

# REMEDIATION STRATEGY AND VERIFICATION PLAN

7ABC BAYHAM STREET, CAMDEN, LONDON NW1 0EY



JER8709  
Remediation Strategy and  
Verification Plan  
02  
October 2021

## REPORT

### Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Review date
V1	R0	JL	NT	JL	14/07/21
V2	R0	MH	JL	JL	25/10/2021

### Approval for issue

Jim Lightbown

25 October 2021

© Copyright RPS Group Plc. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS'), no other party may use, make use of, or rely on the contents of this report. The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made. RPS has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy. No part of this report may be copied or reproduced, by any means, without the prior written consent of RPS.

Prepared by:

**RPS**

**Jim Lightbown**  
**Technical Director**

20 Farringdon Street  
London  
EC4A 4AB

**T** +44 (0) 20 3691 0500

**E** Jim.Lightbown@rpsgroup.com

Prepared for:

**Camden Lifestyle (UK) Limited**

## Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Preamble .....	1
1.2	Aim .....	1
1.3	Legislation and Guidance .....	1
<b>2</b>	<b>PREVIOUS ASSESSMENTS .....</b>	<b>3</b>
2.1	Phase 1 Preliminary Risk Assessment and Phase 2 Environmental and Geotechnical Site Investigation.....	3
2.2	Consideration of Radon Risk to the Proposed Redevelopment at 7ABC Bayham Street, Camden, London.....	3
<b>3</b>	<b>REMEDIATION STRATEGY .....</b>	<b>5</b>
3.1	Introduction .....	5
3.2	Importation of Clean Cover.....	5
3.3	Upgraded Services.....	5
3.4	Discovery Strategy .....	5
3.5	Protection of Construction Workers .....	6
3.6	Handling and Disposal of Soils .....	6
<b>4</b>	<b>VERIFICATION PLAN .....</b>	<b>7</b>

## Figures

Figure 1: Site Location Plan

Figure 2: Site Boundary Plan

## Appendices

Appendix A Proposed Development Plans

# 1 INTRODUCTION

## 1.1 Preamble

- 1.1.1 RPS Consulting Services Ltd (RPS) was commissioned by Camden Lifestyle (UK) Limited to undertake a Remediation Strategy and Verification Plan for the proposed redevelopment of 7ABC Bayham Street, Camden, London NW1 0EY. A site location plan is provided as Figure 1.
- 1.1.2 The site currently comprises three existing buildings 7A, 7B and 7C, contained on three sides with a carpark / courtyard in the centre, accessed off Bayham Street to the east. A site boundary plan is provided as Figure 2.
- 1.1.3 It is proposed to redevelop the site with a five storey building and two basement levels to accommodate 3,027m<sup>2</sup> of office floorspace, 70 hotel bedrooms and an ancillary café/bar. Proposed development plans are included within Appendix A.
- 1.1.4 The Remediation Strategy and Verification Plan has been prepared for submission under Condition 15 of planning permission reference 2020/5647/P for the proposed redevelopment, which states:
- 'Prior to commencement of any development other than works of demolition, site clearance & preparation, a written programme of ground investigation for the presence of soil and groundwater contamination and landfill gas shall be submitted to and approved by the local planning authority in writing.*
- Site investigation shall be carried out in accordance with the approved programme and the results and a written scheme of remediation measures [if necessary] shall be submitted to and approved by the local planning authority in writing.*
- The remediation measures shall be implemented strictly in accordance with the approved scheme and a written report detailing the remediation shall be submitted to and approved by the local planning authority in writing prior to occupation.'*
- 1.1.5 RPS has previously submitted a Site Investigation Scheme (RPS reference 200804 R JER8709 JL, dated August 2020) and a Phase 1 Preliminary Risk Assessment and Phase 2 Environmental and Geotechnical Site Investigation (RPS reference 200817 R JER8709 JG, dated September 2020), which have been accepted under Condition 14.

## 1.2 Aim

- 1.2.1 The aim of this document is to provide:
- A Remediation Strategy and Verification Plan detailing required mitigation measures (and verification thereof) to minimise any potential risk to identified human health receptors as part of the site redevelopment; in doing so, satisfying the requirements of Condition 15 of planning decision notice 2020/5647/P, which requires *"a written scheme of remediation measures [if necessary] shall be submitted to and approved by the local planning authority in writing"*.
- 1.2.2 A Verification Report detailing the remediation shall be submitted to and approved by the local planning authority in writing (prior to occupation) to submit towards the final requirement of Condition 15.

## 1.3 Legislation and Guidance

- 1.3.1 This report has been produced in general accordance with:
- Contaminated Land (England) Regulations 2006 (as amended);

- DEFRA Environmental Protection Act 1990: Part 2A - *Contaminated Land Statutory Guidance (2012)*;
- Environment Agency (2020) Land Contamination Risk Management (LCRM);
- National Planning Policy Framework (2019);
- CIRIA Document C665: *Assessing Risks Posed by Hazardous Ground Gases to Buildings*;
- British Standard requirements for the '*Investigation of potentially contaminated sites - Code of practice*' (ref. BS10175:2011+A1:2017);
- British Standard requirements for the '*Code of practice for ground investigations*' (ref. BS5930:2015+1:2020);
- British Standard requirements for the '*Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings*' (ref BS8485:2015+A1:2019);



## 2 PREVIOUS ASSESSMENTS

### 2.1 Phase 1 Preliminary Risk Assessment and Phase 2 Environmental and Geotechnical Site Investigation

- 2.1.1 RPS has previously carried out a Phase 1 Preliminary Risk Assessment and Phase 2 Environmental and Geotechnical Site Investigation for the site (RPS reference 200817 R JER8709 JG, dated September 2020).
- 2.1.2 The Phase 1 Preliminary Risk Assessment identified a limited number of pollutant linkages that could potentially be active upon completion of the proposed redevelopment. A targeted Phase 2 was therefore carried out to assess these pollutant linkages, provide information on ground conditions and data for the assessment geotechnical properties of strata underlying the site
- 2.1.3 The site investigation was carried out between 3<sup>rd</sup> and 5<sup>th</sup> August and 19<sup>th</sup> to the 26<sup>th</sup> August 2020 and comprised two cut-down cable percussion boreholes up to 25m below ground level (bgl), four hand held window sample boreholes up to 4m bgl and three foundation inspection pits up to 1.43m bgl. Groundwater and ground gas monitoring standpipes were installed in selected boreholes. Representative soil and groundwater samples were collected for laboratory analysis and ground gas monitoring was undertaken on three occasions following the site investigation.
- 2.1.4 Ground conditions comprised a variable depth of Made Ground (up to 2m thick) over the London Clay Formation, proven to a depth of at least 25m bgl. Perched groundwater was encountered in the Made Ground and shallow depths within the London Clay Formation during subsequent monitoring visits.
- 2.1.5 Although localised exceedances of assessment criteria (AC) protective of future site occupiers were encountered within Made Ground, this material is to be entirely removed as part of the basement excavation. A single sample of London Clay Formation from depths within the potential cut level did not record concentrations above the assessment criteria.
- 2.1.6 The groundwater analytical data indicated that no contaminants of concern were recorded above their respective AC and therefore do not pose a risk to human health via the inhalation pathway.
- 2.1.7 Ground gas monitoring undertaken on site as part of the current investigation indicated CIRIA Characteristic Situation CS1 was applicable to the site, whereby no ground gas protection measures are required for new buildings.

### 2.2 Consideration of Radon Risk to the Proposed Redevelopment at 7ABC Bayham Street, Camden, London

- 2.2.1 Following submission of the Phase 1 Preliminary Risk Assessment and Phase 2 Environmental and Geotechnical Site Investigation, the Council raised concerns that the potential risk to proposed end users from radon gas had not adequately been considered.
- 2.2.2 RPS produced correspondence (RPS reference 210506 L JER8709 JL 7 Bayham Street Radon V1 R1, dated 12<sup>th</sup> May 2021) to address these concerns.
- 2.2.3 It was concluded that although Radon Guidance BR 211 (2015) states that all basements are at increased risk of elevated levels of radon regardless of geographic location, consideration of radon occurrence, the environmental setting and mitigation measures to be incorporated as part of the proposed structure (including a radon proof membrane and ventilation), the potential risk to future occupants from radon was considered to be negligible.
- 2.2.4 No further assessment of the proposed development with regards to radon was therefore considered necessary.

2.2.5 This Remediation Strategy and Verification Plan should be read in conjunction with those assessments detailed above.

## 3 REMEDIATION STRATEGY

### 3.1 Introduction

3.1.1 A Remediation Strategy has been prepared on the basis of the findings of the geo-environmental assessment previously undertaken for the site and subsequent regulatory correspondence. The proposed remedial measures are outlined in the sections below.

### 3.2 Importation of Clean Cover

3.2.1 The only current proposals for soft landscaping at the site is a Bauder sedum blanket system for an area of approximately 60m<sup>2</sup> at roof level. This area is to be installed with a Bauder (FLL compliant) extensive substrate (comprising recycled crushed brick, expanded clay, shale, composted pine bark) overlain by a Bauder SB Substrate Sedum Blanket. This area will not be readily accessible to the public and only require infrequent maintenance. On the basis of the above, validation of the sedum blanket system is not considered to be warranted.

3.2.2 It is understood that planters may be introduced as part of the redevelopment. Where this is the case, material imported as a growing medium within the planters will be sampled in situ to confirm suitability for use. The medium will be sampled at a rate of one sample per planter and submitted to a UKAS/MCERTS accredited laboratory for chemical analysis for the following contaminants of concern:

***Inorganic Determinands:***

3.2.3 pH, arsenic, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, sulphide, total cyanide, sulphate, sulphur, selenium, zinc and asbestos

***Organic Determinands:***

Speciated PAH, speciated TPH CWG including benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tert-butyl ether (MTBE) and total phenols.

The topsoil material will need to be free of asbestos and not exceed the LQM:CIEH Suitable 4 Use Levels (S4UL) 2015 or, where not available, Category 4 Screening Levels (C4SL) for a conservative public open space (residential) end use.

### 3.3 Upgraded Services

3.3.1 Although elevated concentrations of hydrocarbon compounds were recorded within Made Ground analysed as part of the Phase 2 Site Investigation, the basement excavation is proposed to approximately 10m bgl across the entire site footprint. As such, all Made Ground material is to be removed from beneath the site. Camden Lifestyle (UK) Limited are to confirm requirements for buried utility pipes with the relevant service providers prior to installation.

### 3.4 Discovery Strategy

3.4.1 A discovery strategy for any previously un-encountered contamination should be implemented as part of the redevelopment. RPS or another suitably qualified environmental consultant should be contacted, where any significant visual or olfactory evidence of contamination, not previously encountered, is identified by construction workers during the development works. The following shall be considered indicative of soil contamination that may require remediation:

- The presence of free phase contamination (liquids or sheens);
- Fibrous or cement bound materials (potentially asbestos containing materials);
- Significant staining and discolouration of exposed soils; and/or



- Visual or olfactory evidence of organic contamination (i.e hydrocarbons, solvents, etc).

3.4.2 Any construction activities in the area of this material should cease until an appropriate plan for dealing with the contamination has been put in place. A written statement will be provided by the developer where no significant evidence of contamination is encountered.

### 3.5 Protection of Construction Workers

3.5.1 Construction workers are unlikely to be exposed to significantly contaminated soils and groundwater during ground works. Risks to construction workers will be managed through appropriate health and safety legislation including the Health and Safety at Work Act and Construction Design Management (CDM) regulations. A copy of the Phase 2 Environmental and Geotechnical Site Investigation is to be provided to the contractor undertaking the demolition/construction works so appropriate health and safety measures can be implemented.

3.5.2 Suitable measures to protect construction workers are envisaged to include clean/dirty working practices, provision of appropriate personal protective equipment (PPE) including gloves, provision of adequate welfare/hygiene facilities as well as explanations of the potential risks. Operatives should be prohibited from eating, drinking or smoking within contaminated areas.

3.5.3 Asbestos fibres were not detected within the eight samples of Made Ground screened as part of the Phase 2 Site Investigation. However, the contractor undertaking the demolition/construction works should have appropriate measures in place to mitigate any risk from suspected or known asbestos encountered within Made Ground as part of the redevelopment.

### 3.6 Handling and Disposal of Soils

3.6.1 Given the proposals, no excavated material (contaminated or otherwise) is to be reused as part of the redevelopment.

3.6.2 Disposal of any soil waste generated by the redevelopment to off-site landfill should comply with both the Hazardous Waste Regulations and Landfill Waste Regulations. It shall be necessary to determine whether this waste is non-hazardous or hazardous, in accordance with Environment Agency, Technical Guidance WM3 – Hazardous Waste: Interpretation of the definition and classification of hazardous waste (EA 2015, updated May 2018). Waste Acceptance Criteria (WAC) analysis should be carried out on this material where:

- Non-hazardous material is being considered for disposal to an inert landfill; or
- It needs to be demonstrated that material classified as Hazardous is within acceptable levels for either hazardous or stable non-reactive hazardous (SNRH) landfills.

3.6.3 It will be necessary to demonstrate that any off-site disposal of waste is documented, as required under Duty of Care legislation.

## 4 VERIFICATION PLAN

4.1.1 A Verification Report will be issued upon completion of the development to confirm completion of the above measures. It will be submitted to the London Borough of Camden for review and approval under Condition 15 of the planning permission. The report will include the following information:

- Where planters are installed, scaled photographs to confirm the imported material within the planters is homogenous;
- Results of chemical analysis for soil samples taken from any topsoil imported for use in planters;
- Comparison of the chemical results of topsoil to appropriate assessment criteria;
- Details of any additional remediation measures implemented upon receipt of these results or upon encountering any previously un-encountered contamination;
- Where relevant, a confirmatory written statement from the developer or construction contractor where no significant evidence of contamination is encountered; and
- Duty of Care documentation, including waste transfer notes.



**FIGURES**

The Site

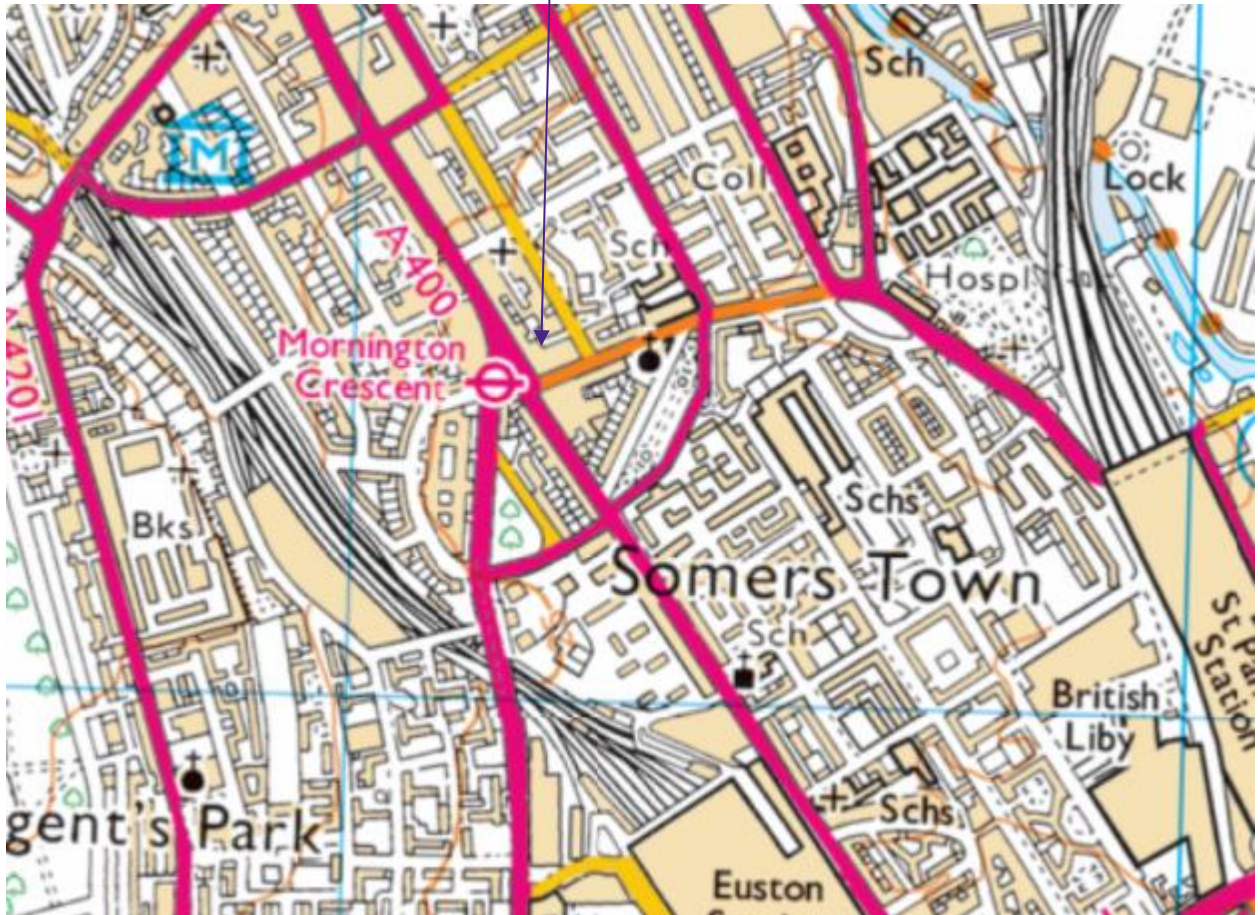
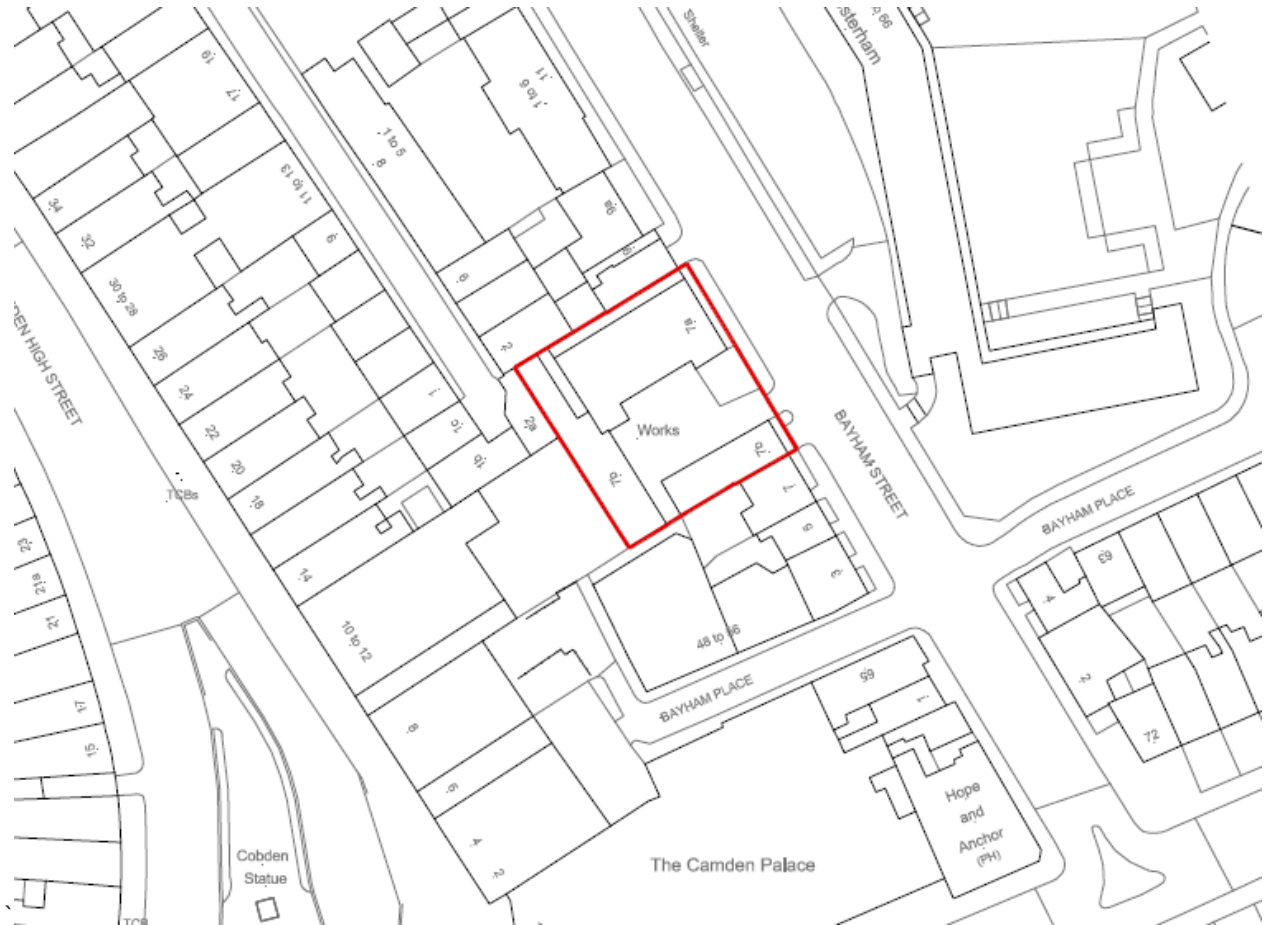


Figure 1: Site Location Plan



**Figure 2:** Site Boundary Plan

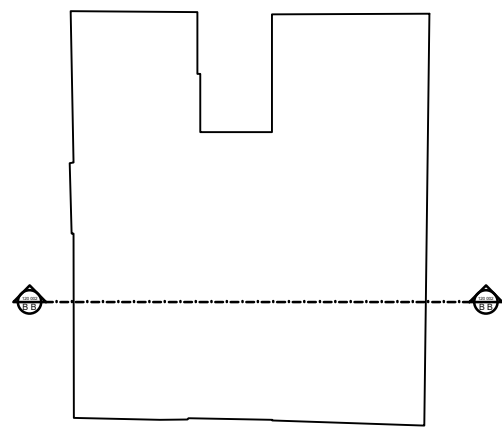


**APPENDICES**



## Appendix A

### Proposed Development Plans

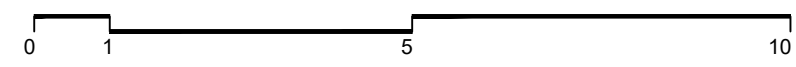


Copyright: All rights reserved. This drawing must not be reproduced without permission.  
 Only the original drawing should be relied upon. Contractors, sub-contractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.  
 All shop drawings to be submitted to the architect / interior designer for comment prior to fabrication.  
 This drawing is to be read in conjunction with the architect's / interior designer's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect / interior designer.  
 Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

**NOTES**



Section BB  
 1:100



rev	amendments	date	by	chk
P3	Plant screen height increased	07.05.21	PW	FJ
P2	Updates to align with plans	15.03.21	PW	FJ
P1	Plans well revisited following neighbour consultation	28.01.21	PW	FJ
P0	ISSUED FOR PLANNING	20.11.20	FJ	PW

**dexter moren associates**  
 architecture urban design interior design creative media  
 www.dextermoren.com  
 dma@dextermoren.com

57d  
 jamestown road  
 london nw1 7db  
 UK

t: 020 7267 4440

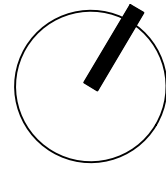
project  
 Bayham Street  
 London, NW1 0EY

client  
 Camden Lifestyle (UK) Ltd

drawing title  
**Proposed Section BB**

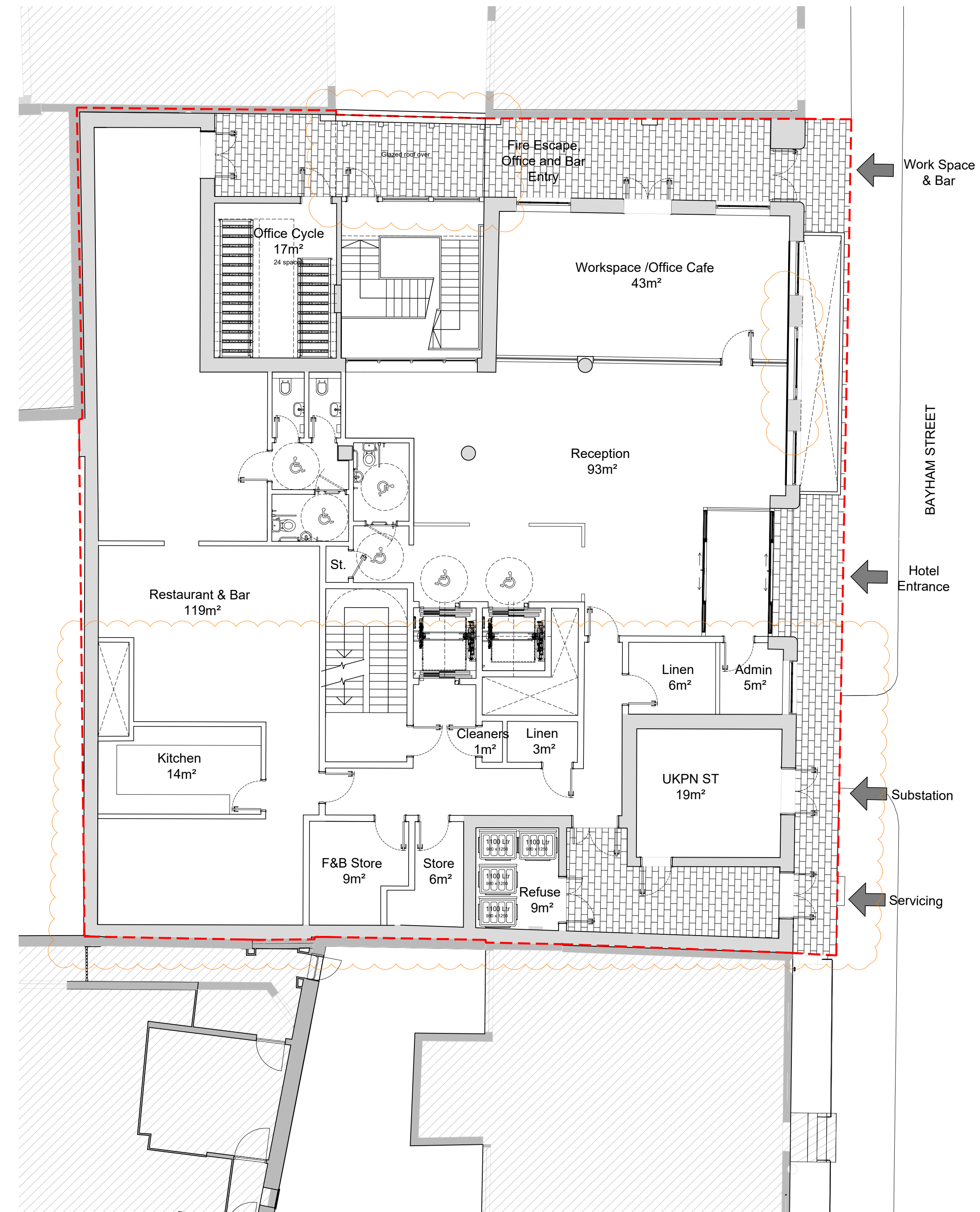
drawing status  
**PLANNING**

scale	date	drawn by
1:100 @ A1	20.11.20	FJ
1:200 @ A3		
job no.	drawing no.	revision
1783	A-120-002	<b>P3</b>

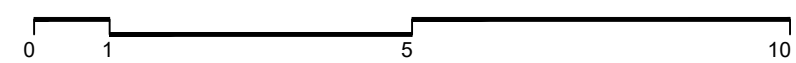


Copyright: All rights reserved. This drawing must not be reproduced without permission.  
 Only the original drawing should be relied upon. Contractors, sub-contractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.  
 All shop drawings to be submitted to the architect / interior designer for comment prior to fabrication.  
 This drawing is to be read in conjunction with the architect's / interior designer's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect / interior designer.  
 Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

**NOTES**



○ Proposed Ground Floor  
 1:100



rev	amendments	date	by	chk
P3	BOH areas reconfigured; updates to glazing	12.05.21	PW	FJ
P2	Canopy added and stair reconfigured; access to cafe updated	15.04.21	FJ	PW
P1	Updated following objections to substation location	15.03.21	PW	FJ
P0	ISSUED FOR PLANNING	20.11.20	FJ	PW

**dexter moren associates**  
 architecture urban design  
 interior design creative media  
 www.dextermoren.com  
 dmaj@dextermoren.com

57d  
 jamestown road  
 london nw1 7db  
 UK

t: 020 7267 4440

architecture  
 project  
 Bayham Street  
 London, NW1 0EY  
 client  
 Camden Lifestyle (UK) Ltd

drawing title  
 Proposed Ground Floor

drawing status  
 PLANNING

scale	date	drawn by
1:100 @ A1	20.11.20	FJ
1:200 @ A3		
job no.	drawing no.	revision
1783	A-100-100	<b>P3</b>