# Technical Note

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|---|---|---|---|
| **To:** | Frank Cowell<br>Project Manager<br>JJ Rhatigan Limited<br>Anna House<br>214-218 High Road<br>Seven Sisters<br>London N15 4NP | **Date:** | 05 September 2025 |
| | | **Turnkey ref:** | 0112-TN003i7 |
| | | **Author:**<br>**Reviewed:** | Kene Onwubuya<br>Dave Rutherford |

**Title:** CTC, Hayes – Blocks A, B, C, D, E and F Addendum Verification Report

## 1 Introduction

JJ Rhatigan instructed Turnkey Regeneration Limited (Turnkey) to prepare an addendum Verification Report at their CTC Hayes site. This report is 'Issue 7', following further import of topsoil to Blocks A & D and assessment of chemical data from imported topsoil used in Blocks A, B, C, D, E & F.

This addendum report is specific for Blocks A, B, C, D, E and F and provides an update to the site-wide Verification Report referenced below:

- Turnkey Verification Report (Final). Crown Trading Centre, Hayes. Ref: 0112-R002i3. Dated: March 2025

As part of the requirements set out in the Remediation Method Statement (RMS)[1], verification of the clean cover to be placed as part of soft landscaping is required, underlain by a marker layer when at ground level. Landscaping is subject to the ground level and also at podium level in planters – the layouts, also showing block areas, is presented in Appendix A for these levels.

For clarity, all works regarding contamination-related conditions are complete for these six blocks, i.e. the whole site.

### 1.1 Regulatory Context

The primary objective of this addendum Verification Report is to seek partial discharge of Planning Condition 36iii and iv (Ref: Hillingdon 73955/APP/2022/3516) for the CTC Hayes development as outlined below:

> *(iii) Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works for each phase have been carried out in full and in accordance with the approved methodology.*
>
> *(iv) No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination.*
>
> *Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the*

[1] Turnkey Remediation Statement (Final). Crown Trading Centre, Hayes. Ref: 0097-R002i3. Dated: May 2023

*Local Planning Authority. All soils used for gardens and/or landscaping purposes shall be clean and free of contamination.*

*REASON*

*To ensure that 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 the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with 'Hillingdon Local Plan: Part 2 (January 2020) Policies – DMEI 11: Protection of Ground Water Resources and DMEI 12: Development of Land Affected by Contamination'*

Planning Condition 36i was discharged in 2023 and it is understood that Turnkey's recent verification report discharged Planning Condition 36ii.

### 1.2 Objectives

The objectives of this addendum Verification Report are summarised below:

- Partial discharge of Planning Condition 36ii, iii & iv of planning permission 73955/APP/2022/3516 (wording updated via Non Material Amendment reference: 73955/APP/2025/604).
- ensure any identified potential pollutant linkages are broken or will be broken on completion of the works across sectional areas; and
- comply with all relevant planning conditions and ensure works are carried out in a suitable manner to discharge relevant planning conditions.

The report has been completed in accordance with Land Contamination: Risk Management (issued October 2020 and updated July 2023 and June 2025).

## 2 Topsoil and Soft Landscaping Verification

Topsoil to be utilised within Blocks B, C, E and F as a clean cover layer comprises is supplied from two sources:

- Boughton Loam Ltd. Telford Way. Kettering. Northamptonshire NN16 8UN
- Springfield Direct Ltd. Denham. Middlesex UB9 4DF

Supplier documentation is presented in Appendix A. JJ Rhatigan also supplied Turnkey with certification from the supplier confirming that the soils complied with the chemical thresholds set in the verification criteria and those set out in BS3882 Specification for Topsoil.

The imported topsoil is to be used within plant boxes and soft landscaping areas within Blocks A, B, C, D, E and F.

To refresh on the frequency of sampling, 1 sample per 100m$^3$ for the first 500m$^3$ and then every 500m$^3$ for further import, should the source be consistent. The sources have proven to be consistent.

### 2.1 Verification Testing of Imported Soil

The following sections are reported in the chronological order that topsoil was imported.

#### 2.1.1 Block F

Based on information provided by JJ Rhatigan, the volume of topsoil imported for use in Block F was 275m$^3$. An initial 6 no. samples of the topsoil so far delivered to site were collected for testing (3 no. from each source, meaning there was flexibility on where each was used and represent adequate quota to also partially represent topsoil used in Block E). The contractor deemed these to be representative of the Block F topsoil, i.e. negating the need for further sampling/testing.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, polycyclic aromatic hydrocarbons (PAHs), speciated total petroleum hydrocarbons (TPH), other organics and asbestos.

This is with the exception of 1 no. sample (TS3-03) where a marginal exceedance of vanadium (84mg/kg vs screening criteria of 82mg/kg) was recorded. This is not considered a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples. This is with the exception of 2 no. samples (TS2-01 and TS2-03) from the same source where very marginal exceedances of boron (3.1mg/kg vs screening criteria of 3.0mg/kg) was recorded. This is not considered to be a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

### 2.1.2 Block E

The maximum volume of topsoil imported for use in Block E is ~380m$^3$, as confirmed by JJ Rhatigan. To build on what was sampled to represent Block F, a further 3 no. samples of the material were collected that the contractor deemed to be representative of the Block E topsoil material, thus negating the requirement for further sampling/testing. In addition, some imported sand was utilised in planters at podium level and therefore 1 no. representative sample (sample ref. SS01-01) of this material was collected for record purposes[2].

A very small section of topsoiling was completed with Blocks A and D.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, PAHs, speciated TPH, other organics and asbestos.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

### 2.1.3 Block C

The maximum volume of topsoil imported for use in Block C is ~640m$^3$, as confirmed by JJ Rhatigan. The topsoil areas are shown in a drawing presented in Appendix A. To build on what was sampled to represent Blocks E and F, a further 4 no. samples of the material were collected that the contractor deemed to be representative of the Block C topsoil material, thus negating the requirement for further sampling/testing.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, PAHs, speciated TPH, other organics and asbestos.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples. This is with the exception of 2 no. samples (TS1-04 and TS1-07) from the same source where very marginal exceedances of boron (3.2mg/kg and 3.4mg/kg vs screening criteria of 3.0mg/kg) was recorded. This is not considered to be a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

### 2.1.4 Block B

The maximum volume of topsoil imported for use in Block B is ~310m$^3$, as confirmed by JJ Rhatigan. The topsoil areas are shown in a drawing presented in Appendix A. To build on what was sampled to represent Block B, a further 1 no. sample of the material was required. However, 4 no. samples were collected to enable representation of topsoil in Blocks A and D as well (which will be reported in a further update to this

[2] This material does not constitute part of the required thickness of topsoil in locations where it was used.

addendum report). These soils that were collected were deemed to be representative of the blocks' topsoil material, thus negating the requirement for further sampling/testing.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, PAHs, speciated TPH, other organics and asbestos.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples. This is with the exception of 1 no. sample (TS1-08) where an exceedance of vanadium (98mg/kg vs screening criteria of 82mg/kg) was recorded. This is not considered a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

### 2.1.5 Blocks A and D

The maximum volume of topsoil imported for use in Block A and D was ~950m$^3$ and ~210m$^3$, respectively, as confirmed by JJ Rhatigan. The topsoil areas are shown in a drawing presented in Appendix A. To build on what was sampled to represent Blocks A and D, a further 3 no. samples of the material was required. However, 4 no. samples were collected to enable representation of topsoil in Block B as well (which was reported in Issue 6 of this addendum report). These soils that were collected were deemed to be representative of the blocks' topsoil material, thus negating the requirement for further sampling/testing.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, PAHs, speciated TPH, other organics and asbestos.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples. As noted in Section 2.1.4, this is with the exception of 1 no. sample (TS1-08) where an exceedance of vanadium (98mg/kg vs screening criteria of 82mg/kg) was recorded. This is not considered a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

## 2.2 Justification for use of topsoil with marginal boron and vanadium exceedances

Following the marginal exceedances recorded for boron and vanadium (as indicated in Section 2.1), it is imperative to provide justification to show that these exceedances are not detrimental to human health – these points are outlined below.

### 2.2.1 Statistical analysis

It is possible to undertake statistical analysis under planning using the UCL95 approach in line with the CL:AIRE Statistical Guidance[3], which is a conservative approach (e.g. when compared to Part 2A, which uses LCL95). This assessment was undertaken for the two contaminants (boron and vanadium), which recorded exceedances of the RMS verification criteria for imported material. The outputs from the calculations are outlined below:

- Boron – UCL95 = 2.61mg/kg versus screening criteria of 3.0mg/kg
- Vanadium – UCL95 = 55.27mg/kg versus screening criteria of 82mg/kg

From the above, the UCL95 values are below the RMS verification criteria. This means that the topsoil is suitable for its intended use without further action.

[3] CL:AIRE (2008); Guidance on Comparing Soil Contamination Data with a Critical Concentration

Additional information on the assessment is presented in Appendix B.

### 2.2.2 Derivation of cover layer and import verification criteria

Under typical circumstances, in order to identify potential contaminants of concern (CoC), soil analytical data is screened against Land Quality Management Suitable 4 Use Levels (S4UL)[4,5] generic assessment criteria (GAC) for public open space – residential[6] (POSresi) and residential - with homegrown produce (Resi hgp)[7] end use.

However, in order to be conservative and reduce the potential for increasing the contaminant load on the site (via importation of material with high concentrations), some of the RMS verification criteria were derived using historic concentrations recorded at the site, i.e. lower than the S4UL GAC. This rationale is presented in Appendix C2 of the Remediation Statement. The criteria for boron and vanadium were based on "twice site-wide average" of concentrations recorded on the site.

For completeness, the topsoil concentrations have now also been screened against the S4UL GACs for both POSresi and Resihgp, with no exceedances recorded (including for the two compounds under consideration).

In addition, the mean concentrations for each compound were also calculated with the resulting concentrations below all the screening criteria, including the RMS verification criteria and the S4UL for POSresi and Resihgp.

A breakdown of the comparison for boron and vanadium is outlined in Table 2.1 below with the full screening spreadsheet provided in Appendix B.

Table 2.1: Boron and vanadium comparison against various screening criteria

| Contaminant | Recorded Concentration (mg/kg) | UCL (mg/kg) | Mean Concentration (mg/kg) | Site Derived GAC (mg/kg) | S4UL GAC (POSresi)[8] mg/kg | S4UL GAC (Reshgp)[8] mg/kg |
|---|---|---|---|---|---|---|
| Boron | 3.1 | 2.61 | 2.36 | 3.0 | 290 | 21,000 |
| Vanadium | 84 | 55.27 | 42.94 | 82 | 410 | 2000 |

Based on the above evidence, we can conclude that the topsoil utilised in the development is suitable for intended use with no detriment to human health.

## 2.3 Verification of Thickness of Clean Cover

There is a requirement to confirm that 600mm thickness of clean cover (i.e. imported topsoil) was installed within soft landscaping areas in Blocks A, B, C, D, E and F, as indicated in the RMS. Where laid on site won soils, a marker layer (e.g. terram) should be lain prior to topsoil being laid.

[4] LQM/CIEH S4Uls (2015) for Human Health Risk Assessment (Copyright Land Quality Management Limited reproduced with permission); publication number S4UL3759.

[5] Category 4 Screening Levels (C4SL) will sometimes be considered in screening contaminant concentrations but there are no C4SL values for a number of contaminants (including boron and vanadium) and therefore S4UL is generally utilised.

[6] This is the end use of the development based on conceptual site model submitted for Planning

[7] This is considered the most conservative S4UL GAC

[8] The screening criteria was developed with the following assumptions which have been changed from the CLEA default parameter set. Soil type is a sandy loam with an organic matter content of 1%. The is considered to be more conservative than the CLEA default of 6%.

The contractor has verified that the recommended 600mm thick topsoil was placed across the soft landscaping areas. Example photos are presented in Appendix D. The only exception to this is within the footprint of installed below ground utilities where a reduced thickness of topsoil has been installed (typically 300-450mm).

Site photographs showing the topsoil and marker layer placement is presented in Appendix D.

## 2.4 River Wall

The river wall schematic is presented in Appendix A. For completeness, it can be confirmed that the structural activity and the backfilling of site won soils has been undertaken (*these soils have already been confirmed as suitable for use as part of the main verification report – these soils results are presented in Appendix C for interest and ease*).

Site progress photos are presented in Appendix D. The hardstanding is to be installed, however the soils are suitable for use without this, thus the photos of the finished hardstanding is not considered essential to include within this report.

## 2.5 Closing Remark

This update of the addendum report marks the last in the series, as all topsoiling has been completed in line with the RMS. There are no further open matters related to contamination/remediation. This report, therefore, is the final piece to confirm that the site is suitable for use and should enable the discharge of any outstanding planning conditions.

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| Author:  <br>……<br>**Kene Onwubuya** |
| Reviewer:  <br>……<br>**Dave Rutherford** |

# Appendix A – Supporting Documentation

GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING
2. ALL DIMENSIONS TO BE CHECKED ON SITE
3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT / CONTRACT ADMINISTRATOR

Scale 1:200

0 4 8 12m

0 12 24 36ft

CANAL SIDE WALKWAY

RESIDENTIAL PARK

COMMERCIAL SPINE

LOADING BAY

Plant 23 m²

Cycle storage 68 spaces

LV 13 m²

Lobby 27 m²

Cycles 44 m²

Refuse 57 m²

Refuse 35 m²

LV 12 m²

Lobby 35 m²

Cycles 44 m²

Cycles 46 m²

Sprinkler pumps 33 m²

Lobby 33 m²

Refuse 27 m²

Cycles 15 m²

Plant 40 m²

Cycles 53 m²

Generator 35 m²

below ground sprinkler tank

276 Commercial 303 m²

Energy Centre 88 m²

Cycles 16 m²

Lobby 41 m²

Refuse 18 m²

gas meter 5 m²

277 Commercial 119 m²

Cycles 27 m²

C4 Commercial 91 m²

Commercial 29 m²

Commercial Parking Area 6 standard parking spaces

Refuse 25 m²

309 Commercial 94 m²

Bulk waste 9 m²

Maintenance 44 m²

Substation 16 m²

LV 21 m²

Substation 32 m²

Refuse 106 m²

Cycles 139 m²

Comms 22 m²

Cleaner 5 m²

wc 4 m²

wc 7 m²

Lobby 317 m²

Gym 131 m²

Concierge lobby entrance

External parking 7 Standard car parking spaces

## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

| Rev | Date | Description | © |
|---|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core | |

FRANK REYNOLDS ARCHITECTS
Hoxton,London N1 7LB T: +44 (0)20 7812 8454

CLIENT: Greystar

PROJECT: CTC - Stage 3B (SEP 2022)

DRAWING NAME: Stage 3B - Ground Floor - GA Plan

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

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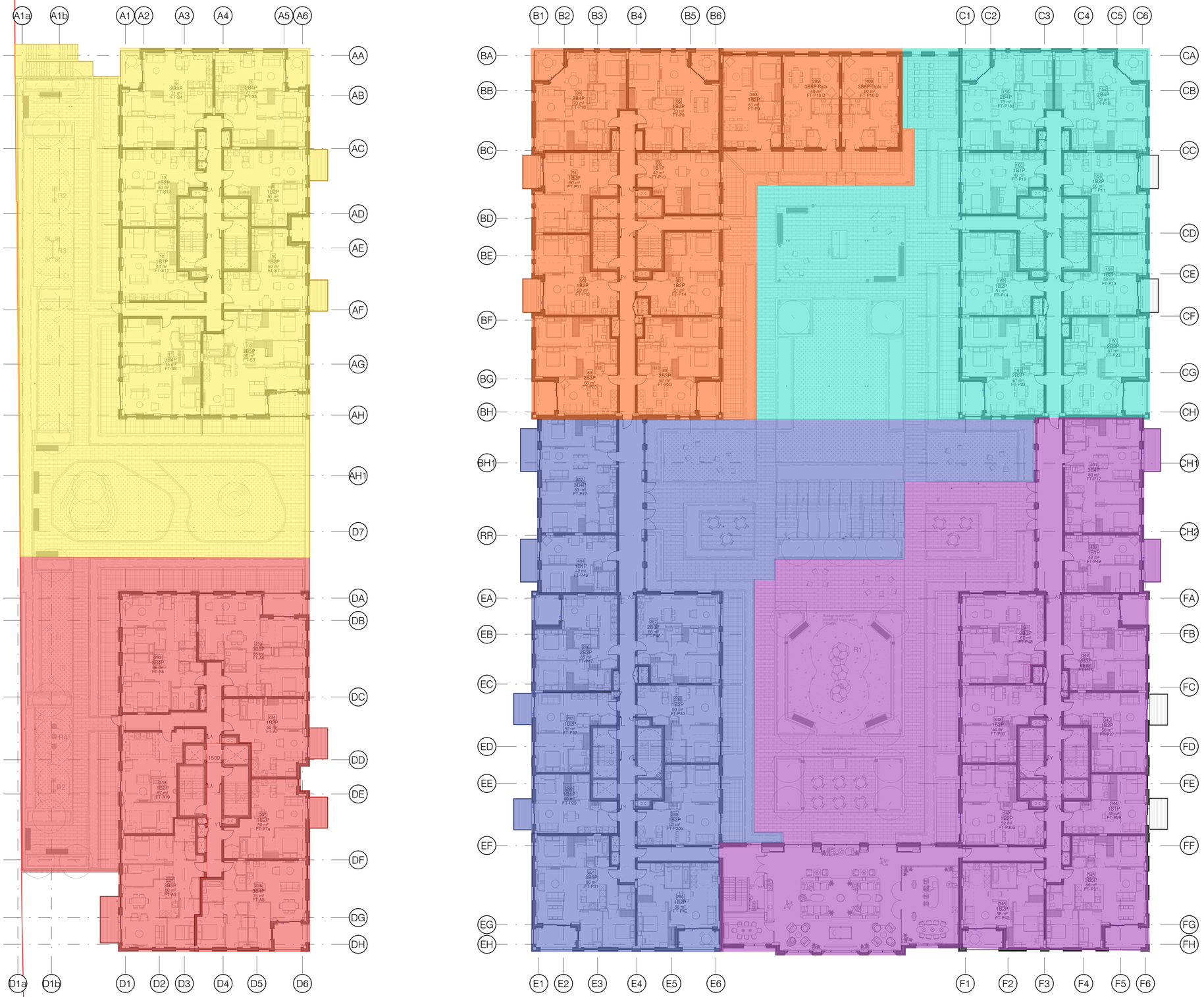





GENERAL NOTES

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Scale 1:200

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## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

| Rev | Date | Description |
|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core |

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Hoxton,London N1 7LB T: +44 (0)20 7812 8454

CLIENT: Greystar

PROJECT: CTC - Stage 3B (2022)

DRAWING NAME: Stage 3B - First Floor

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

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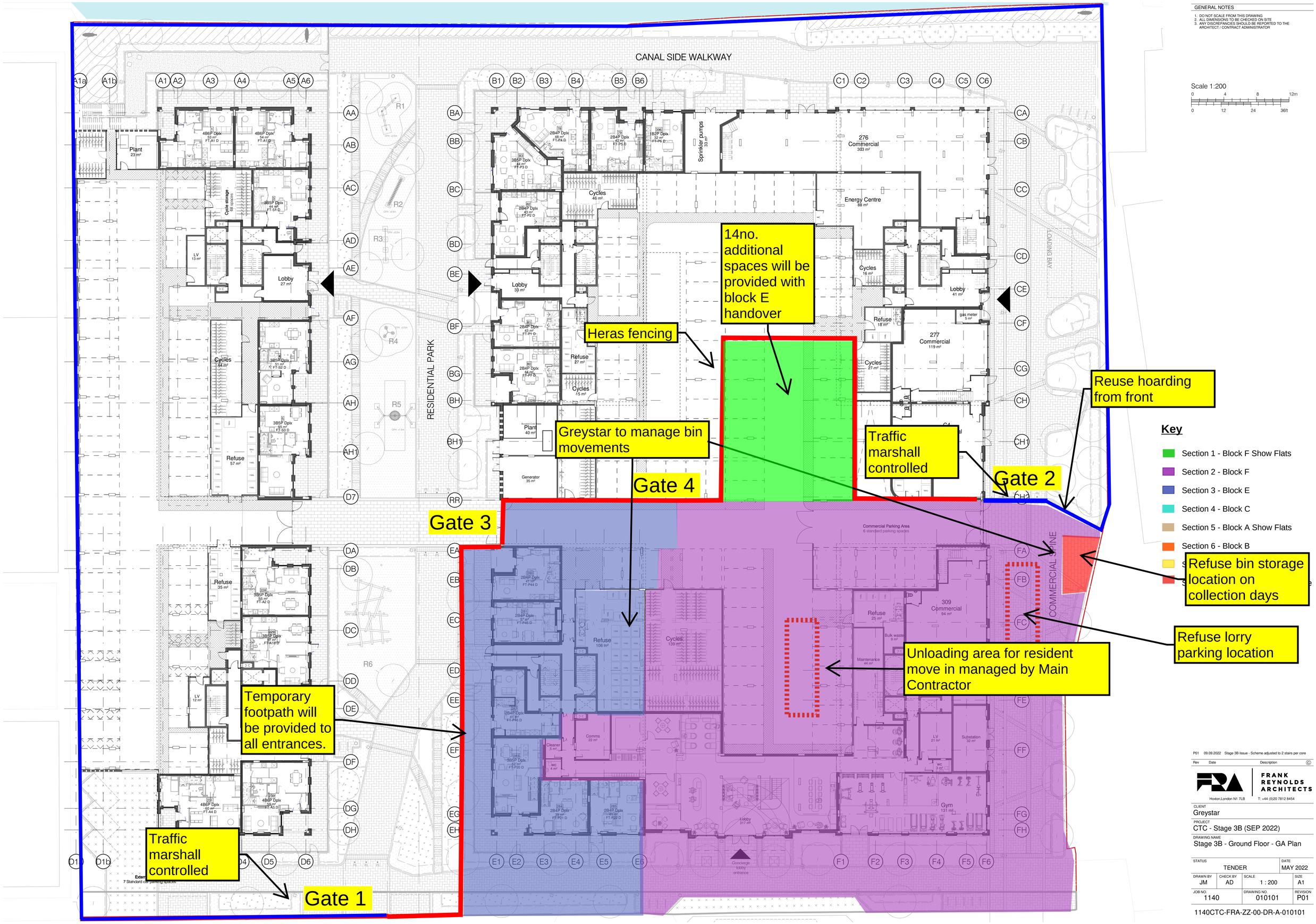


GENERAL NOTES

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| Rev | Date | Description |
|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core |

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Hoxton,London N1 7LB T: +44 (0)20 7812 8454

CLIENT: Greystar

PROJECT: CTC - Stage 3B (SEP 2022)

DRAWING NAME: Stage 3B - Ground Floor - GA Plan

| STATUS | DATE |
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| TENDER | MAY 2022 |

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GENERAL NOTES

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Scale 1:200

0 4 8 12m

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## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

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| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core | |

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CLIENT
Greystar

PROJECT
CTC - Stage 3B (2022)

DRAWING NAME
Stage 3B - Mezzanine Floor

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

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GENERAL NOTES

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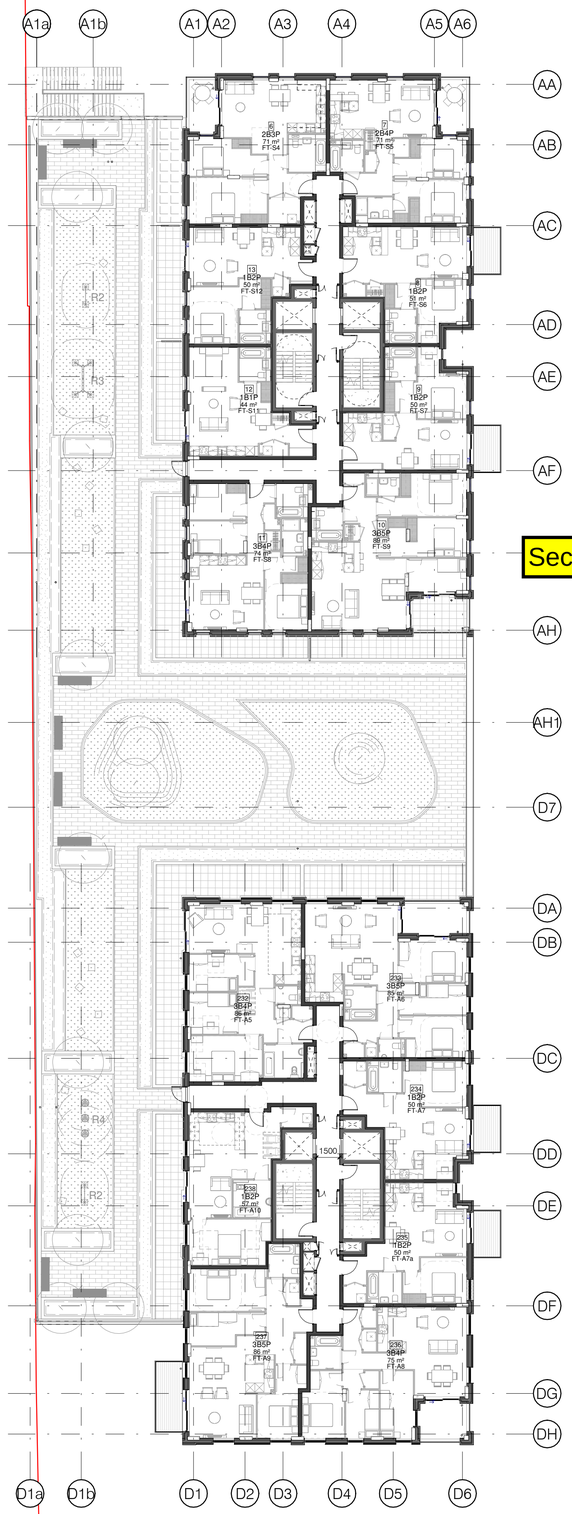


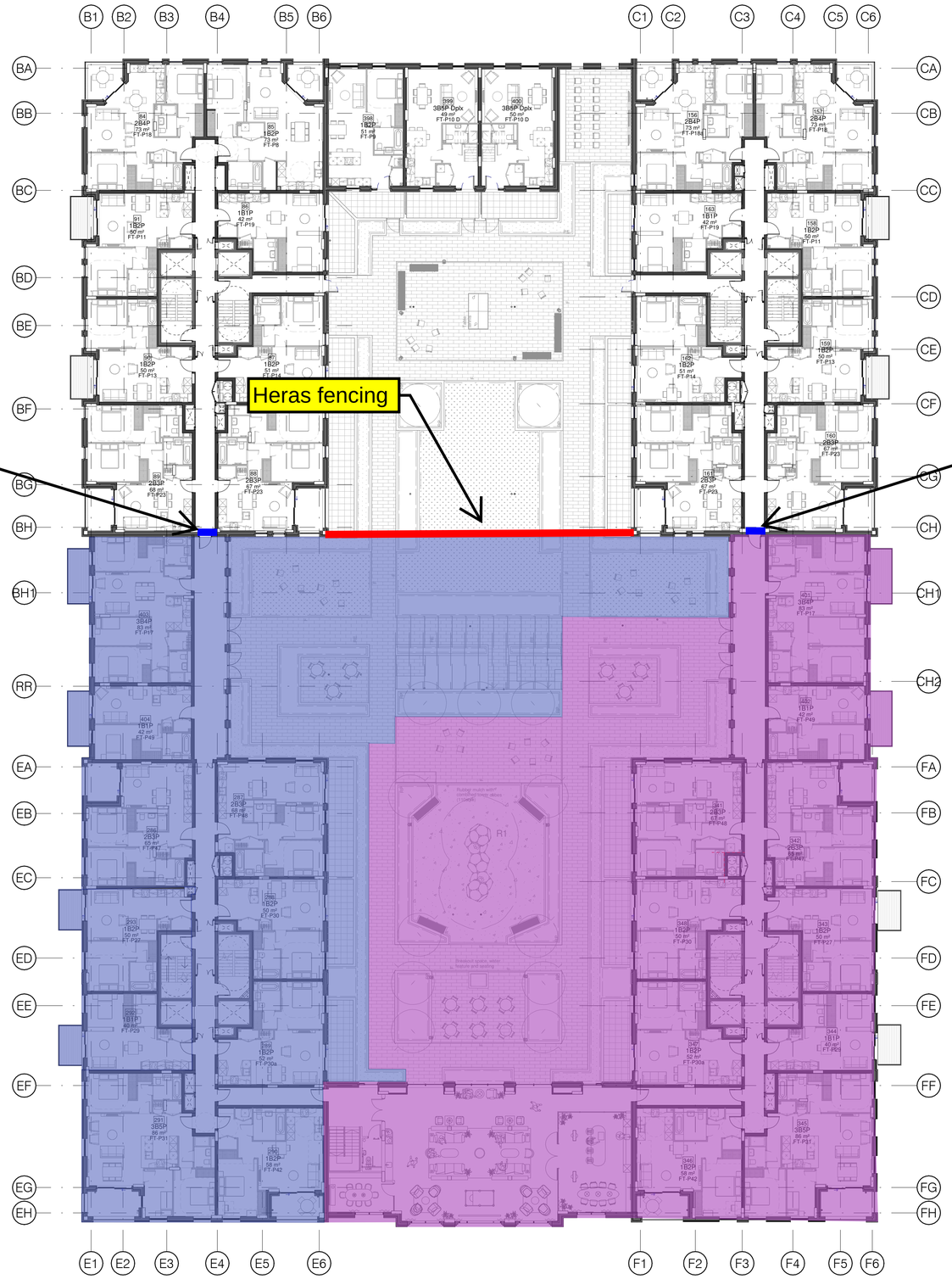


## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

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| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core | |


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CLIENT: Greystar

PROJECT: CTC - Stage 3B (2022)

DRAWING NAME: Stage 3B - First Floor

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

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GENERAL NOTES

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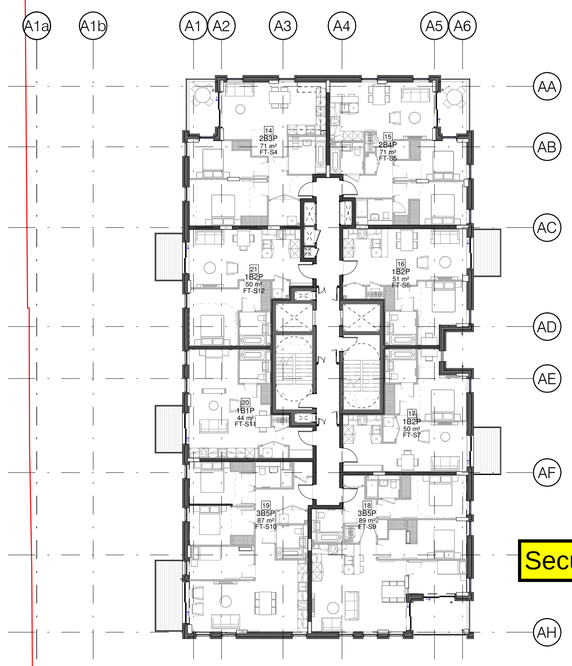

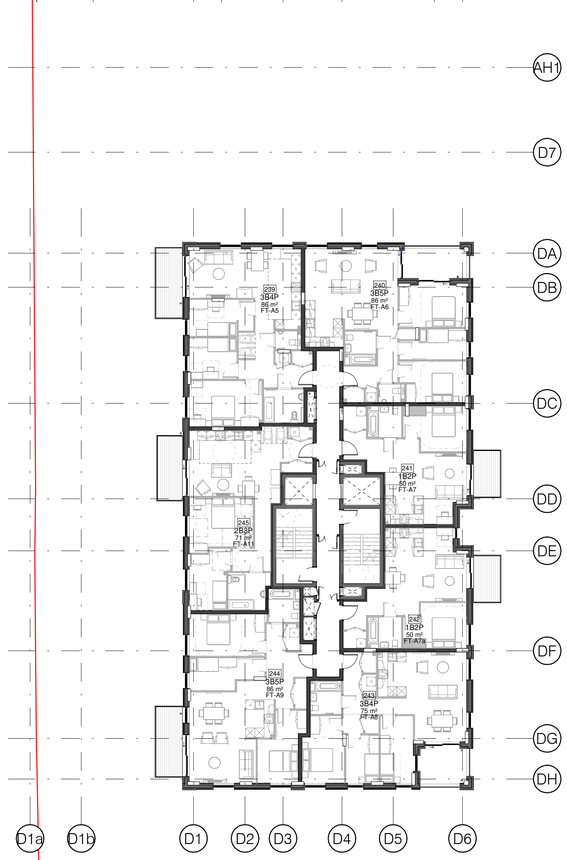

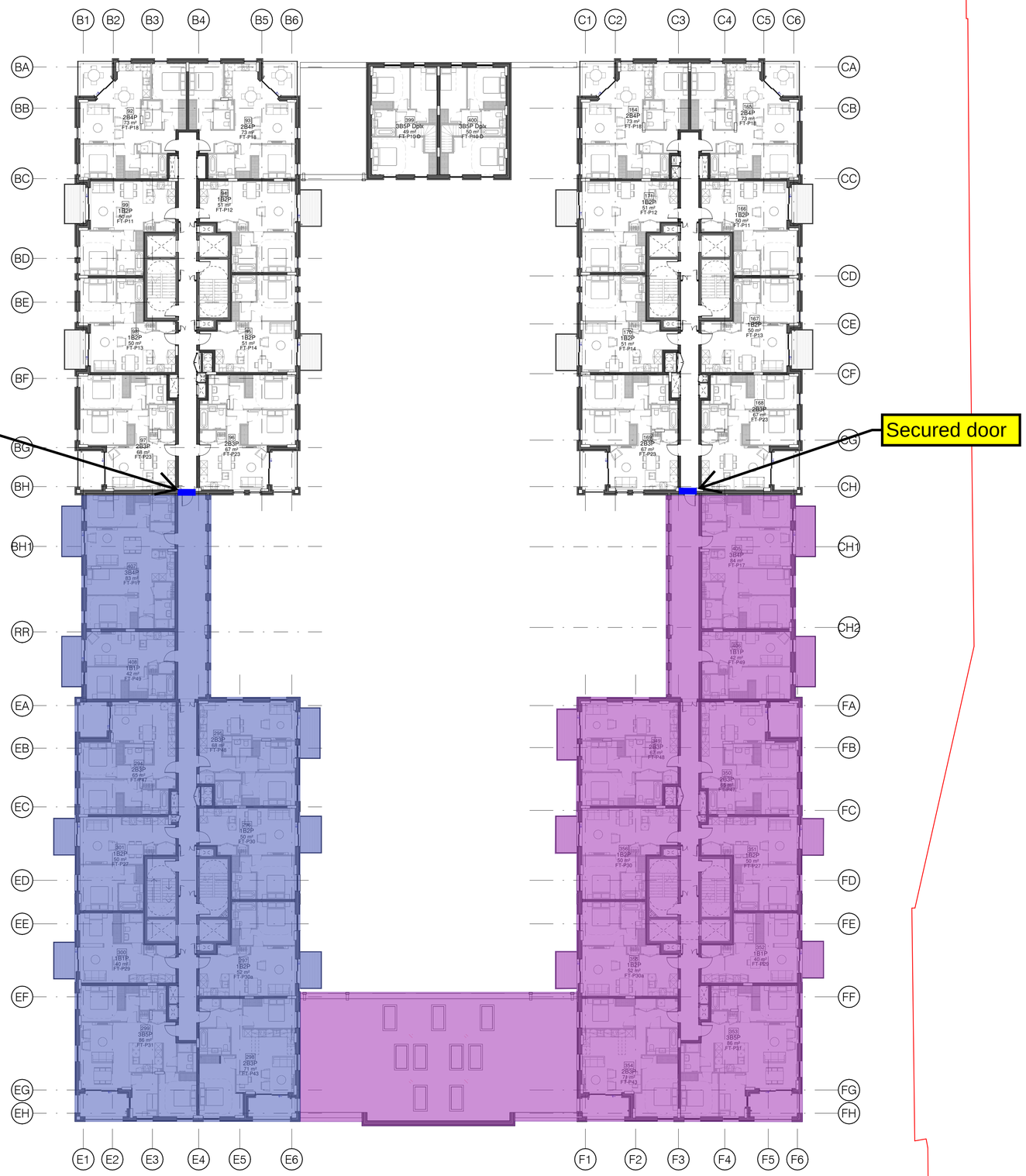


## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

| Rev | Date | Description |
|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core |

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Hoxton,London N1 7LB T: +44 (0)20 7812 8454

CLIENT: Greystar

PROJECT: CTC - Stage 3B (2022)

DRAWING NAME: Stage 3B - Second Floor

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

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GENERAL NOTES

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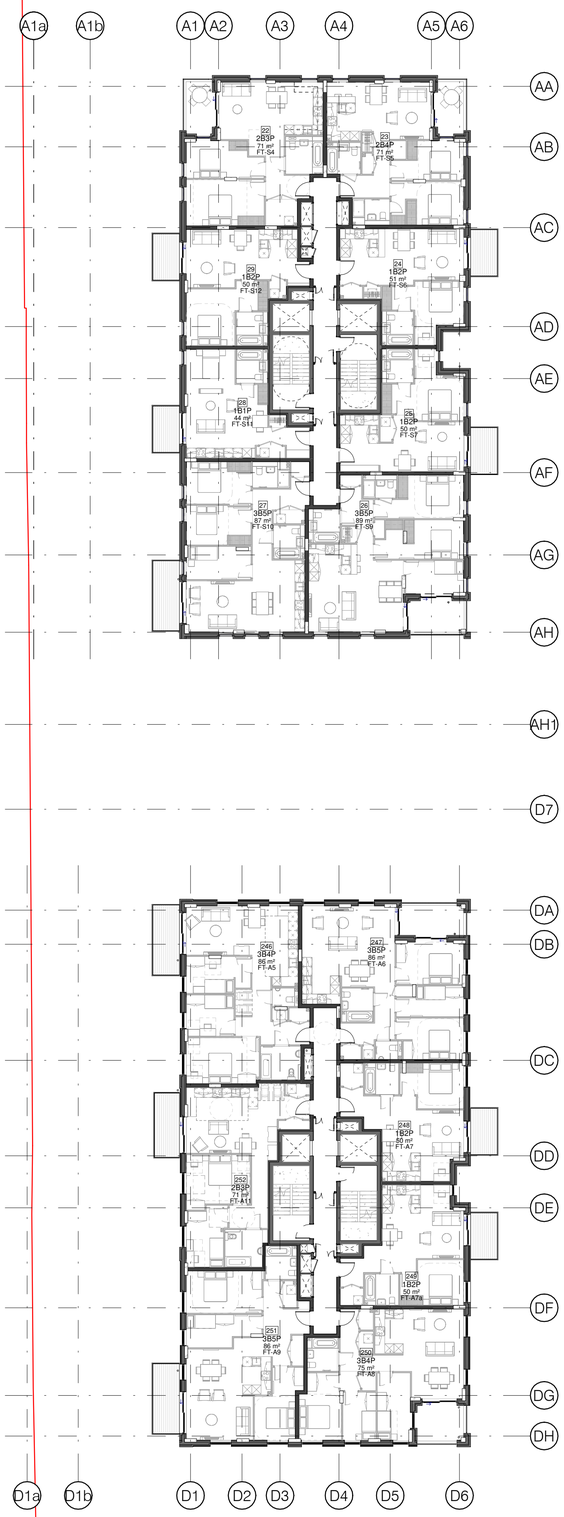
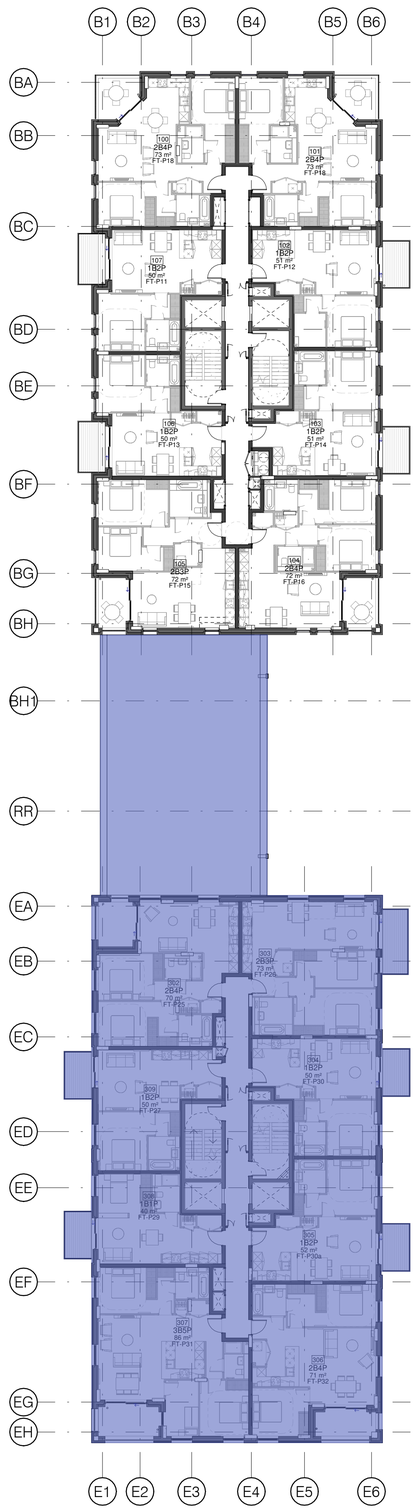
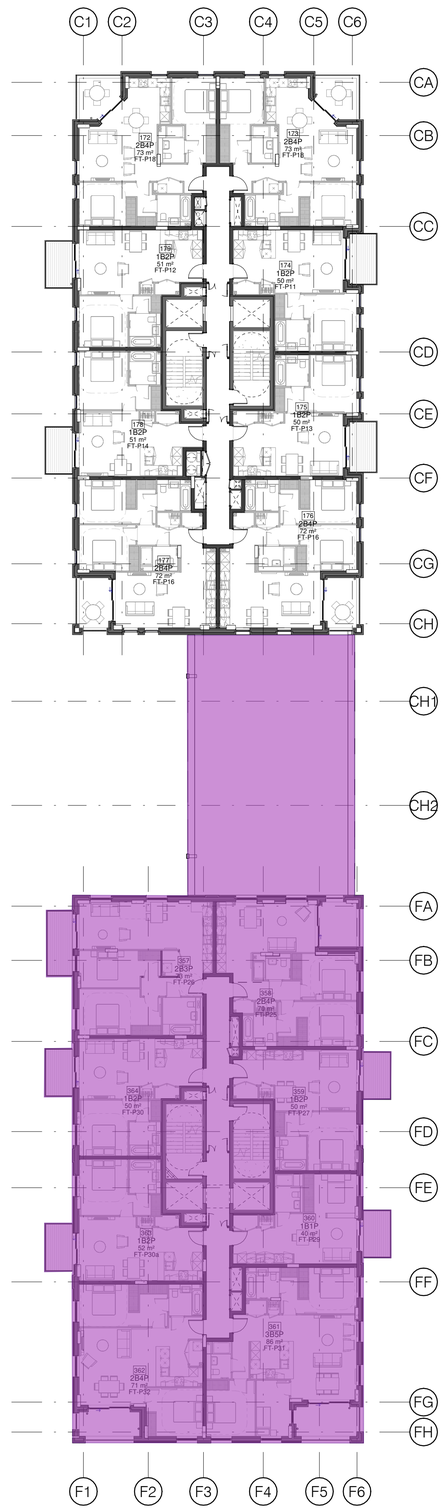



## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

| Rev | Date | Description | © |
|---|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core | |


FRANK REYNOLDS ARCHITECTS
Hoxton,London N1 7LB T: +44 (0)20 7812 8454


CLIENT: Greystar

PROJECT: CTC - Stage 3B (2022)

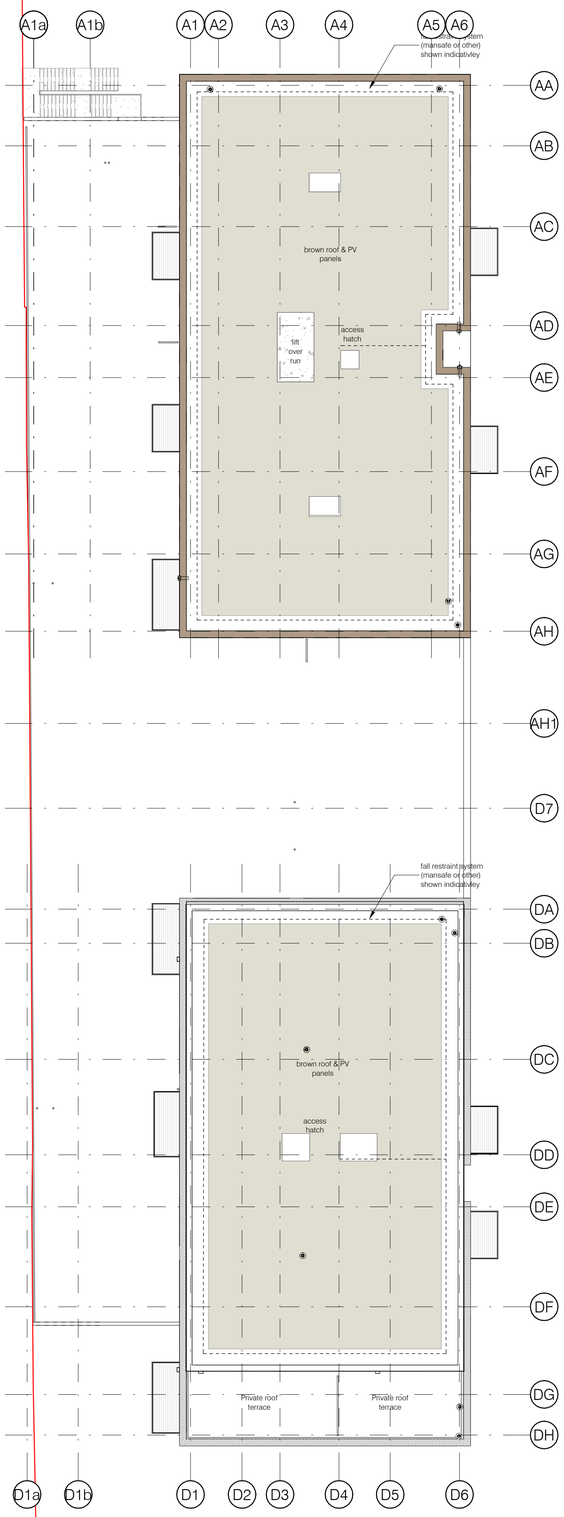
DRAWING NAME: Stage 3B - Third Floor

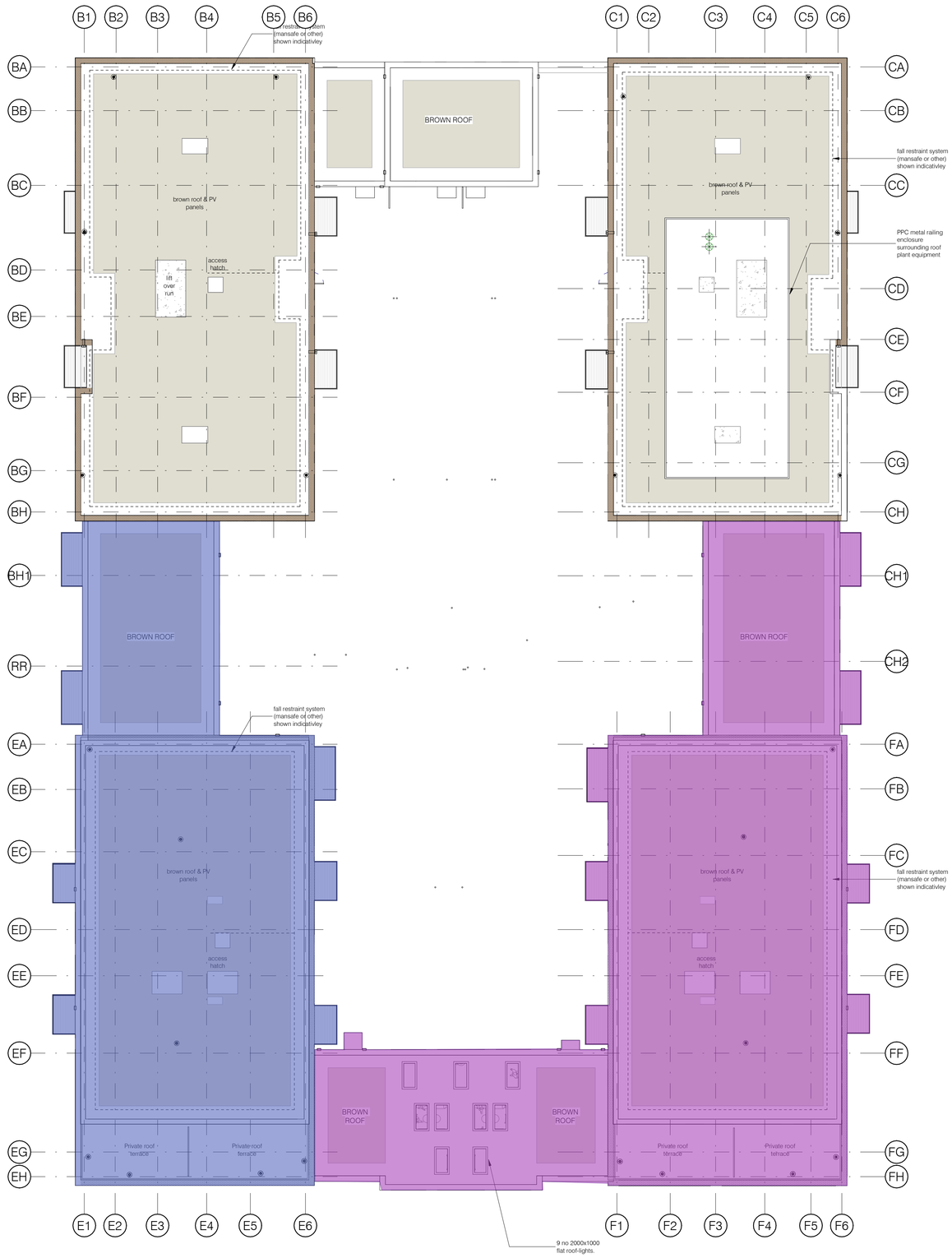
| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

| DRAWN BY | CHECK BY | SCALE | SIZE |
|---|---|---|---|
| JM | AD | 1 : 200 | A1 |

| JOB NO. | DRAWING NO. | REVISION |
|---|---|---|
| 1140 | 010105 | P01 |

1140CTC-FRA-ZZ-03-DR-A-010105




GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING
2. ALL DIMENSIONS TO BE CHECKED ON SITE
3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT / CONTRACT ADMINISTRATOR

Scale 1:200

0 4 8 12m

0 12 24 36ft

## Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

| Rev | Date | Description |
|---|---|---|
| P01 | 09.09.2022 | Stage 3B Issue - Scheme adjusted to 2 stairs per core |

FRANK REYNOLDS ARCHITECTS
Hoxton,London N1 7LB T: +44 (0)20 7812 8454

CLIENT: Greystar

PROJECT: CTC - Stage 3B (2022)

DRAWING NAME: Stage 3B - Roof Plan

| STATUS | DATE |
|---|---|
| TENDER | MAY 2022 |

| DRAWN BY | CHECK BY | SCALE | SIZE |
|---|---|---|---|
| JM | AD | 1 : 200 | A1 |

| JOB NO. | DRAWING NO. | REVISION |
|---|---|---|
| 1140 | 010112 | P01 |

1140CTC-FRA-ZZ-RF-DR-A-010112

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Amended Report

| | | | |
|---|---|---|---|
| **Report No.:** | 25-02435-2 | | |
| **Initial Date of Issue:** | 10-Feb-2025 | **Date of Re-Issue:** | 10-Feb-2025 |
| **Re-Issue Details:** | This report has been revised and directly supersedes 25-02435-1 in its entirety | | |
| **Client** | Springbridge Direct Ltd | | |
| **Client Address:** | Oxford Road<br>Denham<br>Middlesex<br>UB9 4DF | | |
| **Contact(s):** | Tom Hawkins | | |
| **Project** | Springbridge Yard | | |
| **Quotation No.:** | Q25-37158 | **Date Received:** | 24-Jan-2025 |
| **Order No.:** | | **Date Instructed:** | 24-Jan-2025 |
| **No. of Samples:** | 2 | | |
| **Turnaround (Wkdays):** | 10 | **Results Due:** | 06-Feb-2025 |
| **Date Approved:** | 07-Feb-2025 | **Subcon Results Due:** | 06-Feb-2025 |

**Approved By:**

**Details:** David Smith, Technical Director

**For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report**

# Results - Soil

**Project: Springbridge Yard**

| **Client: Springbridge Direct Ltd** | | | **Chemtest Job No.:** | | | 25-02435 |
|---|---|---|---|---|---|---|
| Quotation No.: Q25-37158 | | | **Chemtest Sample ID.:** | | | 1922378 |
| Order No.: | | | Client Sample Ref.: | | | Topsoil |
| | | | Client Sample ID.: | | | Top |
| | | | Sample Type: | | | SOIL |
| | | | Date Sampled: | | | 22-Jan-2025 |
| | | | Time Sampled: | | | 11:26 |
| | | | Asbestos Lab: | | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| ACM Type | | U | 2192 | | N/A | - |
| Asbestos Identification | | U | 2192 | | N/A | No Asbestos Detected |
| Moisture | | N | 2030 | % | 0.020 | 17 |
| Soil Colour | | N | 2040 | | N/A | Brown |
| Other Material | | N | 2040 | | N/A | Stones |
| Soil Texture | | N | 2040 | | N/A | Sand |
| Boron (Hot Water Soluble) | | M | 2120 | mg/kg | 0.40 | 1.1 |
| Cyanide (Total) | | M | 2300 | mg/kg | 0.50 | < 0.50 |
| Arsenic | | M | 2455 | mg/kg | 0.5 | 1.4 |
| Cadmium | | M | 2455 | mg/kg | 0.10 | < 0.10 |
| Chromium | | M | 2455 | mg/kg | 0.5 | 3.2 |
| Copper | | M | 2455 | mg/kg | 0.50 | 3.2 |
| Mercury | | M | 2455 | mg/kg | 0.05 | < 0.05 |
| Nickel | | M | 2455 | mg/kg | 0.50 | 2.0 |
| Lead | | M | 2455 | mg/kg | 0.50 | 6.0 |
| Selenium | | M | 2455 | mg/kg | 0.25 | < 0.25 |
| Zinc | | M | 2455 | mg/kg | 0.50 | 14 |
| Chromium (Hexavalent) | | N | 2490 | mg/kg | 0.50 | < 0.50 |

# Results - Soil

**Project: Springbridge Yard**

| **Client: Springbridge Direct Ltd** | | | | **Chemtest Job No.:** | | 25-02435 |
|---|---|---|---|---|---|---|
| Quotation No.: Q25-37158 | | | | **Chemtest Sample ID.:** | | 1922378 |
| Order No.: | | | | Client Sample Ref.: | | Topsoil |
| | | | | Client Sample ID.: | | Top |
| | | | | Sample Type: | | SOIL |
| | | | | Date Sampled: | | 22-Jan-2025 |
| | | | | Time Sampled: | | 11:26 |
| | | | | Asbestos Lab: | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| Aliphatic VPH >C5-C6 | HS_2D_AL | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Aliphatic VPH >C6-C7 | HS_2D_AL | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Aliphatic VPH >C7-C8 | HS_2D_AL | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Aliphatic VPH >C6-C8 (Sum) | HS_2D_AL | N | 2780 | mg/kg | 0.10 | < 0.10 |
| Aliphatic VPH >C8-C10 | HS_2D_AL | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Total Aliphatic VPH >C5-C10 | HS_2D_AL | U | 2780 | mg/kg | 0.25 | < 0.25 |
| Aliphatic EPH >C10-C12 MC | EH_2D_AL_#1 | M | 2690 | mg/kg | 2.00 | < 2.0 |
| Aliphatic EPH >C12-C16 MC | EH_2D_AL_#1 | M | 2690 | mg/kg | 1.00 | < 1.0 |
| Aliphatic EPH >C16-C21 MC | EH_2D_AL_#1 | M | 2690 | mg/kg | 2.00 | 3.5 |
| Aliphatic EPH >C21-C35 MC | EH_2D_AL_#1 | M | 2690 | mg/kg | 3.00 | 25 |
| Aliphatic EPH >C35-C40 MC | EH_2D_AL_#1 | N | 2690 | mg/kg | 10.00 | 17 |
| Total Aliphatic EPH >C10-C35 MC | EH_2D_AL_#1 | M | 2690 | mg/kg | 5.00 | 30 |
| Total Aliphatic EPH >C10-C40 MC | EH_2D_AL_#1 | N | 2690 | mg/kg | 10.00 | 47 |
| Aromatic VPH >C5-C7 | HS_2D_AR | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Aromatic VPH >C7-C8 | HS_2D_AR | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Aromatic VPH >C8-C10 | HS_2D_AR | U | 2780 | mg/kg | 0.05 | < 0.05 |
| Total Aromatic VPH >C5-C10 | HS_2D_AR | U | 2780 | mg/kg | 0.25 | < 0.25 |
| Aromatic EPH >C10-C12 MC | EH_2D_AR_#1 | U | 2690 | mg/kg | 1.00 | < 1.0 |

# Results - Soil

**Project: Springbridge Yard**

| **Client: Springbridge Direct Ltd** | | | | **Chemtest Job No.:** | | 25-02435 |
|---|---|---|---|---|---|---|
| Quotation No.: Q25-37158 | | | | **Chemtest Sample ID.:** | | 1922378 |
| Order No.: | | | | Client Sample Ref.: | | Topsoil |
| | | | | Client Sample ID.: | | Top |
| | | | | Sample Type: | | SOIL |
| | | | | Date Sampled: | | 22-Jan-2025 |
| | | | | Time Sampled: | | 11:26 |
| | | | | Asbestos Lab: | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| Aromatic EPH >C12-C16 MC | EH_2D_AR_#1 | U | 2690 | mg/kg | 1.00 | < 1.0 |
| Aromatic EPH >C16-C21 MC | EH_2D_AR_#1 | U | 2690 | mg/kg | 2.00 | 11 |
| Aromatic EPH >C21-C35 MC | EH_2D_AR_#1 | U | 2690 | mg/kg | 2.00 | 6.0 |
| Aromatic EPH >C35-C40 MC | EH_2D_AR_#1 | N | 2690 | mg/kg | 1.00 | 31 |
| Total Aromatic EPH >C10-C35 MC | EH_2D_AR_#1 | U | 2690 | mg/kg | 5.00 | 17 |
| Total Aromatic EPH >C10-C40 MC | EH_2D_AR_#1 | N | 2690 | mg/kg | 10.00 | 48 |
| Total VPH >C5-C10 | HS_2D_Total | U | 2780 | mg/kg | 0.50 | < 0.50 |
| Total EPH >C10-C35 MC | EH_2D_Total_#1 | U | 2690 | mg/kg | 10.00 | 47 |
| Total EPH >C10-C40 MC | EH_2D_Total_#1 | N | 2690 | mg/kg | 10.00 | 95 |
| Benzene | | M | 2760 | µg/kg | 1.0 | < 1.0 |
| Toluene | | M | 2760 | µg/kg | 1.0 | < 1.0 |
| Ethylbenzene | | M | 2760 | µg/kg | 1.0 | < 1.0 |
| m & p-Xylene | | M | 2760 | µg/kg | 1.0 | < 1.0 |
| o-Xylene | | M | 2760 | µg/kg | 1.0 | < 1.0 |
| Nitrogen (Total) | | SN | 2790 | % | 0.10 | 0.23 |
| Naphthalene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Acenaphthylene | | N | 2800 | mg/kg | 0.10 | < 0.10 |
| Acenaphthene | | M | 2800 | mg/kg | 0.10 | < 0.10 |

# Results - Soil

**Project: Springbridge Yard**

| **Client: Springbridge Direct Ltd** | | | | **Chemtest Job No.:** | | 25-02435 |
|---|---|---|---|---|---|---|
| Quotation No.: Q25-37158 | | | | **Chemtest Sample ID.:** | | 1922378 |
| Order No.: | | | | Client Sample Ref.: | | Topsoil |
| | | | | Client Sample ID.: | | Top |
| | | | | Sample Type: | | SOIL |
| | | | | Date Sampled: | | 22-Jan-2025 |
| | | | | Time Sampled: | | 11:26 |
| | | | | Asbestos Lab: | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| Fluorene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Phenanthrene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Anthracene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Fluoranthene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Pyrene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[a]anthracene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Chrysene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[b]fluoranthene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[k]fluoranthene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[a]pyrene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Indeno(1,2,3-c,d)Pyrene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Dibenz(a,h)Anthracene | | N | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[g,h,i]perylene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Total Of 16 PAH's | | N | 2800 | mg/kg | 2.0 | < 2.0 |
| Total Phenols | | M | 2920 | mg/kg | 0.10 | < 0.10 |

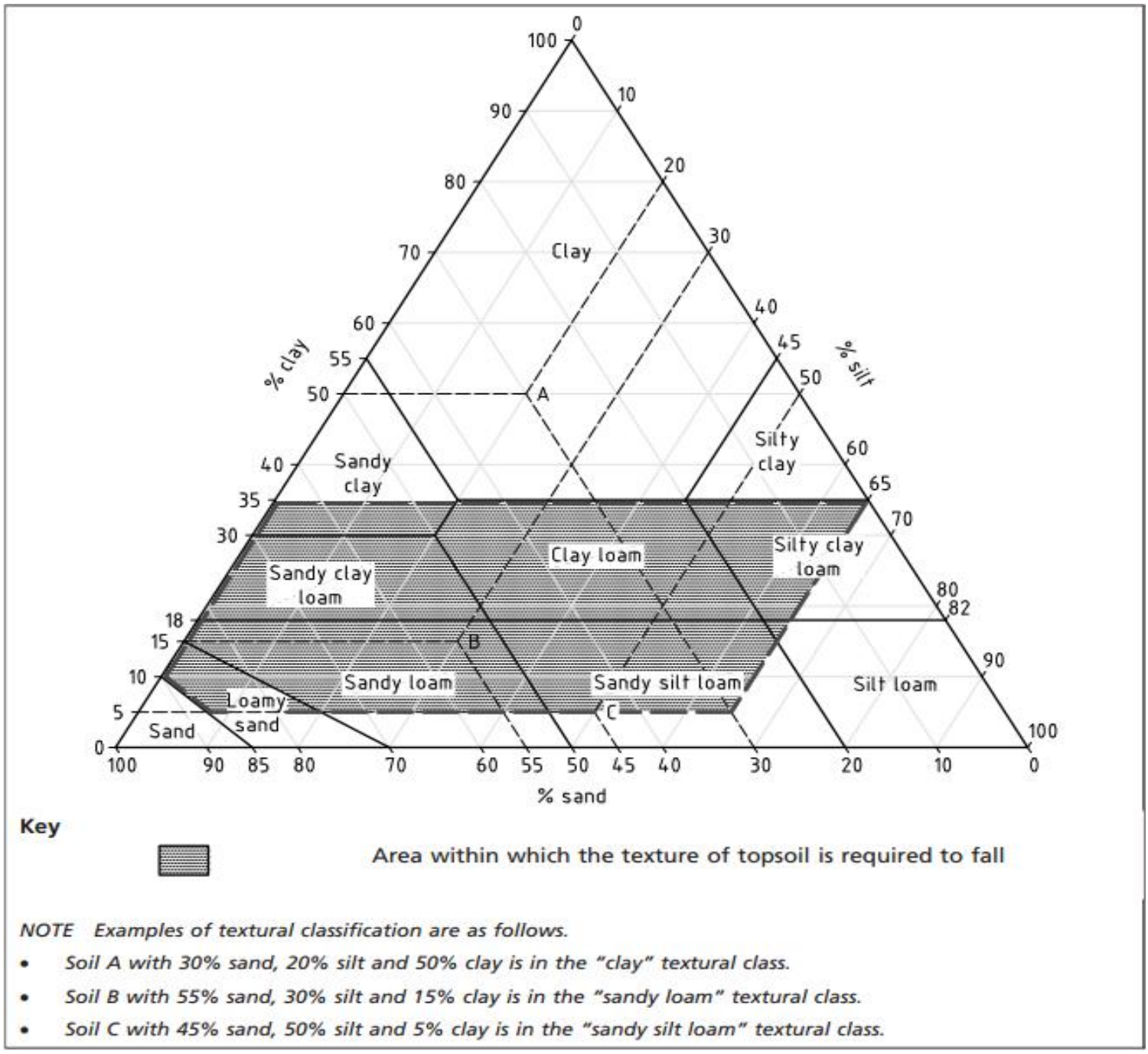
# Results - Topsoil Report

# BS3882:2015

**Chemtest Job No.: 25-02435**
**Chemtest Sample ID.: 1922378**
Client Sample Ref.: Topsoil
Sample Location:
**Client Sample ID.: Top**
Top Depth (m):
Bottom Depth (m):
Date Sampled: 22-Jan-2025
Time Sampled:

| Parameter | Units | Multipurpose Range | | | Result | Compliant with Multipurpose Range? (Y/N) | Compliant with Specific Purpose Range? (Y/N) | | |
|---|---|---|---|---|---|---|---|---|---|
| **Texture** | | | | | | | **Acid** | **Low F** | **Calc.** |
| Clay content (Sub Contracted) | % | | | | 6.0 | | | | |
| Silt content (Sub Contracted) | % | | | | 11.0 | | | | |
| Sand content (Sub Contracted) | % | | | | 84 | | | | |
| Soil texture class | | See Attached Chart | | | Loamy Sand | YES | | | |
| **Mass Loss on Ignition** | | | | | | | | | |
| Clay 5-20% | | 3.0-20 | | | 3.1 | YES | YES | YES | YES |
| Clay 20-35% | | 5.0-20 | | | | | | | |
| **Stone Content** | **% m/m** | | | | | | | | |
| >2mm (Sub Contracted) | | 0-30 | | | 4.2 | YES | | | |
| >20mm (Sub Contracted) | | 0-10 | | | 0.70 | YES | | | |
| >50mm (Sub Contracted) | | 0 | | | < 0.10 | YES | | | |
| Soil pH value | | 5.5-8.5 | | | 8.2 | YES | NO | YES | YES |
| Carbonate (Calcareous only) | % | | | | 1.2 | | | | YES |
| Electrical Conductivity | µS/cm | If >3300 do ESP | | | 3200 | YES | | | |
| **Available Nutrient Content** | | | | | | | | | |
| Nitrogen % | | >0.15 | | | 0.23 | YES | YES | | YES |
| Extractable phosphorus | mg/l | 16-140 | | | 110 | YES | YES | NO | YES |
| Extractable potassium | mg/l | 121-1500 | | | 1400 | YES | YES | | YES |
| Extractable magnesium | mg/l | 51-600 | | | 220 | YES | YES | | YES |
| **Carbon : Nitrogen Ratio** | | <20:1 | | | 7.4/1 | YES | YES | YES | YES |
| **Exchangeable sodium** | **%** | <15 | | | 4.2 | | | | |
| Available Calcium | mg/l | | | | 1700 | | | | |
| Available Sodium | mg/l | | | | 160 | | | | |
| **Phytotoxic Contaminants (by soil pH)** | | **< 6.0** | **6.0-7.0** | **> 7.0** | | | | | |
| Zinc (Nitric Acid extract) | mg/kg | <200 | <200 | <300 | 38 | YES | | | |
| Copper (Nitric Acid extract) | mg/kg | <100 | <135 | <200 | 8.6 | YES | | | |
| Nickel (Nitric Acid extract) | mg/kg | <60 | <75 | <110 | 5.4 | YES | | | |
| **Visible Contaminants** | **% mm** | | | | | | | | |
| >2mm | | <0.5 | | | 0.000 | YES | | | |
| ….. of which plastics | | <0.25 | | | 0.000 | YES | | | |
| ….. man-made sharps | | zero in 1kg | | | 0.000 | YES | | | |

# Topsoil: BS3882:2015
## Texture Classification Chart




**Key**

Area within which the texture of topsoil is required to fall

*NOTE Examples of textural classification are as follows.*

- *Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.*
- *Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.*
- *Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.*

# Test Methods

| SOP | Title | Parameters included | Method summary | Water Accred. |
|---|---|---|---|---|
| 2010 | pH Value of Soils | pH at 20°C | pH Meter | |
| 2020 | Electrical Conductivity | Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil | Measurement of the electrical resistance of a 2:1 water/soil extract. | |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS) | Moisture content | Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C. | |
| 2040 | Soil Description(Requirement of MCERTS) | Soil description | As received soil is described based upon BS5930 | |
| 2115 | Total Nitrogen in Soils | Nitrogen | Determination by elemental analyser | |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium | Boron; Sulphate; Magnesium; Chromium | Aqueous extraction / ICP-OES | |
| 2192 | Asbestos | Asbestos | Polarised light microscopy / Gravimetry | |
| 2260 | Carbonate | Carbonate | Titration | |
| 2300 | Cyanides & Thiocyanate in Soils | Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate | Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser. | |
| 2400 | Cations | Cations | ICP-MS | |
| 2420 | Phosphate | Phosphate | Spectrophotometry - Discrete analyser | |
| 2450 | Acid Soluble Metals in Soils | Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc | Acid digestion followed by determination of metals in extract by ICP-MS. | |
| 2455 | Acid Soluble Metals in Soils | Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc | Acid digestion followed by determination of metals in extract by ICP-MS. | |
| 2490 | Hexavalent Chromium in Soils | Chromium [VI] | Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide. | |
| 2620 | LOI 440 | LOI 440 Trommel Fines | Determination of the proportion by mass that is lost from a soil by ignition at 440°C. | |
| 2690 | EPH A/A Split | Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 | Acetone/Heptane extraction / GCxGC FID detection | |
| 2760 | Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS | Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule | Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds. | |
| 2780 | VPH A/A Split | Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10 | Water extraction / Headspace GCxGC FID detection | |
| 2790 | Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS | Semi-volatile organic compounds(cf. USEPA Method 8270) | Acetone/Hexane extraction / GC-MS | |
| 2800 | Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS | Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene* | Dichloromethane extraction / GC-MS | |
| 2920 | Phenols in Soils by HPLC | Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded. | 60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection. | |

## Report Information

| Key | |
|---|---|
| U | UKAS accredited |
| M | MCERTS and UKAS accredited |
| N | Unaccredited |
| S | This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis |
| SN | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T | This analysis has been subcontracted to an unaccredited laboratory |
| I/S | Insufficient Sample |
| U/S | Unsuitable Sample |
| N/E | not evaluated |
| < | "less than" |
| > | "greater than" |
| SOP | Standard operating procedure |
| LOD | Limit of detection |



Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

| | |
|---|---|
| NEW_ASB | Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL |
| DURHAM | Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW |

### Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

### Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

### Water Sample Category Key for Accreditation

## Report Information

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

### Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

### HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com