</td>
<td>TB HSG11</td>
</tr>
<tr>
<td>Sample Date</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
</tr>
<tr>
<td>Batch Number</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Date of Receipt</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
</tr>
</tbody>
</table>

Please see attached notes for all abbreviations and acronyms.

<table>
<thead>
<tr>
<th>J E Sample No.</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>TB HSG2</td>
<td>TB HSG3</td>
<td>TB HSG4</td>
<td>TB HSG5</td>
<td>TB HSG6</td>
<td>TB HSG7</td>
<td>TB HSG8</td>
<td>TB HSG9</td>
<td>TB HSG10</td>
<td>TB HSG11</td>
</tr>
<tr>
<td>Sample Date</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
</tr>
<tr>
<td>Batch Number</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Date of Receipt</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead</th>
<th>1009</th>
<th>18680</th>
<th>D</th>
<th>1781</th>
<th>2730</th>
<th>62</th>
<th>932</th>
<th>17</th>
<th>5941</th>
<th>A</th>
</tr>
</thead>
</table>

Please include all sections of this report if it is reproduced.

All solid results are expressed on a dry weight basis unless stated otherwise.
Client Name: Golder Associates Ltd  
Report: Solid

Reference: Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Contact: Jeff Thornton  
JE Job No.: 15/4917

<table>
<thead>
<tr>
<th>J E Sample No.</th>
<th>21</th>
<th>22</th>
<th>23-24</th>
<th>25-26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>TB HSG12</td>
<td>TB HSG13</td>
<td>TB HSG14</td>
<td>TB HSG15</td>
</tr>
<tr>
<td>Sample Date</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
<td>&lt;&gt;</td>
</tr>
<tr>
<td>Containers</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Sample Type</td>
<td>Solid</td>
<td>Solid</td>
<td>Solid</td>
<td>Solid</td>
</tr>
<tr>
<td>Batch Number</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Date of Receipt</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
</tr>
<tr>
<td>LOD/LOR</td>
<td>&lt;5</td>
<td>mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method No.</td>
<td>QF-PM 3.1.2 v11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please see attached notes for all abbreviations and acronyms

All solid results are expressed on a dry weight basis unless stated otherwise.
Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No deviating sample report results for job 15/4917
SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEViating SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURrogates

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.
### ABBREVIATIONS and ACRONYMS USED

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>UKAS accredited.</td>
</tr>
<tr>
<td>B</td>
<td>Indicates analyte found in associated method blank.</td>
</tr>
<tr>
<td>DR</td>
<td>Dilution required.</td>
</tr>
<tr>
<td>M</td>
<td>MCERTS accredited.</td>
</tr>
<tr>
<td>NA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>NAD</td>
<td>No Asbestos Detected.</td>
</tr>
<tr>
<td>ND</td>
<td>None Detected (usually refers to VOC and/SVOC TICs).</td>
</tr>
<tr>
<td>NDP</td>
<td>No Determination Possible</td>
</tr>
<tr>
<td>SS</td>
<td>Calibrated against a single substance</td>
</tr>
<tr>
<td>SV</td>
<td>Surrogate recovery outside performance criteria. This may be due to a matrix effect.</td>
</tr>
<tr>
<td>W</td>
<td>Results expressed on as received basis.</td>
</tr>
<tr>
<td>+</td>
<td>AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.</td>
</tr>
<tr>
<td>++</td>
<td>Result outside calibration range, results should be considered as indicative only and are not accredited.</td>
</tr>
<tr>
<td>*</td>
<td>Analysis subcontracted to a Jones Environmental approved laboratory.</td>
</tr>
<tr>
<td>AD</td>
<td>Samples are dried at 35°C ±5°C</td>
</tr>
<tr>
<td>CO</td>
<td>Suspected carry over</td>
</tr>
<tr>
<td>LOD/LOR</td>
<td>Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS</td>
</tr>
<tr>
<td>ME</td>
<td>Matrix Effect</td>
</tr>
<tr>
<td>NFD</td>
<td>No Fibres Detected</td>
</tr>
<tr>
<td>OC</td>
<td>Outside Calibration Range</td>
</tr>
<tr>
<td>A</td>
<td>x5 Dilution</td>
</tr>
<tr>
<td>D</td>
<td>x10 Dilution</td>
</tr>
<tr>
<td>E</td>
<td>x20 Dilution</td>
</tr>
<tr>
<td>Test Method No.</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TM30</td>
<td>Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry), Modified US EPA Method 200.7</td>
</tr>
</tbody>
</table>

QF-PM 3.1.10 v14 Please include all sections of this report if it is reproduced 8 of 8
One sample were received for analysis on 31st March, 2015 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.
Client Name: Golder Associates Ltd  
Reference: 14514220446  
Location: Fox School  
Contact: Jeff Thornton  
JE Job No.: 15/5556

<table>
<thead>
<tr>
<th>J E Sample No.</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>FCHSG10</td>
</tr>
<tr>
<td>Depth</td>
<td></td>
</tr>
<tr>
<td>COC No / misc</td>
<td>B</td>
</tr>
<tr>
<td>Containers</td>
<td></td>
</tr>
<tr>
<td>Sample Date</td>
<td>26/03/2015</td>
</tr>
<tr>
<td>Sample Type</td>
<td>Solid</td>
</tr>
<tr>
<td>Batch Number</td>
<td>1</td>
</tr>
<tr>
<td>Date of Receipt</td>
<td>31/03/2015</td>
</tr>
</tbody>
</table>

| Lead | <5 | <5 | mg/kg | QF-PM 3.1.2 v11 |

Please see attached notes for all abbreviations and acronyms.

Jones Environmental Laboratory

Please include all sections of this report if it is reproduced.

All solid results are expressed on a dry weight basis unless stated otherwise.
# Notification of Deviating Samples

**Client Name:** Golder Associates Ltd  
**Reference:** 14514220446  
**Location:** Fox School  
**Contact:** Jeff Thornton

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No deviating sample report results for job 15/5556</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.
NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/5556

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2: ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEViating SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURrogates

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>UKAS accredited.</td>
</tr>
<tr>
<td>B</td>
<td>Indicates analyte found in associated method blank.</td>
</tr>
<tr>
<td>DR</td>
<td>Dilution required.</td>
</tr>
<tr>
<td>M</td>
<td>MCERTS accredited.</td>
</tr>
<tr>
<td>NA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>NAD</td>
<td>No Asbestos Detected.</td>
</tr>
<tr>
<td>ND</td>
<td>None Detected (usually refers to VOC and/SVOC TICs).</td>
</tr>
<tr>
<td>NDP</td>
<td>No Determination Possible</td>
</tr>
<tr>
<td>SS</td>
<td>Calibrated against a single substance</td>
</tr>
<tr>
<td>SV</td>
<td>Surrogate recovery outside performance criteria. This may be due to a matrix effect.</td>
</tr>
<tr>
<td>W</td>
<td>Results expressed on as received basis.</td>
</tr>
<tr>
<td>+</td>
<td>AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.</td>
</tr>
<tr>
<td>++</td>
<td>Result outside calibration range, results should be considered as indicative only and are not accredited.</td>
</tr>
<tr>
<td>*</td>
<td>Analysis subcontracted to a Jones Environmental approved laboratory.</td>
</tr>
<tr>
<td>AD</td>
<td>Samples are dried at 35°C ±5°C</td>
</tr>
<tr>
<td>CO</td>
<td>Suspected carry over</td>
</tr>
<tr>
<td>LOD/LOR</td>
<td>Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS</td>
</tr>
<tr>
<td>ME</td>
<td>Matrix Effect</td>
</tr>
<tr>
<td>NFD</td>
<td>No Fibres Detected</td>
</tr>
<tr>
<td>OC</td>
<td>Outside Calibration Range</td>
</tr>
<tr>
<td>Test Method No.</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>TM30</td>
<td>Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry), Modified US EPA Method 200.7</td>
</tr>
</tbody>
</table>
As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth’s development while preserving earth’s integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com
Appendix C
Sub-Contractors Method Statement & Risk Assessment for Demolition Works
Demolition Phase Health & Safety Plan
Methodology / Risk Assessments
Fox Primary School
Soilfix (East) Limited
Contract Number: CN1157

<table>
<thead>
<tr>
<th>Version</th>
<th>Revised By</th>
<th>Job Title</th>
<th>Reason for Change</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>R. Henderson</td>
<td>H&amp;S Director</td>
<td>First Version</td>
<td>100315</td>
</tr>
<tr>
<td>002</td>
<td>R. Henderson</td>
<td>H&amp;S Director</td>
<td>Following site visit 100315</td>
<td>100315</td>
</tr>
<tr>
<td>003</td>
<td>R. Henderson</td>
<td>H&amp;S Director</td>
<td>Lead Based Paints</td>
<td>080515</td>
</tr>
<tr>
<td>004</td>
<td>R. Henderson</td>
<td>H&amp;S Director</td>
<td>Email – 140515 – Steve Jackson</td>
<td>150515</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Representative</th>
<th>Job Title</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author (mandatory):</td>
<td>Health &amp; Safety Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name: Richard Henderson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approver (mandatory):</td>
<td>Director / Operations Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name: Nick Gambles / Gary Giles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepted By (mandatory):</td>
<td>Site Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works Completed (mandatory):</td>
<td>Client / Main Contractor / Representative on Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 1 of 30
Table of Contents

A  Method Statement Details
1.0  Description of Works
2.0  Methodology
3.0  Training
4.0  Personnel Protective Equipment
5.0  Resources
6.0  Permits

B  Site Details
7.0  Access
8.0  Site Layout
9.0  Travel Time to Site
10.0  Protection and Isolation
11.0  Plant and Machinery Movements
12.0  Communication & Contact Details
13.0  Emergency Arrangements
14.0  Welfare
15.0  Interfaces

C  Briefing
16.0  Briefing Arrangements

APPENDIX  A  Risk Assessments
APPENDIX  B  Induction Records
APPENDIX  C  COSHH Records
APPENDIX  D  TMP (Traffic Management Plan) & Fire Plan to be illustrated within the Site Office.
A Method Statement Details

1.0 Description of Works

1.1 Site Address Client / CDM-C / Principal Contractor / Demolition Contractor

Site Address:
Fox Primary School
Kensington Place
London
W8 7PP

c: Richard Mabe

t: 07841 919 526

e: richard@soilfix.co.uk

Client:
Royal Borough of Kensington & Chelsea
Town Hall
Hornton Street
London, W8 7NX

t: 0207 361 3000

c: Vernon Gibbons

CDM-Coordinator:
Gleeds Health & Safety
95 New Cavendish Street
London W1W 6XF

c: Paul Horrox

t: 0207 631 7384

e: paul.horrox@gleeds.co.uk

Principal Contractor:
Soilfix (East) Limited
23 Bellingham Lane
Rayleigh
Essex
SS6 7ED

c: Richard Mabe

t: 07841 919 526

e: richard@soilfix.co.uk

Demolition Contractor:
Sam Gilpin Demolition Ltd
Whitecleave Quarry,
Plymouth Road,
Buckfastleigh,
Devon, TQ11 0DQ

c: Gary Giles

t: 07734 715 190

e: gary.giles@gilpin demolition.com
1.2 Project Organogram

Sam Gilpin
Project Lead

Jason Vincent
Engineer

Gary Giles
Operations / Transport

Richard Henderson
Health & Safety

Kay Barlow
Training

Site Manager

Supervisors

Safety Advisor
1.3 Project Description

A. Demolition of cottage & canopy - removal of all materials off-site

B. Demolition of toilet block including saw cuts and waterproofing on completion – removal of all materials off-site

C. Demolition of wall to play ground level – remove off-site.

N.B: This document is to be read in conjunction with the Solifix Construction Phase Health & Safety Plan – C326.RBK-CPP-01.

1.4 Duration / Working Hours

The works are due to commence on the 18th May 2015. The project duration is estimated to take 3 weeks.

Working hours will be:
Monday to Friday: 0800hrs - 1800hrs
Saturdays: 0800hrs - 1300hrs

No works will be authorised on Sundays and Bank holidays. Due to parents dropping-off & collecting children, HGV access will be restricted.

The allowable times for HGV deliveries / collections to site;
1. Mon to Thurs: 0930 – 1500hrs;
2. Fri: 0930 – 1400hrs;
3. There is a borough wide restrictions on HGV’s after 18:30hrs, but this can be appraised if required.

1.5 Scope of Works / Bill of Quantities

As per project description

1.6 Changing the planned methodology and adding new addendums

In the event the methodology in S3.0 needs to be amended the Gilpin Demolition Health & Safety Director must approve all changes to the planned methodology before works recommences. On site risk assessments can be carried out by a competent person but must be approved as above.

1.7 Start of Works

Before any works commence all operatives must follow the following arrangements;
All persons on site must receive a site induction briefing from the PC and a Gilpin Demolition representative for which they must sign for and must be kept in the site file whilst on site.

Authority to work will be dependent on there being:
- A robust SSOW (safe system of work) in place – Method Statements & Risk Assessments.
- All relevant competency certificates held. CSCS/CCDO/CPCS.
- The appropriate documentation on site;
- Pre-construction Information – to be issued by Solifix.
- Service Disconnection Certificates – to be issued by Solifix.

Site Manager Initials:
Major Refurbishment and Demolition Survey HSG264 – to be issued by Soifix.
Permit to Work (Demolition / Hot Works / Break Ground)
Demolition Planning Permission - to be issued by Soifix.
F10 – to be issued by Soifix.
Section 81 Demolition Notice – to be issued by Soifix.
Insurance Certificate
Health & Safety Law Poster
CCDO Cards
Inspection Certificates of all plant, machinery and equipment.
First Aid Facilities & First Aider.
Fire Muster Point, Fire Extinguishers (in date and suitable for the tasks).
Suitable & Sufficient Welfare and Toilet Facilities (Compliant to CDM2007).
Site Boundary established and warning signage displayed.
Water supply.

1.8 Waste Removal / Completion of Works

All Rubble (concrete, brick, stone) is to be disposed of offsite at a suitable recycling facility by GD:
TBC

All metals are to be segregated into ferrous and non-ferrous and disposed of by GD at suitable recycling centre.
TBC

All other waste items are to be sorted and removed from site and recycled where appropriate.
TBC

The site is to be left in a tidy manner free from any obstructions, snags, open edges or any other hazards.
The site is to be graded off in lines with the current surrounding topography as required. All plant &
equipment to be removed from site.

1.9 Retention

As per project description.
2.0 Methodology

2.1 Introduction:

2.2 Various structures are to be demolished within the Fox Primary School which is set in the affluent area of Kensington.

2.3 The works are to demolish the cottage & canopy down to top of slab with all resultant arisings removed from site and disposed of accordingly.

2.4 Demolition of the toilet block again down to top of slab including saw cuts for the separation and waterproofing on completion. Again all materials removed of off-site.

2.5 Demolition of wall to play ground level and again all arisings disposed of off-site.

2.6 All arisings from the demolition process will be recycled where practicable.

2.7 The School:

2.8 The school will be closed throughout our works, all restrictive hours as prescribed must be adhered to at all times with no exceptions.

2.9 Structural Demolition/Noisy activities must also be reduced in these restrictive hour’s.

2.10 Site Setup:

2.11 Solifix will be acting as the Principal Contractor for the duration of our works and as such are to supply suitable and sufficient site facilities in accordance with CDM2015 Schedule 2. Details to be set out within their CPHSP.

2.12 Solifix are to erect and maintain a suitable and sufficient boundary fence line around each element of our works site so as to exclude any unauthorised access. GD will install all applicable warning signage as necessary including statutory notices upon the main access gate. Debris Netting / Mono flex or similar will be installed by Solifix.

2.13 Solifix will have made all necessary service disconnections prior to our works commencing. Solifix will present the GD site manager with all disconnection certification so as to enable the GD PTD (Permit to Demolish) to be completed and prior to ANY works commencing.

2.14 Solifix are to supply GD a suitable water supply for dust suppression, this must be of a sufficient pressure.

2.15 Gilpin Demolition can if requested undertake a letter drop of the local proprieties to notify them of our works, working hours, estimated duration and emergency contact details.

2.16 Solifix will of made of all necessary arrangement for the parking bay closures whilst both the Cottage is demolished and the Play Ground wall so as to enable suitable exclusion zones to be created.

2.17 Asbestos:

2.18 An R&D Asbestos Survey has been undertaken (C-39091_Rev1). No asbestos has been detected.

2.19 However all GD Operatives hold Cat B asbestos training and if any exotic materials are identified as part of our works, statutory controls will be implemented. Immediate consolation with the HS director must be
2.20 Site Setup (Continued):

2.21 Soiifix to issue a site setup diagram showing amenities and the like.

2.22 Dust Production:

2.23 Whilst this is covered in the below methodology and risk assessment dust production from these works is of foremost concern. As such elevated controls measures are to be put in place so as to ensure dust generation is either nil or negligible.

2.24 A towable water bowser and pressure washing system will be used for the dust suppression. This system will allow a controlled fine mist of water over the works that will suppress any dust particles produced but not to flood the area.

2.25 Demolition will be undertaken in a steady controlled fashion so the above can be as effective as practicable.

2.26 The GD site manager will ensure constant monitoring and reassess as necessary throughout the project and if required implement further control measures.
2.27 Lead based painted products:

2.28 Due to the elevated concerns by the school Gilpin Demolition have been instructed to remove all the lead painted items (except paint item's containing less than 90 mg/kg of lead) from the Fox School Toilet Block and Fox Cottage, all as identified within the Golder Associates Lead Survey - Report Number - 1451420446.501/B.0.

2.29 All waste will be disposed of as non-hazardous waste. Works will be undertaken as follows;

2.30 All items to be removed will be marked up prior using a yellow spray or similar.

2.31 All doors and windows will either be closed and/or sealed with 1000 gauge poly.

2.32 Operatives will wear in addition to their mandatory PPE, their face fitted half masks with P3 filters, type 5/6 disposal coveralls, cleanable footwear, disposable gloves.

2.33 Operatives will use small hand tools such as sledge hammers, mattock, pry bars to remove said items, which will be loaded into waste sacks. Once a sufficient quantity has been reached the sacks will be carried by hand into the waste receptacle out side.

2.34 A hand sprayers with asbestosstrip will be used to reduce any dust.

2.35 Operatives leaving the working area are to de robe their additional PPE and wash hands thoroughly.

2.36 Playground Wall Demolition:

2.37 Works are to commence with the Playground Wall, these works will be undertaken as follows;

2.38 Gilpin Demolition are to release the existing wrought iron gates and set to one side thus allowing suitable access for our 20Te Wheeled 360° Demolition spec excavator.

2.39 This 20Te machine will be utilised to undertake the majority of the works for this project, benefiting from being wheeled avoiding surface damage.

2.40 A roaming exclusion zone will be established as the wall is being demolished, this will be in the form of heras fence panels. The exclusion zone will be pulled out to take 50% of the width of the road under the strict control of banksmen when each high section of the wall is demolished. The fence will then be brought back in to allow for vehicles and pedestrian to pass. This process will cause minimal disturbance to others.

2.41 The fence panels will be double clipped and debris netting installed, all supplied by Soilfix. Demolition warning signage will be affixed to the panels.

2.42 2no Banksmen will be positioned upon the road way to control the safe passage of pedestrians and vehicles. The banksmen will communicate with the excavator operative via two way radios and stop works as necessary.

2.43 Works are to commence from the entrance working towards the lower end of the site. The excavator under water suppression will reduce the brick wall from top down course by course pulling the wall inwards onto the timber navy mat protection.

2.44 The steel high level fence will be removed by operatives working from the MEWP Boom.
It is foreseeable that small debris will fall road side, as such localised timber ply boards will be installed on the pavement to alleviate any damage that may have been caused. The exclusion zone and debris netting will be suitable to protect the general public and ensure no materials exit site.

Works will progressive in careful methodical process demolishing the wall down to top of playground level.

All resulting arisings to be loaded away for recycling.

**Cottage and Canopy:**

A localised exclusion zone will be erected again using heras fence panels, both internally and upon the road way with the parking bay adopted to all for the flow of traffic. Debris netting will also be installed as before.

**Internal Soft Strip:**

Prior to the structural demolition commencing an internal soft strip will be undertaken.

This will be to remove all non-structural fixtures and fittings throughout the cottage.

Operatives using general hand tools such as disc cutters, sledge hammers, mattocks, bars etc. will break out the non-structural items. These may consist of the following but not restrictive too;

- Doors & Frames
- Suspended ceilings
- Carpets
- Soft furnishings
- Sanitary wear
- Partition walls
- Plaster board
- Kitchen wear
- Lighting

The items will be carried by hand to a sorting area outside where the waste will be segregated into their applicable waste streams for subsequent recycling and disposal.

The GD Site Manager will undertake a visual walk around at each phase of these works to ensure all items have been removed.

**Canopy:**

The canopy is to be separated as illustrated below;
2.58 Access will be gained from the MEWP Boom or Alloy Tower. The Excavator will support the canopy with its grab attachment and operatives using a disk cutter will separate the steel work releasing the section of canopy to be demolished.

2.59 Structural Demolition:

2.60 The work will be undertaken by the 20Te wheeled excavator and will commence from the roadside gable wall working into the site. The excavator will be positioned within the heras fenced zone.

2.61 Banksmen with stop/go boards will control the safe passage of vehicle and pedestrians whilst these safety critical works are underway and until the excavator has worked into the site.

2.62 The adjacent parking bays will be adopted by Soilfix throughout these works.

2.63 The excavator under water mist dust suppression will break into the gable wall from the top, pushing the brickwork into the building and reducing from top down working up to the chimney.

2.64 Once complete the fencing upon the road can be pulled in and works can recommence from within the school.

2.65 The excavator with its grab attachment will break up the chimney from top down allowing the material for fall into the building. Once the chimney has been reduced to a safe height the remaining building working to the rear gable will be reduced.

2.66 The excavator will progress into the building folding down the walls of the structure into its footprint, working in a progressive bay by bay demolition method until the structure is demolished, thus maintaining the structural integrity of the building as it is being demolished.

2.67 All resultant arisings will be sorted at ground level by the excavator and when safe to do so operatives may aid this process by picking through the arisings.

2.68 The arisings will be sorted into their applicable waste streams and loaded away.

2.69 Any access requirements as necessary throughout these works where the machine cannot operative will be undertaken working from a MEWP Boom and demolished by hand. Operatives working from the MEWP Boom are to wear in addition to the mandatory PPE certified harnesses and 1 metre steel fixed lanyard. Note: The Boom can also be utilised to dispense water as required.
2.70 Toilet Block:

2.71 The works upon the toilet block are to be undertaken as follows;

2.72 The initial work will be to separate and prop from the main school building that is to be retained.

2.73 Props will be installed internally to support the roof structure.

2.74 Operatives using the exiting access will saw cut the roof from above. Edge protection already in place.

2.75 N.B: Saw cutting will be undertaken by our sub-contractor.

2.76 Once cut and again using the 20Te excavator the toilet block will be broken out.

2.77 The excavator will grab into the roof and fold down the walls until demolished. Where possible the props will be salvaged.

2.78 N.B: A foul pipe runs though the toilet block and is not to be damaged as a result of our works.

2.79 The works will progress down to top of slab.

2.80 Heavy Transport / Waste Removal / Deliveries:

2.81 All heavy vehicle movements, waste removal and deliveries will be undertaken to ensure minimal disruption is caused to local residents and businesses. The logistics of this will be controlled by our Site Manager and Transport Manager ensuring deliveries occur out of rush our periods.

2.82 All HGV's exiting site will be driven out using the turning circle created internally and not reversed.

2.83 Banksmen will aid all movements into and out of site to ensure pedestrians and other road users are controlled.

2.84 All HGV's will be sheeted to contain their loads. N.B: All GD HGV's use an 'easy sheet' system thus eliminating the requirement for operative access onto the waste bins.

2.85 At this stage of the works it is not foreseeable for the requirement of a wheel wash as all HGV's will be loaded upon the existing hard standing, however if this changes additional control measures will be introduced.