Remediation Method Statement

At Latchmere House, Church Road, Richmond, TW10 5HH

for Berkeley Homes Ltd (West London)

Report Reference: LP001059

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SCOPE OF WORKS

This report has been prepared by Leap Environmental Ltd on the basis of information received from a variety of sources which Leap Environmental Ltd believes to be accurate. Nevertheless, Leap Environmental Ltd cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

Leap Environmental Ltd has used all reasonable skill, care and diligence in the design and execution of this report, taking into account the manpower and resources devoted to it in agreement with the Client. Although every reasonable effort has been made to obtain all relevant information, all potential contamination, environmental constraints or liabilities associated with the site may not necessarily have been revealed.

The conclusions reached in this report are necessarily restricted to those which can be determined from the information consulted, and may be subject to amendment in the light of additional information becoming available. These conclusions may not be appropriate for alternative schemes.

This report is confidential to the Client and Leap Environmental Ltd accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Leap Environmental Ltd beforehand. Any such party relies upon the report at their own risk.

Signed :	 Andy Norman MSci FGS
Countersigned :	 Richard Brinkworth BEng
Date :	31 May 2016
Revision:	Issue 2

EXECUTIVE SUMMARY

This report presents a method statement for soil contamination remediation works to be carried out at a site at the Latchmere House site, Church Road, Richmond, TW10 5HH.

The site comprises a former detention centre with several associated buildings (including Latchmere House) and areas of hardstanding. Large areas of open greenspace are located in the eastern part of the site. The proposed development comprises 66 two/three storey houses with private gardens and associated parking. Latchmere House is to be extended and refurbished to comprise 7 apartments. The majority of the soft landscaping will be private garden space with some communal open space.

The site has been subject to three phases of intrusive site investigation, completed between 2012 and 2016. The initial 2012 study was completed by Listers Geotechnical, with two additional phases completed by LEAP in 2015 and 2016.

The site is underlain by a variable thickness of Made Ground (maximum thickness of 1.6m) overlying sand and gravel of the Kempton Park Gravel Formation. This has been proven to between 7.0m and 7.6m bGL, where the London Clay Formation was encountered.

The results of the most recent Generic Quantitative Risk Assessment (GQRA) indicates that areas of Made Ground are contaminated with lead and benzo(a)pyrene above the Generic Assessment Criteria (GAC) and contains chrysotile and amosite asbestos. Contamination is predominantly present within tarry subbase found beneath the tarmacadam hardstanding. Further isolated areas of lead and asbestos contamination have also been identified within the Made Ground and natural ground.

Remedial actions have been recommended, which principally consist of source removal and provision of a clean capping layer. Excavated contaminated soils may be reused beneath areas of hardstanding, including roads and building slabs, provided that the remediation sub-contractor complies with all relevant legislation and best practice (e.g. the CL:AIRE Code of Practise). Where further isolated areas of contamination are present in areas of proposed soft-standing, or where they may be encountered by construction/ maintenance workers, they are to be removed to a maximum of 1m bGL in the case of asbestos contamination and 0.5m in the case of lead contamination – or to natural soils if less in both cases.

A INTRODUCTION AND BACKGROUND

1 Introduction

Leap Environmental Ltd (hereafter referred to as LEAP) has been appointed by Berkeley Homes Ltd (West London) to provide a methodology for contaminated land remediation at the former HM Detention Centre, Latchmere House on Church Road, Richmond, TW10 5HH. The site has been the subject of previous investigations by Listers Geotechnical and LEAP, and is to be redeveloped with residential housing. LEAP has reviewed the previous work in the light of current guidance. This method statement presents the recommendations for redevelopment of the site.

The site has been the subject of previous investigations by LEAP Environmental and others between 2012 and 2016. The following reports refer to the site, and should be read in conjunction with this report:

- Ground Investigation Report, issued by Listers Geotechnical Consultants Ltd, September 2012. Reference: 12.07.020;
- Phase II Site Investigation Report on Latchmere House, issued by LEAP Environmental, 3rd March 2016, Reference: LP001059; and
- Phase II Site Investigation Addendum Report on Latchmere House, House, issued by LEAP Environmental, 4th March 2016, Reference: LP001059.

2 The Site

2.1 Site Location and Description

The site is located at Latchmere House, Church Road, Richmond, TW10 5HH. The approximate National Grid Reference of the site is TQ 18577 71343.

The site extends to approximately 3.2Ha.

The site straddles the boundary between Kingston-upon-Thames and Richmond-upon-Thames.

The site comprises a former detention centre with several associated buildings (including Latchmere House) and areas of hardstanding. Large areas of open greenspace are located in the eastern part of the site. At the time of the most recent site work (February, 2016), most of the buildings had been demolished. During the original site work (December, 2015) asbestos removal specialists were working in several of the buildings.

Mature and semi-mature trees and bushes are located throughout the site, including fir, conifer and various deciduous trees. Most the trees in the eastern part of the site are to be retained.

Several large trees had been removed at the time of the site work, with more to be removed at a later date.

2.2 Proposed Development

The proposed development comprises 66 two/three storey houses with private gardens and associated parking. Latchmere House is to be extended and refurbished to comprise 7 apartments.

The majority of the soft landscaping will be private garden space with some communal open space. A proposed development plan is included as Figure 1 in Appendix A.

2.3 Site History

Latchmere House is understood to have been constructed in the early 1800s as a private residence and was converted to a military hospital, and later a detention centre, in the early 20th Century. The Listers report states that the site was handed to Her Majesty's Prison Service immediately after WW2 in 1948. The site initially served as a Young Offenders Institute, then a remand centre, a deportees prison, and latterly, a rehabilitation centre.

The site is located to the north of Kingston-upon-Thames, adjacent to Richmond Deer Park in a mainly residential area. The site is bounded by residential buildings to the east, south and west, and Richmond Park lies to the north of the site. It is an approximately rectangular parcel of land with maximum dimensions of 250m from SW-NE and 100m from SE-NW. The site is entered from the north via Church Road, towards Latchmere House; a large three-storey brick-built Victorian mansion house. The main ex-detention centre lay to the south of the house and was surrounded by a steel fence. This was entered from the north with a single-storey guard house to the immediate west of the entrance.

To the south of the guard house was a works area, which contained a collection of huts and a two-storey brick building that housed workshops and storerooms. A hazardous chemicals storeroom, a carpenter's shop, an electronics room and other storerooms were noted. To the east of the works area was the Chaplain's office, reception and Infirmary. An old boiler house was located to the north of the Infirmary.

South of the Infirmary was a two-storey brick-built cell block with overgrown vegetable patch nearby. To the south of the vegetable patch was a single-storey kitchen block and above-ground storage tank (AST). This fuel tank was targeted during the site investigations.

A gymnasium was located west of the main exercise yard in the southern half of the site. The Listers report states that the buildings had remained largely unchanged since the 1920s. The exercise yard is an open area of tarmac which has become partially overgrown with weeds in places. In this area, two relict bases for ASTs were noted by Listers. These were believed to contain diesel fuel.

3 Ground conditions

3.1 Soil Profile

The site is mapped by the British Geological Survey (Sheet 270 – Solid and Drift Edition) as being underlain by Kempton Park Gravel Formation over London Clay Formation.

The soil conditions on site as reported by the investigation generally comprise up to around 0.5m depth of Made Ground (although in places it can be as much as 1.6m deep) over loose to very dense slightly clayey gravelly sand/sandy gravel, with gravel of angular to rounded, fine to coarse flint. This is believed to be the Kempton Park Gravel Formation and has been proven to approximately 7-7.6m below ground level (m bGL). Below this was stiff to very stiff, thinly laminated, fissured plastic clay (London Clay Formation).

Groundwater strikes were recorded in several trial pits and both boreholes at depths of between 1.9 – 3.7m bGL.

3.2 Existing Contamination

The previous phases of intrusive ground investigation completed by LEAP includes the collection and analysis of 40 No. soil samples from across the site. These samples have been split into distinct soil populations as follows:

- Made Ground subbase from beneath areas of tarmacadam hardstanding;
- Made Ground subbase from beneath concrete building slabs;
- Topsoil-like Made Ground from areas of public open space;
- Made Ground from in front of the former gym building; and
- Natural soil.

A summary of contamination identified within these populations is presented in the following sections.

3.2.1 Made Ground – Subbase beneath tarmacadam

The Made Ground containing clinker gravels beneath the blacktop hardstanding was found to be contaminated with lead and Benzo(a)Pyrene (BaP). The maximum concentrations for these contaminants was found to be 758 mg/kg and 315 mg/kg, respectively. The Generic Assessment Criteria (GAC) thresholds for these contaminants, for a residential with home-grown produce scenario, is 200 mg/kg and 5 mg/kg, respectively. Asbestos was also identified in three positions (TP10, TP105 and TP113). This comprised chrysotile in TP10, located beneath the access road behind the gym building, and amosite in TP105 and TP113, located beneath the exercise yard and entrance driveway respectively.

The Generic Quantitative Risk Assessment (GQRA) presented in the Phase II Site Investigation Addendum Report concluded that this material was sufficiently contaminated with lead, BaP and asbestos to warrant remedial action where present beneath garden/ open space areas.

3.2.2 Made Ground – Subbase beneath building slabs

The Made Ground found beneath the building slabs was typically less contaminated, with one sample exceeding the GAC for lead (TP110). This material comprised reworked natural soils, with minor brick and flint gravel. A layer of brick and concrete cobble was noted beneath some slab areas. The GQRA concluded that the granular brick and cobble subbase could be crushed along with the slab and reused as a subbase and the underlying reworked natural soils could be retained/ reused at depth.

3.2.3 Topsoil-like Made Ground

Topsoil-like Made Ground was present from ground level across the open space areas of the site. The laboratory analysis indicates that this material was uncontaminated with the exception of shallow soils from TP107 contained marginally elevated lead and amosite asbestos. It is noted that this material was located between two large stockpiles of demolition rubble and may have been contaminated during this work or may represent a hotspot of contamination.

3.2.4 Made Ground from in front of the gym

Mad Ground in front of the former gym building was fairly deep (~1.6m) and comprised a reworked slightly clayey fine sand. It was noted to contain elevated lead, BaP and asbestos sheeting in places. This Made Ground does not extend beneath the exercise yard to the south or the road to the north. The GQRA concluded that this material would require remedial action where present beneath garden/ open space areas.

3.2.5 Natural Soil

Natural sand and gravel was sampled from two separate locations across the site. Samples were targeted around the AST (TP8) and beneath the exercise yard (TP104). Samples were taken to identify if fuel hydrocarbons or the PAH contamination within the subbase was migrating into natural soils at depth. The GQRA identified a single exceedance of lead in TP8 at 0.5m. This material was noted to be grey and exhibit a slight hydrocarbon odour. The GQRA concluded that this hotspot would require remedial action if present beneath garden/ open space areas.

A zoned site plan is presented in Figure 2, Appendix A. This shows the key areas mentioned above with the associated trial pits/excavations where contaminated material was found. A summary of asbestos detections is included on Figure 3 in Appendix A.

B REMEDIATION STRATEGY

4 Remediation of On-Site Contamination

The following summarises the remedial activities that are proposed for the site:

- Removal of tarmacadam and tarry subbase, specifically;
    - The shallow Made Ground beneath the exercise yard, which is contaminated with lead, BaP and amosite.
    - The sub-base beneath the main access road, which is contaminated with lead, BaP and chrysotile.
    - The sub-base beneath the road in front of Latchmere House, which is contaminated with lead, BaP and asbestos (amosite) – only in the area of the formal garden.
    - The shallow Made Ground beneath the northern yard, which is contaminated with lead and BaP.
- The hotspot of contaminated topsoil-like Made Ground from TP107, reworked soil in TP110 and the area of contaminated natural soil from TP8 should be removed if present at shallow depth in garden/ open space areas.
- The Made Ground material from in front of the gym building should be removed to 1m bGL if present in areas of soft-standing.

These four key zones are shown on Figure 2, Appendix A.

Following removal, the excavated material may be reused on site, subject to all necessary regulatory approvals and procedures (e.g. the CL:AIRE Code of Practice, waste licensing, or exemption), otherwise it should be disposed of as waste. at a licensed off-site facility.

4.1 Excavation of Hardstanding

The tarmacadam and underlying tarry subbase shall be excavated to the underlying natural soil. During excavation this material should be segregated and stored on hardstanding to avoid cross-contamination of surrounding Made Ground or natural soils. This material was typically thin (circa 0.5m) and thus should be removed to natural soil. If pockets of thicker tarry subbase Made Ground are identified, this should be removed to a depth of 1m and covered with a geotextile 'Deter to Dig' layer.

The concrete building slabs will be lifted and crushed. Any underlying concrete and brick rubble subbase can also be crushed. Whilst no asbestos was identified in this material during the site investigation works, the groundworker should be vigilant and report any asbestos, if encountered, prior to crushing. Crushed slab and subbase could be reused beneath hardstanding, provided it is geotechncially suitable for use. The production of crushed

aggregate for reuse on site should be completed in line with best practice, as set out in the WRAP Quality Protocol[1].

4.2 Removal of Asbestos Contaminated Soil

The hotspot of asbestos contamination identified in shallow soils from TP107 will require removal if present in a proposed area of garden/ open space or if it is likely to be encountered by construction/ maintenance workers. This material was noted to be 0.55m thick and thus should be removed down to the natural soil.

The Made Ground in front of the gym building will require removal to 1m if present in areas of soft-standing, or if it is to be disturbed by construction/ maintenance workers. It is noted that this material was present to 1.6m, but does not coincide with proposed areas of soft-standing.

4.3 Removal of Lead Contaminated Soil

The reworked soil present beneath the concrete and brick subbase in TP110 contained elevated lead (622mg/kg). If this area contains gardens/ open space then it should be excavated to 500mm and covered with clean soil.

The natural soil in TP8 was noted to contain elevated lead. However, this sample is situated beneath an area of proposed hardstanding and thus no further action is required. This material would not be suitable for excavation and reuse in garden/ open space areas.

4.4 Stabilisation and Re-Use of On-Site Materials

It is understood that the contaminated tarmacadam and soils impacted by lead, BaP and asbestos are to be retained on-site and stabilised. Following stabilisation, and subject to their geotechnical suitability, these materials are to be re-used as sub-base beneath roads and beneath the building slab, thus reducing the requirement for off-site disposal.

4.4.1 Geochemical Suitability for Use

The contaminated soils described in the sections above are not suitable for re-use under softstanding areas. If any of these soils fall under proposed areas of softstanding they must either be excavated and stabilised before re-use under roads/building slabs, or removed off-site.

It is noted that four samples of Made Ground were found to contain asbestos contamination. Asbestos containing soils, defined herein as soils containing asbestos material at greater than 0.001wt%, may only be re-used where there is a requirement to fill areas where there is no potential future exposure to human receptors. Examples could include at depths greater than

[1] WRAP Quality Protocol, Production of Aggregates from Inert Waste – End of Waste Criteria for the Production of Aggregates from Inert Waste,

1m beneath roads, where materials will not be accessible during routine road maintenance, and beneath a 100mm blinding layer under houses. The intention of the blinding layer is to ensure that surface fill material in the sub-floor void does not become airbourne.

Prior to re-use of site-won materials, the appointed sub-contractor shall complete a Materials Management Plan. The works will be completed in accordance with the CL:AIRE Code of Practice[2]. This will include gaining confirmation from the suitable regulatory bodies that reuse of material will not present an additional, unacceptable hazard to the environment or development; that the material is geotechnically suitable for its intended use; and that there is a defined and quantified requirement for material reuse.

4.5 Discovery Strategy

It is further envisaged that some artefacts from the former site use may remain (for example drains, foundations etc). Where these are identified during remediation or construction, they will be assessed and addressed individually, and documented accordingly.

If contamination not previously identified is encountered, work should be suspended in the area and LEAP contacted. Areas of unexpected contamination shall be inspected, sampled if necessary, and further risk assessment undertaken. The results of any further work shall be communicated to the Local Planning Authority and any further remedial actions agreed as required.

5 Provision of Clean Cover in Garden Areas

Garden and open space areas will require clean cover, comprising a minimum of 150mm topsoil and sufficient subsoil to achieve design levels. It is anticipated that the topsoil-like Made Ground can be reused in these areas. Likewise, arisings from the underlying sand and gravel strata would be suitable for use as subsoil.

The existing hardstanding and underlying subbase will be excavated from across the site. These materials will not be present at depth beneath soft-standing. Following removal, garden and open space areas will consist of the underlying natural soils or reworked soils. Where the reworked soil sampled from TP110 is encountered, this should be covered with 500mm of clean cover (for the purposes of this BRE cover calculation, a lead concentration in the cover of 45mg/kg has been used as this is reflective of on-site natural ground concentrations). If different cover materials are used, then the cover thickness may vary. Where the hardstanding removal exposes natural soil, clean cover shall comprise a minimum of 150mm of topsoil, plus sufficient subsoil to achieve the design level.

[2] The Definition of Waste: A Development Industry Code of Practice, version 2, CL:AIRE 2011.

There is some topsoil that can be reused on site, and it is envisaged that topsoil will also be required to be imported to the proposed garden and soft landscaped areas. Depending on final levels and the specific requirements of the development (landscape architecture for example), it may be necessary to import subsoil as well as topsoil.

6 Waste Disposal

It is the duty of the waste producer, in this case Berkeley Homes Ltd (West London), to ensure that all waste is disposed of appropriately and that any that is sent to landfill is sent to an appropriately licensed one. All waste sent to landfill must be classified and must be pre-treated. The form of pre-treatment should be documented in the Site Waste Management Plan. There are various forms of pre-treatment that are acceptable.

It is up to the receiving landfill to classify the waste.

C VERIFICATION WORKS

7 Site Works

During the remediation the Verification Engineer (LEAP) will observe the following:

- Removal of tarmacadam and tarry subbase Made Ground.
- Visual inspection of underlying soils.
- Validation testing following removal of asbestos and lead contaminated soils (TP4, TP5, TP107, TP110), where required.

7.1 Validation testing of imported and reused soils

7.1.1 Reused Soils

The remediation subcontractor shall detail their validation procedure within their MMP submission. LEAP would expect this to include testing of sub-base material and sub-slab fill to ensure compliance with reuse criteria. Specifically, sub-base material placed beneath the roads at depths less than 1m shall be tested at 10m linear intervals to ensure the material contains <0.001wt% asbestos. Likewise, the 100mm blinding layer beneath the building footprint shall be tested at a frequency of 1 sample per plot to ensure the material contains <0.001wt% asbestos.

Where existing topsoil is to be reused it shall be sampled at a density of 1 sample per 100-150m3. If natural, as dug soils are to be reused then these will not require validation testing. The reuse of clean, as dug soils falls outside of the remit of the CL:AIRE Code of Practice.

7.1.2 Imported Soils

In general terms, all imported soils will be approved by LEAP prior to importation. The proposed sources will be assessed on the basis of either a detailed site investigation or laboratory test results in the case of a manufactured topsoil. In the absence of this data then LEAP will then advise what further testing, if any, is required prior to importation.

The test frequency will be as follows (to be advised by LEAP on a source by source basis depending on the quality of data provided prior to importation).

Subsoil – 1 sample per 150-300m^3

Topsoil – 1 sample per 100-150m^3

All imported soils will be subject to the test parameters attached in Appendix B, irrespective of the depth at which they are to be placed.

7.2 Depth of subsoil and topsoil

The depth of the placed topsoil layer in garden areas will be verified by LEAP by excavation of hand dug holes through completed gardens. This depth will be specified to meet the requirements of the NHBC, the Local Authority and the landscaper. These verification holes will be randomly positioned and placed at a frequency of one per two plots.

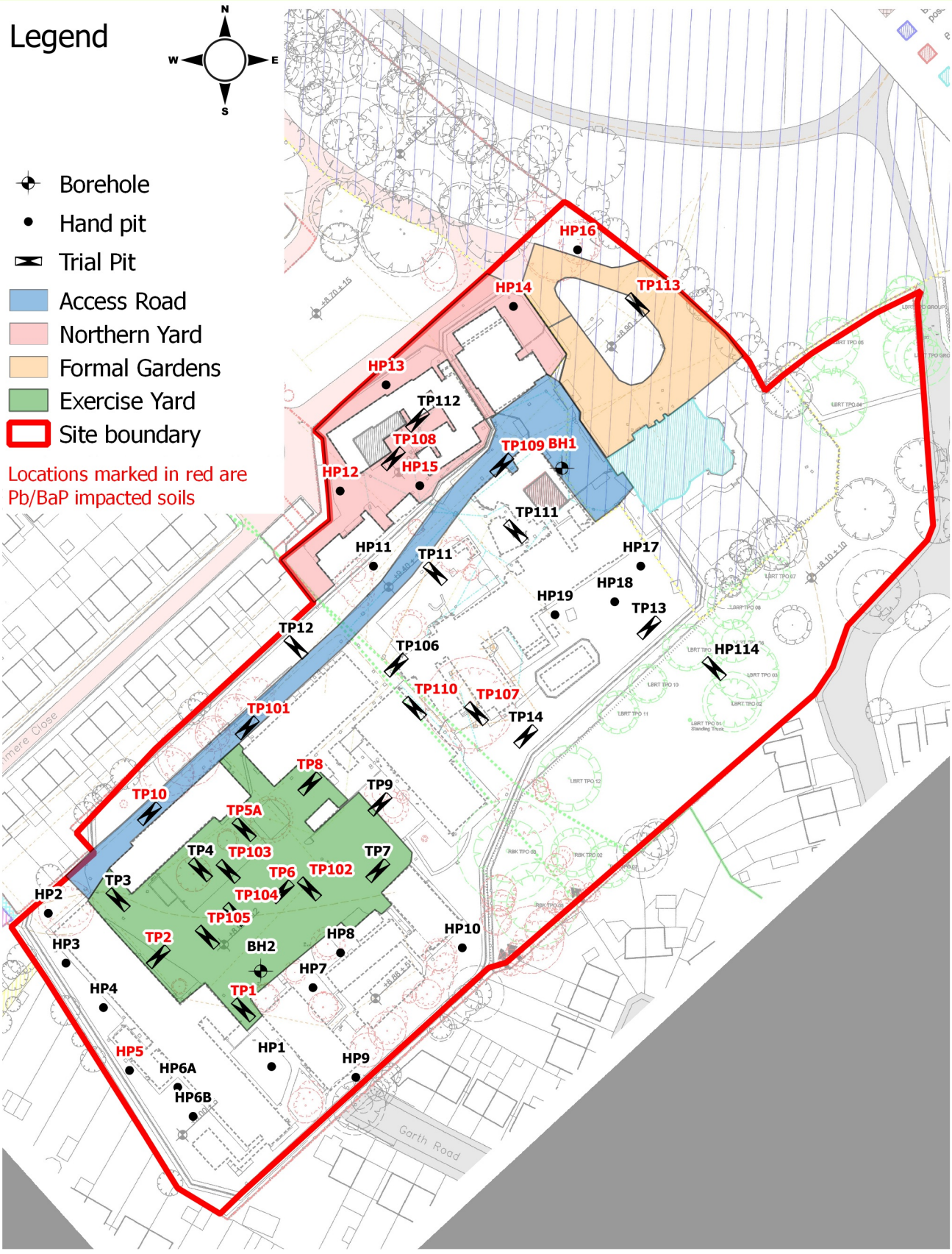
8 Verification Report

All verification works will be presented in final verification reports upon plot completion. These reports will include: source certificates and test results of imported and re-used soils; site photographs of topsoil, hardstanding removal, topsoil/subsoil depths and any excavations.

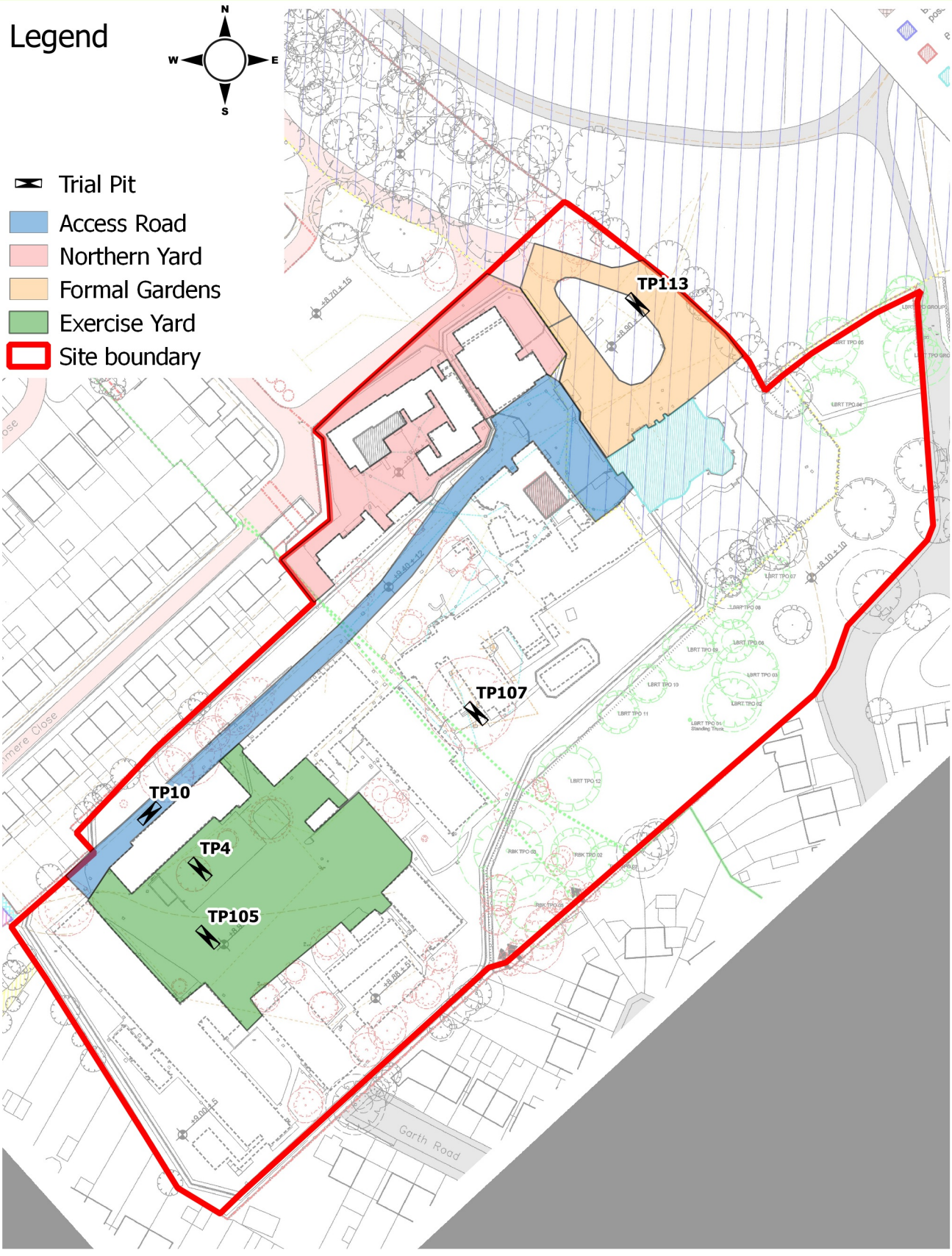
APPENDIX A

Figures

leap environmental	**Client :**	Berkeley Homes Ltd	**Date :**	13/01/2016	**Project ID:**	LP001059
	Project :	Latchmere House	**Title :**	Site Development Plan	**Fig. No.**	1



leap environmental	Client:	Berkeley Homes Ltd (West London)	Title:	Zones of Impacted Soils	Project ID:	LP001059
	Project:	Latchmere House	Date:	08/03/2016	Figure No.	2



leap environmental	Client:	Berkeley Homes Ltd (West London)	Title:	Asbestos Locations	Project ID:	LP001059
	Project:	Latchmere House	Date:	08/03/2016	Figure No.	3

APPENDIX B

Specification for Imported Soils

LEAP SPECIFICATION FOR PLACEMENT OF IMPORTED FILLS AND PROCUREMENT OF IMPORTED TOPSOIL AND SUBSOIL.

1 FILLS

1.1 Filling Generally

Filling shall be carried out in accordance with the recommendations of BS 6031: 1981

Fill shall be maintained and protected in a satisfactory condition at all times until final completion.

Any material rendered unsuitable or unsatisfactory after being placed in the works shall be repaired or replaced as appropriate so that all the completed filling is in accordance with the specification.

1.2 Dimensions

Fills shall be constructed to backfill the excavations made to remove unacceptable material in order to reinstate the ground to finished levels with an allowance for shrinkage and consolidation of the fill material subsequent to completion, and in order that the minimum clean cover as specified in the remediation method statement is achieved.

The excavated levels shall be recorded before the commencement of filling. The level of the filled areas shall be taken and recorded after filling.

2 Types of Fill

There are potentially two types of fill to be used. These are as follows:

- Topsoil
- Subsoil

The capping of landscaped areas will comprise a minimum of 150 mm of topsoil to finished garden level. Underlying subsoil thicknesses will be as required to achieve the overall finished levels and to provide the required cover layer thicknesses as detailed in the main body of this report.

2.1 Topsoil

It is recommended that imported topsoil complies with the requirements of BS 3882: 1994 for a Premium or General Purpose Grade material.

The topsoil shall be free from fragments of glass, bricks, concrete, wire or other potentially hazardous matter.

The topsoil will be subject to the additional limitations set out below.

2.2 Subsoil

Imported subsoil shall comprise certified clean material which satisfies the conditions set out in Clause 9.3. Site arising subsoil shall comprise natural arisings from the construction activities which have been confirmed acceptable by the Engineer.

2.3 Sources of Materials

Imported materials may be obtained from any source unless otherwise stated in the Drawings or in the Specification.

It shall remain the responsibility of the Contractor to obtain only fill material complying with the Specification and Method Statement, not withstanding any tests which may be accepted by the Engineer.

The Contractor shall demonstrate to the Validation Engineer's satisfaction that his fill materials from each source are uncontaminated by submitting to the Validation Engineer a chemical analysis of material or evidence of such other tests as the Validation Engineer may require for all proposed sources of fill, and if necessary sampling and analysing materials as they are delivered to stockpiles or the fill location on site.

Sampling rates shall be a minimum of one sample per 150 cubic metres of imported soil, unless otherwise agreed with the Engineer. Such tests for chemical composition as may be agreed by the Engineer shall be carried out on each sample and the results of tests shall be forwarded to the Engineer. Testing for contamination on samples taken shall be carried out at a testing laboratory approved by the Engineer and shall be to appropriate MCERTS standards. The Contractor shall maintain records of the location in the Works of fill from each source and the date of delivery to the site, and shall submit these records to the Engineer as requested. Chemical analysis on the imported fill material shall include testing for the contaminants listed in Tables B1 as a minimum. Contaminant concentrations shall be below those listed in Tables B1 and B2, which are attached, unless agreed otherwise by the Engineer. Additional analyses may be requested depending on the source and nature of the material.

In addition, the following shall be deemed as unacceptable for replacement fills:

- Peat, materials from swamps, marshes and bogs.
- Logs, stumps and perishable material.
- Materials in a frozen condition.

- Clay having a liquid limit determined in accordance with BS1377; Part 2, exceeding 90% or plasticity index determined in accordance with BS1377; Part 2, exceeding 65%.
- Material susceptible to spontaneous combustion.

Should the Contractor proceed with stockpiling or spreading and fill prior to receiving approval from the Engineer of results of the above tests, and the results of such tests show that the fill is contaminated above acceptable levels, the Contractor shall remove all contaminated material and replace it with acceptable material at his own cost as part of the main contract.

TABLE B1: CHEMICAL ACCEPTABILITY CRITERIA FOR MATERIALS TO BE IMPORTED FOR USE AS TOPSOIL OR SUBSOIL IN PRIVATE GARDENS WHERE EDIBLE PLANTS MAY BE GROWN.

Determinant	Assessment Criteria mg/kg
pH	6.5-9.5
Arsenic	37
Cadmium	26
Hexavalent Chromium	21
Copper	2400
Cyanide	34
Lead	200
Mercury	40[1]
Nickel	130
Selenium	250
Zinc	3700[2]
Benzo(a)pyrene	5.0
Naphthalene	2.3
Acenaphthylene	170
Acenaphthene	210
Flourene	170

Phenanthene	95
Anthracene	2400
Flouranthene	280
Pyrene	620
Asbestos	<0.001%wt

Notes to table

1. *Assessment criterion based on inorganic mercury.*
2. *Assessment criterion based on oral pathway only.*

TABLE B2: CHEMICAL ACCEPTABILITY CRITERIA FOR MATERIALS TO BE IMPORTED FOR USE AS TOPSOIL OR SUBSOIL IN PUBLIC OPEN SPACE

Determinant	**Assessment Criteria mg/kg**
pH	6.5-9.5
Arsenic	79
Cadmium	220
Hexavalent Chromium	23
Copper	12000
Cyanide	34
Lead	630
Mercury	120[1]
Nickel	230
Selenium	1100
Zinc	81000[2]
Benzo(a)pyrene	10
Naphthalene	4900
Acenaphthylene	15000

Acenaphthene	15000
Flourene	9900
Phenanthene	3100
Anthracene	74000
Flouranthene	3100
Pyrene	7400
Asbestos	<0.001%wt

Notes to table

1. *Assessment criterion based on inorganic mercury.*
2. *Assessment criterion based on oral pathway only.*