



Firmdale Hotels

**21 – 23 Bedford Place**  
*Basement Impact Assessment*  
*Rev2*




November, 2023



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### **APPENDICES**

<b>Appendix A</b>	<b>Proposed Development Drawings</b>
<b>Appendix B</b>	<b>Relevant BGS Boreholes &amp; Trial Pitting Mark-Ups</b>






## 1. INTRODUCTION

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Card Geotechnics Limited (CGL) has been instructed by Firmdale Hotels ("the Client") to produce a Basement Impact Assessment for the proposed works at 21-23 Bedford Place in London, WC1B 5JJ. This Basement Impact Assessment (BIA) has been undertaken in general accordance with the following London Borough of Camden documentation outlining requirements related to basement developments within the borough:

-  *Camden geological, hydrogeological and hydrological study. Guidance for subterranean development. ARUP. (November 2010)<sup>1</sup>.*
-  *Camden Local Plan (CLP) 2021. Policy A5 Basements, Camden Planning Guidance Basements (January 2021)<sup>2</sup>*
-  *Camden Planning Guidance: Basements (CPG) March 2018, replacing the Camden Planning Guidance 4: Basements and Lightwells (July 2015)<sup>3</sup>*

In line with CPG4<sup>3</sup>, the Basement Impact Assessment procedure includes the following stages:

-  **Stage 1:** Screening
-  **Stage 2:** Scoping
-  **Stage 3:** Site investigation and study
-  **Stage 4:** Impact assessment
-  **Stage 5:** Review and decision making.

This BIA report provides information for stages 1 to 4 of the London Borough of Camden BIA process.

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<sup>1</sup> *Camden geological, hydrogeological and hydrological study. Guidance for subterranean development. ARUP.(November 2010)*

<sup>2</sup> *Camden Local Plan (CLP) 2021. Policy A5 Basements, Camden Planning Guidance Basements (January 2021)*

<sup>3</sup> *Camden Planning Guidance: Basements (CPG) March 2018, replacing the Camden Planning Guidance 4: Basements and Lightwells (July 2015)*

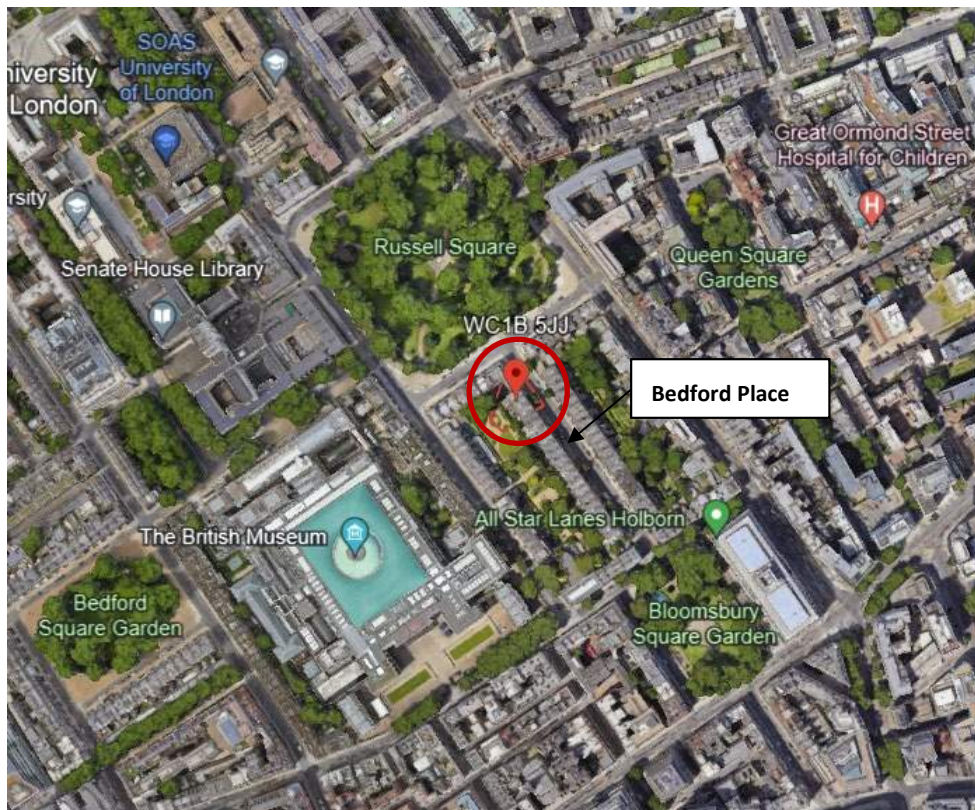
## 2. SITE LOCATION AND DESCRIPTION

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### 2.1 Site Location

The site is located at 21-23 Bedford Place, London, WC1B 5JJ within the London Borough of Camden. The National Grid reference for the approximate centre of the site is 530187, 181868. A site location plan is included in Plate 1 below.

**Plate 1. Site Location Plan**



### 2.2 Site Description

The site is currently occupied by a two to five storey building, inclusive of a single-level basement. As shown in Plate 2 below, at the rear of the existing building, at basement level, there is a relatively narrow corridor (taken as the reference level moving forward) with a direct stepped access up to two raised land areas, which are circa 1.675m above corridor level (+1.675mACL) and are partially concreted over. It is noted that there are several shrubs within the edges of the raised land areas that will likely be removed as part of the proposed works.

**Plate 2. Rear of the existing building – corridor and raised land areas**



The existing building is to the east of the land raised areas and the corridor (see Plate 2 above), which are in turn externally delimited by a brick boundary wall surrounded by a private garden to the west (see Plate 3), a parking lot to the north and a raised wooden deck/terrace at 24-27 Bedford Place (see Plate 4 ) to the south.

**Plate 3. Private garden to the west of the corridor and raised land areas**

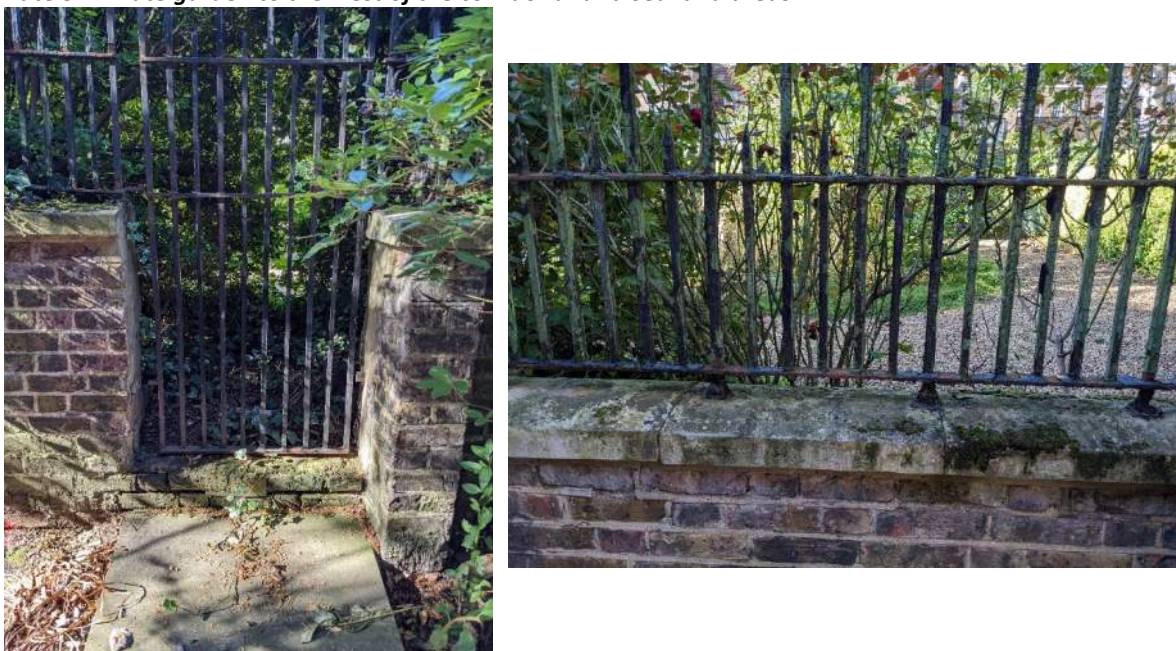


Plate 4. Raised wooden deck/terrace to the south – 24-27 Bedford Place



As shown in Plate 4 above, 24 – 27 Bedford Place does also have an existing basement with a narrow corridor at the rear of the existing basement. There is an existing tree located circa 750mm from the boundary wall which is circa 3.75m away from the proposed plant rooms.

In Plate 5, it can be observed that several services/drainage pipes were found at shallow depths, circa 300mm below the existing corridor level.

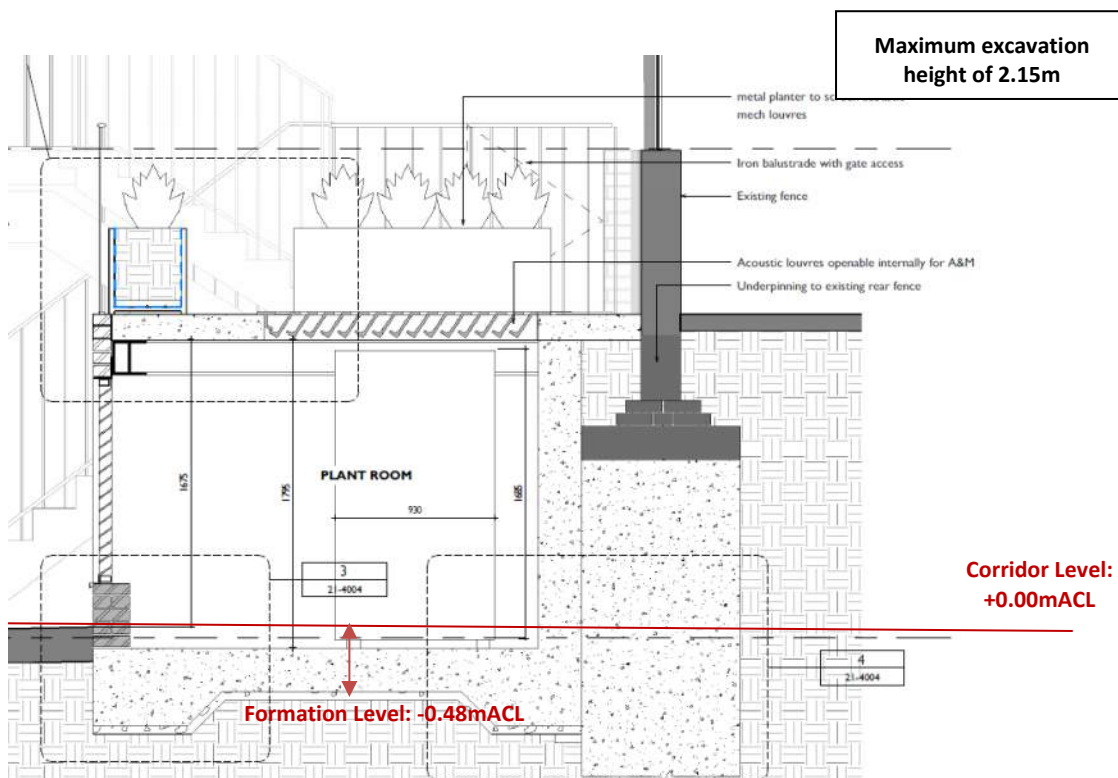
Plate 5. Presence of shallow services at corridor level



### 2.3 Proposed Development

The proposed development comprises the excavation of the raised land areas down to a formation level of -0.48mACL (480mm below the existing corridor level) to construct two plant rooms<sup>4,5</sup> at existing basement level, that cover a total area of circa 55m<sup>2</sup>. A section and plan drawings are presented in Plate 6 and Plate 7.

Plate 6. Proposed Plant Rooms – Section

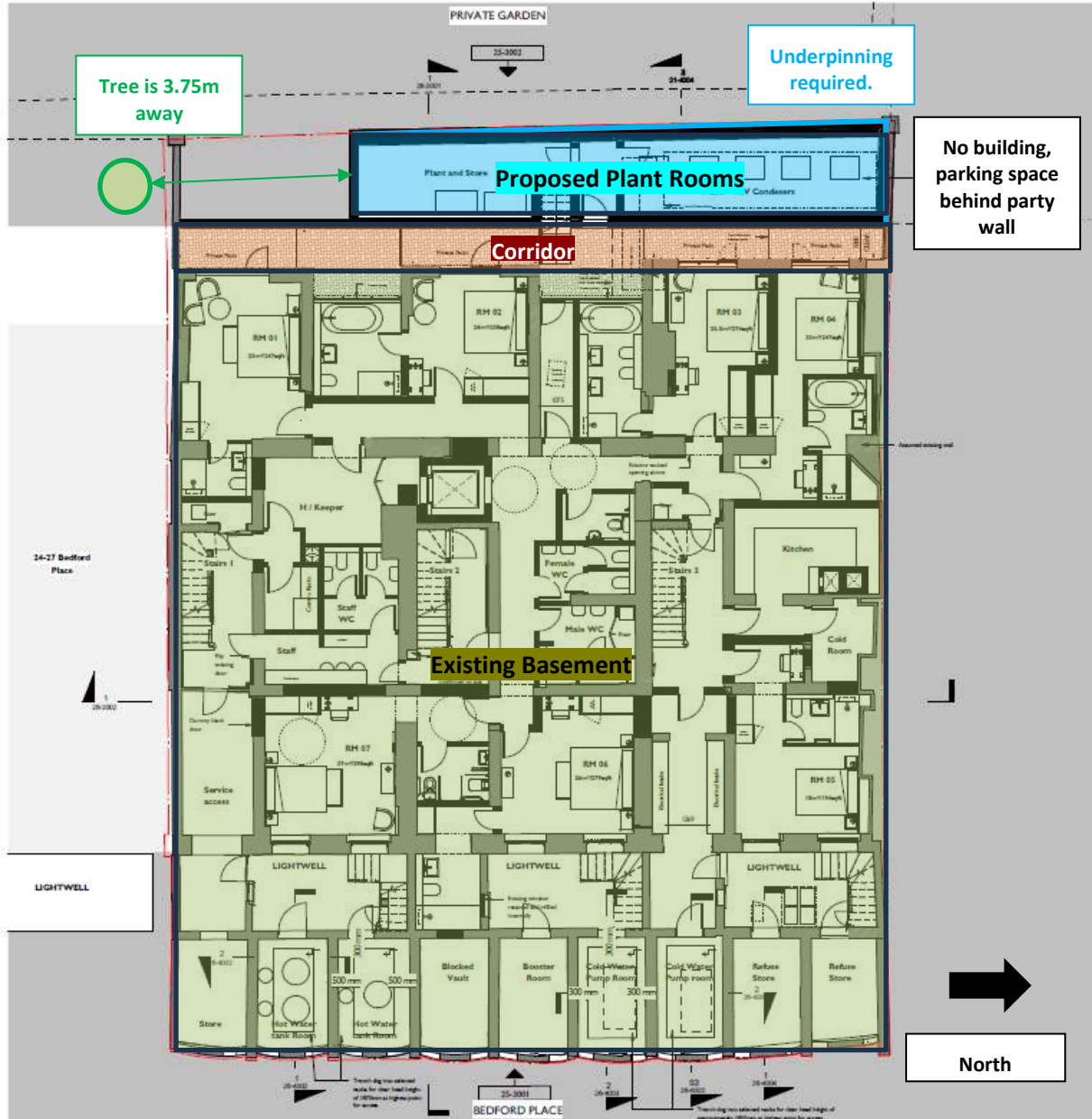


<sup>4</sup> SPPARC (October 2023). Proposed Basement Level Floor Plan. Ref 2205-SPP-BP-B1-DR-A-20-1001. Rev P01

<sup>5</sup> SPPARC (October 2023). Rear Plant Room Section 01. Ref 2205-SPP-BP-ZZ-DR-A-21-4004. Rev P01



Plate 7. Proposed Plant Rooms - Plan



It is noted that the plant rooms are proposed directly adjacent to the party wall in the north (see Plate 7), which has a parking space directly behind it. Therefore, the proposed works are almost 4m away from the raised terrace at 24 – 27 Bedford Place and the existing tree and even farther away from the existing 24 – 27 Bedford Place building.

It is also noted that a section of the private garden’s boundary wall (see in blue in Plate 7) is to be underpinned to enable the excavation and subsequent construction of the plant rooms. The need for underpinning is further discussed in Section 3.

Relevant documents are presented in Appendix A.

### 3. EXISTING INFORMATION REVIEW

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#### 3.1 Anticipated Ground Conditions

##### 3.1.1 Published Geology

With Reference to the British Geological Survey (BGS) website<sup>6</sup>, and as shown in Plate 8 and Plate 9 below, the site area is shown to be underlain by Lynch Hill Gravels, which overlies the London Clay at depth. It can be observed that the site is not located within any transition zones between various superficial geology/bedrock and thus, ground conditions are not anticipated to vary significantly across site.

**Plate 8. BGS Extract – Superficial Geology**



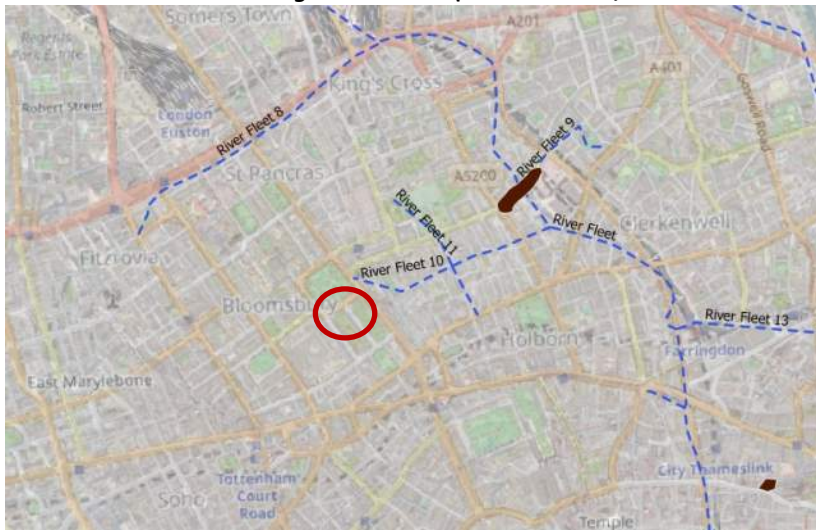
**Plate 9. BGS Extract – Bedrock Geology**



<sup>6</sup> <https://mapapps2.bgs.ac.uk/geindex> (accessed October 2023)

As presented in Plate 10 below, the risk of any scour features within the site is low. It is noted that the site is within 160m from the lost River Fleet.

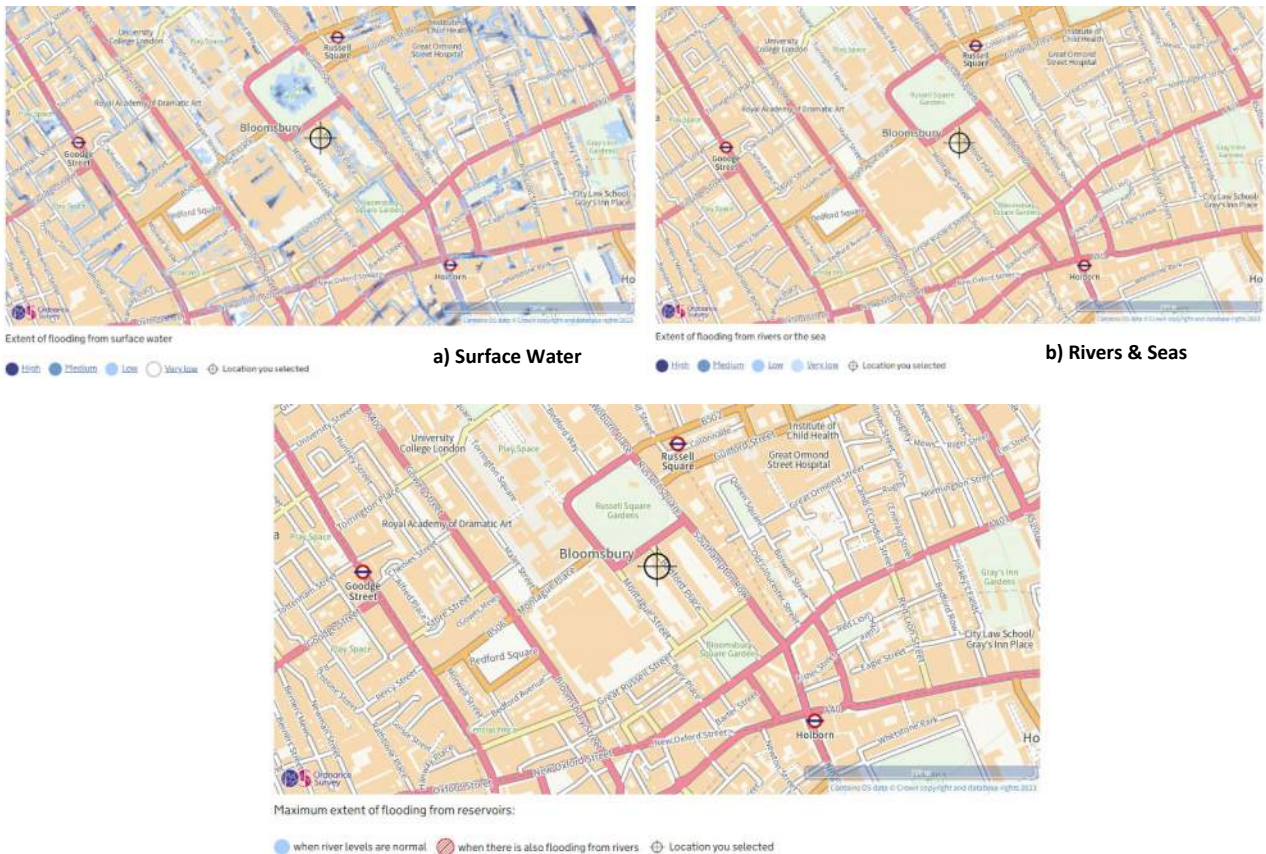
**Plate 10. Additional Geological Features (red circle: site, dashed lines: lost rivers, brown: scour features)**



### 3.1.2 Surface Water & Groundwater

As shown in Plate 11 below, the risk of flooding<sup>7</sup> from surface water, rivers and the sea is very low to low. It is also noted that the risk of flooding from reservoirs and/or groundwater is unlikely in this area.

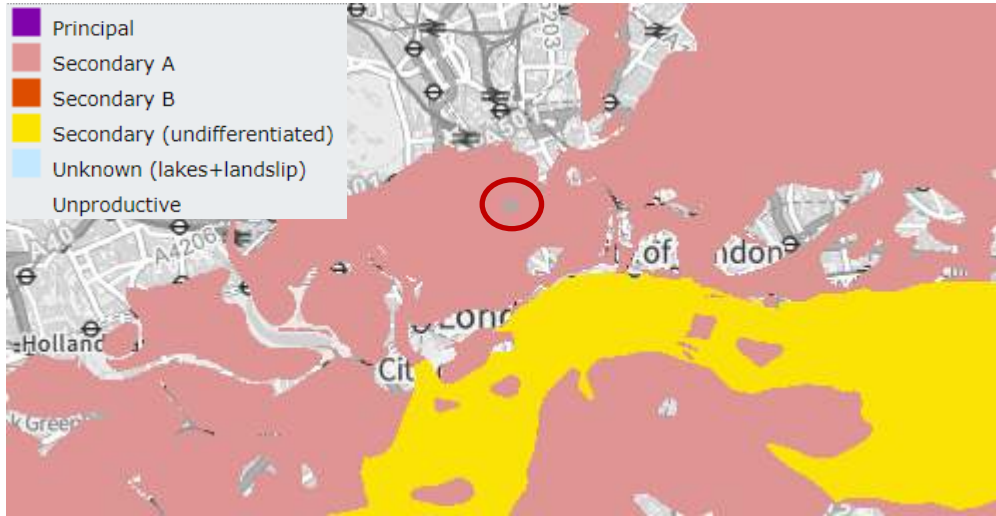
**Plate 11. Extracts of Flood risk maps – a) from surface water, b) from rivers and seas & c) from reservoirs**



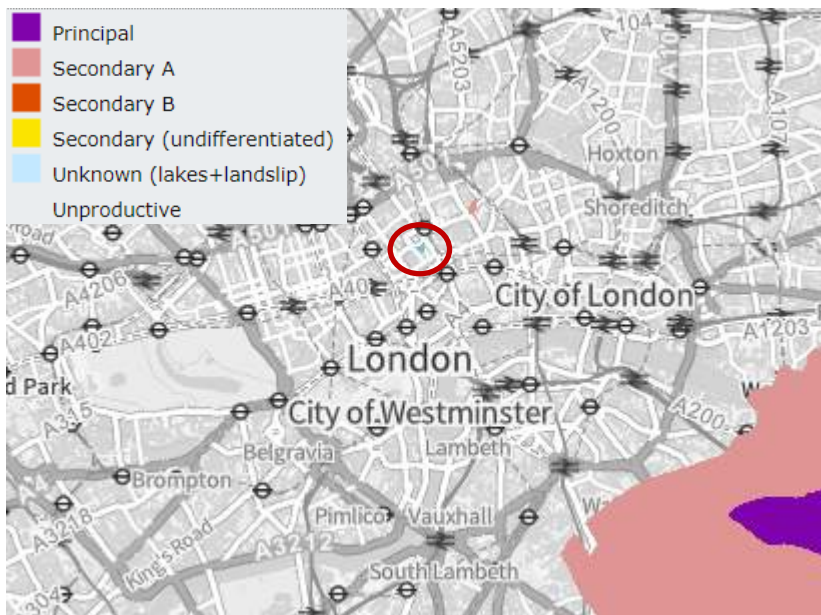
<sup>7</sup> <https://check-long-term-flood-risk.service.gov.uk/risk> (accessed October 2023)

The Environment Agency<sup>8</sup> indicates that the superficial deposits on site (Lynch Hill Gravels) form a Secondary A aquifer (see Plate 12), while the London Clay is an unproductive stratum (see Plate 13).

**Plate 12. Extracts of Aquifer Designation Map - Superficial deposits (red: approximate site location)**



**Plate 13. Extracts of Aquifer Designation Map - Bedrock (red: approximate site location)**



### 3.1.3 UXO Risk

Available online UXO risk mapping<sup>9</sup> indicates that the site is located within a high risk for UXO. However, given that most of the area to be excavated corresponds to the raised land areas, the risk to encounter any UXO during excavation works is considered to be low and thus, no further action is recommended regarding UXO.

<sup>8</sup> <https://magic.defra.gov.uk/MagicMap.aspx> (accessed October 2023)

<sup>9</sup> <https://zeticauxo.com> (accessed October 2023)

### **3.1.4 Underground Infrastructure**

CGL's records do not suggest any Transport for London (TfL) and/or London Underground Limited (LUL) infrastructure is present below or adjacent to the site.

Due to the limited extent in plan and depth of the proposed plant rooms, the impact of the proposed works on any neighbouring service/asset is considered to be negligible.

## **3.2 Existing Site Investigation Data & Unpublished Geology**




### **3.2.1 General**

This report is mainly informed by two phases of trial pitting undertaken by others during September 2023 and pertinent historic BGS boreholes (TQ38SW1171, TW38SW2101 and TW38SW2102) located within 100m to 200m to the west of the site. It is noted that during the first trial pitting phase, a CGL engineer visited site to better understand existing site constraints and to observe the ground and groundwater conditions encountered in the trial pits.

Relevant BGS boreholes, together with mark-ups of the two trial pitting phases completed on site, are presented in Appendix B.

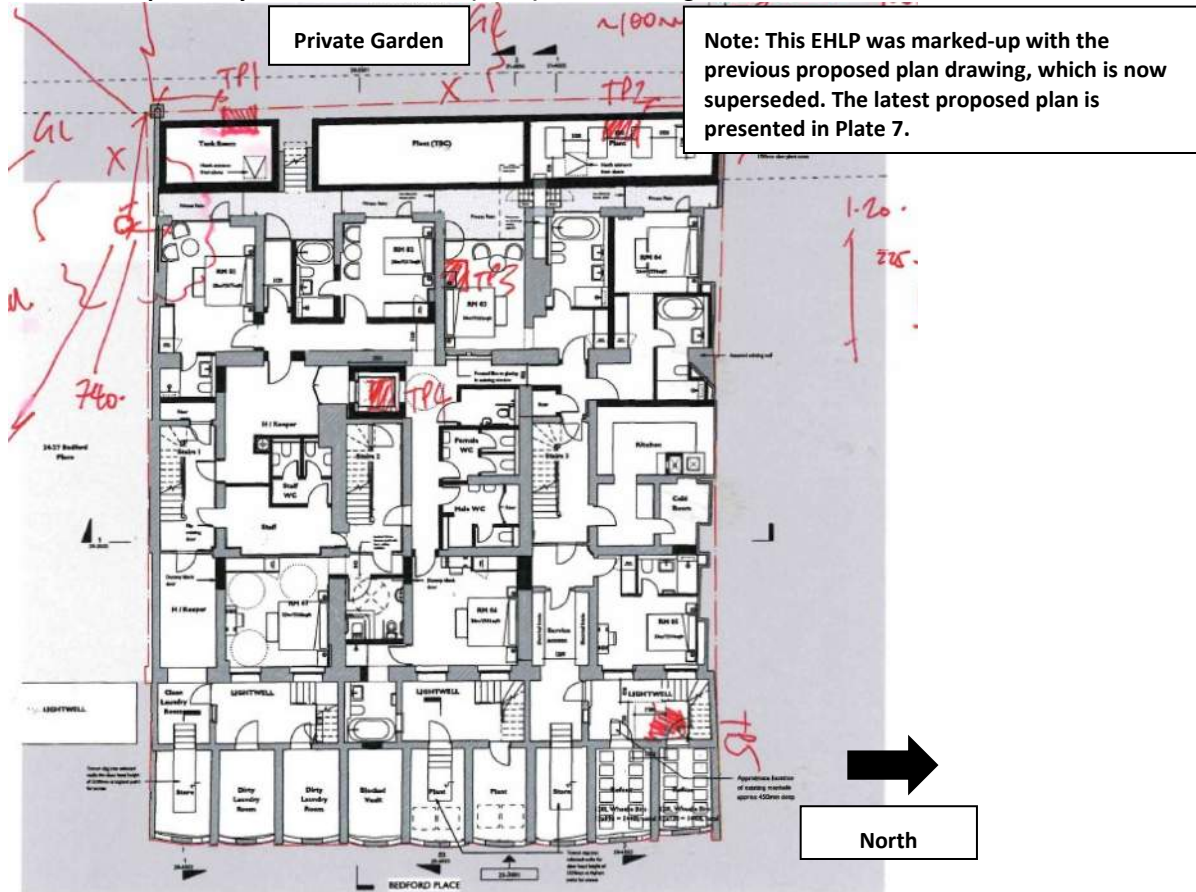
### **3.2.2 Phase 1 – Trial Pits**

As shown in Plate 14 below, 5no Trial Pits (TP) were completed during phase 1 of the trial pitting works undertaken on site. The following is noted:

-  TP1 and TP2 are external trial pits excavated within the raised land areas at the rear of the existing building against the existing private garden boundary wall to the west. The underside of the existing private garden boundary wall footing was encountered at depths ranging between 450mm and 820mm (+0.78mACL to +1.15mACL), founded on mostly dry granular slightly clayey Made Ground;
-  TP3 to TP5 encountered the underside of the existing building's footings at depths ranging between 450mm to 700mm below the existing corridor level (-0.7mACL to -0.45mACL), founded on dry reworked Made Ground (TP3), dry natural gravelly sand (TP4) and/or wet clayey gravels (TP5);
-  It is CGL's opinion that natural Lynch Hill Gravels were encountered within TP4 at circa 0.6m below the existing basement level. The soils encountered in the rest of the pits were logged as Made Ground/reworked clay/gravels;


Groundwater was not encountered during the excavation of the trial pits, and soils were generally observed to be dry and/or slightly moist, except for in TP5. However, it is CGL’s opinion that the wet soils encountered in TP5 may be as a result of a minor localised leak in an existing drain, rather than the presence of a shallow groundwater body (additional details regarding the potential shallow groundwater body present within the Lynch Hill Gravels is discussed in Section 3.2.4).


**Plate 14. Exploratory Hole Location Plan (EHL) – Trial Pitting Phase 1**






### 3.2.3 Phase 2 – Trial Pits

As shown in Plate 15 below, 4no Trial Pits (TP) were completed during phase 2 of the trial pitting works undertaken on site. The following is noted:

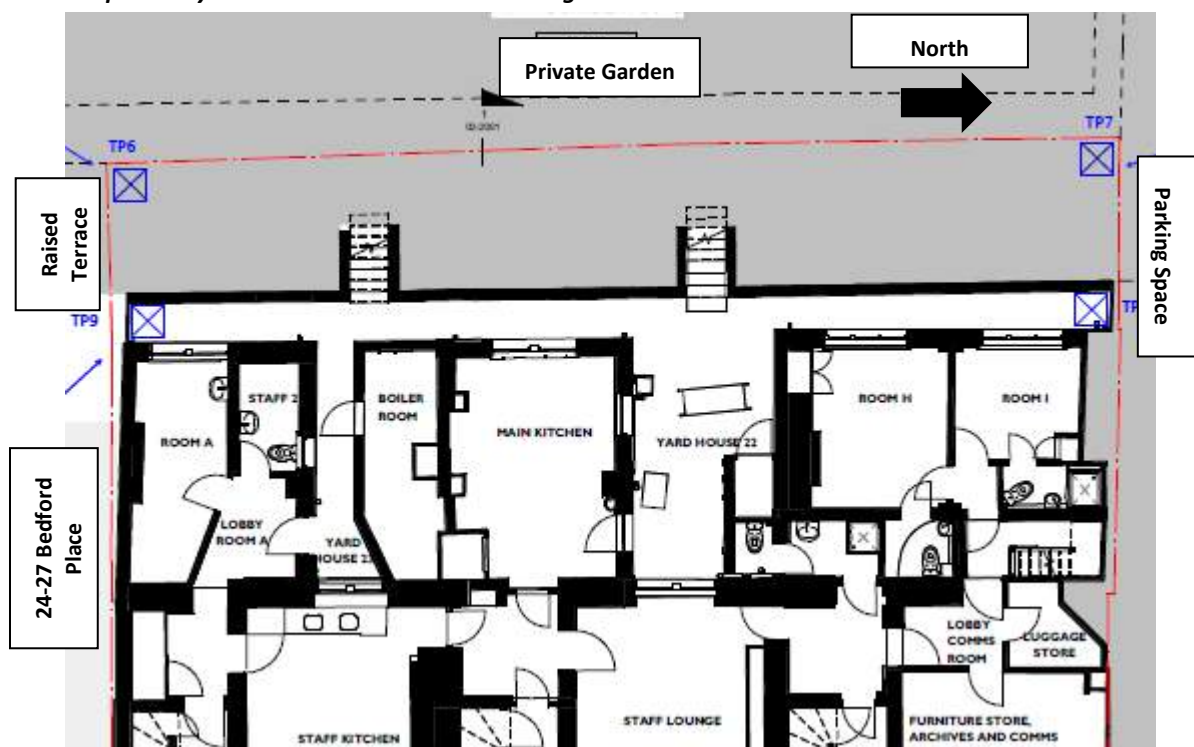
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No groundwater was encountered in any of the pits and the soils encountered were generally logged as moist reworked clay and/or dry granular Made Ground
- 

TP6 and TP7 are external trial pits excavated within the raised land areas against the rear garden wall and both party wall boundary walls, respectively, while TP8 and TP9 are external trial pits excavated within the corridor area against the rear wall of the existing building and both party wall boundaries, respectively.

-  The depth of the private garden wall ranged between 600mm and 750mm below raised ground level (+0.795mACL and +0.98mACL); while the depth of the existing building’s rear wall ranged between 600mm and 750mm below corridor level (-0.75mACL and -0.60mACL).
-  The depth of the boundary party wall to the south (22 Bedford Place) was found to be 630mm below corridor level (-0.63mACL) and there was no presence/sign of any root system/zone from the neighbouring tree; and,
-  The depth of the boundary party wall to the north (existing parking space) was found to be 560mm below corridor level (-0.56mACL);

**Plate 15. Exploratory Hole Location Plan – Trial Pitting Phase 2**



### 3.2.4 BGS Boreholes

The available information from boreholes TQ38SW1171, TW38SW2101 and TW38SW2102 indicates variable Made Ground is present in the local area, which is proven to be underlain by Lynch Hill Gravels and London Clay at depth. A summary of the recorded ground conditions from the current ground investigation is presented in Table 1 below.

**Table 1. Summary of stratigraphy**

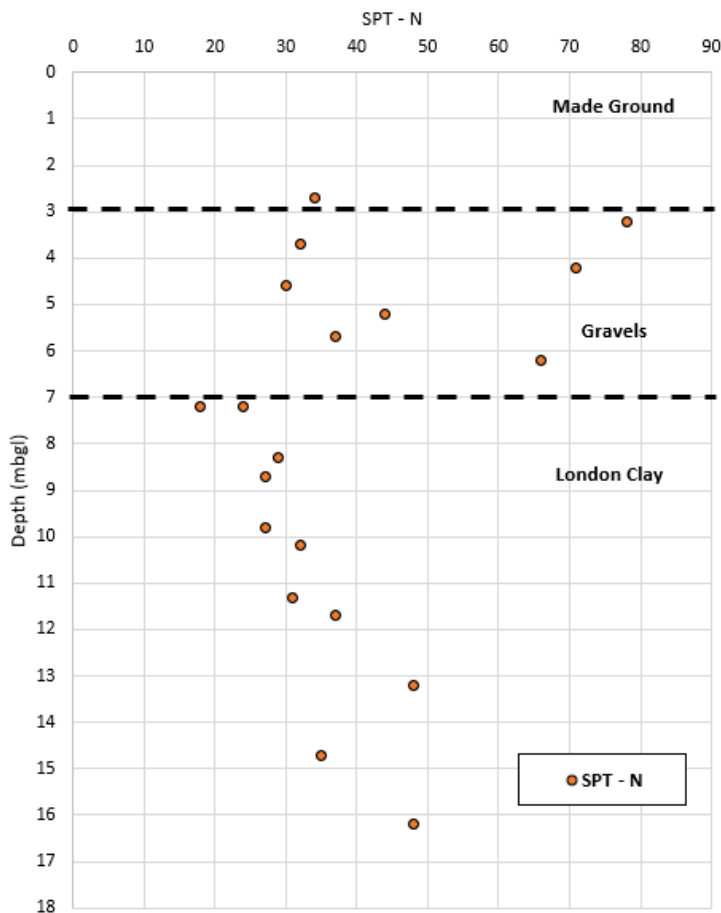
Strata	Depth to strata top mbgl <sup>a</sup>	Thickness (m)
Soft becoming firm sandy CLAY and/or very loose to medium dense SAND becoming dense sandy and very clayey GRAVELS. [MADE GROUND]	0	2.60 to 4.20
Medium dense to dense very gravelly SAND, becoming dense to very dense sandy GRAVELS with depth. [LYNCH HILL GRAVELS - GRANULAR]	2.60 to 4.20	4.00 to 12.00
Stiff mottled CLAY [LONDON CLAY - COHESIVE]	6.20 to 7.40	Proven to 17.7mbgl

**Notes:**

a. mbgl – metres below ground level


In-situ SPT testing was carried out at regular intervals in the boreholes reviewed, which are displayed in the plot presented in Plate 16.

**Plate 16. SPT – N vs Depth (mbgl)**




The following groundwater remarks were made:

 In TQ38SW1171, groundwater was present at 4.7mbgl within the Lynch Hill Gravels;






 TW38SW2101 was dry; however, water flowed into the hole overnight and rose to 9.6mbgl (within the London Clay); and,



 In TW38SW2102, a water strike was recorded at 5.7mbgl that rose to 4.6mbgl (within the Lynch Hill Gravels); however, it dried over night.

### 3.3 Summary

The following is concluded:

-  The site is anticipated to be underlain by a variable thickness of Made Ground, which directly overlies potentially water bearing gravels and London Clay at depth. However, the excavation works are not anticipated to reach the groundwater body below the site and therefore, the proposed works will not impact the potential water bearing gravels.
-  The portion of the brick boundary wall constructed within the raised land area will be underpinned to enable the construction of the proposed plant rooms (see Plate 7), given that the proposed formation level of the excavation will be below its existing foundation level. However, it is noted that there is no sensitive building/infrastructure directly behind this portion of the boundary wall (parking space and private garden) and thus, the impact of the proposed works is not considered to be critical provided that any underpinning and/or temporary works will be completed with high-level workmanship and following standard good practices and recommendations by a competent and experienced contractor;
-  The portion of the brick boundary wall within the corridor level is founded at or below the proposed formation level of the excavation; and thus, this portion of the boundary wall will not be undermined by the proposed works;
-  The closest neighbouring buildings are remote to the area where the plant rooms will be constructed and as such, these are not anticipated to be impacted by the relatively minor net loadings associated with the proposed works, which are very localised and limited in extent and depth; and,
-  In trial pits TP6 and TP9, there was no sign/presence of any substantial root zone and therefore, it is possible that the root zone of the existing tree present at 24-27 Bedford Place has not encroached into the rear of 21 – 23 Bedford Place. Additionally, the proposed plant rooms are proposed to be circa 3.75m away from the boundary wall to the south; and therefore, the works are not anticipated to be detrimental to the existing tree and its associated root zone.

## 4. SCREENING ASSESSMENT – STAGE 1

### 4.1 Introduction

CGL has carried out a screening process based on Camden’s Planning Guidelines (CPG), Stage 1. Relevant questions for the site and proposed development are presented below. Appropriate responses are provided where there is no requirement for further investigation and assessment.

### 4.2 Subterranean (Groundwater) Flow

This section answers questions relating to groundwater flow.

**Table 2. Subterranean (Groundwater) Flow**

Question	Response	Action Required
1a. Is the site located directly above an aquifer?	Yes.  The site is underlain by the Made Ground and the Lynch Hill Gravels. The gravels are a Secondary A Aquifer.  However, the excavation works are not anticipated to reach the groundwater body below the site and therefore, the proposed works will not impact the potential water bearing gravels.	None
1b. Will the proposed basement extend beneath the water table surface?	No.  Records from the BGS indicate that the groundwater may be present within the Lynch Hill Gravels, with the shallowest level encountered at circa 4.6mbgl.  Given that the formation level of the proposed excavation works will be above this depth, the plant rooms are anticipated to extend above any groundwater.	None
2. Is the site within 100m of a watercourse, well, or potential spring line?	No.  There are no neighbouring local water features within 100m. The lost river Fleet is circa 160m away from the site to the north-east.	None
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No.	None
4. Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	No.  The area of the proposed plant rooms is already covered by two raised land areas that are partially concreted. Additionally, it is understood that a drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding with the incorporation of Sustainable Drainage Systems (SUDS) as required appropriate.	None
5. As part of site drainage, will more surface water than at present be discharged to ground (e.g. via soakaways and/or SUDS)?	Not anticipated; however, to be confirmed by others	None
6. Is the lowest point of the proposed excavation close to, or lower than, the mean water level in any local pond or spring lines?	No.  There are no evidence of ponds or spring lines in close proximity of the site.	None

To summarise, the risk of flooding due to groundwater and surface water is unlikely and very low on site. The proposed plant rooms are not expected to encounter groundwater during excavation. In the event of minor seepage encountered, during excavation works, it is anticipated that this can be controlled locally by conventional sump pumping.

The area of the proposed plant rooms is already covered by two raised land areas that are partially concreted. It is also understood that a drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding.

Thus, further qualitative assessments of impact of the proposed works in the subterranean groundwater regime is not deemed necessary for this BIA.

### 4.3 Slope & Land Stability

This section answers questions relating to site topography, trees, neighbouring infrastructure and potential ground movements associated with basement development.

**Table 3. Slope/Land Stability**

<b>Question</b>	<b>Response</b>	<b>Action Required</b>
1. Does the site include slopes, natural or manmade, greater than about 1 in 8?	No.  In a wider context, the site is located within a relatively flat area in the London Borough of Camden.	None
2. Will the proposed re-profiling of the landscaping at site change slopes at the property boundary to greater than about 1 in 8?	No.	None
3. Does the development neighbour land including railway cuttings and the like with a slope greater than about 1 in 8?	No.	None
4. Is the site within a wider hillside setting in which the general slope is greater than about 1 in 8?	No.	None
5. Is the London Clay the shallowest stratum on site?	No.  The London Clay is overlain by Made Ground and dense to very dense gravels.	None
6. Will any trees be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?	No.  A few shrubs present on the edges of the raised land areas will likely be removed; however, there are no trees present on site.  A single tree is present adjacent to the proposed development at 24-27 Bedford Place, which is not anticipated to be removed and/or impacted by the proposed works.	None

Question	Response	Action Required
7. Is there a history of shrink/swell subsidence in the local area and/or evidence of such at the site?	Yes.  However, given that the excavation works will not reach the natural soils, subsidence due to shrink/swell is not anticipated on site. There is also no evidence of the above on site.  Net loadings that may generate ground movements are anticipated to be negligible.	None
8. Is the site within 100m of a watercourse or a potential spring line?	No.  There are no neighbouring local water features within 100m. The lost river Fleet is circa 160m away from the site to the north-east.	None
9. Is the site within an area of previously worked ground?	No.  Made Ground was observed in the trial pits.  As discussed in Section 3.2.4, based on local records, Made Ground thicknesses in the area range between 2.6m to 4.2m.	None
10. Is the site within an aquifer?	Yes.  The site is underlain by the Lynch Hill Gravels. The gravels are a Secondary A Aquifer.  However, the excavation works are not anticipated to reach the groundwater body below the site and therefore, the proposed works will not impact the potential water bearing gravels.	None
11. Is the site within 50m of the Hampstead Heath ponds?	No.	None
12. Is the site within 5m of a highway or pedestrian right of way?	No.	None
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes.  The formation level of the proposed plant rooms will be below the foundation level of part of the existing boundary wall (see in blue in Plate 7). However, there is no critical building/infrastructure directly behind this portion of the boundary wall.  The closest neighbouring buildings are remote and will be founded below the formation level of the plant rooms.	None
14. Is the site over (or within the exclusion zone of) any tunnels?	No.	None.

In summary, the site is located within a relatively flat area in the London Borough of Camden. The proposed plant rooms are not expected to encounter groundwater during excavation. However, in the event of minor seepage encountered, during excavation works, it is anticipated that this can be controlled locally by conventional sump pumping.

The formation level of the proposed excavation will be below the foundation of part of the boundary wall; therefore, along this section, underpinning works will be required (see in blue in Plate 7).

However, it is noted that there is no sensitive building/infrastructure directly behind this section of the boundary wall (private garden to the west and parking space to the north), and thus, these underpinning works are not considered to be critical. The closest neighbouring building (24 – 27 Bedford Place) is remote from the proposed plant rooms and based on observations made on site, it does also have an existing basement, which will be founded at or below the formation level of the proposed plant rooms. Therefore, 24 - 27 is not anticipated to be impacted by the relatively minor net loadings associated with the proposed works, which are very localised and limited in extent and depth.

Thus, further consideration of any ground movement analysis and impact assessment is not deemed necessary as part of this BIA.

#### 4.4 Surface Flow and Flooding

This section answers questions relating to the impact of the proposed development on existing drainage, permeable surfacing and flood risk.

**Table 4. Surface Flow and Flooding**

<b>Question</b>	<b>Response</b>	<b>Action Required</b>
1. As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off), be materially changed from the existing route?	Not anticipated, to be confirmed by others.	None
2. Will the proposed development result in a change in the proportion of hard surfaced/paved external areas?	No.  The area of the proposed plant rooms is already covered by two raised land areas that are partially concreted and the existing corridor. Additionally, it is understood that a drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding with the incorporation of Sustainable Drainage Systems (SUDS) as required appropriate.	None
3. Will the proposed basement result in a change to the profile of the inflows of surface water being received by adjacent properties or downstream watercourses?	Not anticipated, to be confirmed by others.  It is understood that inflows of surface water run-off will be managed effectively and sustainably through design to ensure that flood risk is not increased elsewhere.	None.
4. Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No.  The construction of the plant rooms will remove existing Made Ground and potential existing contaminants from the site and as such the surface water quality is not anticipated to be adversely impacted	None
5. Is the site in an area known to be at risk from surface flooding or is it at risk from flooding because the proposed basement is below the static water level of a nearby surface water feature?	No.  See Section 3.1.2.	None

The proposed development is not anticipated to have an impact on surface water flow and flooding. A drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding with the incorporation of Sustainable Drainage Systems (SUDS) as required/appropriate. As discussed in Section 3.1.2, the site is not at risk of flooding due to surface water, rivers, sea, reservoirs and/or groundwater.

Thus, additional analysis and impact assessments are not deemed necessary within this BIA.

## 5. SCOPE OF PROPOSED ASSESSMENT - STAGE 2

This section addresses Stage 2 as per Camden Guidance and summarises the scope of additional assessments required, if applicable. On the basis of the screening exercise within Section 4, it is considered that no additional investigation and/or impact assessments are required for the site and proposed works, as presented in Table 5.








**Table 5. Summary of Screening and Basement Impact Assessment Requirements**

Item	Description
1.	<p><b>Subterranean (Groundwater) Flow</b></p> <p><b>Action: None Required</b> – The risk of flooding due to groundwater and surface water is unlikely and very low on site. The proposed plant rooms are not expected to encounter groundwater during excavation. In the event of minor seepage encountered, during excavation works, it is anticipated that this can be controlled locally by conventional sump pumping.</p> <p>The area of the proposed plant rooms is already covered by two raised land areas that are partially concreted. It is also understood that a drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding with the incorporation of Sustainable Drainage Systems (SUDS) as required/ appropriate.</p>
2.	<p><b>Slope (Land Stability)</b></p> <p><b>Action: None Required</b> –The site is located within a relatively flat area in the London Borough of Camden. The proposed plant rooms are not expected to encounter groundwater during excavation. However, in the event of minor seepage encountered, during excavation works, it is anticipated that this can be controlled locally by conventional sump pumping.</p> <p>The formation level of the proposed excavation will be below the foundation of part of the boundary wall (see in blue in Plate 7); therefore, along this section, underpinning works will be required. However, it is noted that there is no sensitive building/infrastructure directly behind this section of the boundary wall (private garden to the west and parking space to the north) and thus, these underpinning works are not considered to be critical.</p> <p>The closest neighbouring building (24 – 27 Bedford Place) is remote from the proposed plant rooms and based on observations made on site, it does also have an existing basement, which will be founded at or below the formation level of the proposed plant rooms. Therefore, 24 - 27 is not anticipated to be impacted by the relatively minor net loadings associated with the proposed works, which are very localised and limited in extent and depth.</p>
3.	<p><b>Surface Flow and Flooding</b></p> <p><b>Action: None Required</b> – The proposed development is not anticipated to have an impact on surface water flow and flooding. A drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding. As discussed in Section 3.1.2, the site is not at risk of flooding due to surface water, rivers, sea, reservoirs and/or groundwater.</p>

In light of the above, no further site investigation and/or specific impact assessments is considered necessary for the proposed works.

## 6. NON-TECHNICAL SUMMARY

---

-  The site is anticipated to be underlain by a variable thickness of Made Ground, which directly overlies potentially water bearing gravels and London Clay at depth. However, the excavation works are not anticipated to reach the groundwater body below the site and therefore, the proposed works will not impact the potential water bearing gravels;
-  The risk of flooding from surface water, rivers and the sea is very low to low. It is also noted that the risk of flooding from reservoirs and/or groundwater is unlikely in this area;
-  The proposed development comprises the excavation of the raised land areas down to a formation level of -0.48mACL (480mm below the existing corridor level) to construct two plant rooms at the rear of the existing basement that cover a total area of circa 55m<sup>2</sup>;
-  The proposed plant rooms are not expected to encounter groundwater during excavation. In the event of minor seepage encountered, during excavation works, it is anticipated that this can be controlled locally by conventional sump pumping;
-  The portion of the brick boundary wall constructed within the raised land area will be underpinned to enable the construction of the proposed plant rooms (see Plate 7), given that the proposed formation level of the excavation will be below its existing foundation level. However, it is noted that there is no sensitive building/infrastructure directly behind this portion of the boundary wall (parking space and private garden) and thus, the impact of the underpinning works is not considered to be critical provided that any underpinning and/or temporary works will be completed with high-level workmanship and following standard good practices and recommendations by a competent and experienced contractor;
-  The closest neighbouring building (24 – 27 Bedford Place) is remote from the proposed plant rooms and based on observations made on site, it does also have an existing basement, which will be founded at or below the formation level of the proposed plant rooms. Therefore, 24 - 27 is not anticipated to be impacted by the relatively minor net loadings associated with the proposed works, which are very localised and limited in extent and depth.
-  The proposed development is not anticipated to have an impact on surface water flow and flooding. A drainage strategy will likely be prepared, which will seek to reduce the risk of surface water flooding.



# **APPENDIX A**

*Proposed Development Drawings*



**GENERAL NOTES:**  
 CONTRACTOR TO IMMEDIATELY ADVISE THE CONTRACT ADMINISTRATOR & ARCHITECT OF ANY DISCREPANCIES BETWEEN THE EXISTING SURVEY DRAWINGS AND THE SITE SITUATION IF FOUND TO DIFFER. SHOULD A DISCREPANCY BE IDENTIFIED, THE CONTRACTOR IS TO REQUEST VERIFICATION FROM THE CONTRACT ADMINISTRATOR BY WAY OF INSTRUCTION PRIOR TO PROCEEDING WITH THE ASSOCIATED WORK OR ORDERING OF MATERIALS.

WHERE THERE IS A PERCEIVED DISCREPANCY BETWEEN THE ARCHITECT'S P1 & E / STRUCTURAL, ENG. DRAWINGS, SPECIFICATIONS AND SCHEDULES, THOSE OF THE ARCHITECT ARE TO TAKE PRECEDENCE. THE CONTRACTOR IS TO SEEK CLARIFICATION FROM THE CONTRACT ADMINISTRATOR PRIOR TO UNDERTAKING THE WORKS OR ASSOCIATED WORKS.

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DO NOT SCALE DRAWING.

FIGURED DIMENSIONS TO BE WORKED IN ALL CASES. ALL DIMS ARE IN mm UNLESS OTHERWISE STATED.

ALL SUPPLIED TIMBER AND TIMBER BASED PRODUCTS SHALL CARRY THE FOREST STEWARDSHIP COUNCIL'S (FSC) TRADEMARK OR OTHER LABEL FROM AN EQUIVALENT INTERNATIONALLY RECOGNISED, GLOBALLY APPLICABLE, INDEPENDENT CERTIFICATION SYSTEM FOR GOOD FOREST MANAGEMENT, ACCEPTABLE TO THE ARCHITECT. CHAIN OF CUSTODY DOCUMENTATION IS TO BE PROVIDED PRIOR TO ANY WORKS PROCEEDING AND IS TO BE AVAILABLE FOR INSPECTION ON REQUEST BY THE ARCHITECT (WHERE INDEPENDENTLY CERTIFIED TIMBER STOCKS ARE NOT AVAILABLE, TIMBER AND WOOD PRODUCTS MAY BE SOURCED FROM SUPPLIERS THAT HAVE ADOPTED A FORMAL ENVIRONMENTAL PURCHASING POLICY, AND CAN PROVIDE CREDIBLE EVIDENCE OF A COMMITMENT TO THAT POLICY).

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, STRUCTURAL ENGINEERS, M&E ENGINEERS AND OTHER CONTRACT DOCUMENTS.

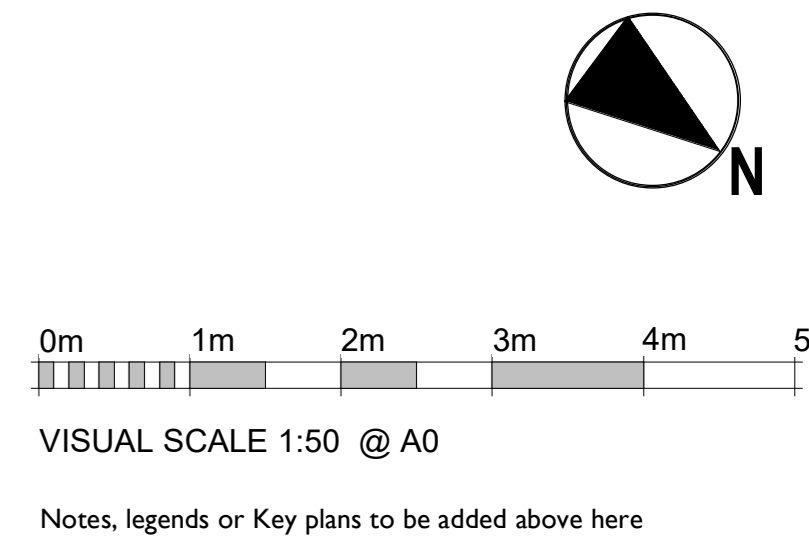
**TOTAL KEYS ON LEVEL B1: 7**  
**TOTAL KEYS: 42**

**SKIRTING:**  
 ALL NON-ORIGINAL/DAMAGED SKIRTING TO BE REMOVED  
 REPLACE LIKE FOR LIKE WHERE ORIGINAL SKIRTINGS ARE DAMAGED AND CANNOT BE MADE GOOD

**BASEMENT**  
 RETAIN/MATCH EXISTING PROFILED TIMBER SKIRTING TO FOH ROOMS + SQUARE SET SKIRTING TO BOTH ROOMS  
 (GROUND)  
 RETAIN/MATCH EXISTING PRIMARY ORDER TIMBER SKIRTING TO STREETSIDE ROOMS + RETAIN/MATCH SECONDARY ORDER TIMBER SKIRTING TO PARKSIDE ROOMS  
 L1  
 RETAIN/MATCH EXISTING PRIMARY ORDER TIMBER SKIRTING TO STREET-SIDE ROOMS + RETAIN/MATCH SECONDARY ORDER TIMBER SKIRTING TO PARKSIDE ROOMS  
 L2  
 RETAIN/MATCH PROFILED TIMBER SKIRTING TO ALL ROOMS GENERALLY  
 L3  
 RETAIN/MATCH SQUARE SET TIMBER SKIRTING TO ALL ROOMS GENERALLY

**DADOS:**  
 ORIGINAL DADOS TO BE RETAINED GENERALLY  
 REPLACE LIKE FOR LIKE WHERE ORIGINAL DADOS HAVE BEEN DAMAGED AND CANNOT BE MADE GOOD

**CORNICES:**  
 REFER TO CORNICE STRATEGY ON PROPOSED RCP  
 ALL NON-ORIGINAL/DAMAGED CORNICES TO BE REMOVED - REPLACE LIKE FOR LIKE WHERE ORIGINAL CORNICES ARE DAMAGED AND CANNOT BE MADE GOOD



Notes, legends or Key plans to be added above here

DATE	REV	BY	DESCRIPTION
27.10.23	01	PL	ISSUED FOR PLANNING

**SPPARC**

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 BEDFORD SQUARE  
 LONDON WC1B 3HB  
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 F +44 (0) 20 7334 9930  
 W www.spparcstudio.com

Client: **FIRMDALE HOTELS**

Job Title: **2205 - Bedford Place Hotel**

Drawing Title: **Proposed Basement Level Floor Plan**

Drawing Number & Revision: **2205-SPP-BP-B1-DR-A-20-1001**

Scale	Date Amended	Amended By	Revision
As indicated	27.10.23	PL	P01
Checked	Date Created	Drawn By	SUITABILITY
BR	01.04.22	LH	S2

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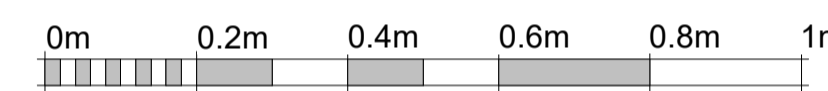
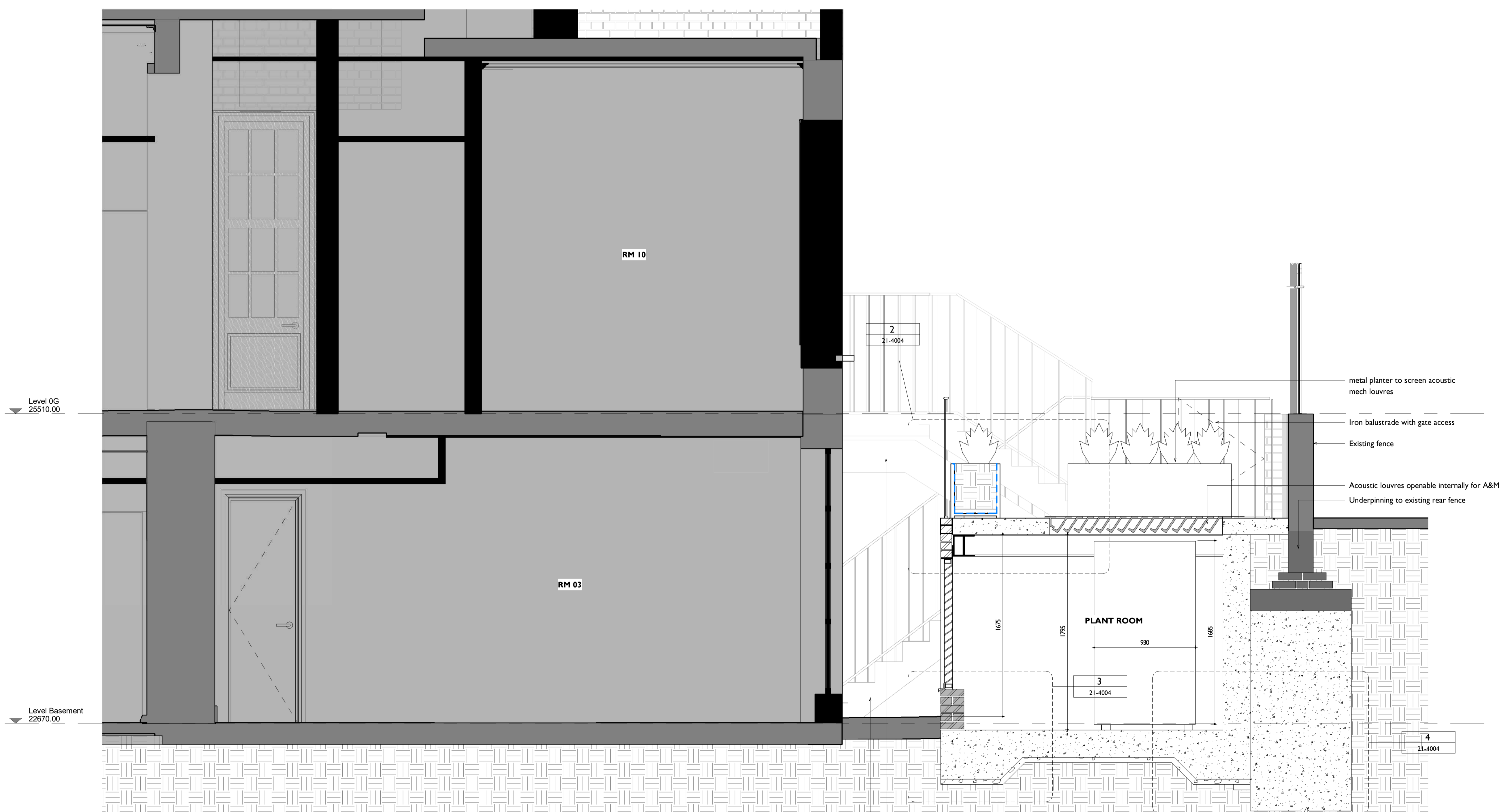
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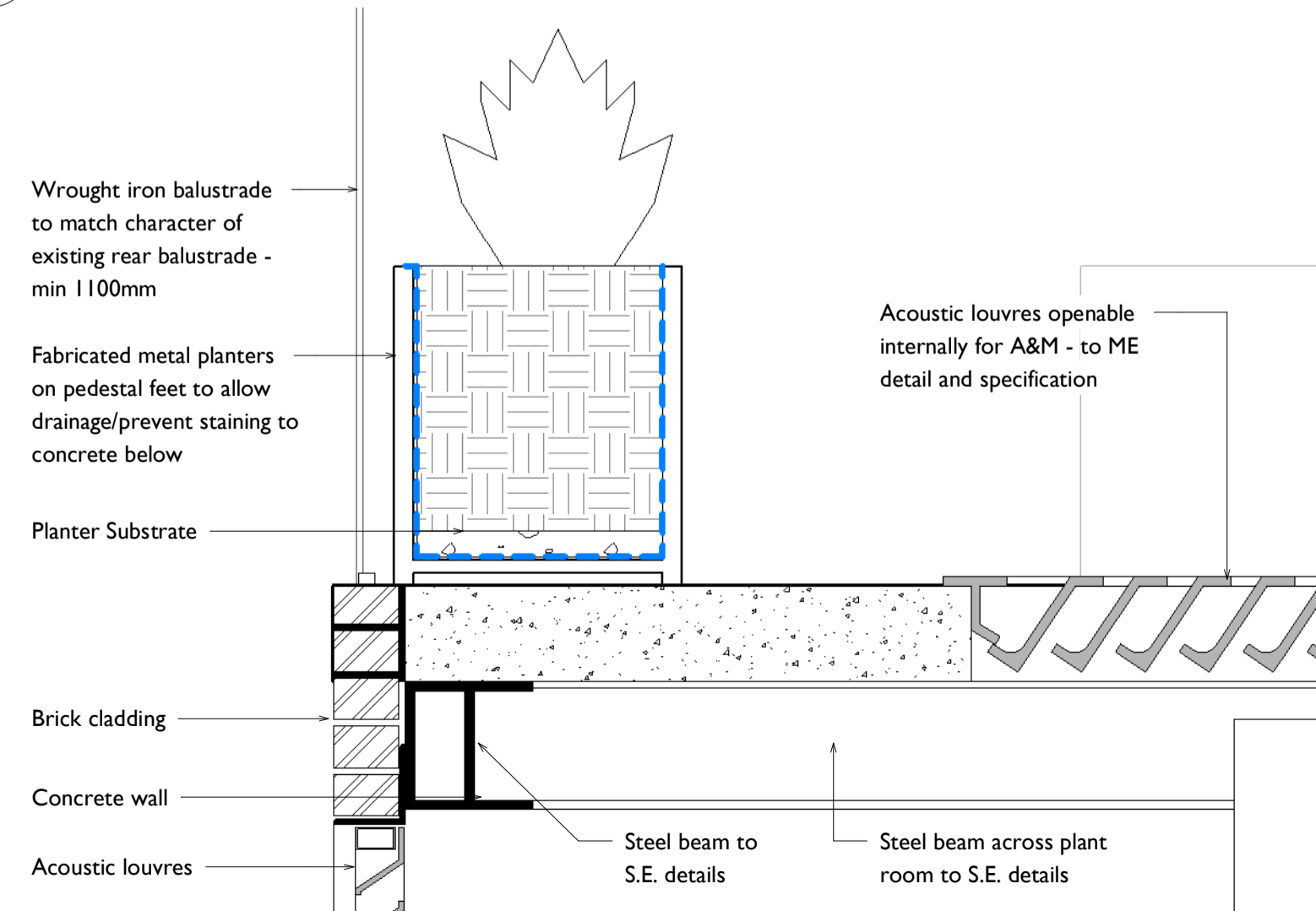
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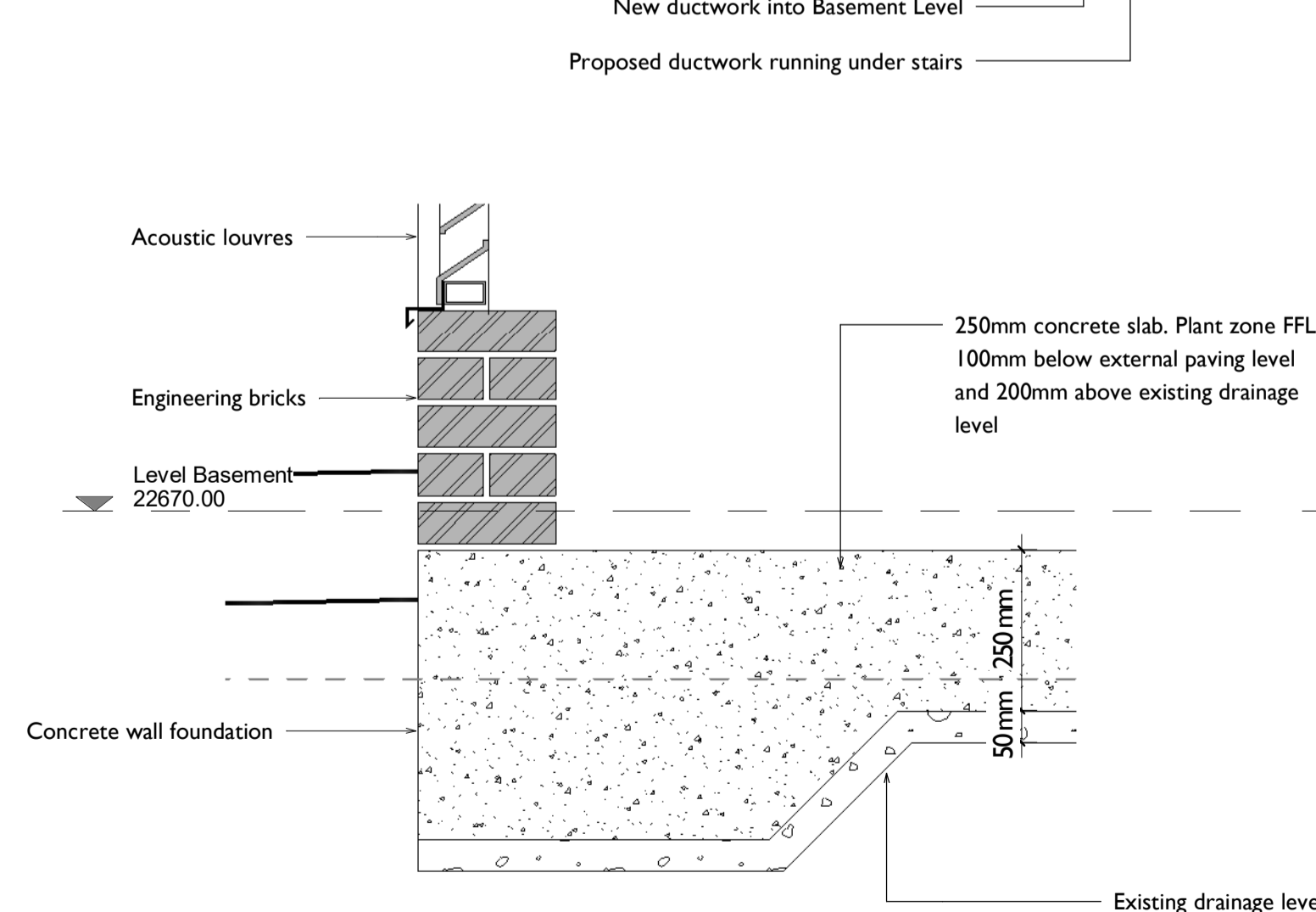
VISUAL SCALE 1:10 @ A1

Notes legends or Key plans to be added above here

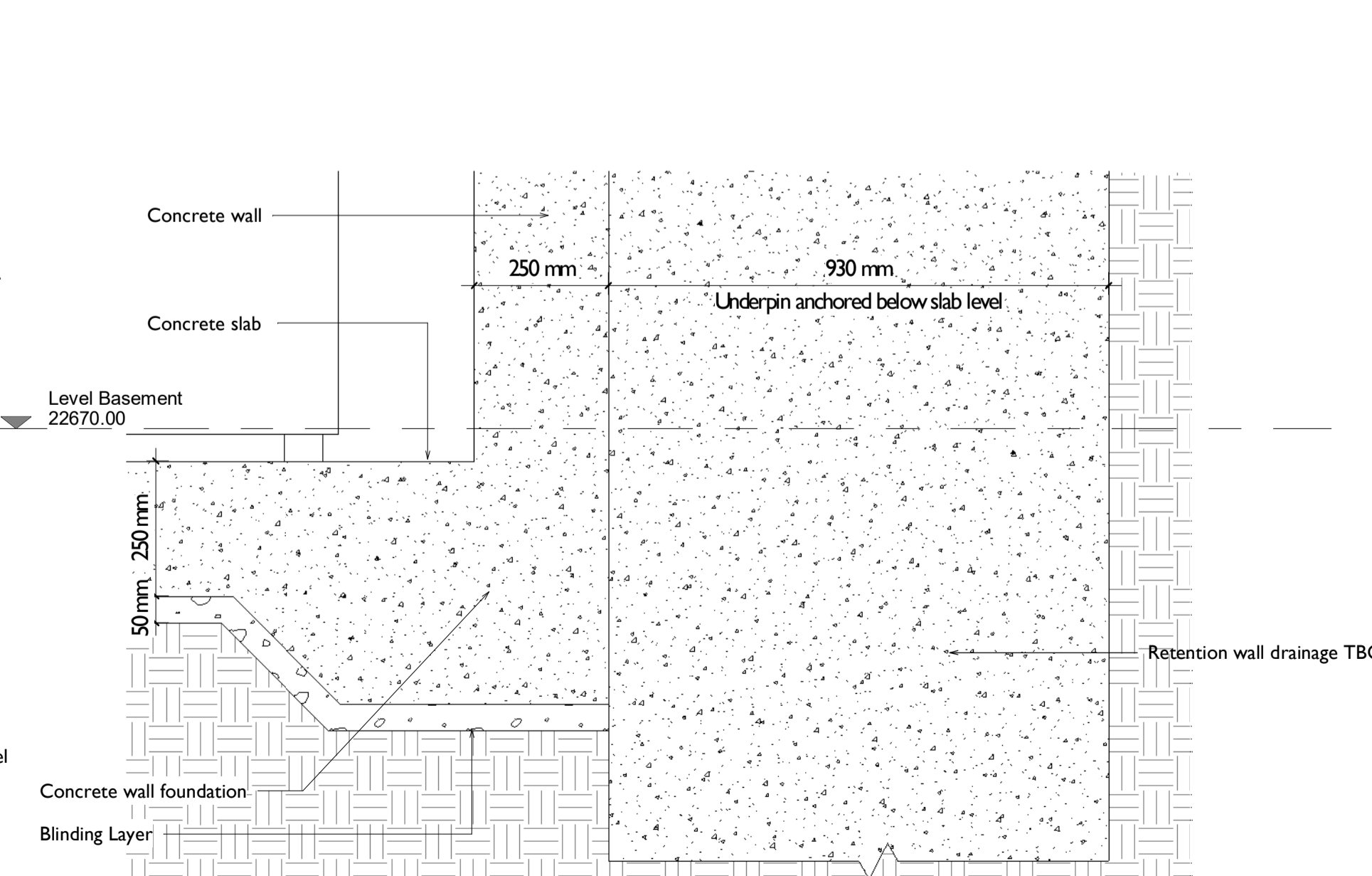
**1 WIP SECTION - REAR PLANT ROOM**  
20-1001 1 : 20



**2 WIP SECTION - REAR PLANT ROOM DETAIL 01**  
21-4004 1 : 10



**3 WIP SECTION - REAR PLANT ROOM DETAIL 02**  
21-4004 1 : 10



**4 WIP SECTION - REAR PLANT ROOM DETAIL 03**  
21-4004 1 : 10

DATE	REV	PL	ISSUED FOR PLANNING
27.10.23	P01	PL	ISSUED FOR PLANNING

# SPPARC

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F +44 (0) 20 7534 9930  
W www.spparcstudio.com

Client  
**FIRMDALE HOTELS**

Job Title  
**2205 - Bedford Place Hotel**

Drawing Title  
**Rear Plant Room Section 01**

Drawing Number & Revision  
**2205-SPP-BP-ZZ-DR-A-21-4004**

Scale	Date Amended	Amended By	Revision
As Indicated	27.10.23	PL	P01
Checked	Date Created	Drawn By	SUITABILITY
TM	05.10.23	PL	S2

## **APPENDIX B**

*Relevant BGS Boreholes & Trial Pitting Mark-Ups*

REAR GARDEN WALL



PARTY WALL

PARTY WALL



GARDEN WALL

HOTEL REAR WALL

LIGHTWELL

TP6

TP9

02-2002

PRIVATE GARDEN ABOVE

02-3002

02-2001

NOTE: FOR TP7, THE COVER COULD NOT BE COMPLETELY REMOVED WHILST JS ON SITE. PHOTOS ARE TAKEN BELOW COVER AND SO ANGLES ARE LIMITED

PARTY WALL

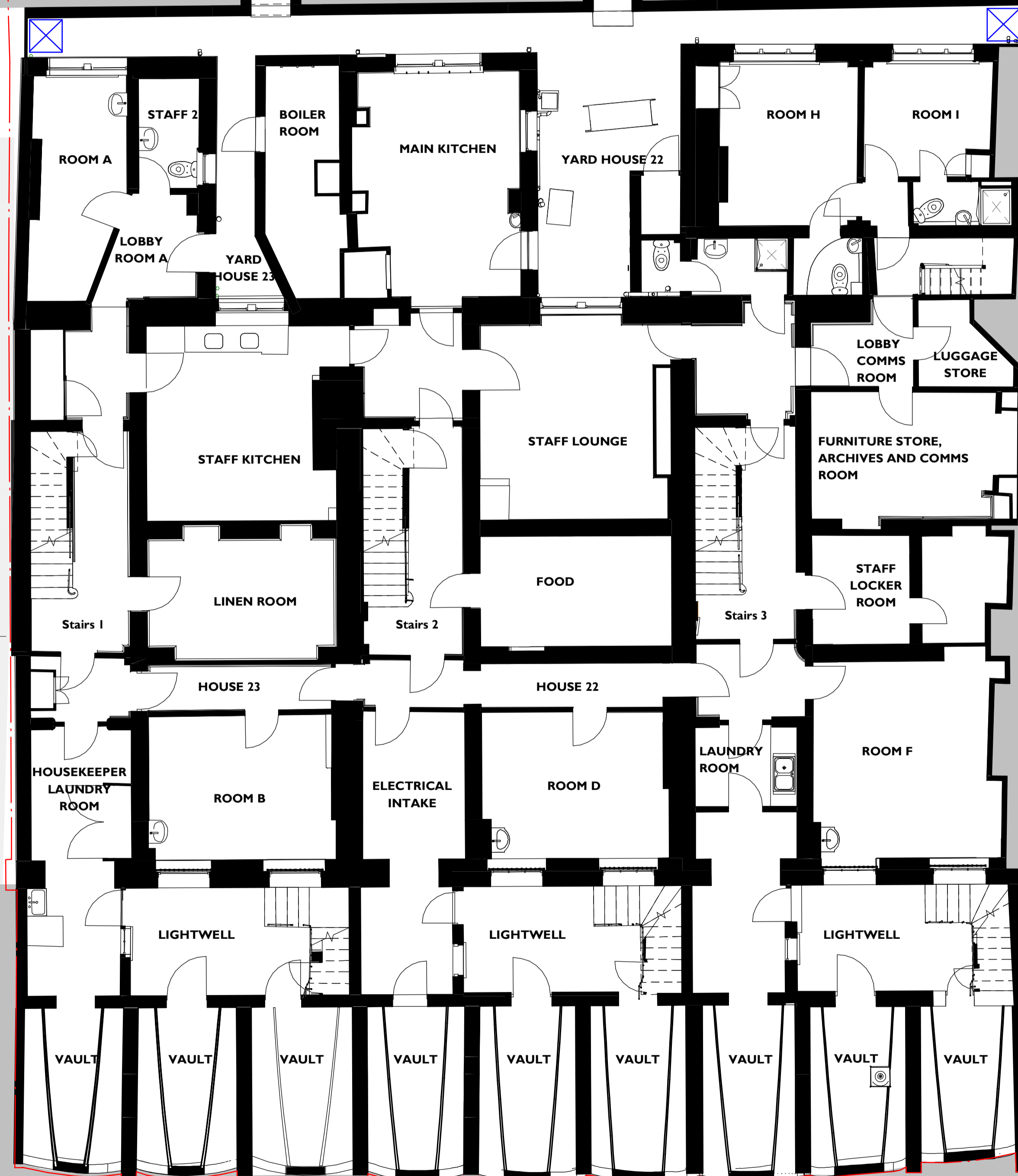


GARDEN WALL

GARDEN WALL



HOTEL REAR WALL



BEDFORD PLACE

02-3001

GENERAL NOTES

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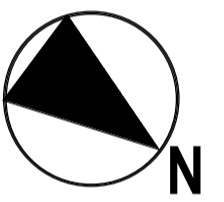
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1.5m 3m 4.5m 6m 7.5m

SCALE 1:75 @ A1

Legends or Key plans to be added above here

P01	PL	ISSUED FOR PLANNING
REV	BY	DESCRIPTION

# SPPARC

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F +44 (0) 20 7534 9930  
W www.spparcstudio.com

Client  
**FIRMDALE HOTELS**

Job Title  
**2205 - Bedford Place Hotel**

Drawing Title  
**Existing Basement Level Floor Plan**

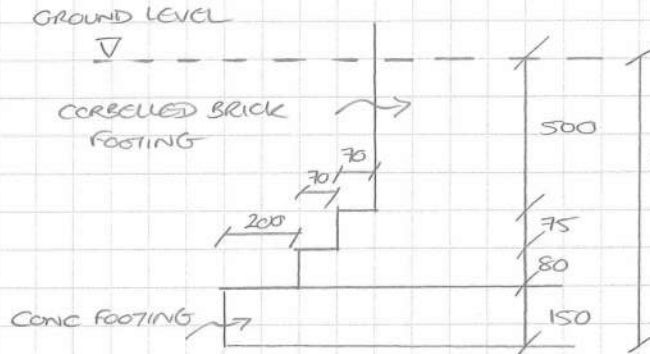
Drawing Number & Revision  
**2205-SPP-BP-0B-DR-A-02-1000**

Scale	Date Amended	Amended By	Revision
1:75	03.08.23	PL	P01
Checked	Date Created	Drawn By	SUITABILITY
TM	02.02.23	PL	S2

TRIAL PIT TP6

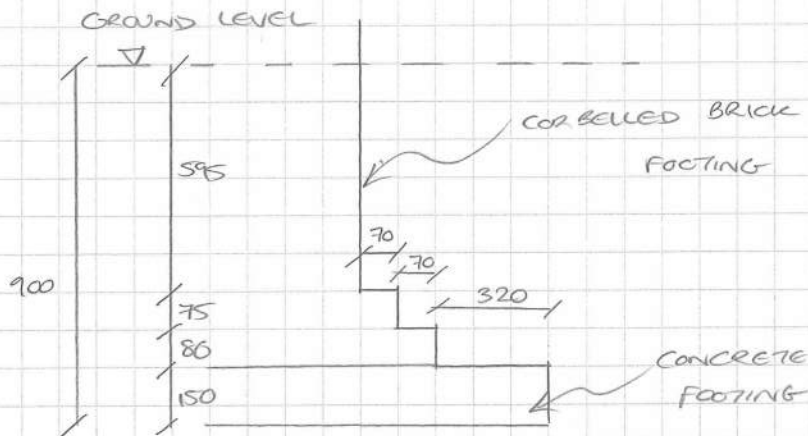
ALL DIMS ARE IN MM

SECTION THROUGH REAR GARDEN WALL



SOIL AT BASE LOOKS  
TO BE DAMP CLAY  
— NO WATER IN  
EXCAVATION

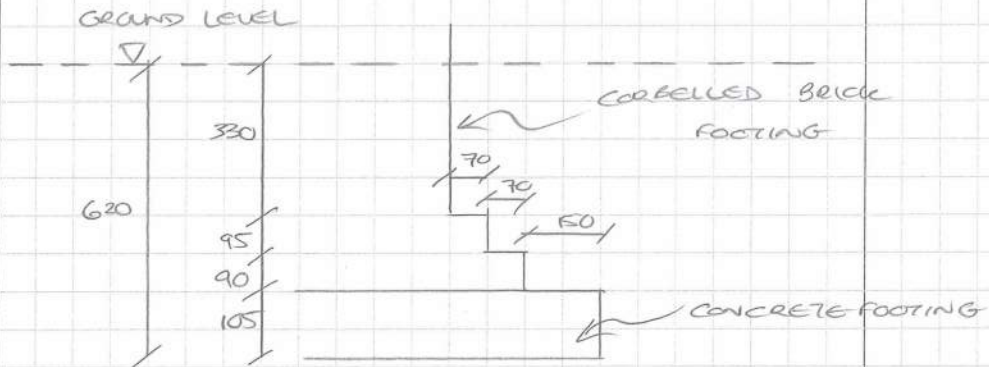
SECTION THROUGH PARTY WALL



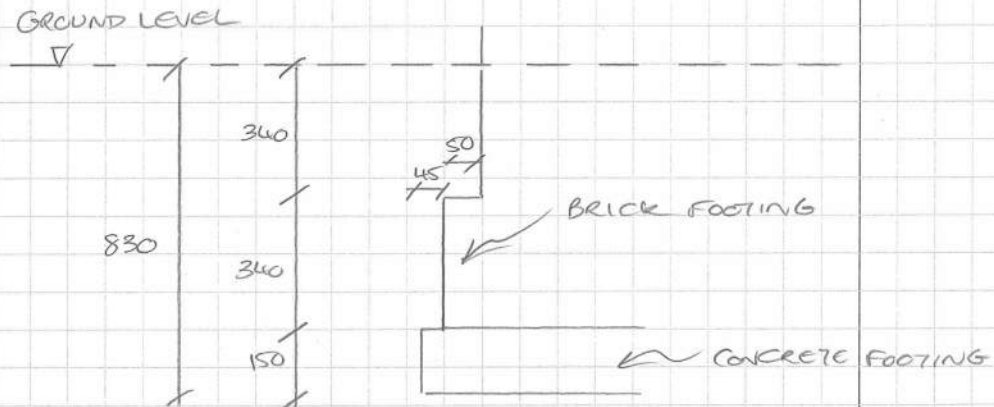
TRIAL PIT TP7

ALL DIMENSIONS ARE  
IN MM

SECTION THROUGH GARDEN WALL



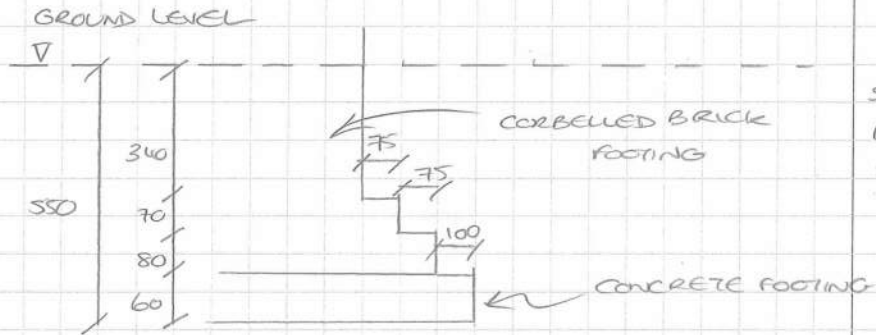
SECTION THROUGH PARTY WALL



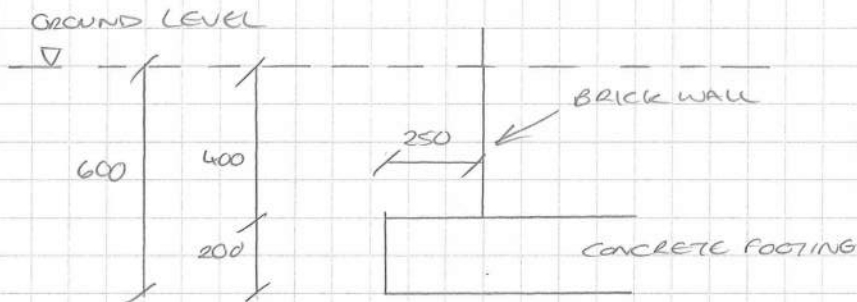
TRIAL PIT TP 8

ALL DIMENSIONS ARE  
IN MM

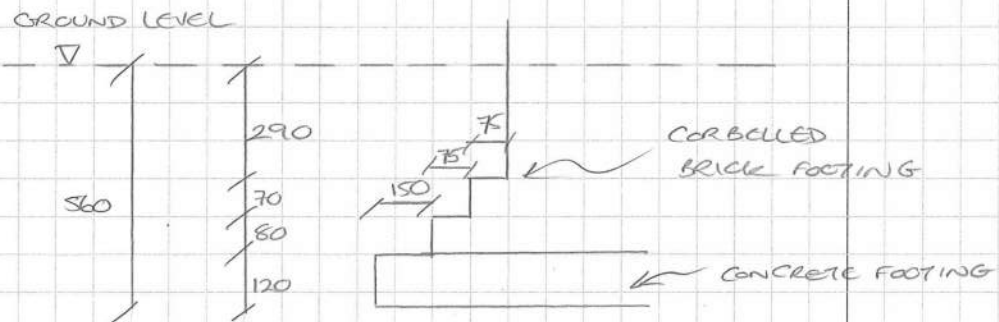
SECTION THROUGH GARDEN WALL



SECTION THROUGH HOTEL REAR WALL



SECTION THROUGH PARTY WALL

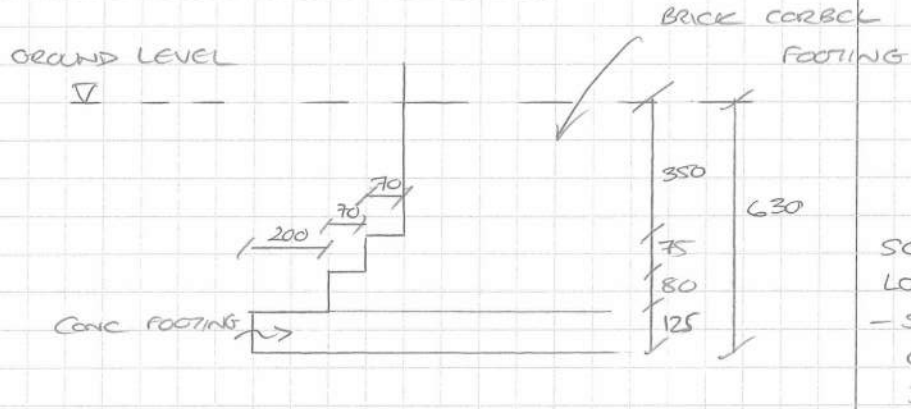




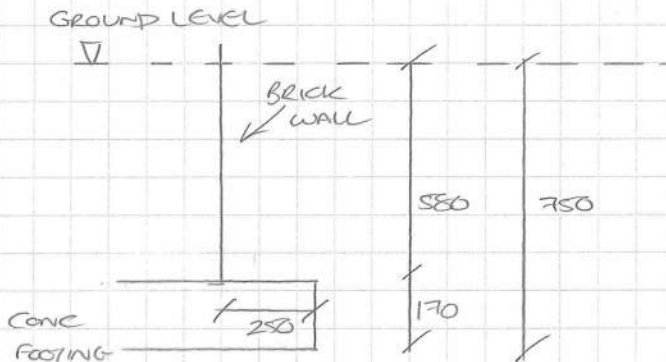
TRIAL PIT TP 9

ALL DIMS ARE MM

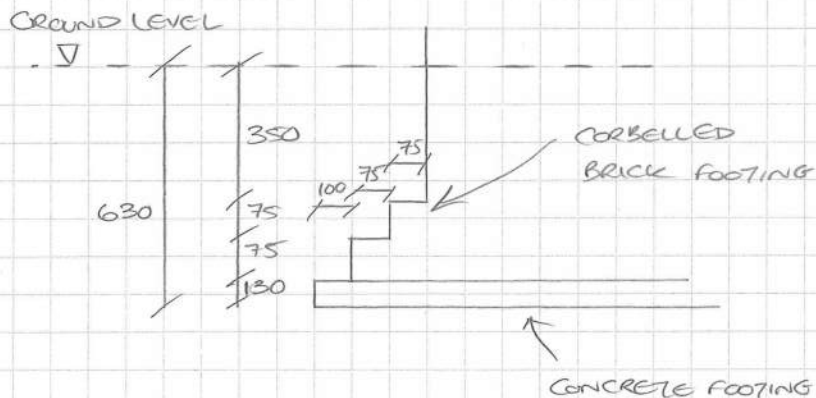
SECTION THROUGH GARDEN WALL



SECTION THROUGH HOTEL REAR WALL



SECTION THROUGH PARTY WALL





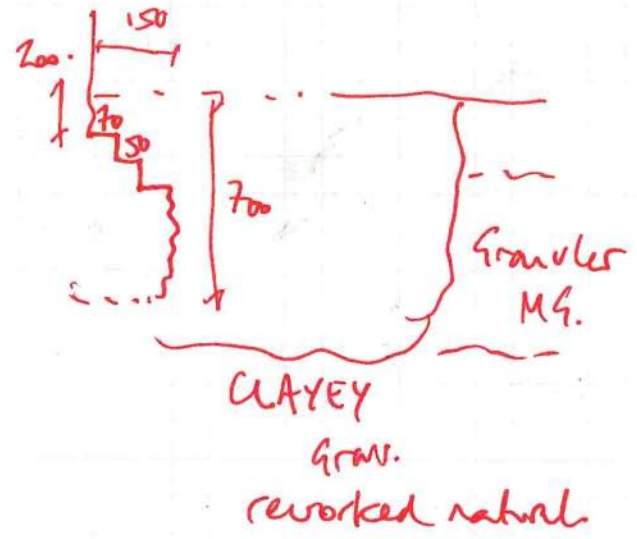
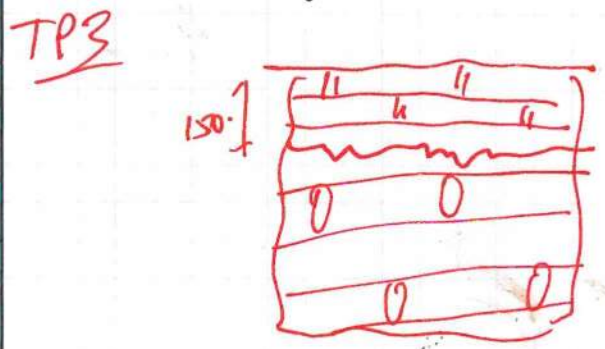
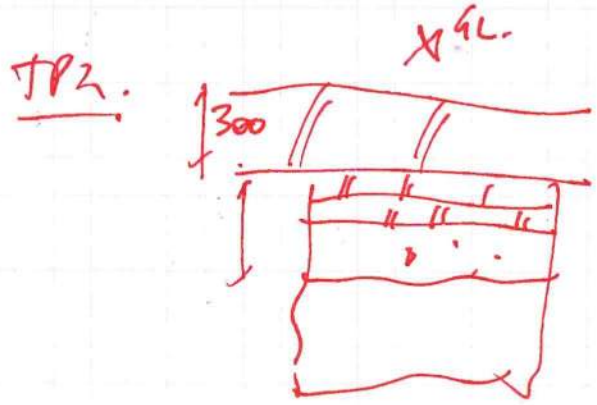
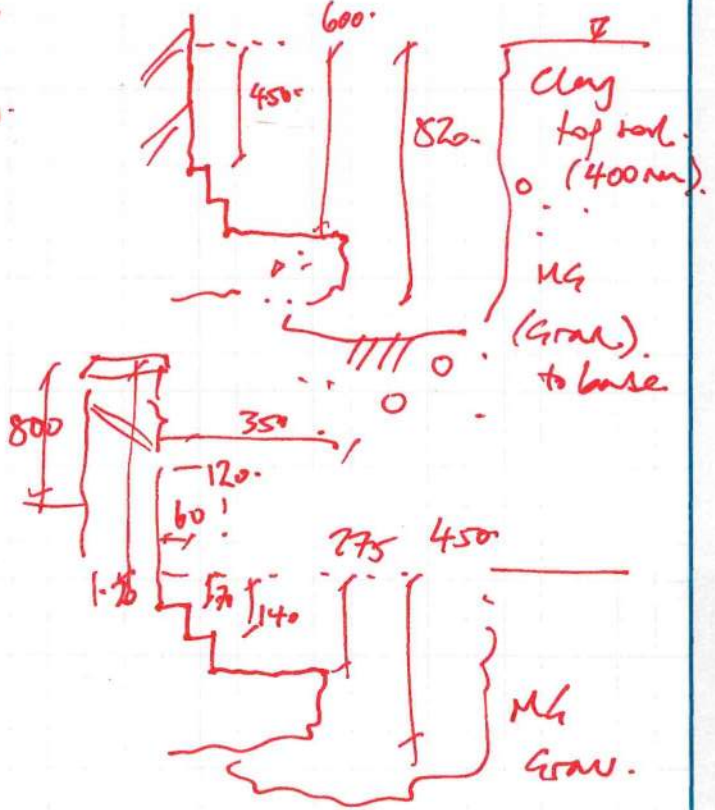
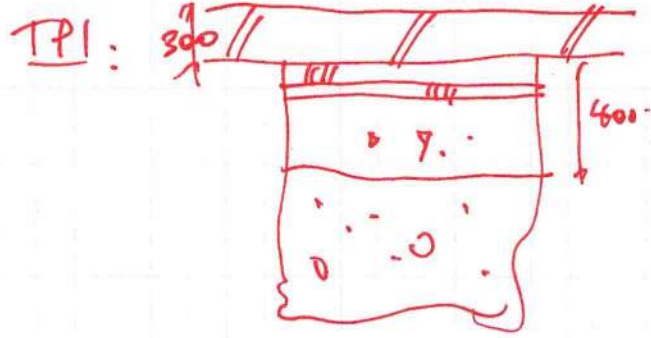
# W O R K S H E E T



Client	
Job Title	
Drawing Ref No.	Job No.
Date	Quality Plan
Made by	Checked by

SHEET No. \_\_\_\_\_

- Soil is being removed
- NO 'excavation' below ex. wall formation
- drainage 300mm cover below ex. C&F slab  
X 300mm Lev.

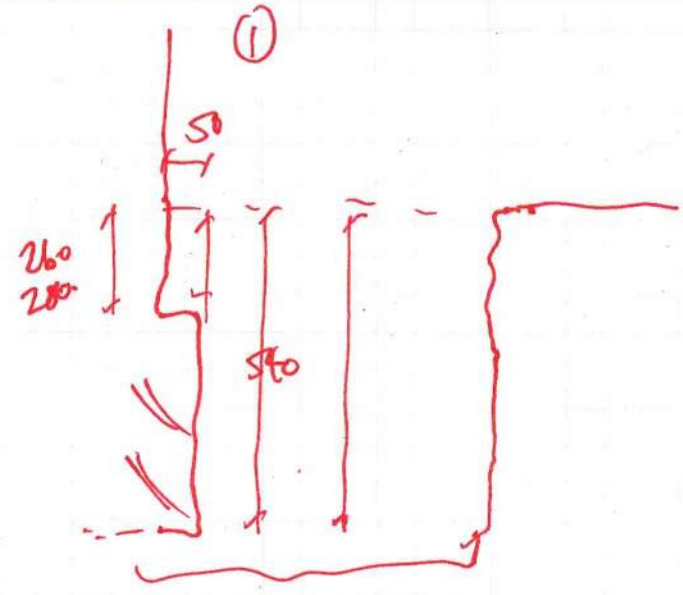
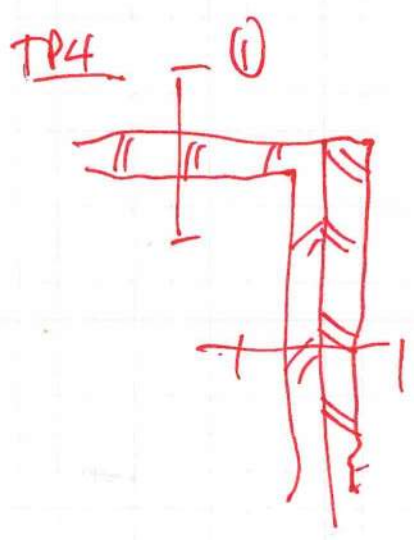


# W O R K S H E E T

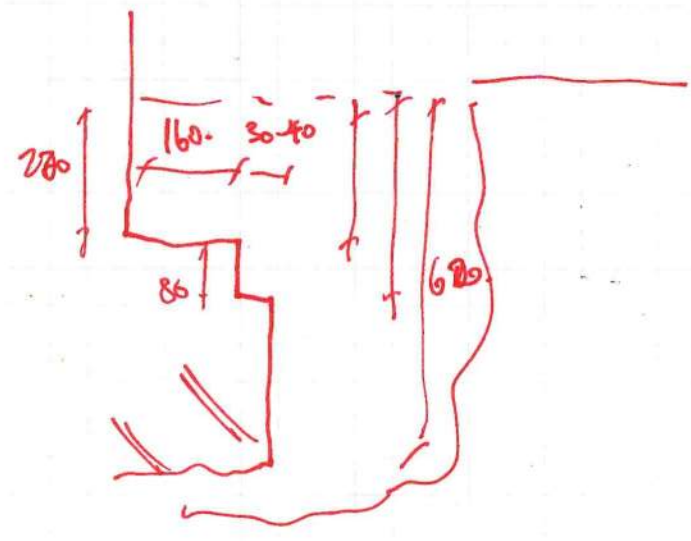


Client	
Job Title	
Drawing Ref No.	Job No.
Date	Quality Plan
Made by	Checked by

SHEET No.



(2)



Clayey ground to base  
Gravelly SAND - Natural!

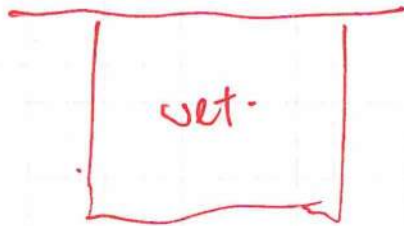
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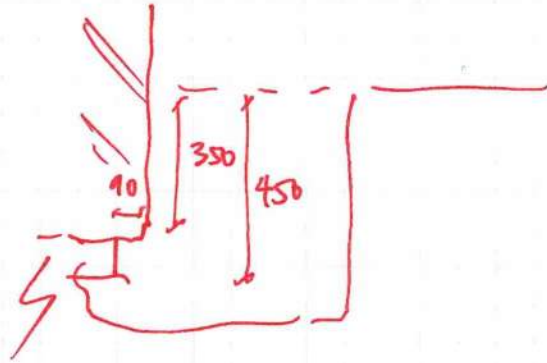
Client	
Job Title	
Drawing Ref No.	Job No.
Date	Quality Plan
Made by	Checked by

SHEET No.
-----------

TP5 - vault wall



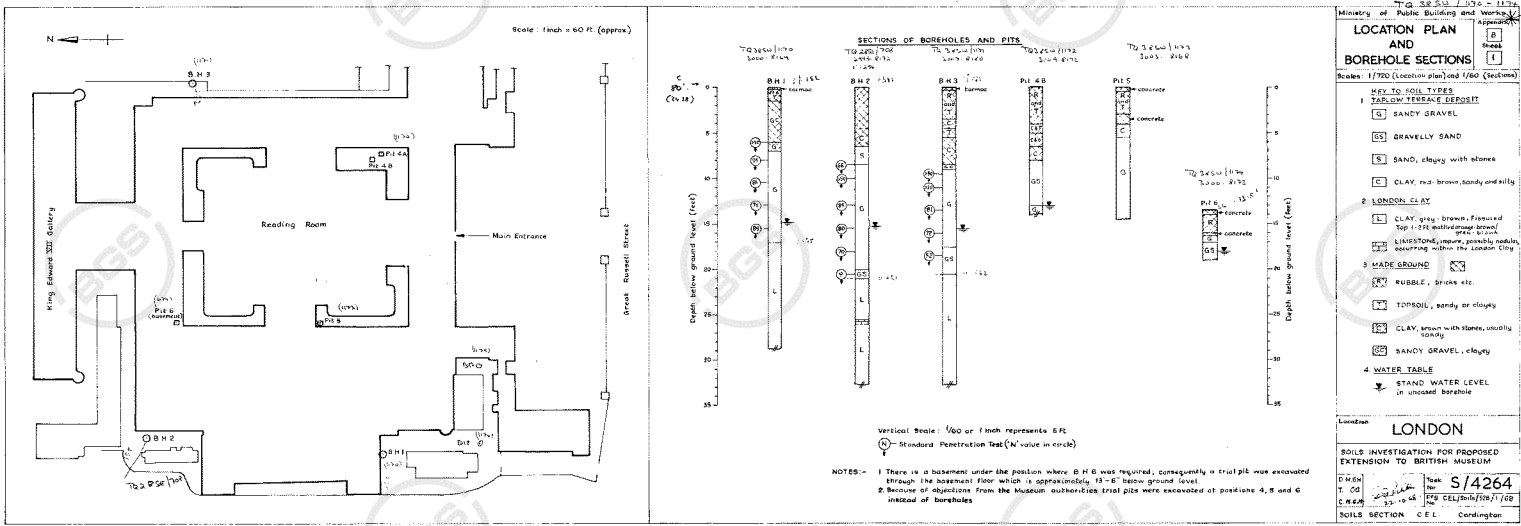
Changing grounds.  
vat!



Each SAND ~100mm



<b>MINISTRY OF PUBLIC BUILDING AND WORKS</b> <b>SOILS SECTION, C.E.L. Cardington.</b>		Task No. <b>4264</b>	Appendix Sheet No. <b>A 3</b>		
Location <b>LONDON</b>	Task Soils Investigation for Proposed Extension to British Museum				
<b>BOREHOLE LOG</b> <b>TQ38SW 1171</b>		<b>CEL/Soils/528/4/68</b>			
Borehole No. <b>3</b> Ground Level <b>---</b> Date <b>September, 1968</b>	<b>3007.8180</b>	<b>Key.</b> Disturbed Sample <b>•</b> Undisturbed Sample <b>I</b> Ground Water Level <b>≡</b> Standard Penetration Test <b>⌵ (N)</b> (N value in circle)			
Description of Strata	Legend	Sample	Depth	O.D.	Remarks
			3' GL		
<del>Terrace</del> RUBBLE mixed with TOPSOIL	R and T		3'6"		PAVEMENT OF ROADWAY AND MADE GROUND
CLAY; brown, sandy, with stones	C	I	4'6"		
TOPSOIL; with stones and brick fragments	T		5'6"		
CLAY; brown with some topsoil present	C	I	8'6"		
SANDY GRAVEL; clayey with topsoil content	GC	•	9'0"		
SANDY GRAVEL; slightly silty / clayey	G	⌵ (50)	10'0"		TAPLOW TERRACE GRAVEL  ≡ 15'6"
SANDY GRAVEL	G	⌵ (81)			
		⌵ (72)			
		⌵ (52)	17'6"		
GRAVELLY SAND; driller recorded bands of sandy clay between 19'0" and 20'0"	GS	•	20'6"		LONDON CLAY
CLAY; mottled orange-brown/grey-brown, stones present	L	I	21'6"		
CLAY; stiff, grey-brown fissured	L	I			
		I	32'9"		



. NR 3001 8185

Description of Strata		Legend	Depth (m)	O.D. Level (m)	Samples/Tests			Remarks	
					Depth (m)	Type	Test		
TARMACADAM		[Cross-hatch pattern]	0-1	20.0					
CONCRETE		[Cross-hatch pattern]	0-5	25.6				Water added to assist boring	
SAND, Very loose, very clayey, with much brick and concrete rubble etc. becoming more clayey and silty with depth  (MADE GROUND)		[Cross-hatch pattern]			0.8-1.2	B			
					1.2-1.7	D			
					1.2-2.2				
					1.7-2.2	D	E	= 1, 1, 4, 12: blows per 150mm	
					1.2-2.2	B			
CLAY, Firm, orange brown, with a trace of sand, contains some weak iron-pan and frequent ancient root traces, becoming slightly gravelly at base		[Horizontal lines]			2.4	B			
					2.7-3.2	U	25		
GRAVEL, Very dense, brownish yellow, medium and coarse with some coarse sand, gravel content is sub-angular flint.  Becoming very sandy with a little clay over lower 0.5m or so  (TERRACE GRAVEL)		[Circular pattern]			3.2	D			
					3.2-3.7	D	S	N=78	
					3.7	B			
					4.2-4.7	D	S	N=71	
					4.2-4.7	B			
CLAY, Firm, brown rapidly becoming brownish grey, silty, fissured, blocky and laminated, contains occasional scattered small pockets of dark grey fine sand  (WEATHERED LONDON CLAY)		[Horizontal lines]			5.2-5.7	D	S	N=44	
					5.2-5.7	B			
CLAY, Firm, brown rapidly becoming brownish grey, silty, fissured, blocky and laminated, contains occasional scattered small pockets of dark grey fine sand  (WEATHERED LONDON CLAY)		[Horizontal lines]			6.2-6.7	D	S	N=66	
					6.2-6.7	B			
CLAY, Firm, brown rapidly becoming brownish grey, silty, fissured, blocky and laminated, contains occasional scattered small pockets of dark grey fine sand  (LONDON CLAY)		[Horizontal lines]			7.2-7.7	D	S	N=18	
					7.2-7.7	B			
					7.7	B			
					7.8-8.3	U	14		
					8.3	D			
CLAY, Stiff to very stiff, grey, silty with a little sand, fissured, contains frequent small pockets of grey fine sand & occasional sulphate traces  (LONDON CLAY)		[Horizontal lines]			8.3-8.8	D	S	N=29	
					8.3-8.8	B			
					9.0	W			
		[Horizontal lines]			9.3-9.8	U	30		
					9.8	D			

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<b>Civil Engineering Laboratory</b> <b>Building Research Establishment</b>		<span style="font-size: 1.2em;">TQ 38 SW</span> <span style="font-size: 1.2em;">2101</span>		Figure <b>A</b>			
		BOREHOLE No: <b>1</b>		Sheet <b>2</b> of <b>2</b>			
Client: <i>Property Services Agency/DCES</i>		Location: <b>BRITISH MUSEUM</b>					
Investigation No: <b>FGE/2443</b>		Project: <b>Japanese Gallery</b>					
<b>BOREHOLE LOG</b>							
Date: <b>As sheet No. 1</b>		Equipment: <b>As sheet No. 1</b>					
Ground Level: (m. AOD)		Diameter:					
Logged By:							
Scale: <b>1:50</b>							
Description of Strata	Legend	Depth (m)	O.D. Level (m)	Samples/Tests			Remarks
				Depth (m)	Type	Test	
CLAY - as previous sheet	x	(10.0)	(16.1)	9.8-10.3	D	S	Borehole dry in evening, water entered overnight and rose to 9.6m below G.L. Borehole dried out during remainder of boring
CLAY, Very stiff, grey, silty with some sand, fissured and laminated, contains frequent small pockets and thin layers of light grey fine sand and occasional nodules (up to 25mm) of pyrites, becoming slightly more sandy with depth <b>(LONDON CLAY)</b>	x	10.6	15.5	9.8-10.3	B	N=27	
	x			10.8-11.3	U	42	
	x			11.3	D		
	x			11.3-11.8	D	S	
	x			11.3-11.8	B	N=31	
	x			12.3-12.8	U	46	
	x			12.8	D		
End of borehole							

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		Civil Engineering Laboratory Building Research Establishment		TQ 38 SW 2102		Figure A BOREHOLE No: 2 Sheet 1 of 2	
Client: Property Services Agency/DCES				Location: BRITISH MUSEUM			
Investigation No: FGE/2443				Project: Japanese Gallery			
<b>BOREHOLE LOG</b>							
Date: 31st July - 6th August 1985 Ground Level: 24.9 (approx) (m. AOD) Logged By: D. G. F. Scale: 1:50				Equipment: Light cable percussion boring rig Diameter: 200 mm to 3.2 m BGL 150 mm to base Cased to 7.7 m BGL			
Description of Strata	Legend	Depth (m)	O.D. Level (m)	Samples/Tests			Remarks
				Depth (m)	Type	Test	
TARMACADAM		0.1	24.8				
CONCRETE		0.4	24.5				Water added to assist boring throughout
CLAY, Soft becoming Firm, brown, sandy with some gravel and brick fragments cinders etc. - Void encountered at about 2m BGL				1.0-1.2	B		
				1.2-1.7	U	20	
				1.7	D		
				1.7-2.2	D	5	2 blows only - cavity encountered
GRAVEL, Dense, yellow brown, sandy and very clayey  (MADE GROUND)				2.2-2.2	B		
				2.2-2.7	B		
CONCRETE - Chiselled for 6 1/2 hours to penetrate				2.7-3.2	D	5	SPT probably hit stone. Blows were: 1, 2, 24, 7 per 75mm.
				3.1	B	N°34	
				3.5	B		
				3.7	B		
GRAVEL, Dense, very sandy with some clay, contains concrete, rock & metallic fragments  (MADE GROUND)				3.7-4.2	D	5	
				3.9	D		
SAND, Medium dense, brownish yellow, medium and coarse, very gravelly				4.2-4.2	B	N°32	
				4.0	B		
				4.6-5.1	D	5	
GRAVEL, Dense, brownish yellow, medium and fine sub-angular flint, very sandy with a little clay, becoming more sandy with depth  (TERRACE GRAVEL)				4.6-5.1	B	N°30	
				5.2-5.2	B		
				5.4	B		
CLAY, Firm, becoming very stiff, brown rapidly becoming brownish grey, fissured, silty, with occasional small pockets of blackish sand and scattered small sulphate crystals  (WEATHERED LONDON CLAY)				5.7-6.2	D	5	
				6.2	B	N°37	
				6.5	B		
				6.6-6.6	B		
CLAY - see following sheet  (LONDON CLAY)				6.7-7.2	U	54	
				7.2	D		
				7.2-7.7	D	5	
				7.2-7.7	B	N°24	Water in borehole standing at 5.7m in evening, rose to 4.6m below GL overnight. Borehole dried out during remainder of boring
				8.2-8.7	U	69	
				8.7	D		
				8.7-9.2	D	5	
				8.7-9.2	B	N°27	
				9.3-9.3			
				(10.0)			
				(14.9)			
				9.7-10.2	U	46	

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	Civil Engineering Laboratory Building Research Establishment	TQ 38 SW 2102	Figure A					
			BOREHOLE No: 2 Sheet 2 of 2					
Client: Property Services Agency/DCES		Location: BRITISH MUSEUM						
Investigation No: FGE / 2443		Project: Japanese Museum						
<b>BOREHOLE LOG</b>								
Date: As sheet No. 1		Equipment: As sheet No. 1						
Ground Level: (m. AOD)		Diameter: .....						
Logged By:								
Scale: 1:50								
Description of Strata	Legend	Depth (m)	O.D. Level (m)	Samples/Tests			Remarks	
				Depth (m)	Type	Test		
<p>CLAY, Very stiff becoming hard, greenish grey, fissured and poorly laminated, silty and fairly sandy, with frequent thin lenses and layers of green fine sand and traces of pyrites</p> <hr/> <p>CLAY, Hard, grey, fissured, laminated in places, silty and variably sandy with occasional thin layers of white silt/sand, contains shelly fossil trace and nodular pyrites up to 50mm across, becoming less sandy with depth</p> <p style="text-align: center;">(LONDON CLAY)</p>	x	(10.0)	(14.9)	10.2	D			
	x			10.2-10.7	D	S		
	x			10.2-10.7	B	N=32		
	x			11.2-11.7	U	100		
	x			11.7	D			
	x			11.7-12.2	D	S		
	x		12.2	12.7	11.7-12.2	B		N=37
	x			12.7-13.2	U	54		
	x			13.2	D			
	x			13.2-13.7	D	S		
	x			13.2-13.7	B	N=48		
	x			14.2-14.7	U	57		
	x			14.7	D			
	x			14.7-15.2	D	S		
	x			14.7-15.2	B	N=35		
x			15.7-16.2	U	63			
x			16.2	D				
x			16.2-16.7	D	S			
x			16.2-16.7	B	N=48			
x			17.2-17.7	U	70			
x		17.7	7.2	17.7	D			
End of borehole								