



REGAL LONDON **Ryder**

**100-100A Chalk Farm Road
Planning Pre Commencement Condition Discharge
Condition 7**

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Introduction

This information was previously granted approval on 27 November 2025, in accordance with the requirements outlined in the planning conditions of the planning application referenced as 2024/0479/P.

The following document has been prepared by Ryder Architecture on behalf of Regal London to illustrate the details in pursuance of discharging the planning condition noted below under planning application reference number 2024/0479/P.

Pre Commencement Condition 7: Land Contamination

Prior to commencement of development (other than demolition, site clearance and preparation), a written programme of ground investigation for the presence of soil and groundwater contamination and landfill gas should be submitted to and approved in writing by the local planning authority.

The site investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures (if necessary as a result of the investigation) shall be submitted to and approved by the local planning authority in writing.

The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior to occupation.

Reason: To ensure the risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other receptors, in accordance with policies D1, A1, and C1 of the London Borough of Camden Local Plan 2017.

Information

Evidence

Remediation strategy and verification plan

Consultant

Geo-Environmental



Geo-Environmental

REMEDIATION STRATEGY & VERIFICATION PLAN

for the land at

100 CHALK FARM ROAD, CAMDEN


LONDON, NW1 8EH

on behalf of

REGAL THREE LONDON CONSTRUCTION LIMITED





Report:	REMEDICATION STRATEGY & VERIFICATION PLAN
Site:	100 CHALK FARM ROAD, CAMDEN, LONDON, NW1 8EH
Client:	REGAL THREE LONDON CONSTRUCTION LIMITED
Date:	04/02/2025
Reference:	GE22556/RSVP/FEB25
Version:	1.0
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AMENDMENT RECORD

Revision ref.	Date	Reasons for amendment	Author	Reviewed By	Authorised by
1.0	04/02/2025	First issue	JT	CG	GR

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1.0 INTRODUCTION

1.1 General

Following an intrusive investigation undertaken at the site by Geo-Environmental Services Limited ('Geo-Environmental'), Geo-Environmental was then appointed by Regal Three London Construction Limited ('the Client') to formulate a Remediation Strategy and Verification Plan in relation to the proposed development on land at 100 Chalk Farm Road, Camden herein referred to as 'the site' (see Figure 1).

The site has been the subject of a Phase 2 Geotechnical Design Report by Geo-Environmental (reference GE22556/GDR/JUL24 dated 20th August 2024) which also included assessment of environmental testing.

The remediation strategy has been developed to reflect the findings from the assessments undertaken to date on this site.

Geo-Environmental assumes that the data and information presented within any third-party reports, documents and drawings is factually correct and accepts no liabilities for any inaccuracies, omissions or errors presented within the third-party information or subsequent assessment thereof.

1.2 Objectives

The Remediation Strategy & Verification Plan (RSVP) sets out the proposed remedial works to be undertaken on the subject site to support its development for the demolition of existing buildings and redevelopment of the site to provide two buildings ranging in height from [6] to [12] storeys containing purpose-built student accommodation (PBSA) with 265 rooms, associated amenity and ancillary space (Sui Generis), 24 affordable residential homes (Class C3), ground floor commercial space (Class E) together with public realm, access, servicing, and other associated works.

The development will also include for a basement excavation in the central and western two thirds of the site which will have a maximum excavation depth of approximately 12m along the southern boundary of the site. The southeastern section of the site will also have an overall reduced dig of approximately 3.5m.

1.3 Planning Permission

It is understood that an outline planning application has been approved for the site by London Borough of Camden under Planning Reference 2024/0479/P dated 27th November 2024. The following planning condition is attached to the application which relate to land contamination:

Condition 7 (Programme of Ground Investigation "Land Contamination"):

Prior to commencement of development (other than demolition, site clearance and preparation), a written programme of ground investigation for the presence of soil and groundwater contamination and landfill gas should be submitted to and approved in writing by the local planning authority.

The site investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures (if necessary as a result of the investigation) shall be submitted to and approved by the local planning authority in writing.

The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior



to occupation.

Reason: To ensure the risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other receptors, in accordance with policies D1, A1, and C1 of the London Borough of Camden Local Plan 2017. “

This Remediation Strategy and Verification Plan has been prepared to address Condition 7 of the outline planning permission for the site with reference to the remediation works at the site.



2.0 BACKGROUND

This Remediation Strategy & Verification Plan (RSVP) has been developed from the findings of the assessments:

- Phase 2 Geotechnical Design Report by Geo-Environmental Services Limited (reference GE22556/GDR/Jul24 dated 20th August 2024);

A brief overview of salient findings of the report is presented below. For further information, the report should be referred to directly.

2.1 Overview

At the time of the intrusive works the site comprised an 0.27 ha area of land which consisted of 100 and 100a Chalk Farm Road, two mid-rise buildings that were occupied by artist studios along with associated roads running along the west boundary and southern border with Network Rail. A multi-level parking area was situated in the southeast corner of the site.

The site was roughly rectangular in shape and gently sloped down towards the north with an approximate height change of 3m across the site length. The site was bordered to the south by Network Rail infrastructure defined by a brick wall approximately 2m in height. The site was bordered to the west by the Roundhouse entertainment venue and by a Morrisons supermarket to the east. The site was bordered to the north by Chalk Farm Road and Old Camden Wall. The Northern Line underground tunnel was situated underneath Chalk Farm Road.

An area of dense vegetation was noted on the eastern portion of the site and was approximately 15m long by 15m wide, a multitude of semi-mature to mature trees c.6-7m in height were present in this area alongside low level vegetation and fly tipping of various material including concrete, bricks, metal and general rubbish. The wider area surrounding the site consisted of residential and commercial buildings constituting the London Borough of Camden in all directions. Site access was via Chalk Farm Road to the north.

Geo-Environmental Services Limited Geotechnical Design Report (ref. GE22556/GDR/JUL24)

The ground conditions encountered during the intrusive investigation, undertaken in June 2024, comprised Made Ground, overlying granular Head Deposits with clays of the London Clay Formation at depth.

Made Ground was encountered to a maximum depth of 5.90m bgl with the thicker deposits being towards the southern boundary of the site, adjacent to the Network Rail land. The deposit was found to be predominantly granular in nature mainly comprising brick, concrete and flint, although occasional clayey layers were also identified. Minor concentrations of hydrocarbon and lead contamination were identified at shallow depth within two locations in the Made Ground and chrysotile asbestos fibres were also identified in one location (WS2) at depths of 0.5m and 2.5m within the Made Ground.

The Made Ground was then found to lie on top of granular Head Deposits and two deep cable percussive boreholes were completed in the London Clay Formation.

Monitoring during the investigation works identified shallow perched groundwater within the Made Ground.

2.2 Proposed Site Use

The proposed development will comprise high rise buildings for both student accommodation and social housing. The western and central areas will also include a basement which will be up to 12m depth from current ground



levels. The eastern area of the site adjacent to a secant piled wall bounding Network Rail will also have a reduced excavation of approximately 3.5m. The new development will not have any soft landscaping. Figure 2 shows the proposed development layout.

2.3 Conceptual Site Model

Assessment of the investigation findings identified some areas of contamination on site which were considered to require intervention (remediation) to mitigate the risk of harm. Two exceedances were noted at 0.50m within BH2, where Benzo(b)fluoranthene was recorded at a concentration of 14mg/kg where the limit is 4mg/kg for residential without home-grown produce. Within WS2 at 2.50m Lead was recorded at a concentration of 400mg/kg with a limit of 330mg/kg. Within two samples from WS2 at 0.50 and 2.50m loose fibres and debris of Chrysotile asbestos were identified as being present.

Remediation works are proposed to break the identified plausible contamination linkages associated with respect to Made Ground soils containing elevated PAH and asbestos fibres during the basement excavation works thereby mitigating the associated risk of harm to human health during the construction operations. The areas requiring remediation include around BH2 and WS2 and generally within the Made Ground during construction. The final construction and its associated permanent hardstandings will form long term mitigation for any residual impacted soils post construction.

The overall remediation works will be undertaken one of two ways depending on finished formation levels:

- 1) Reduced dig (i.e. basement construction) of Made Ground to sufficient depth to accommodate the proposed basement floor level. It is considered that the majority of the Made Ground will be removed within the basement excavation and a large proportion of the materials will be removed in the eastern part of the site.
- 2) The placement of access roads, car parking and ground floor slabs which will cover the entire development area. This will form a suitable cap in areas where there is residual Made Ground left in place.

The aim of the remediation is not necessarily to remove all unsuitable material identified on site but to reduce the identified risk to an acceptable level with respect to human health and the built environment. In this instance this will require delineation of the identified asbestos, suitable categorisation of the excavated soils (including any appropriate segregation of Made Ground and natural soils and segregation of impacted and none impacted Made Ground). This should be demonstrated with a watching brief and requisite Duty of Care of all removed soils.



3.0 SOILS

The ground conditions on the site have been established through recent assessment. Encountered soils comprised a wedge of Made Ground (becoming thicker towards the south in line with the rising topography) and Head Deposits, overlying the London Clay Formation.

Made Ground was encountered to depths between 0.75m to 5.90m bgl and comprised generally granular-based soils with quantities of anthropogenic material including brick and concrete. Some locally clayey soils were also encountered.

An exceedance of Benzo(b)fluoranthene was identified within the Made Ground at 0.5m in BH2. An elevated concentration of Lead was also recorded at 2.5m depth in WS2 within the Made Ground. Finally, loose fibres and debris of Chrysotile Asbestos were also identified at 0.5m and 2.5m within WS2 both in the Made Ground.

It should be noted that the impacted Made Ground identified above will be removed as part of the new basement construction.

Based on the above, it is considered that remedial action would be warranted to protect construction workers across the site and adjacent land users where Made Ground and elevated PAH was recorded.

3.1 Site Workers

It is the responsibility of the Principal Contractor and their appointed sub-contractors to implement and manage safe systems of work, prepare their own risk assessments in accordance with Health and Safety legislation in order to protect persons in their employ, as well as mitigate the risk of harm to others due to works in their control. Special consideration should be given to the provisions of the Construction (Design & Management) Regulations 2015, Health and Safety at Work Act and the Control of Substances Hazardous to Human Health regulations to protect the safety of persons in their employment. Additional guidance can be sought from the CIRIA publications entitled "A Guide for Safe Working on Contaminated Sites" and "Environmental Good Practice on site guide (fourth edition)".

Due to the potential for asbestos at site within the Made Ground, any bulk excavation works for the basement and reduced dig (specifically in relation to the Made Ground), should be designed with due consideration of the Control of Asbestos Regulations 2012 (CAR 2012).

In addition to the safe systems of works to be implemented alongside appropriate risk assessments and method statements, all site personnel shall benefit from on-site hygiene facilities including wash area, toilets and drying room.

Separate canteen area and welfare facilities should be provided. All eating and drinking should be restricted to the canteen area and only once site personnel have removed outer PPE and washed exposed skin.

In the event of dry spells, or where the exposed surface becomes dry, regular damping down of the surface of the site will be required to prevent the release of soil dust which could impact on site operatives or migrate off-site, thereby mitigating both off-site exposure and nuisance for neighbours.

3.2 End Users

A contamination assessment has identified asbestos fibres within the general Made Ground, elevated PAH and elevated lead as seemingly sporadic, isolated occurrences in Made Ground.



Given the proposed development incorporating a deep basement and reduced dig, the majority of the Made Ground at site will be removed as part of the construction process. This would include removal of the Made Ground where contaminants have been encountered. Once all excavation works are complete, the site will be capped with concrete floor slabs and access roads. Where any Made Ground is left in place, the construction will comprise a cap thus breaking any link between any potential residual contamination (specifically should any Made Ground be left in-situ) and the future users of the site.

Where contaminated/physically unsuitable soils are located in an area of permanent hard cover, e.g. building footprint, road, car park, driveway or the like, then the hard cover would break the contamination linkage and remediation would not be required in terms of the risk to human health, however limited works may be required in these areas to provide a suitable working platform for development to proceed and in relation to any longer term maintenance for any service runs located in this area.

3.3 Waste Categorisation and Duty of Care

The previous site investigation identified some localised PAH, metal and asbestos contamination in two locations. However, it is possible that the Made Ground is impacted in currently uninvestigated areas of the site. As it is proposed to bulk excavate and remove the Made Ground, further delineation as part of the remedial scheme is recommended. This would then allow a more detailed characterisation of the soils allowing suitable on site segregation and removal.

As part of the removal works it is recommended that the Made Ground is carefully segregated from the natural soils and the Made Ground is segregated into appropriate waste classifications.

3.4 Inspection/Validation

Verification of remediation measures shall be required through regular inspection at key stages of the works to include:

- Further delineation of the Made Ground and appropriate waste categorisation;
- Excavation/removal of soils from a reduced dig (where required) and subsequent validation of removal;
- Validation testing of any Made Ground soils left in-situ to ensure suitability;
- Evidence of suitable segregation and removal of all excavated soils in line with Duty of Care of the Town and Country Planning Act 1990.

Details of these works would be presented within a verification report for the site.



4.0 DEFINITION OF WASTE CODE OF PRACTISE

4.1 Re-use of Soils

Due to the requirement for a basement and a reduced level dig, it is understood that there is no requirement on site for the re-use of any excavated soils. However, should any excavated soils be considered for re-use the following would apply.

In accordance with CL:AIRE Code of Practice (2011) materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded by the holder'. Current guidance recommends the retention and re-use of site won soils where there is a need for the materials and where the risk is acceptable

The Code of Practice therefore allows soils to be re-used on site where the following criteria are met:

- Pollution of the environment and harm to human health is prevented in reusing the excavated materials;
- The materials are suitable for use (without any further processing);
- There is certainty of use; and
- The quantity that is absolutely necessary (and no more) is used.

Where materials do not meet the required criteria, it may be possible to treat them under an environmental permit so that they may be re-used on site.

In accordance with the Definition of Waste Code of Practice, the re-use and importation of material will need to be fully documented and included within the Verification Report produced on completion of the works.

Should excess clean naturally occurring materials be identified on site, it may be possible for these to be re-used on other sites through the CL:AIRE register of materials, as opposed to these materials being considered waste.

4.2 Imported Soils

Subsoil and Topsoil shall not be imported to site without prior acceptance of provenance and chemical suitability. Import suitability criteria are presented in Appendix A. Where materials are to be imported on to the site for use as subsoil and Topsoil, these shall be derived from one of two sources, i.e. natural or processed. Where natural sourcing is proposed, the provenance of the material shall be determined by confirmation of the source site's history to confirm no previous potentially contaminative use, coupled with analysis of soils at a minimum rate of 3No. samples per source site (up to 250m³) and 1 sample per 250m³ thereafter. Where topsoil or subsoil are derived from a manufactured source, testing would be undertaken at a rate of 1 sample per 50m³ up to 10No. samples and then at one sample per 150m³ thereafter if the source and initial sample results remain consistent. Use of an additional source would require repetition of this stepped sampling frequency. With regard to physical and nutritional composition, a minimum testing regime of 1 sample per 250m³ is recommended for either source.

**5.0 CONTROLLED WATERS**

The site overlies a Secondary Undifferentiated Aquifer (Head Deposits) and Unproductive Strata (London Clay Formation) and is located outside any Source Protection Zone.

No evidence of gross soil impact or significant potentially mobile contaminants were recorded during the intrusive investigations and testing.

Based on the ground conditions, coupled with the chemical results, no remedial works are considered necessary to protect groundwater from on-site soil contamination concentrations identified at this stage.

5.1 Monitoring Well Decommissioning

Where gas and groundwater monitoring wells have been installed on the site as part of the ground investigation works these should be decommissioned in line with best practice and in line with Environment Agency Guidance prior to or as they become redundant on site and prior to any development works where they are situated on site. The decommissioning should comprise the removal of the well and backfilling of the location with bentonite, in order to ensure that a pollution pathway does not remain on the site.

**6.0 GROUND GASES****6.1 Bulk Ground Gases**

Ground gas monitoring undertaken during the site investigation works has indicated that basic gas protection measures are recommended depending on which materials are proposed for removal. The report recommended a preliminary consideration of Characteristic Situation 2 in accordance with CIRIA C655/BS8485.

It is recommended that the final basement design including any proposed waterproofing/tanking is reviewed to identify if it is suitable for this risk rating or if any further measures would be required.



7.0 DISCOVERY STRATEGY

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected soil ground and/or groundwater conditions may be encountered during the process of construction.

Should previously undiscovered contamination or unforeseen ground conditions be encountered during construction, this must be reported to the site manager immediately in order that the consultant is notified. Where deemed necessary and instructed, the consultant shall attend the site to inspect the discovery and provide recommendations on the further actions required, if any. Where necessary the regulatory authority shall be informed. Post any additional investigation or laboratory testing the results and any proposed remedial measures shall be reported to the regulatory authority or other appropriate organisation for consent, before proceeding or implementing the remedial measures.

A copy of the discovery strategy must be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal unforeseen or contaminated soils ground and/or groundwater conditions they may encounter.

Depending on the type, nature and extent of any such 'discovery', it may be necessary to halt works in that location until such time as the assessment has been completed. This shall be reviewed on a 'discovery' specific basis and in conjunction with regulatory consultation with the client, other technical personnel and/or regulatory/appraisal organisations.

As a general guide, where such unexpected conditions are encountered the following approach is required as a minimum:

- All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;
- The Site Manager is to report any such discoveries to the Client and the Consultant;
- Following notification from the Site Manager, the Consultant shall discuss the discovery with the Local Authority and/or other relevant parties and if considered necessary, arrange to meet an Officer on site to view the discovery;
- The Consultant shall attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery, known and probable land uses in that area of the site;
- Where remedial action is required, regulatory consultation and approval will be sought;
- A record will be produced by the Consultant and held on site (with copies held by the Consultant, Client and Local Authority/other relevant organisation), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

The process is shown below.

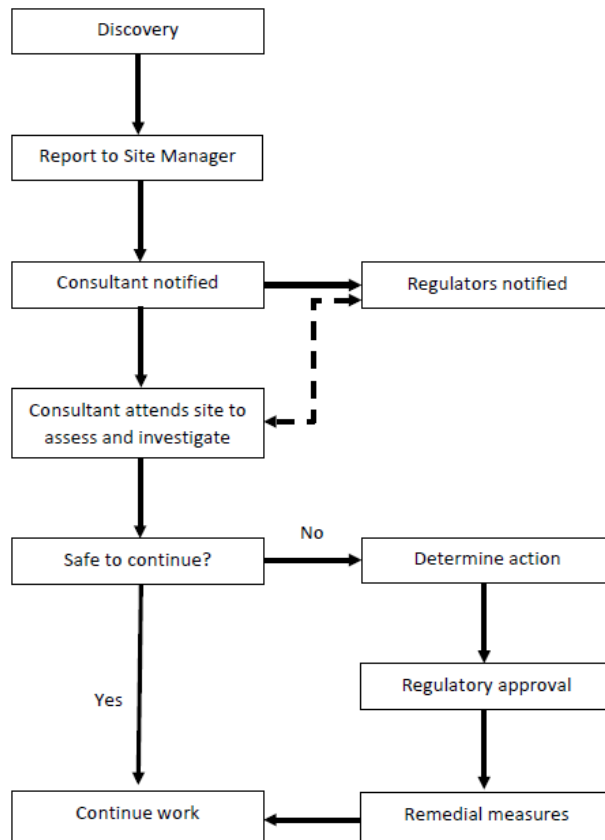


Chart 1 Discovery Strategy Process

A copy of this strategy will be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious or contaminated materials they may encounter.



8.0 VERIFICATION

Verification is required to be undertaken throughout the course of the remediation works/basement excavation, together with tracking and placement of any works/movement/re-use of soils undertaken in line with a Materials Management Plan alongside the RSVP. The Verification Report will be submitted to the Client and Local Authority for formal approval and to the Environment Agency if requested as part of any works completed under the Definition of Waste Code of Practice.

The Verification Report will refer to the works as set out within this remediation strategy and verification plan and as required by any relevant planning conditions. The report will include records from site inspections including:

- Locations where the Made Ground was excavated and confirmation of either placement location on site or disposal from site, and any subsequent validation inspections undertaken.
- Evidence of any delineation works of the identified contamination/soil segregation and Duty of Care documentation for any removal.
- An audit trail for any imported subsoil and topsoil, including source, provenance, analytical results, placement location and thickness (should subsoil and/or topsoil be imported).
- Details of any discovery made under the Discovery Strategy on site and subsequent works undertaken in relation to these discoveries.

The Contractor will be required to deploy a competent person to manage the works and ensure that relevant records are kept in relation to the disposal of any waste soils and pre-import compliance testing for any imported soils. In addition, the remedial works will be inspected and validated on behalf of the Client by Geo-Environmental in order to present independent verification.

It should be noted that to enable the required validation works to be undertaken and reported within a verification report on completion of the works, the client is required to keep the consultant updated on the progress of works on site and to notify them when various stages have been reached such that validation inspections can be carried out as required. Geo-Environmental takes no responsibility for failure to be notified that works are ready for inspection at the required key stages of the works as detailed herein.

**Remediation Strategy & Verification Plan**

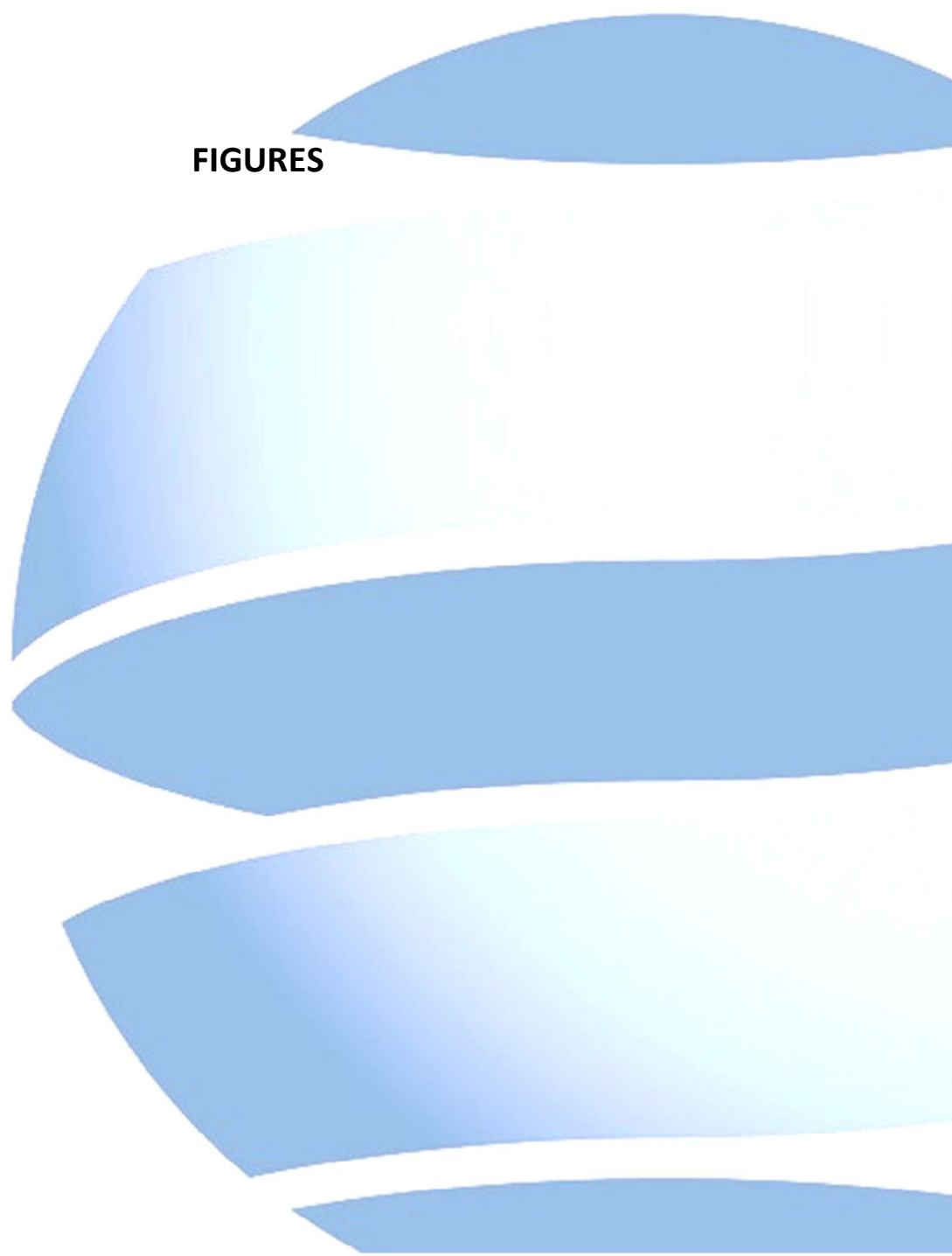
Reference	Principal requirements	Design or construction related	Site visit required by Qualified Geo-Environmental Engineer	Supporting documentation
1.0 Verification general principles	Geo-Environmental will be supervising remedial works for the site at 100 Chalk Farm Road. These works require the bulk removal of soils for a basement excavation and reduced level dig including Made Ground, Head Deposits and London Clay.	Design and Construction	Yes – See below	Details of construction programme to be provided by client/contractor.
2.0 Further Delineation of Made Ground	Further investigation of the asbestos impacted and hydrocarbon impacted areas to allow segregation and appropriate categorisation of the Made Ground.	Design and Construction	Yes – to suit construction programme	Test results to inform the segregation and waste classification process.
3.0 Reduced dig of Made Ground	Excavation of Made Ground, where required by development levels.	Construction	Yes – 5 days' notice required	Regular visits to site required to confirm works being undertaken. Where Made Ground is removed back to natural ground, visual inspection of the exposed natural formation level will be required.

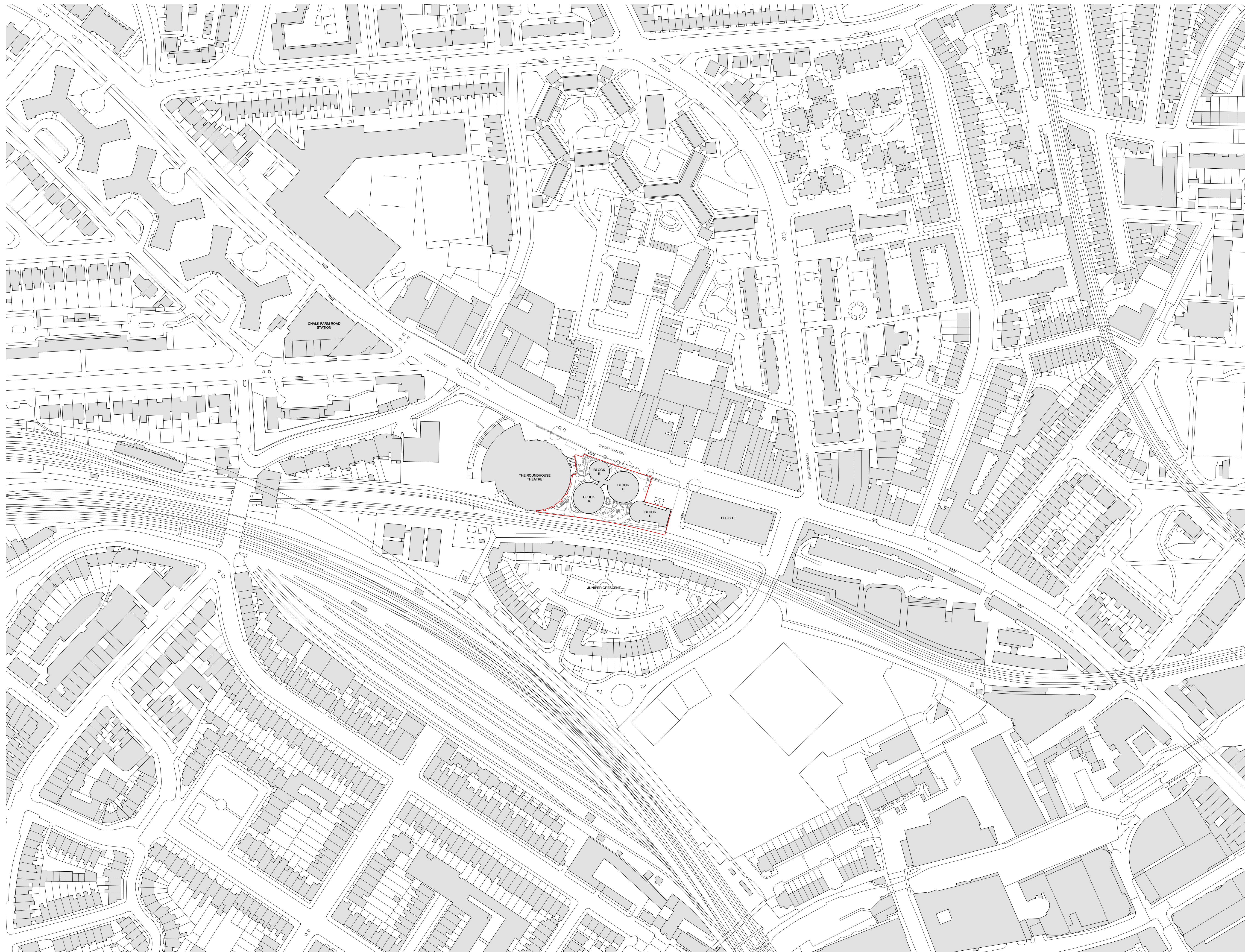


Reference	Principal requirements	Design or construction related	Site visit required by Qualified Geo-Environmental Engineer	Supporting documentation
6.0 Waste Management/Soil re-use Management	<p>Any waste soils arising from the reduced dig in the area of Made Ground and any other waste soils will be disposed of appropriately.</p> <p>Waste tickets for the removal of arisings should be compiled for submission as part of the verification report for the development. The waste tickets will be required to demonstrate that the approximate amount of material being removed is equal to the summed volume on the waste tickets.</p> <p>Where soils are to be re-used on site under the Definition of Waste Code of Practice under a Materials Management Plan for the site records of daily soil movements (volumes)/stockpiling and re-use of materials must be kept.</p>	Design and Construction	No (unless further waste classification and WAC testing required where 5 days' notice required)	<p>Chemical test results (waste classification and WAC)</p> <p>Waste tickets</p> <p>Records of material movements on site to be provided for inclusion in the validation report. (Assumed to be recorded by ground workers, if not then independent inspections will be required).</p>
7.0 Imported Soils	In-situ testing of any soils imported onto site for placement in gardens or landscaped areas if required.	Construction	Yes	Pre-import certification verifying the chemical quality of the topsoil and subsoil to be provided to Geo-Environmental for review prior to Importation.

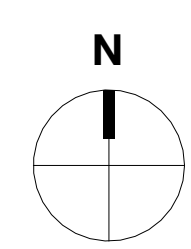
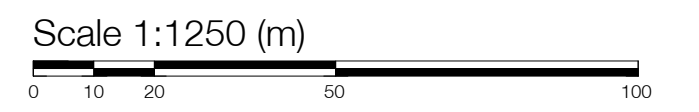
Table 8.1 Details of verification visits required on site

FIGURES





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Legend

— Site Boundary

Rev	Description	Drawn	Checked	Date
P4	Issued for BSR Gateway 2 Submission Following BRPD Compliance Review	JHAY	JHU	29/11/24
P3	Issued for BSR Gateway 2 Submission	JHAY	AWH	14/11/24
P2	Stage 3 Issue	JHAY	AWH	25/10/24
P1	First Issue	JHAY	AWH	07/08/24

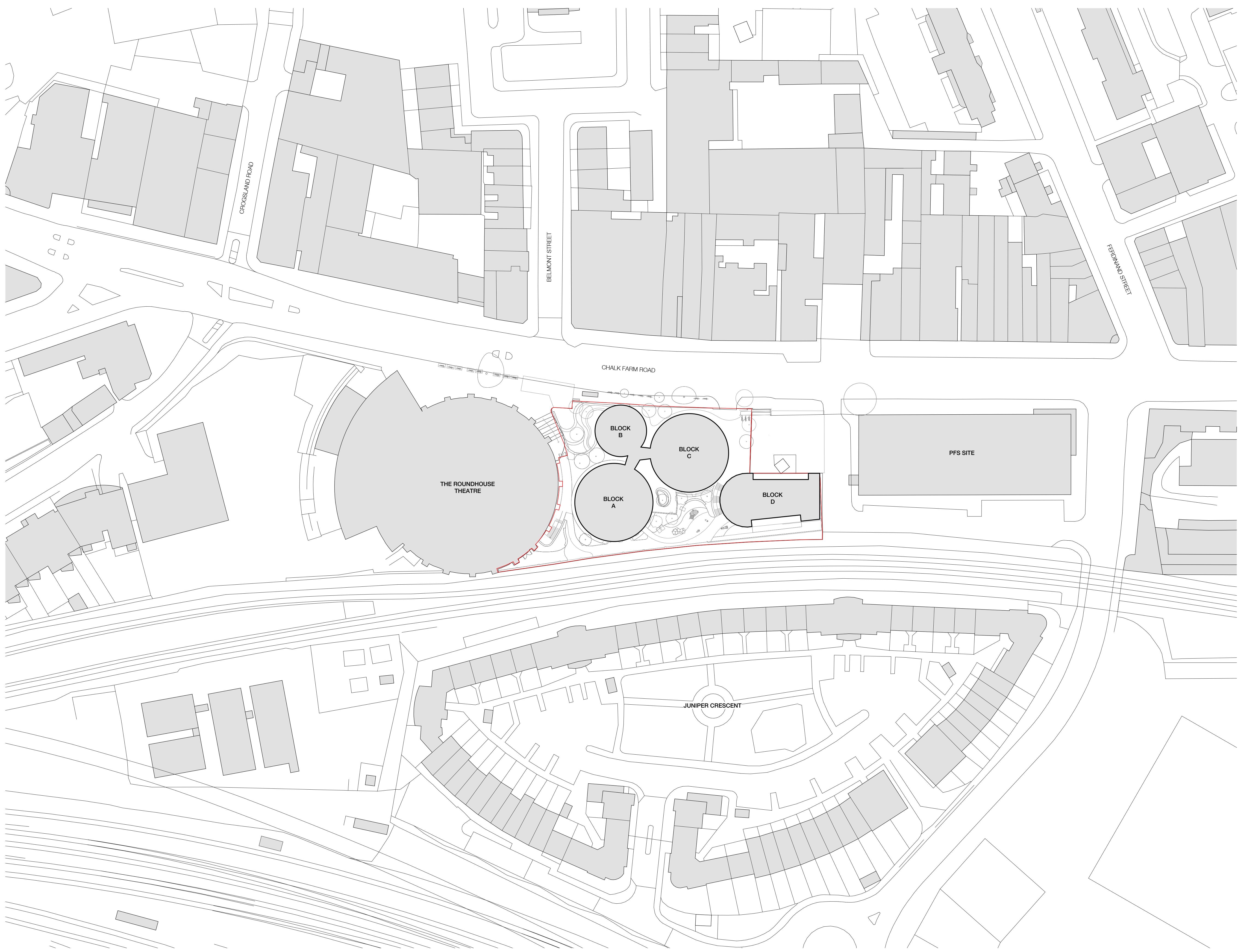
Substability
 Stage Approval

Project
 Regal Chalk Farm Limited
 Chalk Farm Road
 100-100A Chalk Farm Road, London, NW1 8EH

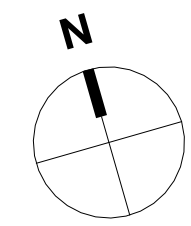
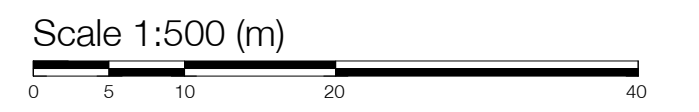
Drawing Title
 Site Location Plan

Drawing Number
 CHALF-RYD-DR-A-YY-00-001

Project Number	Scale at A1	Status	Revision
11484-00	1 : 1250	S4	P4



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Legend

— Site Boundary

P4	Issued for ESR Gateway 2 Submission Following BRPD Compliance Review	JHAY	JHU	29/11/24
P3	Issued for BSR Gateway 2 Submission	JHAY	AWH	14/11/24
P2	Stage 3 Issue	JHAY	AWH	25/10/24
P1	First Issue	JHAY	AWH	07/08/24

Rev Description Drawn Checked Date

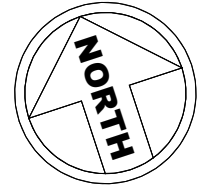
Suitability Stage Approval

Project
 Regal Chalk Farm Limited
 Chalk Farm Road
 100-100A Chalk Farm Road, London, NW1 8EH

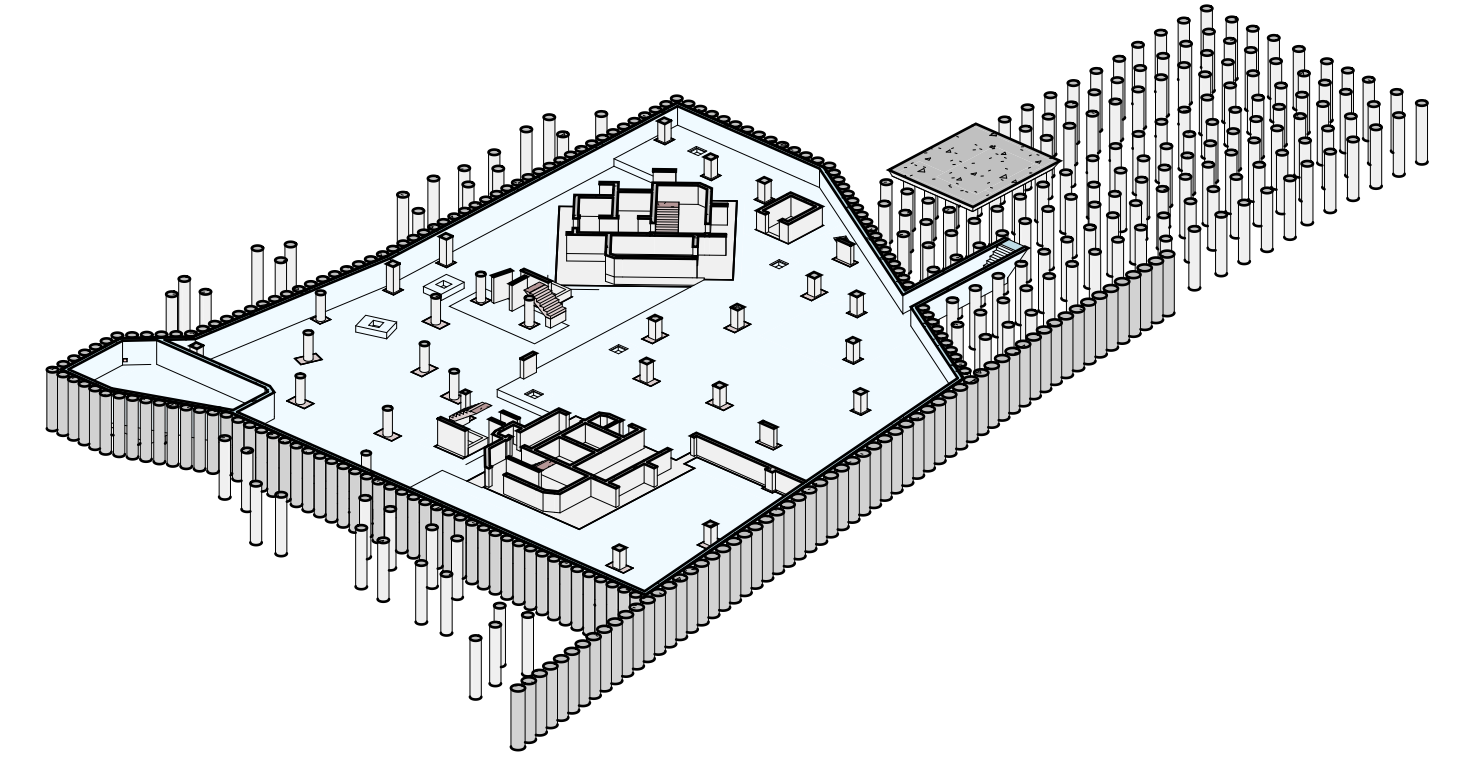
Drawing Title
 Site Block Plan

Drawing Number
 CHALF-RYD-DR-A-YY-00-002

Project Number	Scale at A1	Status	Revision
11484-00	1 : 500	S4	P4



BASEMENT ATTENUATION TANK
 BASEMENT SLAB AND WALLS FORMING
 ATTENUATION TANK TO BE LINED INTERNALLY WITH
 VOLSEAL 250, INSTALLED TO AS PER
 MANUFACTURERS SPECIFICATION AND DETAILS



**STEP 2
 TEMP STAIRCASE PILES**

**STEP 4
 PBSA BLOCK BASEMENT WALL PILES**

**STEP 4
 EXCAVATE BASEMENT**

**STEP 3
 HA BLOCK PILES**

**STEP 1
 CONTIG PILE WALL**

RC COLUMN SCHEDULE			
COL REF	LENGTH	WIDTH	DIAMETER
RC-C1	1000	250	
RC-C2	900	300	
RC-C3			500
RC-C4	500	500	
RC-C5	450	450	
RC-C6	400	400	
RC-C7	350	350	

LEGEND

	REINFORCED INSITU CONCRETE
	REINFORCED INSITU WATERPROOF CONCRETE
	PRECAST CONCRETE
	REINFORCED CONCRETE UPSTAND (PLAN)
	THERMAL BREAK LINE
RC-B	RC BEAM (D x W)
RC-C	RC COLUMN (D x W / Ø)
RC-U	RC UPSTAND (H x W)
RC-CB	RC CAPPING BEAM (D x W)
RC-GB	RC GROUND BEAM (D x W)

CONCRETE FRAME TYPICAL NOTES

BASEMENT ALL BASEMENT LINER WALLS TO BE MIN 250hk UNO
 CORE WALLS ALL CORE WALLS TO BE 250hk UNO

BWH SLAB PENETRATIONS

	100x100		300x300
	150x150		400x200
	200x200		400x400
	250x250		600x200

PRECAST STAIR NOTES

- ALL STAIRS MARKED "PRECAST STAIR" TO SPECIALIST DETAILS.
- SPECIALIST DESIGN TO INCLUDE FLIGHTS AND HALF LANDINGS.
- FOR CONNECTION DETAIL TO RC FULL LANDING, REFER TO DRAWING CHALF-HDR-DR-S-YY-S15-9122.



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CLIENT:
REGAL LONDON

PROJECT:
CHALK FARM ROAD, CAMDEN, LONDON

TITLE:
**PROPOSED WORKS
 GENERAL ARRANGEMENT
 BASEMENT**

SUITABILITY STATUS:
S4 - STAGE APPROVAL

HDR NUMBER: 10400799	REV DRAWN BY: CA	REV CHKD/APPD BY: AB/PW
MODEL NAME: CHALF-HDR-M-S-YY-XX-0200	REV DATE: 22.11.24	SCALE @ A1: 1:125 UNO
DRAWING NUMBER: CHALF-HDR-DR-S-YY-S12-2099	REVISION:	P03

REV	DATE	REVISION DESCRIPTION
P03	22.11.24	STAGE 4 - GATEWAY 2 SUBMISSION
P02	16.08.24	GMA & NETWORK RAIL FORM A ISSUE
P01	02.08.24	PRELIMINARY ISSUE

Autodesk Docs://11664-00 Chalk Farm Road/CHALF-HDR-M-S-YY-XX-0200.rvt

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APPENDIX A

**Imported Soil
Specification**

IMPORTED SOIL SPECIFICATION

for the site at

100 CHALK FARM ROAD, CAMDEN




LONDON, NW1 8EH

on behalf of

REGAL THREE LONDON CONSTRUCTION LIMITED





Report:	IMPORTED SOIL SPECIFICATION
Site:	100 CHALK FARM ROAD, CAMDEN, LONDON, NW1 8EH
Client:	REGAL THREE LONDON CONSTRUCTION LIMITED
Date:	04/02/2025
Reference:	GE23008/ISS/FEB25
Revision:	1.0
Prepared by:	
	JASON TILLEY BEng (Hons), MSc, DIC, FGS DIRECTOR
Reviewed by:	
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Approved by:	
	JASON TILLEY BEng (Hons), MSc, DIC, FGS DIRECTOR
<p>Geo-Environmental Services Limited Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL +44(0)1273 832972 www.gesl.net</p>	



AMENDMENT RECORD

Revision ref.	Date	Reasons for amendment	Author's initials	Reviewer's initials	Approver's initials
1.0	04/02/2025	First issue	JT	CG	JT



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3.0	Nutritional Composition	5
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1.0 Introduction

This document sets out the requirements for imported subsoil and Topsoil materials for any project undergoing redevelopment or other works where capping work is required in line with a residential with plant up take land use.

Within the specification reference has been made to topsoil and subsoil. Topsoil relates to the top layer of natural soil that can support healthy vegetation growth. Subsoil relates to the layer of soil immediately below the topsoil to the depth of the underlying broken rock or geological parent material.

The specification considers the chemical, nutritional and physical properties of soils that are to be imported onto site in order to ensure materials used are suitable for their intended use and do not introduce any new hazard or pollutant linkage on to the site.

Where there is any discrepancy between this specification and BS3882:2015 or BS8601:2013, the latter documents shall take precedence unless otherwise formally confirmed by the relevant regulator.

2.0 Chemical Composition

The chemical criteria listed below are based on the published Category 4 Screening Levels (C4SLs) by DEFRA and/or the relevant Suitable for Use Levels (S4ULs) published by LQM, for a residential end use with plant uptake. From time to time these values may change in line with regulatory or UK policy changes. Such changes will require revision and re-issue of this document.

Where C4SLs or S4ULs are published for a range of Soil Organic Matter (SOM) values, these ranges and their respective SOM values have been presented and would be considered when assessing compliance with this Specification. Where additional guidance comes in which supersedes that information presented here in, this will be assessed at the time when considering acceptability of materials being imported to site.

2.1 Method of Analysis

Samples should be analysed using UKAS or MCERTS accredited laboratories. For TPH analysis sample preparation must not include air drying.

2.1.1 Poly Aromatic Hydrocarbon (PAH)

The PAH analysis must include the EPA priority 16.

2.1.2 Total Petroleum Hydrocarbons (TPH)

The analysis for TPH should be undertaken on the 'as received' sample and not be subject to any pre-treatment and shall include aliphatic and aromatic carbon banding split.

2.2 Topsoil (0-300mm depth)

Tables 1, 1a, 1b and 1c provide a list of the maximum acceptable concentrations for a range of determinants for imported topsoil.



Imported Soil Specification

Determinant	Maximum concentration (mg/kg)
	SOM 6%
Inorganic	
Arsenic (total)	37
Boron (water soluble)	290
Cadmium (total)	11
Chromium (total)	130
Copper (total)	2400
Cyanide (total)	250
Lead (total)	200
Mercury (total inorganic)	40
Nickel (total)	180
pH	5.5 – 8.5
Selenium (total)	250
Zinc (total)	3700
Asbestos	Absent
Organic	
Phenols (total)	110
Poly Aromatic Hydrocarbon (speciated)	See Table 1a
Total Petroleum Hydrocarbon (speciated)	See Table 1b

Table 1 Chemical Specification for Topsoil

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Anthracene	2400	5400	11000
Benz(a)anthracene	7.2	11	13
Benzo(a)pyrene	2.2	2.7	3.0
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(ghi)perylene	320	340	350
Benzo(k)fluoranthene	77	93	100
Chrysene	15	22	27
Dibenz(ah)anthracene	0.24	0.28	0.30
Fluoranthene	280	560	890
Fluorene	170	400	860
Indeno(1,2,3CD)pyrene	27	36	41
Naphthalene	2.3	5.6	13.0
Phenanthrene	95	220	440
Pyrene	620	1200	2000

Table 1a Topsoil Specification for Speciated PAH

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic			
EC 5-6	42	78	160
EC >6-8	100	230	530
EC >8-10	27	65	150
EC >10-12	130	330	760
EC >12-16	1100	2400	4300



Imported Soil Specification

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
EC >16-35	65000	92000	110000
EC >35-44	65000	92000	110000
Aromatic			
EC 5-7 (benzene)	70	140	300
EC >7-8 (toluene)	130	290	660
EC >8-10	34	83	190
EC >10-12	74	180	380
EC >12-16	140	330	660
EC >16-21	260	540	930
EC >21-35	1100	1500	1700
EC >35-44	1100	1500	1700

Table 1b Topsoil Specification for Speciated TPH

Determinant	Phytotoxicity GAC (mg/kg)		
	pH <6.0	pH 6.0-7.0	pH >7.0
Zinc	200	200	300
Copper	100	135	200
Nickel	60	75	110

Table 1c Topsoil Specification for phytotoxicity

2.3 Subsoil (300-1000mm depth)

Tables 2, 2a, 2b and 2c provide a list of the maximum acceptable concentrations for a range of determinants for imported subsoil.

Determinant	Maximum concentration (mg/kg)
Inorganic	SOM 6%
Arsenic (total)	37
Boron (water soluble)	290
Cadmium (total)	11
Chromium (total)	130
Copper (total)	2400
Cyanide (total)	250
Lead (total)	200
Mercury (total inorganic)	40
Nickel (total)	180
pH	5.5 – 8.5
Selenium (total)	250
Zinc (total)	3700
Asbestos	Absent
Organic	
Phenols (total)	110
Poly Aromatic Hydrocarbon (speciated)	See Table 2a
Total Petroleum Hydrocarbon (speciated)	See Table 2b

Table 2 Chemical Specification for Subsoil



Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Anthracene	2400	5400	11000
Benz(a)anthracene	7.2	11	13
Benzo(a)pyrene	2.2	2.7	3.0
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(ghi)perylene	320	340	350
Benzo(k)fluoranthene	77	93	100
Chrysene	15	22	27
Dibenz(ah)anthracene	0.24	0.28	0.30
Fluoranthene	280	560	890
Fluorene	170	400	860
Indeno(1,2,3CD)pyrene	27	36	41
Naphthalene	2.3	5.6	13.0
Phenanthrene	95	220	440
Pyrene	620	1200	2000

Table 2a Subsoil Specification for Speciated PAH

Determinant	Maximum Concentration (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Aliphatic			
EC 5-6	42	78	160
EC >6-8	100	230	530
EC >8-10	27	65	150
EC >10-12	130	330	760
EC >12-16	1100	2400	4300
EC >16-35	65000	92000	110000
EC >35-44	65000	92000	110000
Aromatic			
EC 5-7 (benzene)	70	140	300
EC >7-8 (toluene)	130	290	660
EC >8-10	34	83	190
EC >10-12	74	180	380
EC >12-16	140	330	660
EC >16-21	260	540	930
EC >21-35	1100	1500	1700
EC >35-44	1100	1500	1700

Table 2b Subsoil Specification for Speciated TPH

Determinant	Phytotoxicity GAC (mg/kg)		
	pH <6.0	pH 6.0-7.0	pH >7.0
Zinc	200	200	300
Copper	100	135	200
Nickel	60	75	110

Table 2c Subsoil Specification for phytotoxicity



3.0 Nutritional Composition

The nutritional criteria listed below are based on BS3882:2015 for topsoil and BS8601:2013 for subsoil. In the absence of published criteria, current guidance and best practice has been applied to derive appropriate criteria.

3.1 Topsoil & Subsoil

Table 3 details the minimum acceptable concentrations for imported topsoil and subsoil. The nutrient concentrations set out in Table 3 for Topsoil are based on those set out in BS3882:2015 which states “*Multipurpose topsoil is the grade suited to most situations where topsoil is required; however, there can be situations where specific purpose topsoil is required*”. In the event that an alternative specific Topsoil grade is required, i.e. acidic; calcareous; low fertility; low fertility acidic; or low fertility calcareous, the compliance criteria set out in BS3882:2015 shall be applicable in place of those set out in Table 3 below.

Topsoil/Subsoil	Parameter	Concentration
Topsoil (multipurpose grade only)	Phosphorous	16 – 140 mg/l
	Potassium	121 – 1500 mg/l
	Magnesium	51 – 600 mg/l
	Nitrogen	0.15 % m/m
	Carbon:nitrogen ratio	<20:1
Subsoil	Exchangeable sodium percentage (ESP)	<15% (Need not measure if soil electrical conductivity <2 800 $\mu\text{S}\cdot\text{cm}^{-1}$)

Table 3 Nutritional Specification for Topsoil and Subsoil

Where the nutritional values for subsoil are not strictly in accordance with Table 3 but comply with the current British Standards, then these soils may also be deemed to be acceptable for importation.

4.0 Physical Composition

The physical criteria listed below are based on BS3882:2015 Specification for Topsoil. In the absence of published criteria, current guidance and best practice has been applied to derive appropriate criteria.

4.1 Topsoil

Table 4 details the physical suitability requirements for imported topsoil and subsoil. Table 4 sets out acceptability criteria from BS3882:2015 for multipurpose Topsoil. In the event that an alternative specific Topsoil grade is required, i.e. acidic; calcareous; low fertility; low fertility acidic; or low fertility calcareous, the compliance criteria set out in BS3882:2015 shall be applicable in place of those set out in Table 4 below.

Topsoil/Subsoil	Parameter	Specification requirements
Topsoil (multipurpose Topsoil only)	Textural Classification	Sandy clay loam, sandy loam, loamy sand, sandy silt loam (as defined in BS3882:2015, Figure 1)
	Loss on Ignition	3 - 20% (for 5-20% clay soil) 5 - 20% (for 20-35% clay soil)
	Maximum Stone content:	>2mm = 30% >20mm = 10% >50mm = 0%
Subsoil	Textural Classification	Refer to BS8601:2013 Figure 1
	Loss on Ignition	2%

**Imported Soil Specification**

Topsoil/Subsoil	Parameter	Specification requirements
	Maximum Stone content:	>2mm = 40% >20mm = 20% >75mm = 0%

NB: Topsoil and Subsoil must be free from glass, brick fragments, plastic, metal, asbestos and other deleterious materials.

Table 4 Physical Specification for Topsoil & Subsoil

5.0 Source Requirements

5.1 Topsoil and Subsoil

The following will be required to be provided with all soils imported to site:

- A site plan detailing the location and address of the source site, including grid reference.
- Location description of source material, including historic and current site uses.
- Sample analysis results of material at source, including details of laboratory, date of sampling, date samples received by laboratory etc.

5.2 Manufactured soils

Where natural soils are unavailable manufactured soils may be utilised, and the following should be provided:

- Details of the soil manufacturing process, including criteria for received soils, quality control procedure and validation protocol.
- Soils should be tested at a minimum ratio of one sample per 50m³.

6.0 Testing Rates and Compliance

Sampling shall be undertaken in accordance with BS3882:2015 and BS8601:2013.

6.1 Topsoil

Where natural sourcing is proposed, the provenance of the material shall be determined by analysis of the soils at a minimum rate of 3No. samples per source site (up to 250m³) and 1 sample per 250m³ thereafter. Imported soils should be sampled once it has been laid on the site to support the analysis provided by the source supplier.

Where Topsoil is derived from a manufactured source, testing would be undertaken at a rate of 1 sample per 50m³, with a minimum of 3No. tests for any given potential source material (or production batch).

6.2 Subsoil

Where the source of the material is known validation sampling should be undertaken at a minimum rate of 3 samples per source (up to 250m³) and 1 sample per 250m³ thereafter. Imported soils should be sampled once it has been laid on the site to support the analysis provided by the source supplier.

Where subsoil is derived from a manufactured source, testing would be undertaken at a rate of 1 sample per 50m³, with a minimum of 3No. tests for any given potential source material (or production batch)



Imported Soil Specification

Where the source of the material is not known the validation sampling should be undertaken in-line with the testing rates as set out for cover systems to ensure the materials are suitable for their intended use. Further guidance on minimum testing under this scenario is presented in Section 6.3 below.

6.3 Cover Systems

Where a cover system/ capping layer is proposed as part of the required remedial measures, sampling frequency will follow the guidance set out by the NHBC in their guidance for clean cover systems (2010), outlined below:

- Sites with more than 30 plots testing should be conducted at a rate of one plot in four;
- Sites with between 20 – 30 plots testing should be conducted at a rate of one plot in three;
- Sites with between 5 -20 plots testing should be conducted at a rate of one plot in two;
- Sites with fewer than 5 plots testing should be conducted in every plot.

Where larger sites are broken down into smaller areas in terms of validation the higher rates of validation frequency may be required to allow earlier signoff by the Regulators/Warranty Providers in relation to these specific areas of the wider development.

6.4 Sample failure

In the event that a sample fails to meet the specified criteria for any parameter the Environmental Consultant should be contacted for advice on the suitability of the materials.

Further testing may be required to provide reassurance that the exceedances are not representative of the soil and to provide clarification whether the soil is suitable for importation and/or proposed use.

6.5 Timing

Sampling and analysis undertaken by a manufactured topsoil supplier shall be no earlier than two weeks from the date of import, any results which are older than two weeks will be deemed not to be representative of the soils to be imported and rejected. Results showing consistency of batching may be requested to demonstrate consistency of the physical, chemical and nutritional composition of the material.

Imported soil suppliers and groundwork contractors are required to take reasonably practicable measures to ensure that compliance with this Specification does not hinder formal completion of individual plots or developments.

6.6 General Compliance

All analytical suites shall correspond with the chemical, nutritional and physical compliance criteria (as set out in Tables 1 to 4). The soil supplier shall ensure that the analytical limits of detection are equal or lower than the compliance values presented within this Specification. Where either testing suites or limits of detection do not comply with this Specification, the entire set of results shall be rejected.

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