Symbiotic Solutions Ltd
Unit A4, East Gores Farm, East Gores Road
Coggeshall, Essex, CO6 1RZ
Tel. 01376 618030 / info@symbioticsolutions.co.uk

TECHNICAL NOTE

Validation Report (Construction Phase) – Blocks E and F (Phase 2), Free Wharf, Brighton Road, Shoreham-by-Sea (planning ref. AWDM/1497/17)

Issue Record			
Project No.	1375		
Document Ref.	1375_TN_251010_ValRpt (final)		
Issue Date	10/10/2025		
Client	HG Construction Limited		
Author / Issued By	P Taylor	[redacted]	10/10/2025

1 Introduction

Symbiotic Solutions Limited (SSL) was commissioned by HG Construction Limited (The Client) to prepare a remediation validation report for the construction phase remediation works undertaken for Blocks E and F (Phase 2) at the site at Free Wharf, Brighton Road, Shoreham-by-Sea, West Sussex. A site location plan is presented in Appendix 1.

The overall site is permitted for the development (ref. AWDM/1497/17) of 10 (no.) buildings, to provide 540 (no.) new homes, 2,707sqm of commercial floorspace at ground floor level within use classes, A1 (retail), A3 (cafes and restaurants), B1 (business) and D1 (non-residential institutions). The development also includes 512 parking spaces, the reconstruction of the river wall, construction of mooring pontoons and observation platform, provision of a riverside pedestrian/cycle route, areas of semi-private and publicly accessible open space, internal access roads, 596 cycle parking spaces and associated ancillary areas. The permitted development layout is shown in Appendix 1.

This report covers the remediation works / remediation validation works for Blocks E and F of the development (south-eastern area of the site) in support of discharge of Condition 10 (land contamination / remediation scheme verification report) of the planning consent (ref. AWDM/1497/17).

The final landscaping layout for Blocks E and F (Phase 1) were permitted under ref. AWDM/0959/25; the relevant drawings are included in Appendix 1. Soft landscaping is present at ground level the first-floor podium level and upper levels and the roofs of Block E and F.

The approved (planning ref. AWDM/0255/19) remediation strategy and validation plan for the site was set out in:

- GeoDyne report, Remediation Method Statement, Project ref. 31149, dated 30th May 2019.

It is noted that the Remediation Method Statement split the remediation works into enabling works (pre-construction) and construction phase works. The enabling works phase included earthworks / works to remove and validate known tanks and hotspots; identify, remove and validate potential hotspots; construct the piling mat; and a watching brief for unexpected ground conditions (including contamination). These works were undertaken by Wates Construction and validated by GESL. The GESL validation report listed below was submitted and approved for partial discharge under planning ref. ADWM/0637/21.

- GESL report, Interim MMP Verification Report for the Land at Free Wharf, Brighton Road, Shoreham-by-Sea, BN43 6SA, ref. GE18319/INTMMPVR1.2/MAR21, v1.1, dated 16th March 2021.

It is further noted that whilst the GESL report identified that the whole site area had not been complete (understood to be the western end of the site near the Humphreys Gap road entrance) and that within the area covered by that report an area under an existing haul road (not removed at that time) was likely to overly elevated hydrocarbon concentrations, these and the areas where enabling works were not completed are not be within the Blocks E and F (Phase 2) area.

The construction phase remediation measures are summarised in Section 2.

2 Summary of Site Investigation and Remediation Strategy

2.1 Summary of Site Investigation / Post Remediation Site Conditions

The site investigation identified elevated concentrations of lead, arsenic, PAH and localised potentially elevated SVOC compounds in the general site made ground relative to a residential site usage. Asbestos fibres were also identified in a small number (2 no.) of samples. The natural strata were considered to be 'uncontaminated' for the proposed end use.

The site investigation also targeted potential areas of concern associated with USTs, ASTs, a former oil storage area and tarmacadam works. No significantly elevated TPH concentrations were identified in the soils tested. The tanks and soils associated with the oil storage works etc have been removed / investigated as set out in the GESL MMP validation report (R.2). No significant contamination was identified remaining in the Block E and F (Phase 2) area.

Whilst the site investigation did identify some metal, TPH and PAH impact on the shallow (perched) groundwater it concluded that there was unlikely to be any significant risks to the wider controlled waters environment (aquifer beneath the site and the adjacent River Adur).

The updated gas risk assessment presented in the Geodyne RMS concluded that the site was classified as CS2 and that gas protection measures would be required – with the exact measures to be determined based on the final layouts.

2.2 Summary of Remediation and Validation Strategy

In summary it was considered that the that (construction phase) remediation to address the potential contamination linkages identified could be achieved by implementation of the following elements:

- A watching brief during the site works (in particularly during ground works) for evidence of unexpected or exceptional contamination.
- Soil capping layers to be installed in areas of soft standing (public open space) – to comprise a 0.6m clean soil layer (topsoil + subsoil).
- Gas protection measures to meet the requirements for a CS2 classification.
- Underground services must be installed to the service providers specification.

3 Summary of Remediation and Validation Works Undertaken

3.1 Watching Brief

It is understood that (correspondence in Appendix 2) the Client, or Client's contractors have not encountered any evidence of unexpected or otherwise exceptional contamination during the works undertaken.

3.2 Capping Layer in soft Landscaping Areas

The soft landscaping layout are included in Appendix 1.

The soft standing areas have been installed by the client's contractors.

SSL visited site on 26th September 2025 to inspect and obtain soil samples from the soft standing areas and from stockpiled soils at the site. A second visit to take further photographs was made on the 1st October 2025. The inspection and sampling locations are indicated on Figure 1 and representative photographs are included in Appendix 3.

The planting / soft standing areas arounds the north, east and south were) complete (constructed and filled with soils but not planted). Inspection pits (HP101 – HP103) were dug at 3 (no.) locations (Figure 1). The pits identified around 300mm topsoil over 300mm subsoil at HP101 and HP102 and 300 – 400mm topsoil over 500 – 400mm subsoil at HP103. The topsoil was described as dark brown-grey silty sandy soil with organic material and some fine gravel; the subsoils were described as brown silty sand with some fine gravel. Samples of the topsoil and subsoil were taken at each location.

At the time of the site inspection the ground level planting areas at the west end of the building were under construction but not meaningfully complete. The soils to be used to fill these areas was however stockpiled on site just outside the main works area - stockpiles SP-GL-TS and SP-GL-SS on Figure 1. The soils were visually the same as those at HP101 – HP103 (and were understood to have been imported to site in the same batch). 1 (no.) composite sample (3 sub-samples in each from around the stockpile) of each of the topsoil and subsoil was taken.

The planting areas on the podium level and on the upper levels were not complete at the time of the inspection – where the structures were complete / being installed these were noted to be 500mm depth. As the soils will be installed over an engineered base (as opposed to into site soils) the depth of soils is not critical. The (lightweight) soils to be used to infill these planting areas was stockpiled on site - stockpiles SP-POD-TS and SP-POD-SS on Figure 1. The topsoil was described as brown silty slightly organic sand with fine – medium gravel sized 'brown balls'. The subsoil was described as light brown slightly gravelly silty sand. 2 (no.) composite samples (3 sub-samples in each from around the stockpile) of each of the topsoil and subsoil were taken.

The samples were submitted for laboratory analysis in line with the remediation method statement requirements. The sample results (report ref. P25/01441/SYM - 25-84003) are included in Appendix 3.

The laboratory results have been compared to generic assessment criteria for residential end-use without plant uptake (included in Appendix 3). All determinands pass the relevant screening criteria for residential land use without plant uptake.

Overall, it is also considered that on the basis of the site observations and soil testing undertaken that –

- The planting areas completed at ground level along the north, east and south of the Phase 2 area hve been competed in line with the remediation strategy and that the soils used are physically and chemically suitable for use.

- The planting areas along the west side of the building were not complete but the soils intended to be used to backfill these areas are on-site and are physically and chemically suitable for use.
- The soils designated for use in the podium and upper-level planting areas are also physically and chemically suitable for use and given that the overall depth of these planters is not significant as the planters have engineered bases as opposed to being 'in-ground' the planters will be completed in-line with the remediation strategy.

3.3 Water Pipe

The water supply installation drawings are included in Appendix 4. MDPE barrier pipe was specified for the incoming below ground service pipework.

Photographs of the pipework during installation (showing brown line on blue pipe for barrier pipe) are included in Appendix 4.

3.4 Gas Protection Measures

The gas protection measures were verified by Geo-Environmental Services Limited (GESL). The gas protection measures design and verification are set out in GESL report ref. GE22259/VR/Phase 2/APR24 included in Appendix 5. GESL concluded that the gas protection measures had been installed in line with the remediation method statement.

4 Conclusions

On the basis of the site observations, laboratory results and the information supplied it is considered that the remediation actions required at the site in relation to the general watching brief for evidence of further or unexpected contamination, installation of water pipe and installation of gas protection measures have been completed in line with the approved remediation strategy.

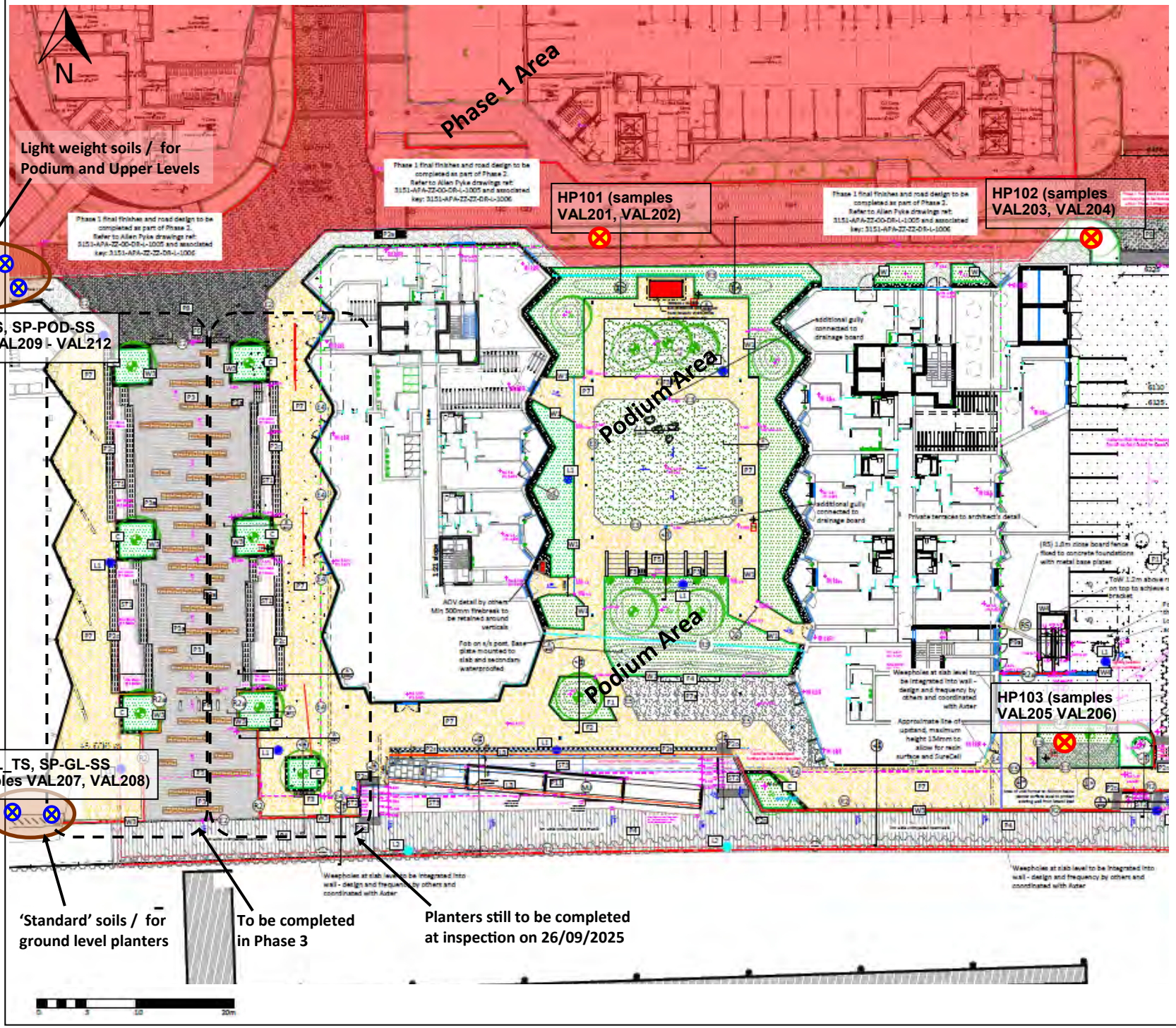
The works to install the planting areas are not yet complete – but where undertaken (north, east and south) of the building these have been undertaken in line with the remediation strategy (including depth of placement and physical and chemical suitability of soils). Further the soils for the uncompleted planters at ground level and all the podium and upper-level planters is on site and has been shown to be physically and chemically suitable for use.

5 References

R.1. GeoDyne report, Remediation Method Statement, Project ref. 31149, dated 30th May 2019.

R.2. GESL report, Interim MMP Verification Report for the Land at Free Wharf, Brighton Road, Shoreham-by-Sea, BN43 6SA, ref. GE18319/INTMMPVR1.2/MAR21, v1.1, dated 16th March 2021.

FIGURE 1: Validation Inspection and Sampling Plan



Legend:

- Validation Inspection and Sampling Location - Planter
- Validation inspection and sampling location - stock-pile

Notes:

Stockpile ID:
SP-GL-TS: standard soils (ground level usage) topsoil
SP-GL-SS: standard soils (ground level usage) subsoil

SP-POD-TS: light weight soils (podium level usage) topsoil
SP-POD-SS: light weight soils (podium level usage) subsoil

HP(HP101 ..): hand dug pit

Site:

Free Wharf, Brighton Road, Shoreham -by-Sea. Phase 2

Title:

Validation Inspection and Sampling Plan

Client:

HG Construction Limited

Drawing: 1375_TN_251010_Figure1

Date: October 2025

Scale: Not to scale / as shown

Drawn by: PT

Checked by: NT

Project No: 1375

symbiotic SOLUTIONS

Symbiotic Solutions Ltd
Unit A4 East Gores Farm
East Gores Rd
Coggeshall, Essex CO6 1RZ

Tel: 01376 311600
info@symbioticsolutions .co.uk

APPENDIX 1: PLANNING DRAWINGS



N

CZWG

CZWG Architects LLP
17 Bowling Green Lane
London EC1R 0QB

Telephone: 020 7253 2523
Fax: 020 7250 0594
mail@czwgarchitects.co.uk
www.czwg.com

Notes:
The Legal Site Boundary indicated on this drawing differs from the Application Boundary, which has been extended north to include the existing kerb line to Brighton Road, and also extended south into the river.
Please read this drawing in conjuction with 'Existing Site - Application Boundary 2052-00-DR-0002-P01'

Rev: P02	**Date:** 18.01.18	**Drw:** EC	**Chk:** SR	
East boundary revised.				
Rev: P01	**Date:** 29.09.2017	**Drw:** RA	**Chk:** EC	
Issued for Planning Submission.				

Do not scale off this drawing
Report all errors and omissions to the Architect
Dimensions to be checked on site
Plot date: 18/01/2018 18:19:49

Client:
Southern Housing Group

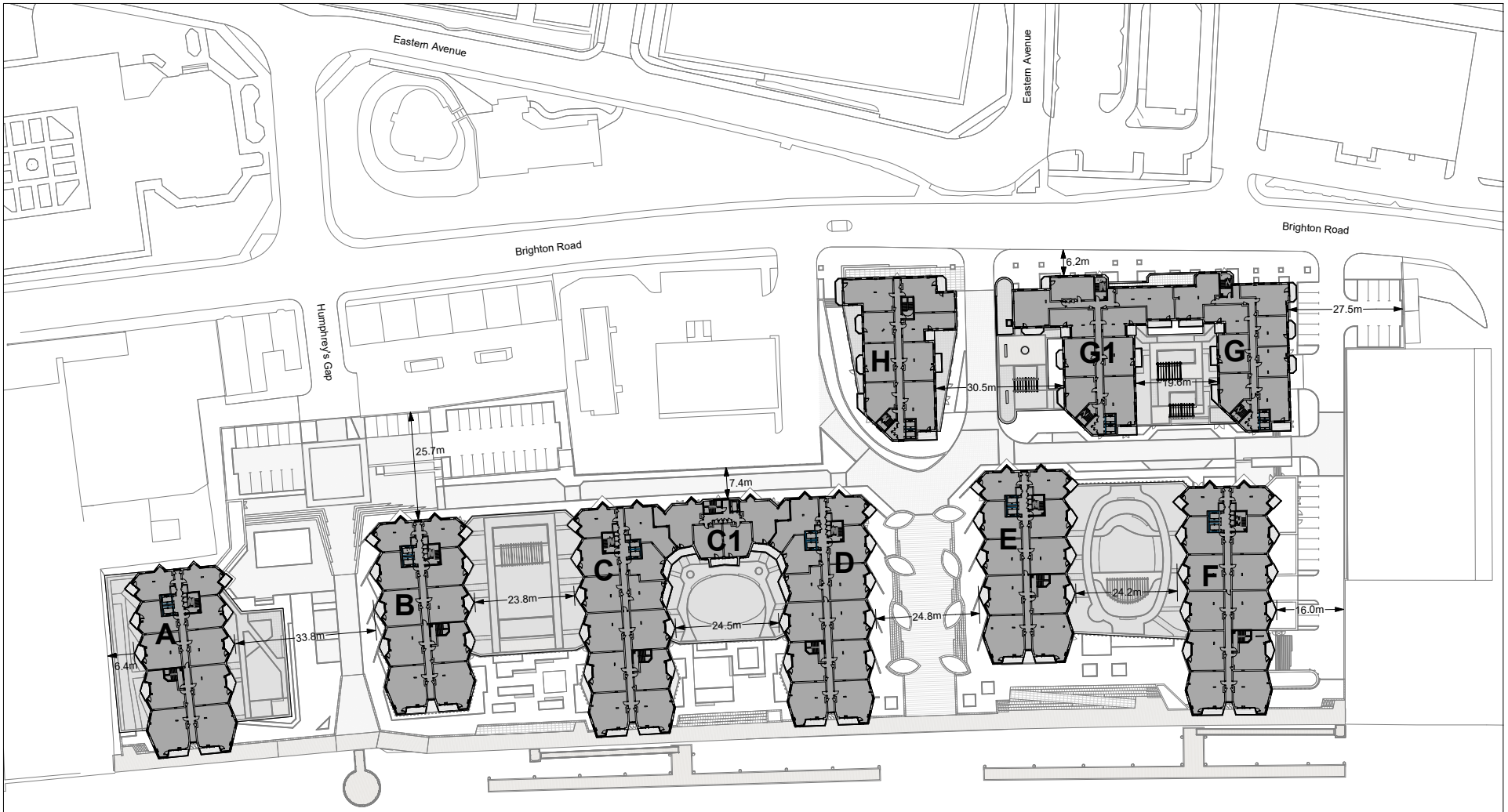
Project:
Free Wharf, Shoreham-By-Sea

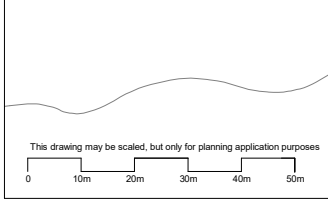
Title:
Existing Site Location Plan

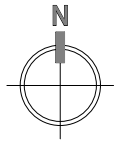
Drawing status:
For Planning

CZWG

Scale @ A1
1 : 1000
Drawing No: 2052-00-DR-0001
Rev: P02







CZWG

CZWG Architects LLP
17 Bowling Green Lane
London EC1R 0QB

Telephone: 020 7253 2523
Fax: 020 7250 0594
mail@czwgarchitects.co.uk
www.czwg.com

Notes:
All dimensions are approximate

Notes:
All elevation values are expressed in meters and relate to their height Above Ordanance Datum (Newlyn)
All trees shown here are indicative. Please refer to Landscape Architect's masterplan for further details on tree/shrubs position and size.

Rev: P03	**Date:** 18.01.18	**Drw:** EC	**Chk:** SR	
Pontoon to east boundary revised.				
Rev: P02	**Date:** 05.01.18	**Drw:** EC	**Chk:** SR	
Revisions to scheme submitted for Planning				
Rev: P01	**Date:** 29.09.2017	**Drw:** RA	**Chk:** EC	
Issued for Planning Submission.				

Do not scale off this drawing
Report all errors and omissions to the Architect
Dimensions to be checked on site
Plot date: 18/01/2018 18:20:08

Client:
Southern Housing Group

Project:
Free Wharf, Shoreham-By-Sea

Title:
Site Wide Block Plan

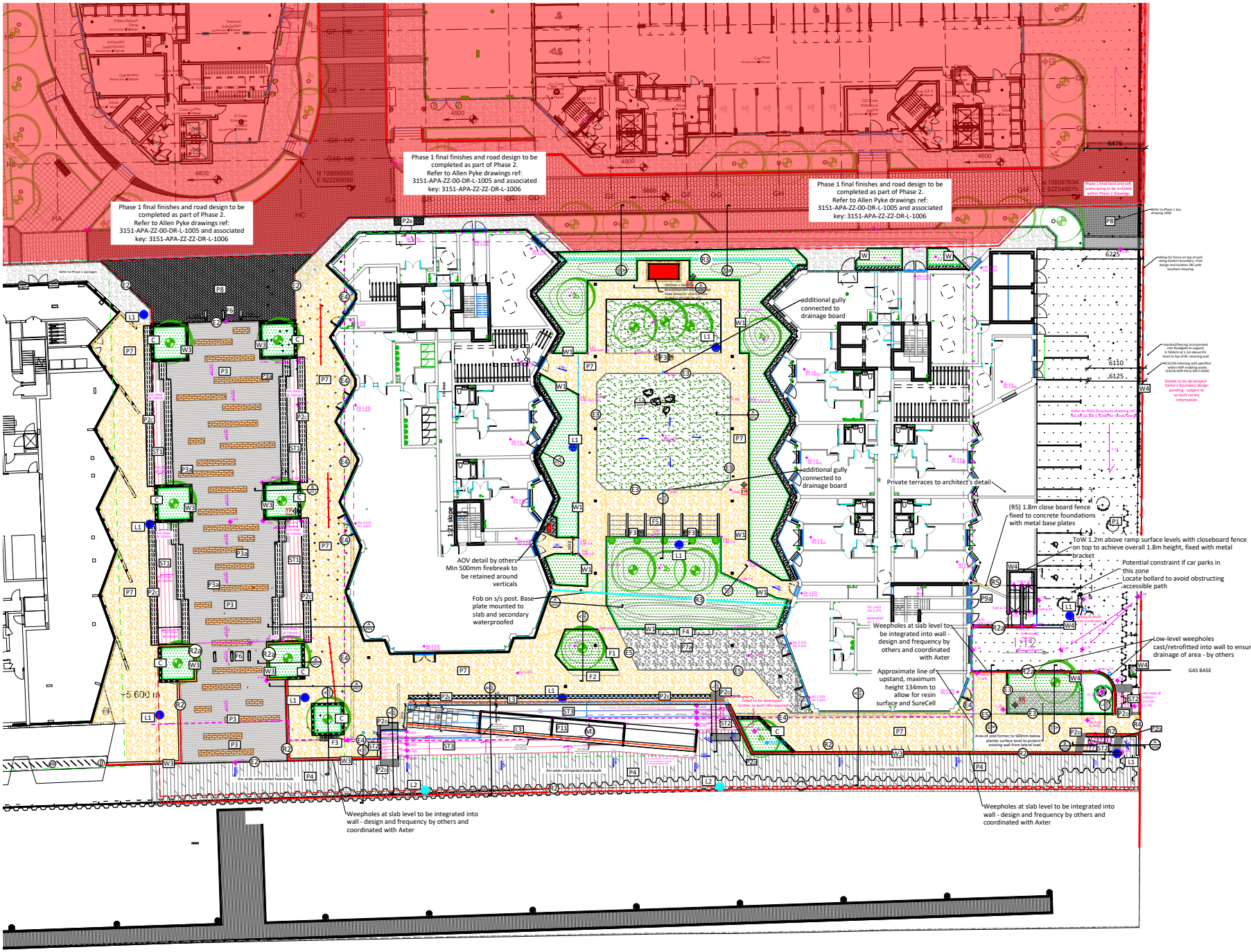
Drawing status:
For Planning

CZWG

Scale @ A1
1 : 500

Drawing No: 2052-00-DR-0003

Rev: P03



APAL FILE REFERENCE
3151-APA-ZZ-00-DR-L-1001.dwg

Notes

This drawing is subject to copyright.
Do not scale from this drawing.

Based on drawing by Alan Camp Architects
Drawing number

Reproduced from the Ordnance Survey Map with the permission of the Controller of Her Majesty's Stationery Office ©Crown Copyright
Allen Pyke Associates Ltd
Licence No. AL 100019283

North

NOTES:

- Drainage and levels to Engineer's details and specification.
- Lighting locations to be coordinated.

FOR DETAILED KEY FOR ALL PHASE 2 ELEMENTS REFER TO 3151-APA-ZZ-ZZ-DR-L-1000

Rev	Description	Date	Drawn	Checked
T12	River walkway updated in line with Ramboll tender information. Weephole notes added.	09/07/25	SB	VF
T11	Bollards reduced. Strip lighting symbol amended. Podium planter updated to accommodate vent. Ramp to private entrances clarified including ToW levels.	19/05/25	SB	VF
T10	Pergola amended. W2 cladding omitted.	17/03/25	SB	VF
T09	Podium planter locations altered for structural loading. Eastern boundary survey information added.	06/03/25	SB	VF
T08	VE alterations - bollards and railings to Plaza, play logs replaced by boulders.	28/02/25	SB	VF
T07	Redesign of courtyard	26/02/25	RW	VF
T06	Lift to east omitted and replaced with ramp.	02/01/25	SB	VF
T05	Addition of section lines	02/09/24	RW	VF
T04	Minor adjustments to railings and addition of door railings	01/08/24	RW	VF
T03	Update to phase 1	18/07/24	RW	VF
T02	Addition of P2E Platform edge tactile paving	17/06/24	RW	VF
T01	Tender issue.	04/06/24	KG	VF
C02	Update to levels	22/05/24	RW	KG
C01	Issued for coordination.	21/05/24	KG	VF
C00	Post-PCSA coordination issue with revised Riverwalk proposals.	27/02/24	SB	VF
P04	Materials added	31/05/23	RW	VF
P03	PCSA issue	26/05/23	SB	VF
P02	Materials added for coordination. As-built note added.	22/05/23	SB	SB
P01	Levels coordiantion to determine SSL. Build-up notes added to support structural eng re loadings.	05/05/23	SB	VF

Drawing Status
TENDER

Allen Pyke
LONDON • BATH • CAMBRIDGE
T 020 8549 3434 T 01225 431 283 T 01223 358 055
www.allenpyke.co.uk
A registered practice of the Landscape Institute

Client
HG Construction

Scale
1:200@A1

Project
Free Wharf, Shoreham-by-Sea
Phase 2

Project No
3151

Drawing Title
Landscape layout
Surface finishes,
Ground level and Podium

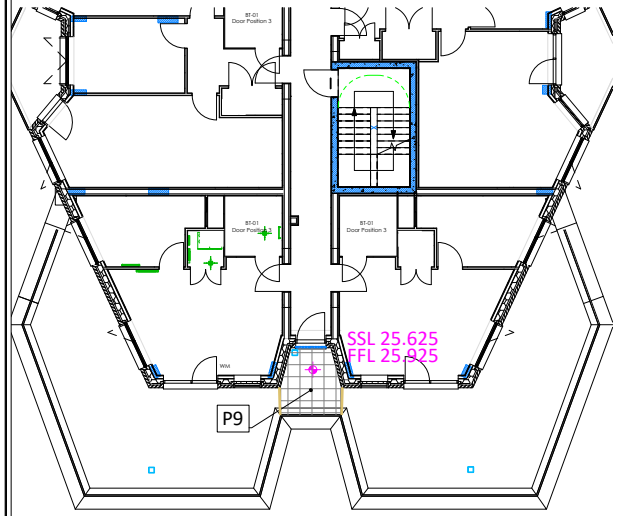
Date
31/03/23
By/Chk
SB/VF

Drawing Number
3151-APA-ZZ-00-DR-L-1001

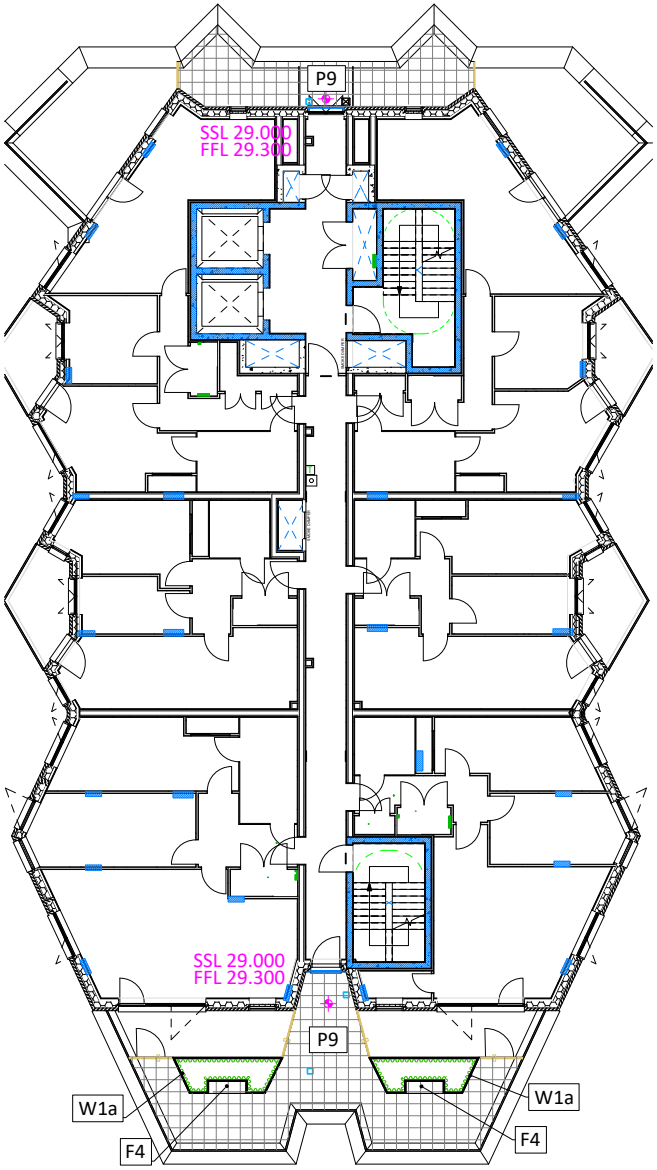
Revision
T12

CDM NOTE:	Ref	Description of hazard and relevant actions
Refer to 3151-APA-ZZ-XX-RA-L-0020 for an assessment of all hazards identified during the design of this project. Hazards with a high risk rating specific to this drawing are listed adjacent for ease of reference.	1.0	No high risk hazards identified at this stage.

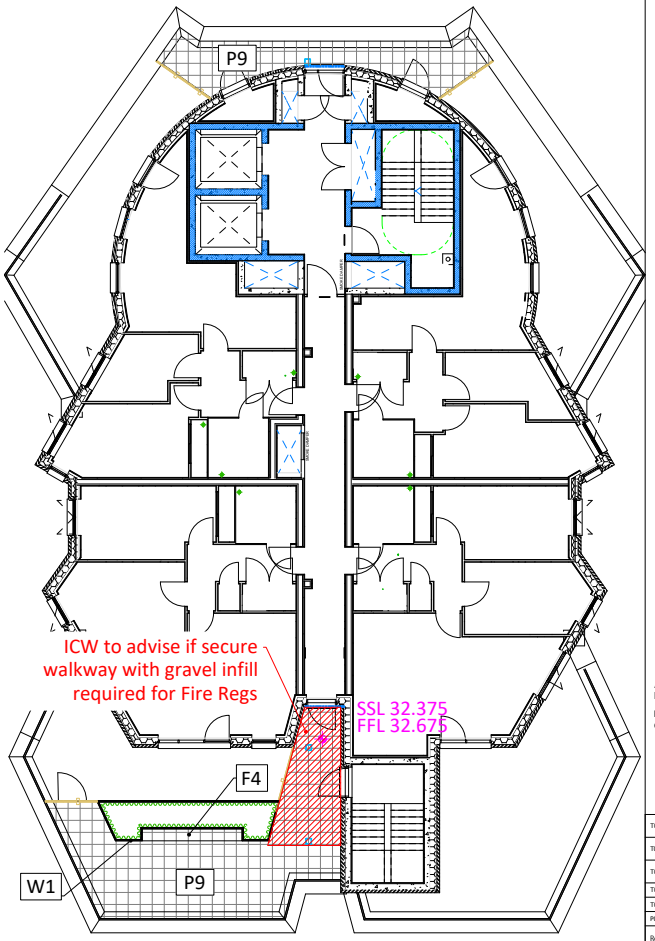
FOR PAVING PATTERN SETTING OUT REFER TO DRAWING 3151-APA-ZZ-XX-DR-L-1007



Level 06



Level 07



Level 08

APAL FILE REFERENCE
3151-APA-BE-XX-DR-L-1002

Notes

This drawing is subject to copyright.
Do not scale from this drawing.

Based on drawing by Alan Camp Architects
Drawing number

North

LEGEND

- Privacy screen to Architects detail
- Mixed planting
- Podium drainage to engineer's detail
- Access to private terrace to Architects detail

All private terraces and privacy screens to be detailed by Architect

Refer to drawing 3151-APA-ZZ-ZZ-DR-L-1000 for detailed key

Rev	Description	Date	Drawn	Checked
T05	1m planter offset from parapet	06/09/24	RW	VF
T04	Extension of gravel infill zone	29/07/24	RW	VF
T03	Pattern setting out note added.	25/07/24	SB	
T02	Planter types updated.	23/07/24	SB	VF
T01	Tender issue	04/06/24	RW	VF
P01	SVP update coordination	30/05/23	RW	VF

Drawing Status
TENDER

Allen Pyke
LONDON • BATH • CAMBRIDGE
T 020 8549 3434 T 01225 431 283 T 01223 358 055
www.allenpyke.co.uk
A registered practice of the Landscape Institute

Client
HG Construction

Scale
1:100@A1

Project
Free Wharf, Shoreham-by-Sea
Phase 2

Project No
3151

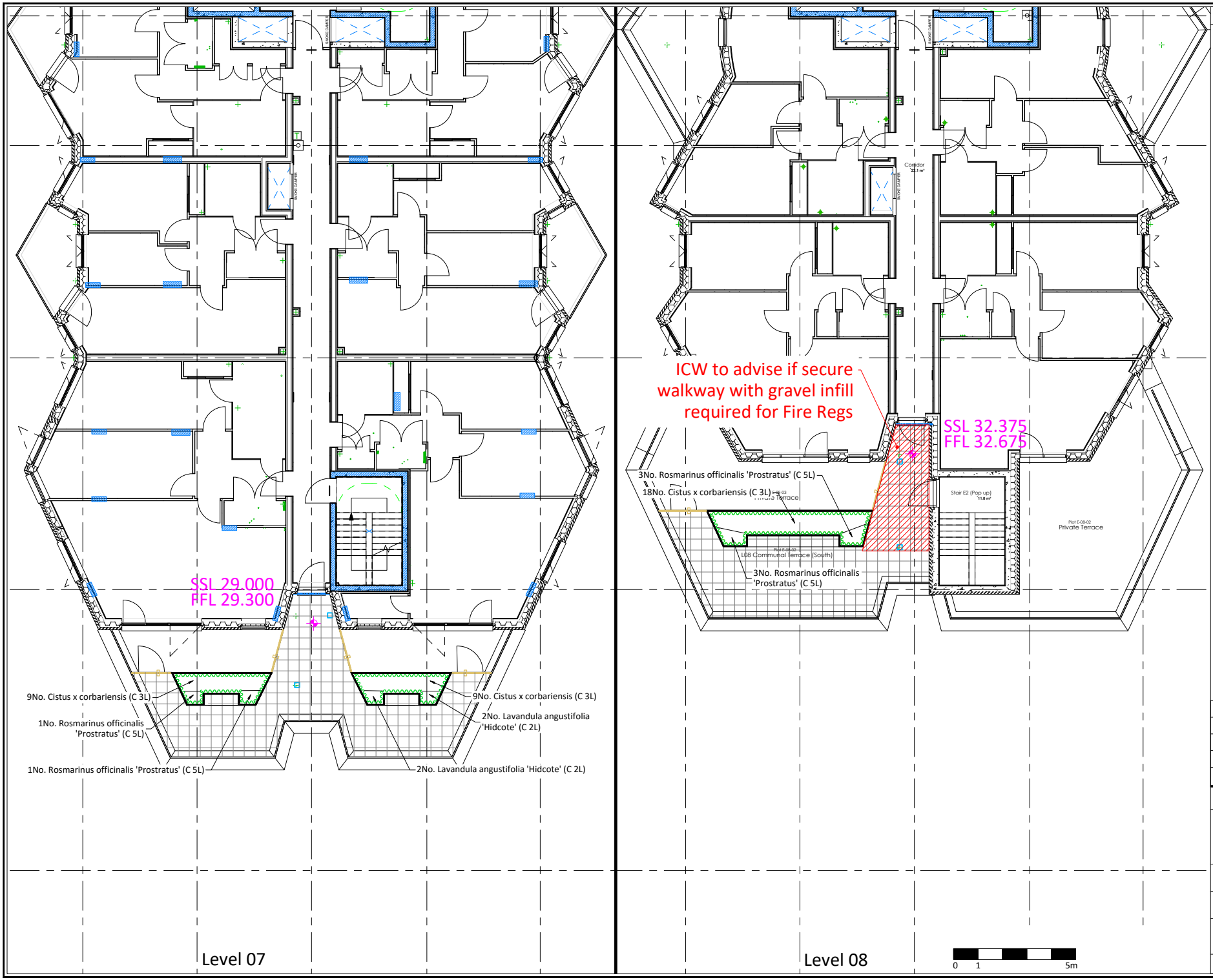
Drawing Title
Landscape Layout
Surface Finishes
Block E - Levels 06,07,08

Date
31/03/23

By/Chk
SB/VF

Drawing Number
3151-APA-BE-XX-DR-L-1002

Revision
T05



APAL FILE REFERENCE
3151-APA-BE-XX-DR-L-2002.dwg

Notes

This drawing is subject to copyright.
Do not scale from this drawing.

North

LEGEND

Proposed mixed planting

Proposed bed division

For planting schedule and horticultural notes see 3151-APA-ZZ-XX-SH-L-4201

Rev	Description	Date	Drawn	Checked
T02	Adjustment to planter position	06/09/24	RW	
T01	Tender issue	04/06/24	RW	VF
P01	SVC update coordination	30/05/23	RW	VF
P00	Issued for PCSA	25/05/23	LM	VF

Drawing Status
TENDER

Allen Pyke
LONDON • BATH • CAMBRIDGE
T 020 8549 3434 T 01225 431 283 T 01223 358 055
www.allenpyke.co.uk
A registered practice of the Landscape Institute

Client
HG Construction

Scale
1:100@A2

Project
Free Wharf, Shoreham-by-Sea
Phase 2

Project No
3151

Drawing Title
Landscape Layout
Planting Plan
Block E - Roofs Level 07 and 08

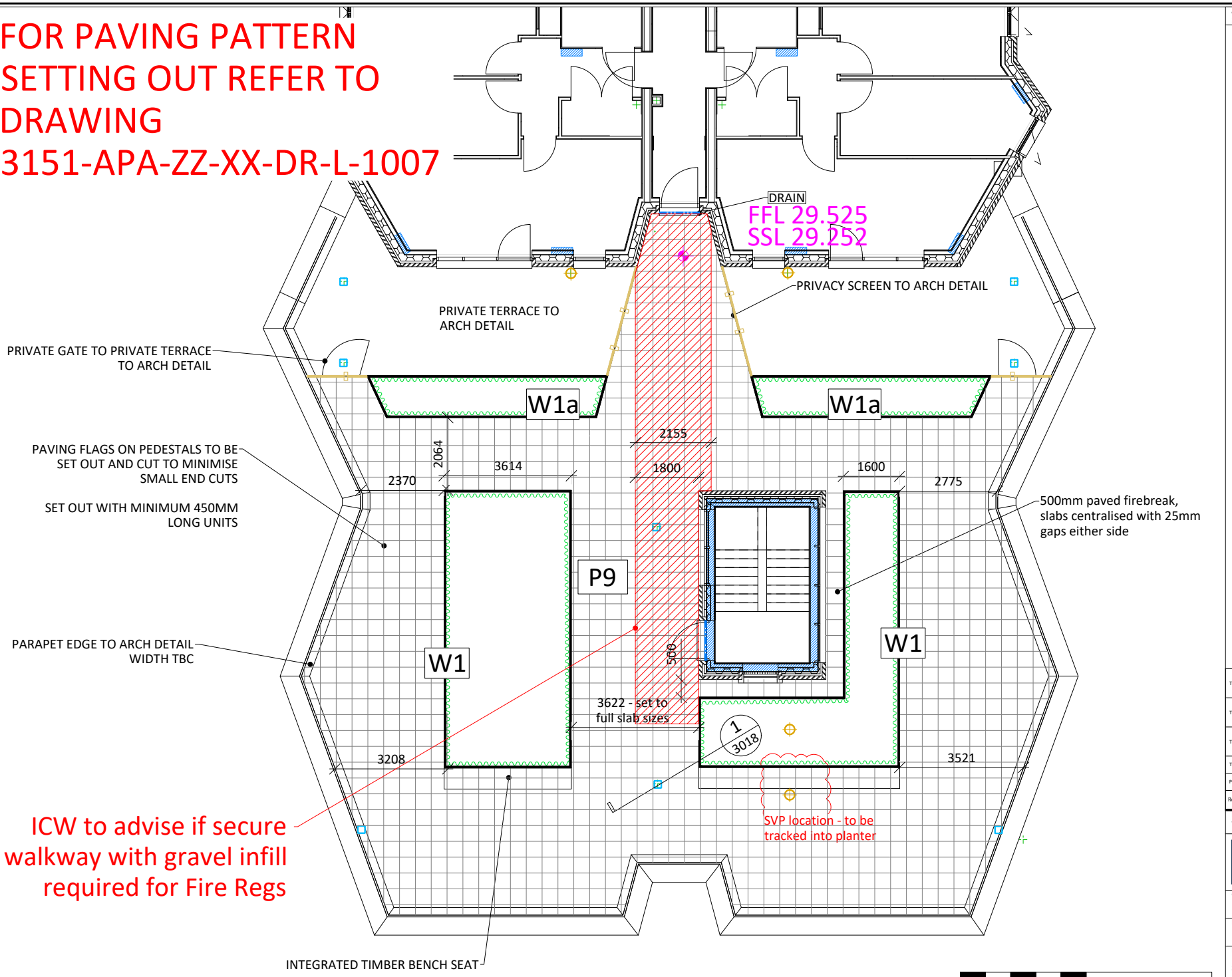
Date
25/05/23

By/Chk
LM/VF

Drawing Number
3151-APA-BE-XX-DR-L-2002

Revision
T02

FOR PAVING PATTERN SETTING OUT REFER TO DRAWING 3151-APA-ZZ-XX-DR-L-1007



0 1 5 10m

APAL FILE REFERENCE
3151-APA-BF-07-DR-L-1004.dwg

Notes

This drawing is subject to copyright.
Do not scale from this drawing.

North

All private terraces to be detailed by Architect

Refer to drawing 3151-APA-ZZ-ZZ-DR-L-1000 for detailed key

Rev	Description	Date	Drawn	Checked
T04	Amendment to paving label W9	29/07/24	RW	
T03	Safe walkway hatch and note added. To be reviewed against Building Regs by Fire Consultant and Insurer.	25/07/24	SB	
T02	Shape of planters simplyfied and privacy screen removed along planters to private patios. Key changed to W1a.	23/07/24	SB	VF
T01	Tender issue	04/06/24	RW	VF
P01	SVP update coordination	30/05/23	RW	VF

Drawing Status
TENDER

Allen Pyke
LONDON • BATH • CAMBRIDGE
T 020 8549 3434 T 01225 431 283 T 01223 358 055
www.allenpyke.co.uk
A registered practice of the Landscape Institute

Client
HG Construction

Scale
1:100@A2

Project
Free Wharf, Shoreham-by-Sea
Phase 2

Project No
3151

Drawing Title
Landscape Layout
Surface Finishes
Block F - Level 7

Date
19/04/23

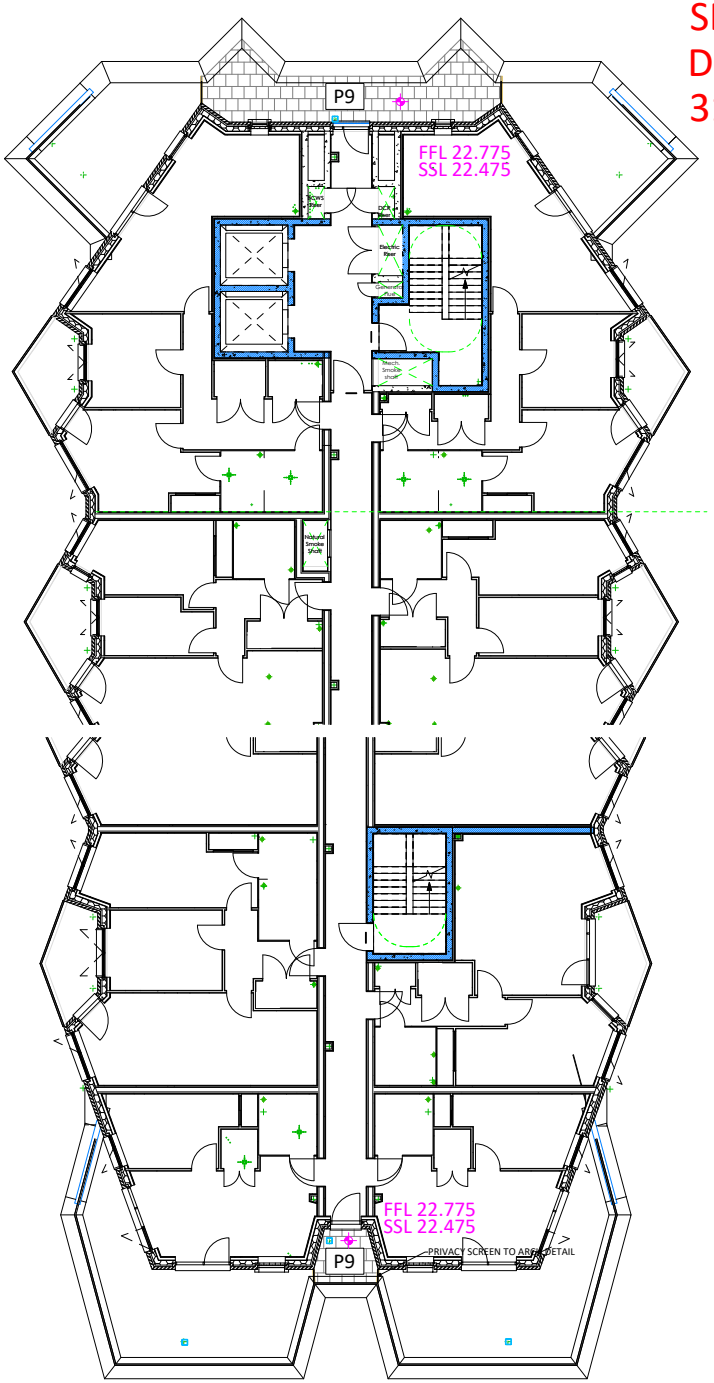
By/Chk
RW/VF

Drawing Number
3151-APA-BF-07-DR-L-1004

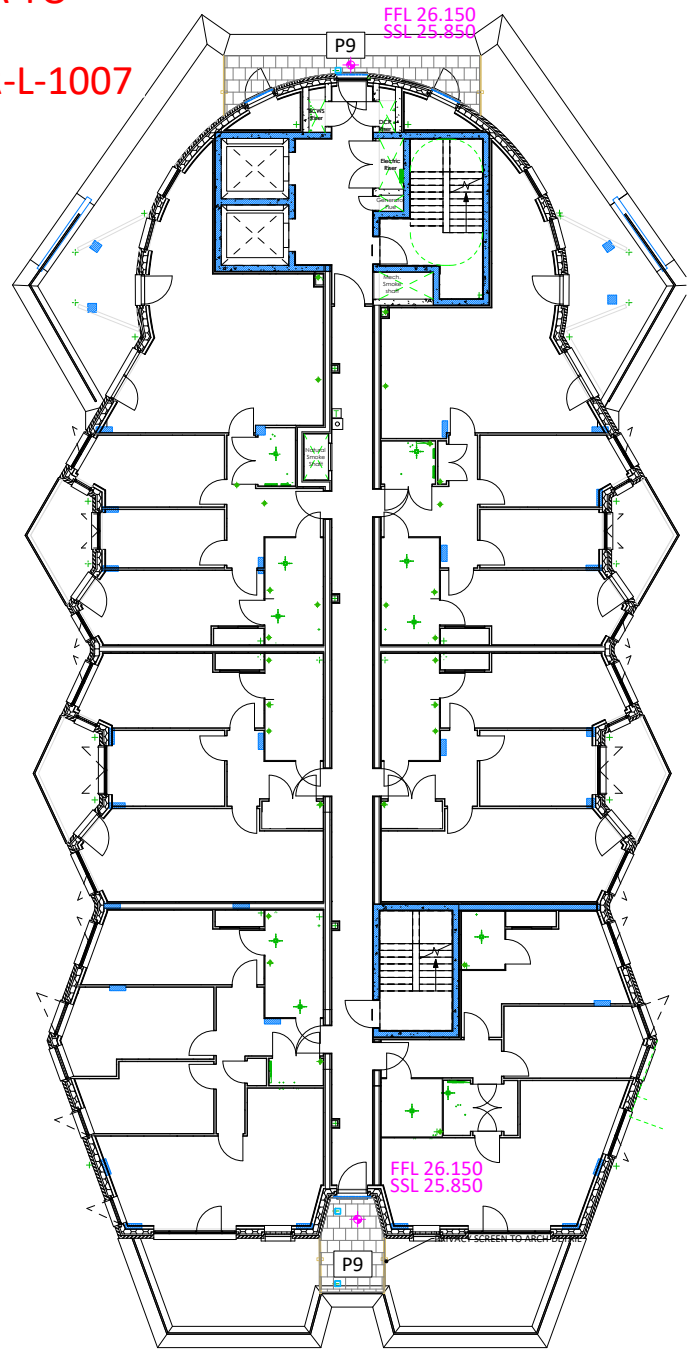
Revision
T04

CDM NOTE:	Rev	Description of hazard and relevant actions
Refer to 3151-APA-ZZ-XX-RA-L-0003 for an assessment of all hazards and risks associated with this project. Hazards with a high risk rating, specific to this drawing are listed adjacent for ease of reference.	1.0	No high risk hazards identified at this stage.

FOR PAVING PATTERN SETTING OUT REFER TO DRAWING 3151-APA-ZZ-XX-DR-L-1007



Level 05



Level 06

APAL FILE REFERENCE
3151-APA-BF-XX-DR-L-1003.dwg

Notes

This drawing is subject to copyright.
Do not scale from this drawing.

Based on drawing by Alan Camp Architects
Drawing number

North

LEGEND

Privacy screen to Architects detail

Podium drainage to engineer's detail

All private terraces to be detailed by Architect
Refer to drawing 3151-APA-ZZ-ZZ-DR-L-1000 for key

Rev	Description	Date	Drawn	Checked
T02	FFL & SLL added. Additional communal paving added to level 6.	23/07/24	SB	VF
T01	Tender Issue	07/06/24	RW	VF
P01	SVP update coordination	30/05/23	RW	VF

Drawing Status
PCSA

Allen Pyke
LONDON • BATH • CAMBRIDGE
T 020 8549 3434 T 01225 431 283 T 01223 358 055
www.allenpyke.co.uk
A registered practice of the Landscape Institute

Client
HG Construction

Scale
1:100@A1

Project
Free Wharf, Shoreham-by-Sea
Phase 2

Project No
3151

Drawing Title
Landscape Layout
Surface Finishes
Block F - Roof Levels 5 & 6

Date
31/03/23
By/Chk
SB/VF

Drawing Number
3151-APA-BF-XX-DR-L-1003

Revision
T02

APPENDIX 2. CONTAMINATION STATEMENT

Outlook

Shoreham Phase 2 - Contamination statement

From Joseph Hanks <josephhanks@hgconstruction.co.uk>
Date Fri 10/10/2025 15:33
To Phil Taylor <PhilTaylor@symbioticsolutions.co.uk>
Cc Garry Moore <garrymoore@hgconstruction.co.uk>; James Schofield <jamesschofield@hgconstruction.co.uk>

Hi Phil

Please take this as confirmation that during the shoreham phase 2 project there has been no evidence of potential unexpected contamination identified during the construction works.

Kind regards

Joseph Hanks
Project Manager

Mob: 07955 400 033

www.hgconstruction.co.uk

SHOREHAM PHASE 2
HUMPHREYS GAPS
BRIGHTON ROAD
BN43 6RE

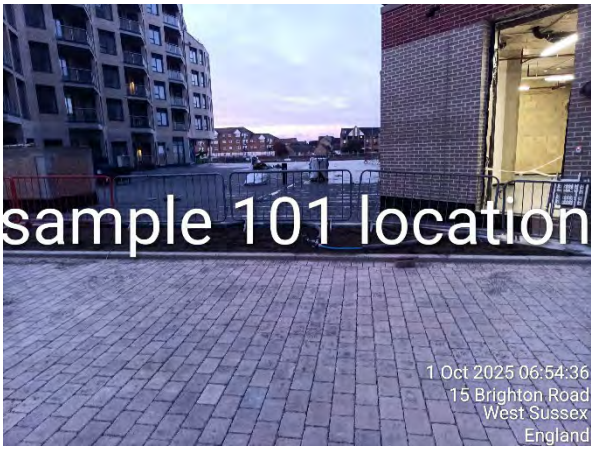
HERTS
4 Hunting Gate, Hitchin
Hertfordshire, SG4 0TJ

LONDON
1st Floor, 99 Charterhouse Street,
Farringdon, London EC1M 6HR



This email and its attachments may be confidential and are intended solely for the use of the individual to whom it is addressed. Any views or opinion expressed are solely those of the author and do not necessarily represent those of HG Construction Ltd.If you are not the intended recipient of this email and its attachments you must take no action based upon them, nor must you copy or show them to anyone. Please contact the sender if you believe you have received this email in error. Although we have taken steps to ensure that this email and attachments are free from any virus, we advise that in keeping with good computing practice your system should have adequate virus protection.

APPENDIX 3. SOIL CAPPING LAYER



Photograph 1. Validation inspection location HP101 (01/10/2025)



Photograph 2. Validation inspection pit HP101 (26/09/2025)



Photograph 3. Validation inspection location HP102 (26/09/2025)



Photograph 4. Validation inspection pit HP102 (26/09/2025)



Photograph 5. Validation inspection pit HP103 (26/09/2025)



Photograph 6. Validation inspection location HP103 (01/10/2025)



Photograph 7. Podium level area between the buildings (01/10/2025)(



Photograph 8. Roof level planters (26/09/2025)



Photograph 9. Roof level planters (26/09/2025)



Photograph 10. Roof level planters (26/09/2025)



Photograph 11. Stockpiles SP-GL-SS and SP-GL-TS (subsoils and topsoil for completion of the ground level plangting areas) (01/10/2025)



Photograph 12. Stockpiles SP-POD-TS and SP-POD-SS (subsoils and topsoil for completion of the podium and upper level plangting areas) (01/10/2025)



Photograph 13. Stockpile SP-POD-TS (topsoil for completion of the podium and upper level plangting areas) (01/10/2025)



Photograph 14. Stockpile SP-POD-SS (subsoils for completion of the podium and upper level plangting areas) (01/10/2025)

4161

CONSTRUCTION TESTING SOLUTIONS
A PHENNA GROUP COMPANY

7 - 11 Harding Street
Leicester
LE1 4DH

Symbiotic Solutions Ltd
Unit A4 East Gores Farm
East Gores Road
CO6 1RZ

Analytical Test Report: P25/01441/SYM - 25-84003

Your Project Reference:	**1375 Free Wharf, Shoreham**		
Your Order Number:	1375/1	Samples Received / Instructed:	30/09/2025 / 30/09/2025
Report Issue Number:	1	Sample Tested:	30/09 to 07/10/2025
Samples Analysed:	12 sample(s)	Report issued:	07/10/2025

Signed

[redacted]

Emily Blissett
Report Manager
CTS

Notes:

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30˚C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Asbestos

Please note: Where futher analaysis is required samples identified as containing asbestos are screened and tested on an as recevied basis. No correction is made for moisture content and other than the asbestos test(s) these results are not covered by our accrediation

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

This report shall not be reproduce except in full

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited, subUKAS - Subcontracted to a laboratory UKAS accredited for this test, subMCERTS - Subcontracted to a laboratory MCERTS accredited for this test

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

UKAS accreditation on waters only covers the Ground water and Surface water matrices

Date of Issue: 27.08.25

Issued by: J. Gane

Issue No: 4

Rev No: 27

CONSTRUCTION TESTING SOLUTIONS
A PHENNA GROUP COMPANY

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Analytical Test Results - Solid

Lab Reference			605004	605005	605006	605007	605008	605009
Client Sample ID			VAL201	VAL202	VAL203	VAL204	VAL205	VAL206
Client Sample Location			HP101	HP101	HP102	HP102	HP103	HP103
Client Sample Type			-	-	-	-	-	-
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			0.00	0.30	0.00	0.30	0.00	0.30
Depth - Bottom (m)			0.30	0.60	0.30	0.60	0.40	0.80
Date of Sampling			26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Arsenic	(mg/kg)	MCERTS	14	< 10	13	< 10	14	< 10
Barium	(mg/kg)	MCERTS	100	110	70	110	63	110
Beryllium	(mg/kg)	MCERTS	0.4	0.9	0.4	1.0	0.5	1.0
Boron (w/s)	(mg/kg)	u	2.9	< 2.5	2.7	< 2.5	2.8	< 2.5
Cadmium	(mg/kg)	MCERTS	1.5	0.8	1.4	0.8	1.6	0.8
Chromium (Total)	(mg/kg)	UKAS	20	6.1	33	4.5	15	5.8
Copper	(mg/kg)	MCERTS	24	7.3	28	6.4	20	6.5
Lead	(mg/kg)	MCERTS	39	6.9	40	6.4	32	5.9
Mercury	(mg/kg)	UKAS	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Nickel	(mg/kg)	MCERTS	27	20	35	22	25	21
Selenium	(mg/kg)	u	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Vanadium	(mg/kg)	UKAS	57	22	57	24	73	26
Zinc	(mg/kg)	MCERTS	83	26	81	26	72	25
Total Phenols	(mg/kg)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide (Total)	(mg/kg)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	< 2.0	< 1.0	< 2.0	< 1.0	< 2.0	< 1.0
Sulphate (Acid Soluble)	(%)	u	0.04	< 0.01	0.05	< 0.01	0.04	< 0.01
pH	pH Units	MCERTS	8.4	8.2	7.8	7.9	7.6	6.6
Sulphide	(mg/kg)	u	24	< 15	24	< 15	20	16
Acenaphthene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Acenaphthylene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02
Anthracene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	0.03	< 0.02
Benzo (a) anthracene	(mg/kg)	MCERTS	0.13	0.04	0.07	< 0.02	0.17	< 0.02
Benzo (a) pyrene	(mg/kg)	MCERTS	0.13	0.04	0.07	< 0.02	0.25	< 0.02
Benzo (b) fluoranthene	(mg/kg)	MCERTS	0.18	0.06	0.11	< 0.02	0.32	< 0.02
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	0.10	0.04	0.06	< 0.02	0.19	< 0.02
Benzo (k) fluoranthene	(mg/kg)	MCERTS	0.06	< 0.02	0.04	< 0.02	0.11	< 0.02
Chrysene	(mg/kg)	MCERTS	0.15	0.04	0.09	< 0.02	0.20	< 0.02
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	0.04	< 0.02
Fluoranthene	(mg/kg)	MCERTS	0.28	0.09	0.18	< 0.02	0.24	< 0.02
Fluorene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	0.09	0.03	0.06	< 0.02	0.18	< 0.02
Naphthalene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phenanthrene	(mg/kg)	MCERTS	0.08	0.03	0.08	< 0.02	0.08	< 0.02
Pyrene	(mg/kg)	MCERTS	0.24	0.07	0.15	< 0.02	0.21	< 0.02
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	1.6	0.59	1.0	< 0.32	2.1	< 0.32
SOM (via TOC)	(%)	UKAS	8.0	< 0.9	7.7	< 0.9	6.9	< 0.9
Asbestos	-	UKAS	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected

CONSTRUCTION TESTING SOLUTIONS
A PHENNA GROUP COMPANY

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Analytical Test Results - Solid

Lab Reference			605010	605011	605012	605013	605014	605015
Client Sample ID			VAL207	VAL208	VAL209	VAL210	VAL211	VAL212
Client Sample Location			SP-GL-TS	SP-GL-TS	SP-POD-SS	SP-POD-SS	SP-POD-TS	SP-POD-TS
Client Sample Type			-	-	-	-	-	-
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			SP	SP	SP	SP	SP	SP
Depth - Bottom (m)			-	-	-	-	-	-
Date of Sampling			26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Arsenic	(mg/kg)	MCERTS	< 10	13	25	23	< 10	15
Barium	(mg/kg)	MCERTS	100	69	38	28	60	89
Beryllium	(mg/kg)	MCERTS	0.9	0.4	0.4	0.3	0.2	0.3
Boron (w/s)	(mg/kg)	u	< 2.5	3.0	< 2.5	< 2.5	4.6	3.7
Cadmium	(mg/kg)	MCERTS	0.7	1.5	1.4	1.2	0.9	2.1
Chromium (Total)	(mg/kg)	UKAS	4.4	27	< 1.0	< 1.0	5.7	9.6
Copper	(mg/kg)	MCERTS	6.0	29	12	10	26	59
Lead	(mg/kg)	MCERTS	5.8	42	13	9.3	43	64
Mercury	(mg/kg)	UKAS	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Nickel	(mg/kg)	MCERTS	19	32	18	15	12	28
Selenium	(mg/kg)	u	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Vanadium	(mg/kg)	UKAS	22	60	32	27	33	51
Zinc	(mg/kg)	MCERTS	22	85	78	55	88	240
Total Phenols	(mg/kg)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide (Total)	(mg/kg)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	< 1.0	< 2.0	< 1.0	< 1.0	3.7	3.4
Sulphate (Acid Soluble)	(%)	u	< 0.01	0.05	< 0.01	< 0.01	0.05	0.07
pH	pH Units	MCERTS	6.8	7.4	7.7	8.0	7.9	8.0
Sulphide	(mg/kg)	u	< 15	24	57	53	89	460
Acenaphthene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Acenaphthylene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Anthracene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo (a) anthracene	(mg/kg)	MCERTS	< 0.02	0.07	< 0.02	< 0.02	0.10	0.16
Benzo (a) pyrene	(mg/kg)	MCERTS	< 0.02	0.07	< 0.02	< 0.02	0.09	0.16
Benzo (b) fluoranthene	(mg/kg)	MCERTS	< 0.02	0.12	< 0.02	< 0.02	0.18	0.25
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	< 0.02	0.07	< 0.02	< 0.02	0.11	0.13
Benzo (k) fluoranthene	(mg/kg)	MCERTS	< 0.02	0.04	< 0.02	< 0.02	0.06	0.08
Chrysene	(mg/kg)	MCERTS	< 0.02	0.10	< 0.02	< 0.02	0.15	0.19
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fluoranthene	(mg/kg)	MCERTS	< 0.02	0.18	< 0.02	< 0.02	0.22	0.21
Fluorene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	< 0.02	0.06	< 0.02	< 0.02	0.09	0.12
Naphthalene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phenanthrene	(mg/kg)	MCERTS	< 0.02	0.06	< 0.02	< 0.02	0.04	0.03
Pyrene	(mg/kg)	MCERTS	< 0.02	0.15	< 0.02	< 0.02	0.19	0.18
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	< 0.32	1.1	< 0.32	< 0.32	1.4	1.6
SOM (via TOC)	(%)	UKAS	< 0.9	7.6	< 0.9	< 0.9	8.1	9.0
Asbestos	-	UKAS	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected

CONSTRUCTION TESTING SOLUTIONS
A PHENNA GROUP COMPANY

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Analytical Test Results - VPH / EPH

Lab Reference			605004	605005	605006	605007	605008	605009
Client Sample ID			VAL201	VAL202	VAL203	VAL204	VAL205	VAL206
Client Sample Location			HP101	HP101	HP102	HP102	HP103	HP103
Client Sample Type			-	-	-	-	-	-
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			0.00	0.30	0.00	0.30	0.00	0.30
Depth - Bottom (m)			0.30	0.60	0.30	0.60	0.40	0.80
Date of Sampling			26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Benzene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C_5 to C_6 [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aliphatic >C_6 to C_8 [HS_MS_1D_AL]	(mg/kg)	MCERTS	0.45	< 0.06	< 0.06	< 0.06	0.10	< 0.06
Aliphatic >C_8 to C_{10} [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aliphatic >C_{10} to C_{12} [EH_2D_AL]	(mg/kg)	MCERTS	1.4	< 1.0	1.6	< 1.0	1.8	< 1.0
Aliphatic >C_{12} to C_{16} [EH_2D_AL]	(mg/kg)	MCERTS	1.9	< 1.0	2.2	1.3	1.7	< 1.0
Aliphatic >C_{16} to C_{21} [EH_2D_AL]	(mg/kg)	MCERTS	11	3.0	15	2.1	11	< 1.0
Aliphatic >C_{21} to C_{35} [EH_2D_AL]	(mg/kg)	MCERTS	34	11	43	5.1	42	4.5
Aliphatic >C_{35} to C_{44} [EH_2D_AL]	(mg/kg)	u	< 5.0	< 5.0	5.9	< 5.0	5.8	< 5.0
Aromatic >C_5 to C_7 [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C_7 to C_8 [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C_8 to C_{10} [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aromatic >C_{10} to C_{12} [EH_2D_AR]	(mg/kg)	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic >C_{12} to C_{16} [EH_2D_AR]	(mg/kg)	MCERTS	2.1	< 1.0	2.4	< 1.0	2.3	< 1.0
Aromatic >C_{16} to C_{21} [EH_2D_AR]	(mg/kg)	MCERTS	8.8	4.4	11	3.7	10	3.2
Aromatic >C_{21} to C_{35} [EH_2D_AR]	(mg/kg)	MCERTS	130	35	130	10	140	3.0
Aromatic >C_{35} to C_{44} [EH_2D_AR]	(mg/kg)	u	17	< 5.0	20	< 5.0	19	< 5.0
Total >C_5 to C_{35} [EH_2D+HS_1D_Total]	(mg/kg)	MCERTS	190	53	210	22	200	< 10
Total >C_5 to C_{40} [EH_2D+HS_1D_Total]	(mg/kg)	MCERTS	210	58	230	25	220	12

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Analytical Test Results - VPH / EPH

Lab Reference			605010	605011	605012	605013	605014	605015
Client Sample ID			VAL207	VAL208	VAL209	VAL210	VAL211	VAL212
Client Sample Location			SP-GL-TS	SP-GL-TS	SP-POD-SS	SP-POD-SS	SP-POD-TS	SP-POD-TS
Client Sample Type			-	-	-	-	-	-
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			SP	SP	SP	SP	SP	SP
Depth - Bottom (m)			-	-	-	-	-	-
Date of Sampling			26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025	26/09/2025
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Sand	Sand	Sand	Sand	Sand	Sand
Determinant	**Units**	**Accreditation**						
Benzene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C_5 to C_6 [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aliphatic >C_6 to C_8 [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	0.09	0.09
Aliphatic >C_8 to C_{10} [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aliphatic >C_{10} to C_{12} [EH_2D_AL]	(mg/kg)	MCERTS	< 1.0	1.4	< 1.0	< 1.0	1.5	1.7
Aliphatic >C_{12} to C_{16} [EH_2D_AL]	(mg/kg)	MCERTS	< 1.0	1.5	< 1.0	< 1.0	1.9	2.2
Aliphatic >C_{16} to C_{21} [EH_2D_AL]	(mg/kg)	MCERTS	< 1.0	8.8	< 1.0	< 1.0	8.7	9.8
Aliphatic >C_{21} to C_{35} [EH_2D_AL]	(mg/kg)	MCERTS	3.5	33	3.1	4.2	38	39
Aliphatic >C_{35} to C_{44} [EH_2D_AL]	(mg/kg)	u	< 5.0	< 5.0	< 5.0	< 5.0	7.5	8.4
Aromatic >C_5 to C_7 [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C_7 to C_8 [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C_8 to C_{10} [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Aromatic >C_{10} to C_{12} [EH_2D_AR]	(mg/kg)	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic >C_{12} to C_{16} [EH_2D_AR]	(mg/kg)	MCERTS	< 1.0	1.8	< 1.0	< 1.0	1.9	1.9
Aromatic >C_{16} to C_{21} [EH_2D_AR]	(mg/kg)	MCERTS	4.9	8.0	2.6	2.8	8.0	7.4
Aromatic >C_{21} to C_{35} [EH_2D_AR]	(mg/kg)	MCERTS	3.3	120	< 2.0	3.4	130	120
Aromatic >C_{35} to C_{44} [EH_2D_AR]	(mg/kg)	u	< 5.0	19	< 5.0	< 5.0	20	19
Total >C_5 to C_{35} [EH_2D+HS_1D_Total]	(mg/kg)	MCERTS	12	180	< 10	10	190	180
Total >C_5 to C_{40} [EH_2D+HS_1D_Total]	(mg/kg)	MCERTS	13	200	< 10	12	220	200

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
605004	VAL201	HP101	-	-	Dark brown slightly gravelly silty sand with rare organic matter	12	< 0.1	80
605005	VAL202	HP101	-	-	Brown slightly gravelly silty sand with rare organic matter	15	< 0.1	100
605006	VAL203	HP102	-	-	Dark brown slightly gravelly silty sand with rare organic matter	9.9	< 0.1	94
605007	VAL204	HP102	-	-	Brown slightly gravelly silty sand with rare organic matter	16	< 0.1	87
605008	VAL205	HP103	-	-	Dark brown slightly gravelly silty sand with rare organic matter	12	< 0.1	74
605009	VAL206	HP103	-	-	Brown slightly gravelly silty sand with rare organic matter	13	< 0.1	77
605010	VAL207	SP-GL-TS	-	-	Brown slightly gravelly silty sand with rare organic matter	12	< 0.1	67
605011	VAL208	SP-GL-TS	-	-	Dark brown slightly gravelly silty sand with rare organic matter	12	< 0.1	89
605012	VAL209	SP-POD-SS	-	-	Brown slightly gravelly silty sand	1.1	< 0.1	98
605013	VAL210	SP-POD-SS	-	-	Brown slightly gravelly silty sand	0.5	0.5	82
605014	VAL211	SP-POD-TS	-	-	Dark brown slightly gravelly silty sand with rare organic matter	11	< 0.1	90
605015	VAL212	SP-POD-TS	-	-	Dark brown slightly gravelly silty sand with rare organic matter	16	< 0.1	85

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
605004	VAL201	HP101	-	-	Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference. VPH/BTEX - Sample taken from container with head space.
605005	VAL202	HP101	-	-	VPH/BTEX - Sample taken from container with head space.
605006	VAL203	HP102	-	-	Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference. VPH/BTEX - Sample taken from container with head space.
605007	VAL204	HP102	-	-	VPH/BTEX - Sample taken from container with head space.
605008	VAL205	HP103	-	-	Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference. VPH/BTEX - Sample taken from container with head space.
605009	VAL206	HP103	-	-	VPH/BTEX - Sample taken from container with head space.
605010	VAL207	SP-GL-TS	-	-	VPH/BTEX - Sample taken from container with head space.
605011	VAL208	SP-GL-TS	-	-	Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference. VPH/BTEX - Sample taken from container with head space.
605012	VAL209	SP-POD-SS	-	-	VPH/BTEX - Sample taken from container with head space.
605013	VAL210	SP-POD-SS	-	-	
605014	VAL211	SP-POD-TS	-	-	VPH/BTEX - Sample taken from container with head space.
605015	VAL212	SP-POD-TS	-	-	VPH/BTEX - Sample taken from container with head space.

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
SKALARCNS	MS - CL - Cyanide by Skalar	As received	Passing 10mm test sieve	Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser
SKALARHCS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Determination of hexavalent chromium in soil using Skalar segmented flow analyser
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Determination of metals in soils via ICP
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Determination of Polyaromatic hydrocarbons in soil via GC-MS
SULPHIDES	MS - CL - Sulphide in Soils	Air Dried	Passing 10mm test sieve	Determination of sulphide in soil via titration
SKALARPHS	MS - CL - Phenols by Skalar	As received	Passing 10mm test sieve	Determination of total phenols in soil using Skalar segmented flow analyser
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Determination of total sulphate in soils by acid extraction followed by ICP analysis
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soils
GCXGCS	MS - CL - TPH & EPH by GCXGC	As received	Passing 10mm test sieve	Determination of TPH and EPH in soils via GCxGC-FID
CWGS	Calculation from VPH-S and EPH-S	As received	Passing 10mm test sieve	Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-GC-FID respectively
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Determination of VPH in soils via Headspace-GC-MS
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Determination of Water soluble Boron in soils via ICP
ASB	MS - AS - Asbestos	-	-	Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures"
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided
W - No time of sampling provided for water sample
C - Received in inappropriate container
H - Contains headspace
T - Temperature on receipt exceeds storage temperature
R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
605004	VAL201	HP101	-	-	MS - CL - pH in Soils	R
605004	VAL201	HP101	-	-	MS - CL - VPH	R
605005	VAL202	HP101	-	-	MS - CL - pH in Soils	R
605005	VAL202	HP101	-	-	MS - CL - VPH	R
605006	VAL203	HP102	-	-	MS - CL - pH in Soils	R
605006	VAL203	HP102	-	-	MS - CL - VPH	R
605007	VAL204	HP102	-	-	MS - CL - pH in Soils	R
605007	VAL204	HP102	-	-	MS - CL - VPH	R
605008	VAL205	HP103	-	-	MS - CL - pH in Soils	R
605008	VAL205	HP103	-	-	MS - CL - VPH	R
605009	VAL206	HP103	-	-	MS - CL - pH in Soils	R
605009	VAL206	HP103	-	-	MS - CL - VPH	R
605010	VAL207	SP-GL-TS	-	-	MS - CL - pH in Soils	R
605010	VAL207	SP-GL-TS	-	-	MS - CL - VPH	R
605011	VAL208	SP-GL-TS	-	-	MS - CL - pH in Soils	R
605011	VAL208	SP-GL-TS	-	-	MS - CL - VPH	R
605012	VAL209	SP-POD-SS	-	-	MS - CL - pH in Soils	R
605012	VAL209	SP-POD-SS	-	-	MS - CL - VPH	R
605013	VAL210	SP-POD-SS	-	-	MS - CL - pH in Soils	R
605013	VAL210	SP-POD-SS	-	-	MS - CL - VPH	R
605014	VAL211	SP-POD-TS	-	-	MS - CL - pH in Soils	R
605014	VAL211	SP-POD-TS	-	-	MS - CL - VPH	R
605015	VAL212	SP-POD-TS	-	-	MS - CL - pH in Soils	R
605015	VAL212	SP-POD-TS	-	-	MS - CL - VPH	R

7 - 11 Harding Street
Leicester
LE1 4DH

P25/01441/SYM - 25-84003

Project Reference - 1375 Free Wharf, Shoreham

HWOL TPH Acronym Index

Acronym	Description
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 and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathmatically subtracted
#2	EH_Total but with fatty acids mathmatically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumlative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Generic Assessment Criteria for the Assessment of Risk to Human Health					
Determinand	**RwHP[1] (mg/kg)**	**RwoHP[1] (mg/kg)**	**POS_{resi}[1] (mg/kg)**	**Commercial (mg/kg)**	**Source**
Asbestos	ND	ND	ND	< 0.001%	
Metals and Metalloids					
Arsenic	37	40	79	640	LQM / CIEH (2015) S4UL[2]
Barium	-	1300	-	22000	CL:AIRE (2010)[3]
Beryllium	1.7	1.7	2.2	12	LQM / CIEH (2015) S4UL[2]
Boron	290	11000	21000	240000	LQM / CIEH (2015) S4UL[2]
Cadmium	11	85	120	190	LQM / CIEH (2015) S4UL[2]
Chromium (III)	910	910	1500	8600	LQM / CIEH (2015) S4UL[2]
Chromium (VI)	6	6	7.7	33	LQM / CIEH (2015) S4UL[2]
Copper	2400	7100	12000	68000	LQM / CIEH (2015) S4UL[2]
Lead	200	310	630	2300	Defra (2014) C4SL[4]
Mercury - Elemental	1.2	1.2	16	58 (25.8)vap	LQM / CIEH (2015) S4UL[2]
Mercury - Inorganic	40	56	120	1100	LQM / CIEH (2015) S4UL[2]
Mercury - Methyl	11	15	40	320	LQM / CIEH (2015) S4UL[2]
Nickel	130	180	230	980	LQM / CIEH (2015) S4UL[5]
Selenium	250	430	1100	12000	LQM / CIEH (2015) S4UL[2]
Vanadium	410	1200	2000	9000	LQM / CIEH (2015) S4UL[2]
Zinc	3700	40000	81000	730000	LQM / CIEH (2015) S4UL[2]
Phenol – At 1% Soil Organic Matter					
Phenol	120	440^{dir} (460)	440^{dir} (10000)	440^{dir} (26000)	LQM / CIEH (2015) S4UL[2]
Polyaromatic Hydrocarbons (USEPA 16) – At 1% Soil Organic Matter					
Naphthalene	2.3	2.3	4900	190 (76.4)sol	LQM / CIEH (2015) S4UL[2]
Acenaphthylene	170	2900 (86.1)^{sol}	15000	83000 (86.1)sol	LQM / CIEH (2015) S4UL[2]
Acenaphthene	210	3000 (57.0)^{sol}	15000	84000 (57.0)sol	LQM / CIEH (2015) S4UL[2]
Fluorene	170	2800 (30.9)^{sol}	9900	63000 (30.9)sol	LQM / CIEH (2015) S4UL[2]
Phenanthrene	95	1300 (36.0)^{sol}	3100	22000	LQM / CIEH (2015) S4UL[2]
Anthracene	2400	31000 (1.17)^{vap}	74000	520000	LQM / CIEH (2015) S4UL[2]
Fluoranthene	280	1500	3100	23000	LQM / CIEH (2015) S4UL[2]
Pyrene	620	3700	7400	54000	LQM / CIEH (2015) S4UL[2]
Benzo(a)anthracene	7.2	11	29	170	LQM / CIEH (2015) S4UL[2]
Chrysene	15	30	57	350	LQM / CIEH (2015) S4UL[2]
Benzo(b)fluoranthene	2.6	3.9	7.1	44	LQM / CIEH (2015) S4UL[2]
Benzo(k)fluoranthene	77	110	190	1200	LQM / CIEH (2015) S4UL[2]
Benzo(a)pyrene	2.2	3.2	5.7	35	LQM / CIEH (2015) S4UL[2]
Indeno(1,2,3-	27	45	82	500	LQM / CIEH (2015) S4UL[2]

Generic Assessment Criteria for the Assessment of Risk to Human Health					
Determinand	**RwHP[1] (mg/kg)**	**RwoHP[1] (mg/kg)**	**POS$_{resi}$[1] (mg/kg)**	**Commercial (mg/kg)**	**Source**
cd)pyrene					
Di-benzo(a,h)anthracene	0.24	0.31	0.57	3.5	LQM / CIEH (2015) S4UL[2]
Benzo(ghi)perylene	320	360	640	3900	LQM / CIEH (2015) S4UL[2]
Coal Tar (BaP surrogate marker)	*0.79*	*1.2*	*2.2*	15	LQM / CIEH (2015) S4UL[2]
Total Petroleum Hydrocarbons (LQM Banding) – At 1% Soil Organic Matter					
Aliphatic EC5 - EC6	42	42	570000 (304)^{sol}	3200 (304)sol	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC6 - EC8	100	100	600000	7800 (144)sol	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC8 - EC10	27	27	13000	2000 (78)sol	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC10 - EC12	130 (48)^{vap}	130 (48)^{vap}	13000	9700 (48)sol	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC12 - EC16	1100 (24)^{sol}	1100 (24)^{sol}	13000	59000 (24)sol	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC16 - EC35	65000 (8.48)^{sol}	65000 (8.48)^{sol}	250000	1600000	LQM / CIEH (2015) S4UL[2]
Aliphatic >EC35 - EC44	65000 (8.48)^{sol}	65000 (8.48)^{sol}	250000	1600000	LQM / CIEH (2015) S4UL[2]
Aromatic >EC5 - EC7	70	370	56000	26000 (1220)sol	LQM / CIEH (2015) S4UL[2]
Aromatic >EC7 - EC8	130	860	56000	56000 (869)vap	LQM / CIEH (2015) S4UL[2]
Aromatic >EC8 - EC10	34	47	5000	3500 (613)vap	LQM / CIEH (2015) S4UL[2]
Aromatic >EC10 - EC12	74	250	5000	16000 (364)sol	LQM / CIEH (2015) S4UL[2]
Aromatic >EC12 - EC16	140	1800	5100	36000 (169)sol	LQM / CIEH (2015) S4UL[2]
Aromatic >EC16 - EC21	260	1900	3800	28000	LQM / CIEH (2015) S4UL[2]
Aromatic >EC21 - EC35	1100	1900	3800	28000	LQM / CIEH (2015) S4UL[2]
Aromatic >EC35 - EC44	1100	1900	3800	28000	LQM / CIEH (2015) S4UL[2]
Ali + Aro >EC44 - EC70	1600	1900	3800	28000	LQM / CIEH (2015) S4UL[2]
BTEX + MTBE – At 1% Soil Organic Matter					
Benzene	0.087	0.38	72	27	LQM / CIEH (2015) S4UL[2]
Toluene	130	880 (869)^{vap}	56000	56000 (869)vap	LQM / CIEH (2015) S4UL[2]
Ethylbenzene	47	83	24000	5700 (518)vap	LQM / CIEH (2015) S4UL[2]
o-Xylene	60	88	41000	6600 (478)sol	LQM / CIEH (2015) S4UL[2]
m-xylene	59	82	41000	6200 (625)sol	LQM / CIEH (2015) S4UL[2]
p-xylene	56	79	41000	5900 (576)sol	LQM / CIEH (2015) S4UL[2]

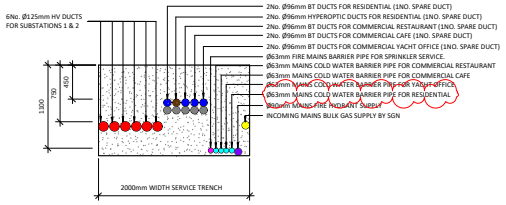
Generic Assessment Criteria for the Assessment of Risk to Human Health					
Determinand	**RwHP[1] (mg/kg)**	**RwoHP[1] (mg/kg)**	**POS_{resi}[1] (mg/kg)**	**Commercial (mg/kg)**	**Source**
MTBE (Methyl *tert*-butyl ether)	49	73	-	7900	CL:AIRE (2010)[3]

Notes:
[sol] GAC exceed the solubility saturation limit which is presented in brackets; consideration of the CSM may be required
[vap] GAC exceed the vapour saturation limit which is presented in brackets; consideration of the CSM may be required
[sat] GAC exceed a soil saturation limit (not specified) which is presented in brackets; consideration of the CSM may be required
[dir] GAC is based on tolerable direct contact concentration; long term health protection value presented in brackets
(1) RwHP = Residential land use including significant production and consumption of home-grown produce; RwoHP = Residential land use without significant production and consumption of home-grown produce; POS_{resi} = Public open space in close proximity to residential properties
(2) Nathanial, C.P. *et al*. (2015), The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham. Note that the LQM / CIEM S4ULs update and replace the former LQM / CIEH GAC on the basis of new toxicological and refined modelling data. The S4ULs also cover the Environment Agency SGV substances with the inclusion of updated toxicological and modelling data.
(3) CL:AIRE, 'Soil Generic Assessment Criteria for Human Health Risk Assessment', 2010.
(4) Defra (2014), 'SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - Policy Document Companion Document', Defra, December 2014; CL:AIRE Report 'SP1010 - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Rev 2, September 2014; Defra erratum note, Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - SP1010, Erratum (December 2014).
(5) Nathanial, C.P. et al. (2015), The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham. Nickel update (August 2015).

Defra Category 4 Screening Levels (C4SL)[1,2]						
Determinand	**RwHP (mg/kg)**	**RwoHP (mg/kg)**	**Allotments (mg/kg)**	**Commercial (mg/kg)**	**POS1 (mg/kg)**	**POS2 (mg/kg)**
Arsenic	37	40	49	540	79	170
Benzene	0.87	3.3	0.18	98	140	230
Benzo(a)pyrene	5.0	5.3	5.7	77	10	21
Cadmium	22	150	3.9	410	220	880
Chromium (VI)	21	21	170	49	21	250
Lead	200	310	80	2300	630	1300

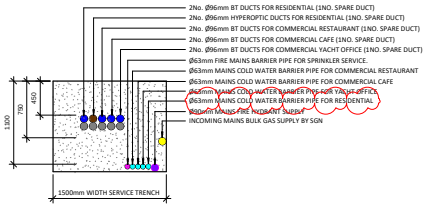
Notes:
(1) Defra (2014), 'SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - Policy Document Companion Document', Defra, December 2014; CL:AIRE Report 'SP1010 - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Rev 2, September 2014; Defra erratum note, Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - SP1010, Erratum (December 2014).
(2) The C4SLs presented in this table apply to the standard land uses set out in the above references. The values are derived using the CLEA framework for a sandy loam soil with 6% soil organic matter. Un-adjusted C4SLs should not be used where the site conditions or land use scenarios differ significantly from these characteristics.

APPENDIX 4. WATER PIPE



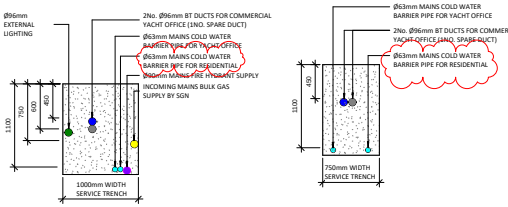
Section A-A Trench in Carriageway

1 : 25



Section B-B Trench in Carriageway

1 : 25

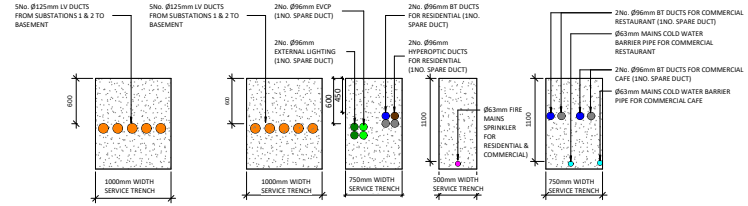


Section C-C Trench in Carriageway

1 : 25

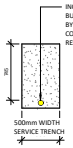
Section D-D Trench in Carriageway

1 : 25



Section E-E Trench in Carriageway

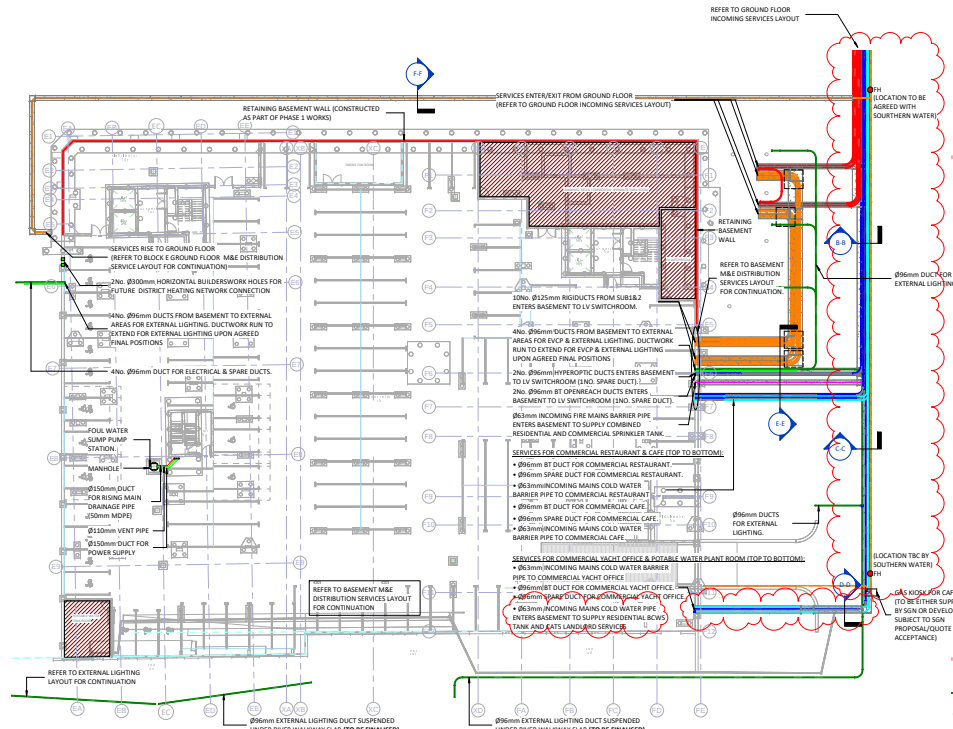
1 : 25



Section F-F Trench in Carriageway

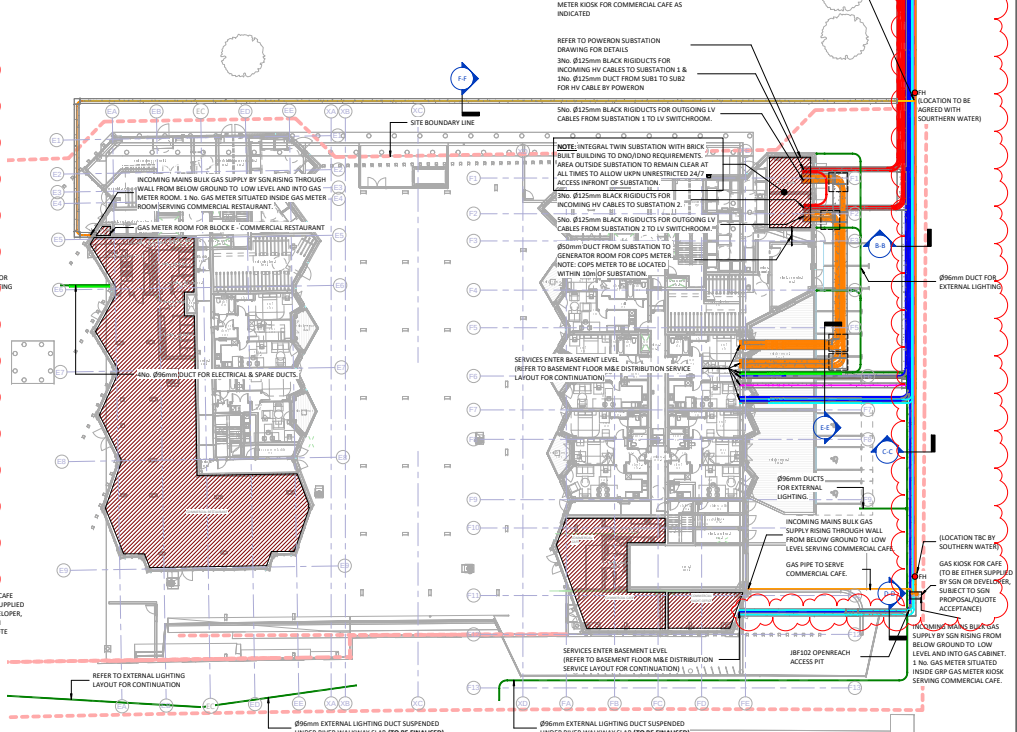
1 : 25

FROM RIGHT TO LEFT:
- INCOMING MAINS BULK GAS SUPPLY BY SGN TO SERVE COMMERCIAL RESTAURANT & COMMERCIAL CAFE
- Ø63mm MAINS FIRES SUPPLY FOR FIRE HYDRANT.
- Ø63mm INCOMING MAINS COLD WATER BARRIER PIPE FOR BLOCK E & F RESIDENTIAL.
- Ø63mm INCOMING MAINS COLD WATER CONNECTION TO Ø63mm BARRIER PIPE FOR YACHT OFFICE.
- Ø50mm INCOMING MAINS COLD WATER CONNECTION TO Ø63mm BARRIER PIPE FOR COMMERICAL CAFE.
- Ø50mm INCOMING MAINS COLD WATER CONNECTION TO Ø63mm BARRIER PIPE FOR COMMERICAL RESTURANT
- Ø63mm INCOMING FIRE MAINS BARRIER PIPE FOR SPRINKLER SERVICE.
- 2No. Ø96mm BT DUCTS FOR COMMERCIAL YACHT OFFICE (1NO. SPARE DUCT)
- 2No. Ø96mm BT DUCTS FOR COMMERCIAL CAFE (1NO. SPARE DUCT)
- 2No. Ø96mm BT DUCTS FOR COMMERCIAL RESTAURANT (1NO. SPARE DUCT)
- 2No. Ø96mm HYPEROPTIC DUCTS FOR RESIDENTIAL (1NO. SPARE DUCT)
- 2No. Ø96mm BT DUCTS FOR RESIDENTIAL (1NO. SPARE DUCT)



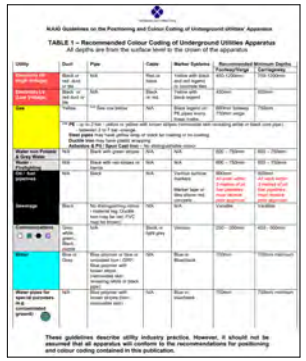
Basement Incoming Services

1 : 200



Ground Floor Incoming Services

1 : 200



NJUG Guidelines on the Positioning and Colour Coding of Underground Utilities' Apparatus

TABLE 1 – Recommended Colour Coding of Underground Utilities Apparatus

All depths are from the surface level to the crown of the apparatus

Utility	Duct	Pipe	Cable	Marker Systems	Recommended Minimum Depths Trenching/Ploughing	Carriageway
Electricity (LV, HV & Supply)	Black or red duct to BS EN 50086	N/A	Red or black to IEC 60446	Yellow with black and red legend to contain the words "ELECTRICITY" or "HIGH VOLTAGE"	450mm	600mm
Gas	Yellow	Yellow	Yellow	Black legend on PE pipes every 1m	375mm	750mm
Water (not Potable & Grey Water Supply)	Blue	N/A	N/A	N/A	450 – 750mm	600 – 750mm
Sewerage	Black	Black with rubber or plastic sleeves	N/A	Various surface markers	900mm	900mm
Communications (BT, Cable TV, Fibre Optics)	Grey, Yellow, Black, Blue, Green, Orange, White	N/A	N/A	Marker tape or tiles (depending on system)	450mm	600mm
Water	Blue or Grey	Blue or Grey	N/A	Blue to Brushland	750mm	750mm minimum

Water pipes for spur or potential HHD compartment (overall)

These guidelines describe utility industry practice. However, it should not be assumed that all apparatus will conform to the recommendations for positioning and colour coding contained in this publication.

Notes

Do not scale from this drawing. All dimensions to be verified by the contractor on site.

Calfordseaden cannot advise on specialist areas relating to fire safety or cladding and all design information must be checked by the Client's appointed expert and coordinated with the fire strategy.

GENERAL NOTES:

1.) ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE STATED.
2.) DO NOT SCALE FROM THIS DRAWING AND USE FIGURED DIMENSIONS ONLY, AND CHECK ALL DIMENSIONS ONSITE.
3.) ALL DIMENSIONS AND LEVELS TO BE CHECKED ONSITE PRIOR TO COMMENCEMENT ONSITE. ANY DISCREPANCIES SHOULD BE NOTIFIED TO THE RELEVANT PARTIES.
4.)THIS DRAWING IS TO BE USED IN CO-ORDINATION WITH ARCHITECTURAL, LANDSCAPE ARCHITECT, STRUCTURAL AND CIVIL DRAWINGS. ANY SERVICES CROSS OVERS SHALL BE CO-ORDINATED ONSITE BY MAIN CONTRACTOR AND GROUND WORKERS.
5.) THE CONTRACTOR SHALL ENSURE ALL EXCAVATION WORKS ARE INLINE WITH THE HEALTH & SAFETY EXECUTIVE GUIDANCE DOCUMENT HSG47 AVOID DANGER FROM UNDERGROUND SERVICES.
6.) THE CONTRACTOR SHALL ENSURE THAT THE FINAL LAYOUT OF THE SERVICES ARE IN ACCORDANCE WITH THE 'NJUG GUIDELINES' ON THE POSITIONING AND COLOR CODING OF UNDERGROUND UTILITIES APARATUS.
7.) EXISTING SERVICES LOCATIONS ARE INDICATIVE. ALL EXISTING SERVICES DRAWINGS ARE TO BE READ IN CONJUCTION WITH STATUATORY SERVICES ASSET MAPS. WHERE APPLICABLE, THE CONTRACTOR SHALL APPOINT THE SPECIALIST TO CARRYOUT CAT SCAN/ GROUND RADAR TO ENSURE NO EXISTING SERVICES ARE LIVE AND ARE BEING AFFECTED PRIOR TO ANY COMMENCEMENT OF WORKS.
8.) BURIED DEPTHS ARE TAKEN FROM NJUG GUIDELINES. REFER TO SERVICES IN FOOTPATH DETAIL ATTACHED WITHIN THIS DRAWING FOR RESPECTIVE SERVICES INSTALLATION DEPTH.
9.) ALL DUCTS ARE TO BE 100MM DIAMETER, UNLESS SPECIFIED OTHERWISE.
10.) ALL MAINS WATER PIPE WORK IN GROUND TO BE INSTALLED IN (MDPE) BARRIER PIPE.
11.) ALL WATER PIPEWORK INSTALLED TO BE CARRIED OUT BY (WRAS) APPROVED CONTRACTOR.
12.) ALL SERVICES TO RUN WITHIN THE MAIN COMBINED M&E SERVICES TRENCH WITH REQUIRED MINIMUM SEPERATION DISTANCE BETWEEN THEM TO MEET UTILITY REQUIREMENTS.
13.) ELECTRICITY DUCTS ROUTED UNDER THE BUILDING SLAB OR PASSING THROUGH THE VOID, STEEL DUCTS SHALL BE USED IN ACCORDANCE WITH DNO/IDNO REQUIREMENTS.
14.) ALL DUCTS SHALL BE LAID AT CORRECT DEPTH WITH LONG RADIUS BENDS AND DRAW WIRES FOR EASE OF INSTALLATION, WHERE MULTIPLE BENDS ARE REQUIRED, AN ACCESS CHAMBER OR SERVICE PIT SHALL BE INSTALLED.
15.) ALL SERVICES EXCAVATION WORKS AND BACK FILL ONSITE TO BE CARRIED OUT BY GROUND WORKERS.
16.) REFER TO INDIVIDUAL UTILITY DESIGN & QUOTATIONS FOR DETAIL SCOPE OF WORKS AND BREAKDOWN OF DESIGN REQUIREMENTS.
17.) CIVIL/STRUCTURAL ENGINEERS TO CO-ORDINATE THEIR BELOW GROUND DRAINAGE SERVICES AND FOUL INSPECTION CHAMBERS INLINE WITH M&E COMBINED INCOMING SERVICES LAYOUTS FOR DUCTS AND OTHER BELOW GROUND SERVICES TO AVOID UNNECESSARY CLASHES.
18.) ALL BELOW GROUND SERVICES SHALL BE FULLY CO-ORDINATED AND INLINE WITH UTILITY PROVIDER PRIOR TO COMMENCEMENT OF ANY BELOW GROUND WORKS.
19.) GAS METER INSTALLED IN GAS METER ROOM SHALL BE PROVIDED WITH HIGH & LOW LEVEL VENTILATION (MIN 3% OF FLOOR AREA).
20.) ALL OFFSITE WORKS OUTSIDE OF SITE BOUNDARY TO BE CARRIED OUT BY RESPECTIVE UTILITY PROVIDERS.
21.) THIS DRAWING IS TO BE READ IN CONJUCTION WITH SITE EXTERNAL LIGHTING LAYOUT FOR DUCTING ROUTE.
22.) NJUG GUIDELINES DEPTHS SHALL NOT APPLY FOR BURIED SERVICES RUNNING THROUGH PRIVATE LAND.

LEGEND:

- LV
- HYPEROPTIC
- SPARE
- BT
- GAS
- FIRE MAINS
- FIRE HYDRANT
- FIRE HYDRANT (LOCATION TBC BY SOUTHERN WATER)
- HV
- MAINS COLD WATER
- EXTERNAL LIGHTING
- EVCP
- SERVICE ACCESS PIT TO BE ALLOWED FOR EASE OF PULLING CABLES AT JUCTION POINT DURING DUCTS & CABLES INSTALLATION BELOW GROUND LEVEL, LATER TO BE BACKFILLED BY GROUND WORKERS.

HG CONSTRUCTION

Key Plan



1:200@A0 North Point

Rev	Description	Date	Init	Chkd
C04	STAGE 4B -Construction Issue	28.06.24	AT	VK/JC
C03	STAGE 4B -Construction Issue	21.06.24	AT	PA
C02	STAGE 4B -Construction Issue	18.03.24	AT	CM
C01	STAGE 4B -Construction Issue	06.03.24	AT	CM/JC
T5	Tender Issue	23.02.24	AT	CM
T4	Tender Issue	29.01.24	AT	JM
T3	Tender Issue	12.01.24	AT	JM
T1	Tender Issue	22.11.23	RW/AT	JM
P2	STAGE 4A - Preliminary Issue	04.08.23	AT	PH
P1	Preliminary Issue	09.06.23	AT	JM

Project: Free Wharf Phase 2

Title: Site M&E Incoming Services Layout

Client: HG Construction — Status: Construction

Date: 09.06.23 — Drawn By: AT — Checked By: JM

Project No.: L230077 — Drawing No.: FWF-CAL-ZZ-00-DR-ME-0501 — Revision: C04

calfordseaden

King's Head House King's Head Yard London SE1 1NA

02079 403200 london@calfordseaden.com calfordseaden.com

calfordseaden LLP is a Limited Liability Partnership Registered in England & Wales number OC 315838

LONDON | BIRMINGHAM | CAMBRIDGE | KENT | ESSEX | HAMPSHIRE



Photograph A4.1 Water supply pipe during installation



Photograph A4.2 Water supply pipe during installation

APPENDIX 5. GAS PROTECTION MEASURES VERIFICATION