

# Fortis Green Tennis Club, Haringey

## Basement Impact Assessment Screening Report



Prepared for Fortis Green LLP

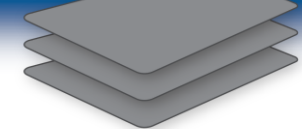
Ref. TAL108

**ABSTRACT:** Basement Impact Assessment Screening Report for a new-build residential development with lower ground floor living, in support of a proposed Planning Application.

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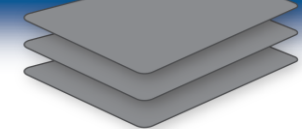
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## EXECUTIVE SUMMARY

Fortis Green LLP is proposing to redevelop the Fortis Green Tennis Club in Haringey to provide a residential development with lower ground floor living and garden space in the southern part of the site and two replacement tennis courts and a clubhouse facility. The proposed development is to include the construction of the residential dwellings with the lower ground level box structure and three storeys above, with associated landscaping. The lower ground level construction will involve excavation being advanced to approximately 2.5m below current site levels in the southern section of the site. The tennis courts and clubhouse do not form part of this screening report. Private residential gardens and dwellings are present on the northern, eastern and western boundaries, with Cherry Tree Wood forming the southern boundary.

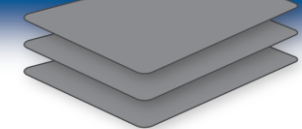
The proposed excavation to create the lower ground floor will result in the local authority requirement to undertake a basement screening assessment to determine potential adverse impacts arising from the construction. The proposed reduced level excavation will occupy a slightly greater footprint than the residential structure due to the reduced level garden areas to the south of the building.

MJP Planning Limited, acting on behalf of Fortis Green LLP, has commissioned Talon Consulting Limited to prepare this Basement Impact Assessment Screening Report in support of an anticipated planning application. This report provides a screening assessment, in line with local authority guidance, which incorporates the findings of a desk-based study and considers anticipated construction methods. In the absence of site-specific ground investigation data, the screening assessment considers potential impact to surface water infiltration and through flow of groundwater. However, the published geology and other readily available sources of information indicate groundwater is not likely to be present below the site and will therefore not be

influenced by the proposed construction. On this basis, impacts on surface waters and groundwater are considered negligible.

In addition, although it is not appropriate to undertake a ground movement assessment and full Basement Impact Assessment at this stage (due to the absence of site-specific data and the early stage of design), supplementary information has been provided within this report in relation to anticipated ground movements and construction related impacts in the form of a preliminary basement impact assessment. It is anticipated that this will be sufficient to address potential construction related concerns assuming that the ground conditions are ultimately confirmed as being in accordance with the published geology. Should the findings of the investigation differ significantly from anticipated conditions, further assessment may be required.

This report has been prepared in support of an anticipated planning submission and to provide information for consideration within the preliminary design.



## 1. INTRODUCTION

Talon Consulting Limited has been commissioned by MJP Planning Limited, acting on behalf of Fortis Green LLP, to prepare this report comprising a screening assessment and preliminary basement impact assessment in support of a planning application for a proposed residential development at Fortis Green Tennis Club, Haringey.

The proposed development is for the creation of a number of dwellings through the construction of new three storey plus lower ground floor level residences in the southern part of the site and reprovision of tennis courts and clubhouse facilities in the central and northern areas. Due to the proposed lower ground floor level excavation, an initial screening assessment is necessary, which has been undertaken in line with planning guidance<sup>1,2,3</sup> issued by various London Boroughs to assess potential impacts from the proposed construction.

This report undertakes the screening process incorporating desk-based data and assesses potential impacts arising from the proposed construction. An intrusive investigation has not yet been undertaken and therefore it is not appropriate to undertake a detailed ground movement assessment at this stage. It is considered that appropriate foundation design and precautions to be taken during construction will adequately mitigate potential movements associated with shallow excavations and the lower ground floor level excavation. The proposed development will be progressed such that it will not adversely affect structural stability of adjacent buildings, property or infrastructure.

Due consideration is also given to other guidance in relation to Basement Impact Assessments for information purposes, including Local Plan Policy LP11 and CPG4, Basements and Lightwells<sup>4</sup>.

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<sup>1</sup> *Draft Basement Development Guidance Note*. Haringey Council Planning Regeneration & Economy, June 2012.

<sup>2</sup> *Lambeth. Design Guide Part 5. Basements*. London Borough of Lambeth, March 2022.

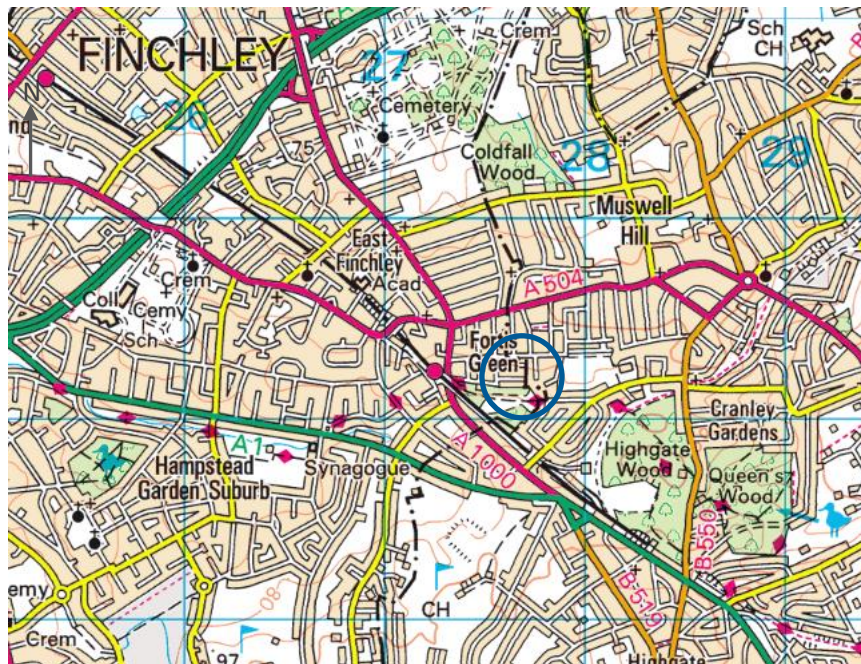
<sup>3</sup> *Basement Assessment User Guide*. London Borough of Richmond Upon Thames.

<sup>4</sup> *Basements and Lightwells*. CPG4. Camden Planning Guidance. March, 2018.

## 2. SITE PARTICULARS

### 2.1 Site location

The site, known as Fortis Green Tennis Club, is located at 31 Southern Road, London, N2 9LH in the London Borough of Haringey. The grid reference for the site is TQ276892. The property is approximately 2.5km south east of Finchley and <1km south west of Muswell Hill. East Finchley Station is approximately 400m west of the site. The site location is presented in Figure 1.



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Figure 1: Site location

### 2.2 Site description

The site is generally level covering an area of approximately 0.3ha. Access is via a private pedestrian link off Southern Road, with the site

currently occupied by four tennis courts and a single storey clubhouse on the eastern boundary. The layout is presented in Figure 2, with further plans included as Appendix A.

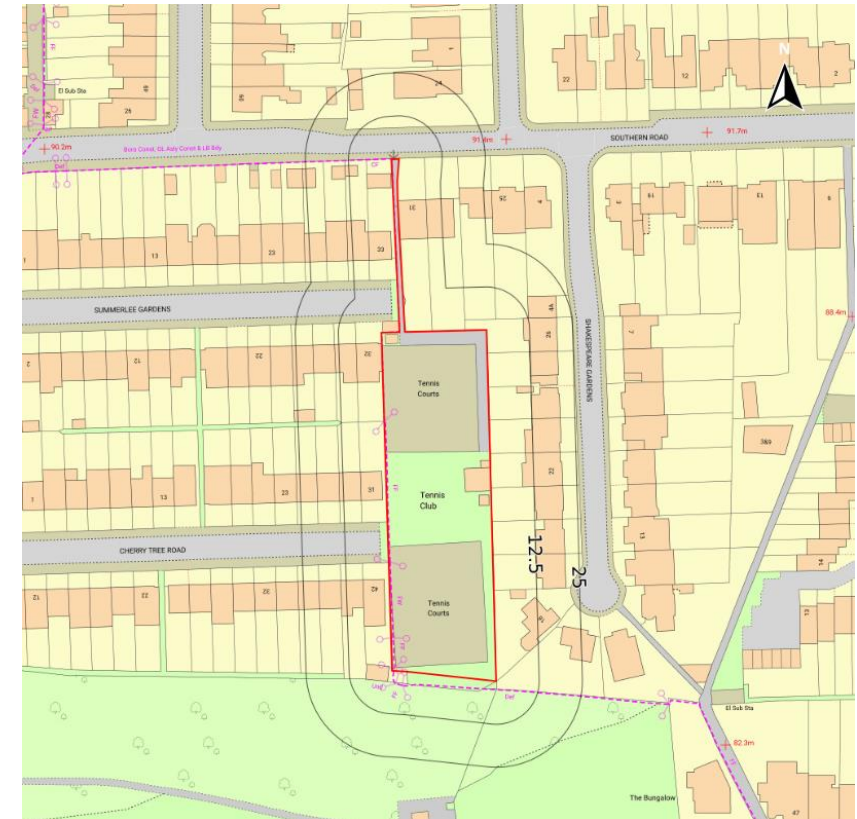
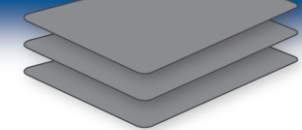


Figure 2: Site layout

The surrounding land use is residential, mainly comprising two and three-storey terraced, semi-detached and detached properties. The site is bounded by residential properties and private gardens. Cherry Tree Wood is located immediately south of the site. An aerial image dated 2022 is presented as Figure 3.



There is little buried infrastructure of significance in the immediately surrounding area of the proposed development, with adjoining land being formed of private residences and gardens. Therefore, highway and mains drainage, other domestic supplies and public access roads will not be affected by the proposed basement development. Adjoining dwellings will need to be given due consideration. There are not known to be any subterranean tunnels (LUL etc.), railways or overground infrastructure of significance within influence of the proposed development.



Figure 3: Aerial photograph (2022)

## 2.3 Proposed development

The proposed development is to provide five houses and three apartments with associated gardens, two new replacement tennis courts and a new clubhouse. The residential development will be located in the southern part of the site and will be delivered across four floors, which includes a lower ground floor. It is the lower ground floor of the residential development to which this screening report relates. The proposed layout is shown indicatively in Figure 4, and the basement layout in Figure 5, with further development plans in Appendix B.

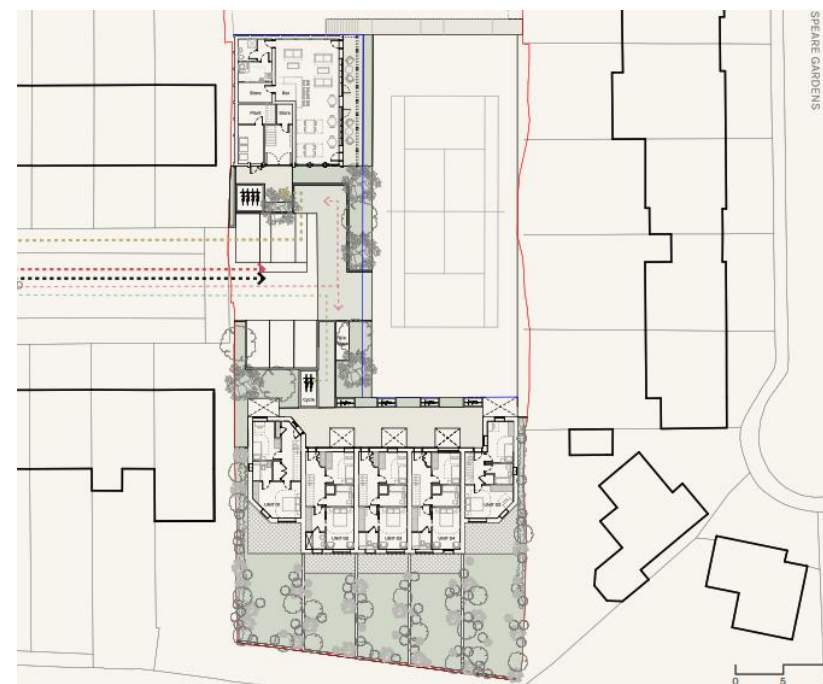


Figure 4: Proposed development layout (ground floor, DAS)



Figure 5: Proposed development layout (DAS)

The lower ground floor level will be approximately 2.5m below current site levels. Detailed design of the foundations has not yet been undertaken. Conventional pad footings may be possible, subject to design loadings, or potentially a raft foundation solution, although it is anticipated that a piled foundation will be adopted. A more comprehensive set of drawings is available within the planning submission package.

The proposed five houses range from two to three storeys, having living rooms facing onto gardens on the lower ground level to the south of the building. The houses are the only part of the scheme with access to the lower ground level. Indicative lower ground floor plans are shown in Figure 6.

<sup>5</sup> British Geological Survey. 1993. North London. England and Wales Sheet 256 Solid and Drift Geology. 1:50,000. (Keyworth, Nottingham: British Geological Survey).



Figure 6: Proposed lower ground floor plan (DAS)

## 2.4 Geology

The following is taken from information obtained from the British Geological Survey (BGS). Published and unpublished sources have been used, including the geological maps for the region<sup>5,6</sup> and historic borehole records.

The site is mapped as being underlain by the London Clay Formation. No Superficial Deposits are mapped directly beneath most of the site, except for the northern boundary where Dollis Hill Gravel may be present. This is not shown to be beneath the proposed residential development area.

<sup>6</sup> British Geological Survey. 1999. Hampstead. Sheet TQ28NE. 1:10,000 Series. (Keyworth, Nottingham: British Geological Survey).

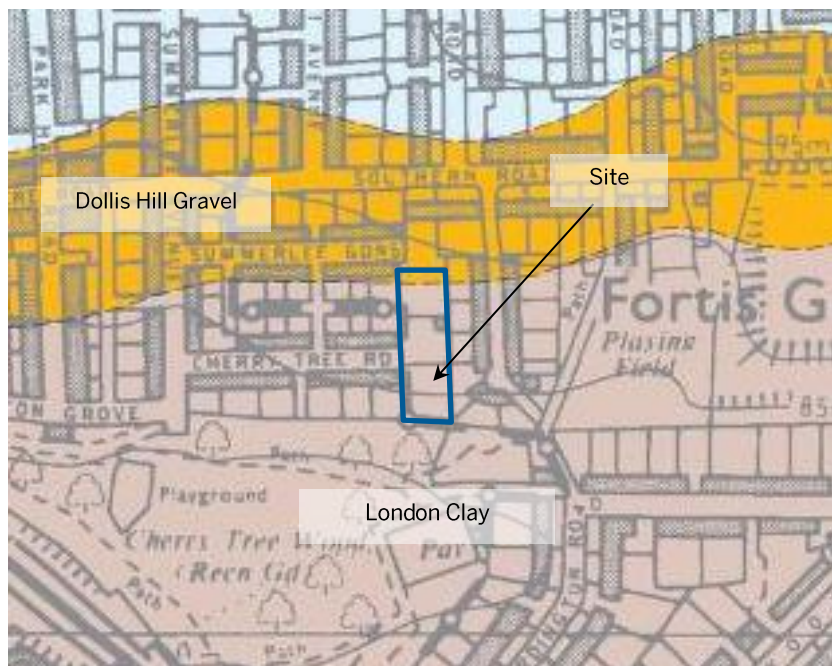
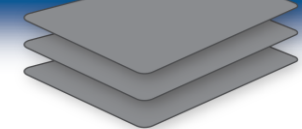


Figure 7: Geological map extract (1:10,000)

Published records obtained via the BGS website identify no historic borehole records within 250m of the site. The closest borehole within the same strata is situated approximately 450m east of the site and indicates London Clay to an approximate depth of 100m. Further boreholes 600m south west of the site indicate soft to firm, becoming stiff mid-brown/grey plastic clay, considered indicative of the London Clay, with bands of septaria. Water seepages were encountered during drilling due to the more permeable nature of these layers. The historic borehole locations are shown in Figure 8, with an example record included in Appendix C.

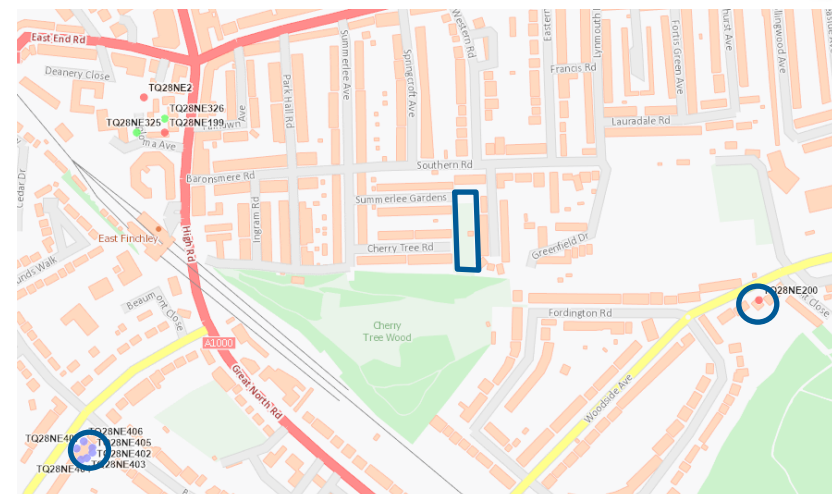


Figure 8: BGS borehole locations

Table 1: Summary of published ground conditions

| Stratum                                                                                                                       | Depth to top of stratum, (mbgl) |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| London Clay Formation<br>Soft to firm, becoming stiff, hard mid brown, grey plastic CLAY. Occasional bands of septaria noted. | 0 to 0.65<br>(Proven to 100m)   |

## 2.5 Hydrogeology

Groundwater is recorded on the historic borehole records as being associated with the deep chalk aquifer. Seepages were encountered within more permeable layers (septaria) within the London Clay, but is not considered indicative of a groundwater table.

The Bedrock geology (London Clay) is classified as Unproductive Strata<sup>7</sup>. The Superficial Deposits (Dollis Hill Gravel) situated to the

<sup>7</sup> 31 Southern Road East, Haringey. Groundsure EnviroInsight report. Ref. GS-9DE-XJK-AFT-W1Y. Groundsure, March 2024.

north of the site form a Secondary A aquifer of medium vulnerability but are not considered likely to affect the residential area of the site.

The site is not situated within 500m of a Groundwater Source Protection Zone (SPZ). There are no groundwater abstractions within proximity of the site.

The site is within an area identified as being at negligible risk from groundwater flooding, (Figure 9).

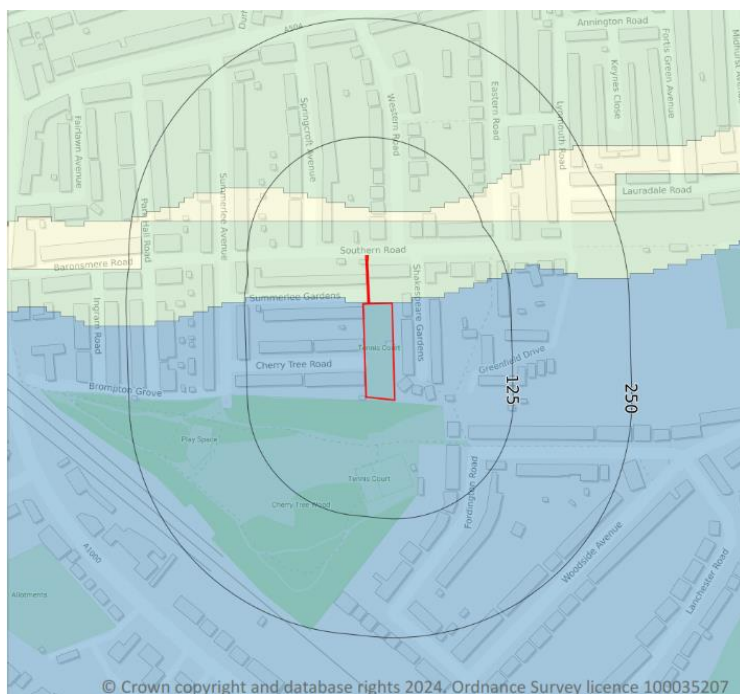


Figure 9: Flood zones (groundwater)

The site is not within a Throughflow Catchment Area nor a Potential Throughflow Catchment Area. The site is not within an area of Increased Potential for Elevated Groundwater (due to permeable superficial deposits).

<sup>8</sup> <https://www.haringey.gov.uk>

## 2.6 Hydrology

There are no recorded surface water features within 250m of the site. The site is not within an area at risk from river and coastal (fluvial) flooding<sup>7,8</sup> and there are no recorded entries for historic flood events within 250m of the site. Flood risk data indicates the risk rating due to surface water flooding as being negligible, (Figure 10).

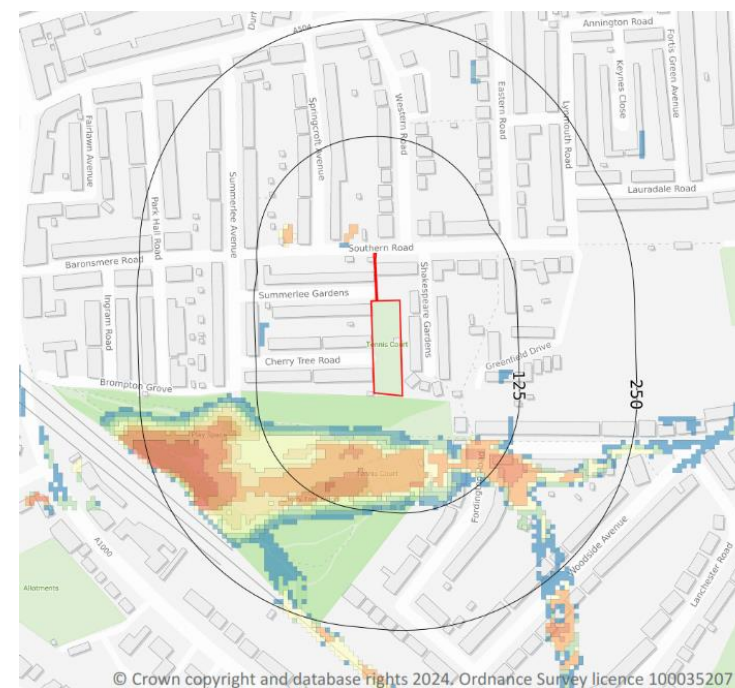
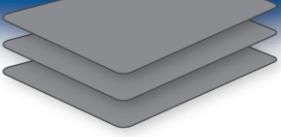


Figure 10: Flood zones (surface water)

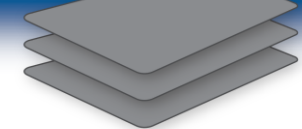


## 2.7 Buried infrastructure

There are no known rail or mail tunnels beneath or in proximity of the site<sup>9</sup>. A railway line passes approximately 250m to the south west, beyond the influence of the site. Utility plans have not been obtained as part of this study but will be required prior to development. It is anticipated that highway and mains drainage will be present beneath nearby roads, in addition to other domestic services. It is not anticipated that utilities will traverse beneath the proposed footprint but will be confirmed prior to development.

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<sup>9</sup> 31 Southern Road East, Haringey. Groundsure GeoInsight report. Ref. GS-1PZ-VEC-PQZ-PLA. Groundsure, March 2024.



### 3. SCREENING ASSESSMENT

#### 3.1 Introduction

The following assessment undertaken by Talon is based on the guidance issued by various London Boroughs<sup>1,2,3</sup>, with the following categories included:

- Subterranean characteristics,
- Land stability,
- Flood risk and drainage.

Responses are provided based on the information collated as part of the desk-based study. The following assumed or anticipated characteristics are based upon published and readily available data. Intrusive investigation may be required as part of the design requirement, which should be used to confirm the anticipated conditions and conclusions of this assessment.

#### 3.2 Subterranean characteristics

Table 1: Subterranean characteristics

| Impact                                                                                  | Response                                                                                         | Action                                               |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Is the site located directly above an aquifer?                                          | No. The London Clay Formation is classed as Unproductive Strata.                                 | None.                                                |
| Will the proposed basement extend beneath the water table surface?                      | No.                                                                                              | None.                                                |
| Is the site within 100m of a watercourse, well (used/disused) or potential spring line? | No.                                                                                              | None.                                                |
| Will the proposed basement development result in a change in the                        | There is unlikely to be a significant change due to the previous surfacing of the tennis courts. | Changes will be managed through the drainage design. |

proportion of hard surfaces/ paved areas?

As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SuDs)?

No, given the very low permeability ground.

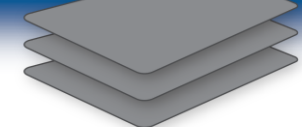
Confirm through detailed drainage design.

Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond or spring line?

No local ponds/spring lines present due to cohesive/very low permeability ground conditions.

None.

In summary, the site is anticipated as being underlain by the London Clay Formation, considered to be of very low permeability. Groundwater is not anticipated as being present. Regional groundwater is at significant depth beneath the London Clay Formation. There are no surface water bodies within 250m of the site. The proposed development will not result in a significant increase in hard cover, there are not likely to be changes in infiltration to the ground and surface water run-off will be appropriately managed through the design of the proposed drainage system.



### 3.3 Land stability

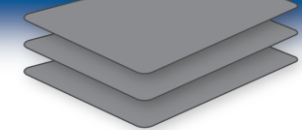
Table 2: Land stability

| Impact                                                                                                                                                      | Response                                                                                                                                                                     | Action                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does the existing site include slopes, natural or man-made, greater than 7°?                                                                                | No.                                                                                                                                                                          | None.                                                                                                                                                                                                                                                                                         |
| Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?                                           | No. Localised changes in levels to form the lower ground level garden boundaries will be structurally retained and will not form a slope.                                    | None.                                                                                                                                                                                                                                                                                         |
| Does the development neighbour land include railway cuttings and the like, with a slope greater than 7°?                                                    | No.                                                                                                                                                                          | None.                                                                                                                                                                                                                                                                                         |
| Is the site within a wider hillside setting in which the slope is greater than 7°?                                                                          | No.                                                                                                                                                                          | None.                                                                                                                                                                                                                                                                                         |
| Is the London Clay the shallowest strata at the site?                                                                                                       | Yes.                                                                                                                                                                         | Excavation is likely to be less than 3m. Detailed design will check for effects of settlement/heave.                                                                                                                                                                                          |
| 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? | Yes. 20No. trees are to be removed, with 18No. new trees planted. Root protection areas are present alongside the eastern perimeter of the proposed building <sup>10</sup> . | Most tree removal is in the central part of the site and on the southern boundary, with only limited trees removal in proximity of the lower ground floor footprint. Assess potential for desiccation and/or ground movement potential as part of detailed design. Assumed piled foundations. |

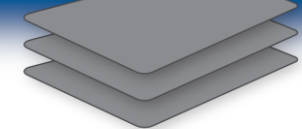
|                                                                                                                                                           |                                                                                                                        |                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?                                    | The site is underlain by London Clay. No known evidence of such effects at the site.                                   | Consideration to be given to root protection areas. Confirm through detailed design that shrink/swell potential is adequately mitigated. |
| Is the site within 100m of a watercourse or a potential spring line?                                                                                      | No.                                                                                                                    | None.                                                                                                                                    |
| Is the site within an area of previously worked ground?                                                                                                   | No.                                                                                                                    | None.                                                                                                                                    |
| Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction? | No. The London Clay Formation is classed as Unproductive Strata. Groundwater not expected to be present.               | None.                                                                                                                                    |
| Is the site within 5m of a highway or pedestrian right of way?                                                                                            | No.                                                                                                                    | None.                                                                                                                                    |
| Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?                              | Yes, the floor lower ground floor slab will be some 2.5m below current site levels. Piled foundations are anticipated. | Confirm through detailed design that potential impacts are mitigated.                                                                    |
| Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?                                                                       | No.                                                                                                                    | None.                                                                                                                                    |

The site is not in an area affected by a significant gradient, nor underlain by tunnels or in the vicinity of railway infrastructure. Proposed tree removal is predominantly within the central area of the site and along the southern boundary, with limited removal adjacent to the building footprint. Foundation design should take into consideration the localised tree removal and root protection areas present along the eastern building perimeter. The foundation loads for the development will be comparable with the adjoining properties and

<sup>10</sup> Fortis Green Tennis Club, East Finchley. Arboricultural Report for planning purposes. 220552-PD-11a. Tim Moya Associates, October 2023.



therefore footings constructed at a similar founding level or piled. Design and construction of new foundations will be in accordance with current design standards such that adjacent property will not be undermined nor inadequately supported and significant ground movements will be prevented. Intrusive investigation may be required prior to commencement of construction to confirm the design parameters adopted.



### 3.4 Flood risk and drainage

Table 3: Flood risk and drainage

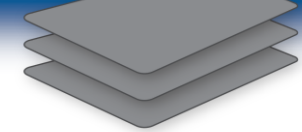
| Impact                                                                                                                                                                                                                                                                                                           | Response                                                                                                                | Action                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 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?                                                                                                                                                        | No significant increases are anticipated due to the increase in building footprint and prior surfaced tennis courts.    | Drainage design to provide adequate provision.                                    |
| Will the proposed basement development result in a change in the proportion of hard surfaced/paved external areas?                                                                                                                                                                                               | No significant increases are anticipated due to the increase in building footprint and prior surfaced tennis courts.    | The surface water runoff is to be adequately managed through the drainage design. |
| Will the proposed basement result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourse?                                                                                                                       | No. The design will adequately cater for surface run off and no significant surface water will pass through the site.   | None.                                                                             |
| Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?                                                                                                                                                                   | No.                                                                                                                     | None.                                                                             |
| Is the site in an area identified to have surface water flood risk according to either the Local Flood Risk Management Strategy or the Strategic Flood Risk Assessment or is it at risk of flooding, for example because the proposed basement is below the static water level of nearby surface water features? | No. Surface water flood risk for the site is negligible and construction is not expected to be affected by groundwater. | None.                                                                             |

The underlying geology is expected to be of very low permeability. There will be no significant increase in low permeability cover from the previously developed conditions for the site nor significant impact on drainage and the groundwater arising from changes to impermeable cover. Groundwater is not expected below the site. The nearest surface water body is >250m from the site. Assuming the site drainage is designed in accordance with current standards, it is considered there will be no adverse effect on flood potential.

### 3.5 Assessment summary

The above assessment indicates most responses to the standard questions to be 'no', indicating the proposed development does not necessitate a full Basement Impact Assessment. This, however, is based upon the assumption that ground conditions beneath the site are confirmed as being in accordance with the published geology, i.e. London Clay Formation, and being of very low permeability, that groundwater is not present beneath the site and that works are designed in the temporary and permanent condition such that there will be no significant adverse effects on adjacent property. Intrusive investigation may be required as part of the detailed design phase to confirm the ground conditions.

Although the above assessment does not indicate a full Basement Impact Assessment is required, the following sections provide supplementary information in support of the conclusions thus far and confirm the scope required to confirm the above assumptions/adopted characteristics.



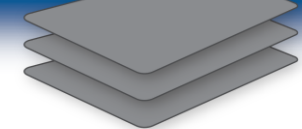
## 4. GROUND INVESTIGATION - SCOPE

A ground investigation has not been undertaken but may be required as part of the detailed design for the proposed development. The proposed scope of investigation will allow the responses provided in the screening assessment to be confirmed, or otherwise addressed, within the context of the proposed development. Should conditions differ from those anticipated, the findings will help identify areas where review or further assessment may be required.

The scope of investigation should be designed to:

- Confirm the presence and depth to the London Clay,
- Identify physical properties of the founding soils for detailed design,
- Confirm groundwater is absent.

The above criteria are likely to be achieved through a series of shallow dynamic sampler boreholes or deeper cable percussive boreholes and/or in situ and laboratory testing of soils. Additional data should also be obtained during the intrusive investigation that is beyond the requirement of this screening assessment and BIA, for example for buried concrete design.



## 5. PROPOSED DEVELOPMENT IMPACT

The following summarises the potential impacts of the proposed development including the lower ground floor construction based on the anticipated ground conditions and findings of the screening assessment. This summary assumes any subsequent ground investigation undertaken will confirm the assumptions made.

### 5.1 Subterranean flow

Underlying soils are expected to be of very low permeability. Groundwater is not anticipated to be present beneath the site. It is considered the proposed construction will have negligible impact on groundwater flows in the vicinity of the site.

### 5.2 Surface flow and flooding

The underlying soils are expected to be of very low permeability. The increase in hard cover across the site will therefore not significantly affect infiltration. On the basis that site drainage is designed in accordance with current standards and best practice, and incorporates appropriate retention and discharge controls as necessary, it is considered the development will cause negligible/acceptable changes to peak drainage outflows and will have no significant impact on surface flow and flooding.

### 5.3 Ground movement

A detailed movement analysis has not been undertaken. Near surface soils are likely to be of variable, potentially up to high, plasticity, i.e. London Clay Formation, and therefore ground movements could arise from shrinkage/swelling of plastic soils and removal/application of loads during construction (stress changes). Movements of the ground can also arise due to construction processes, due to design requirements, construction methods, etc. although these potential

ground movements will be preventable through carefully considered design and planning.

At this early stage, detailed design has not been undertaken, with limited design information provided at this stage. However, it is expected that support will be provided to adjacent property (dwellings and gardens) as part of the proposed construction as appropriate. It is expected this may be in the form of a contiguous or secant piled retaining structure, with some areas of excavation possibly formed in open cut. The design and installation methods for the support will prevent significant movements from occurring associated with possible instability of the ground during the construction phase.

The proposed excavation below current site levels is likely to be of the order of 2.5m to 3m deep, which will result in limited stress change due to unloading of the ground (through soil removal). In addition, this will only be a short-term change until construction loads are applied. The net change in stress in the long term will be negligible.

As the proposed redevelopment is for the construction of a four-storey residential structure including lower ground floor level, typical foundation loads are considered likely to be not too dissimilar to surrounding properties and within an acceptable range for the underlying ground conditions. Based on the expected ground conditions and anticipated loads, ground movements are likely to be within acceptable limits for development and appropriate design should result in no significant/negligible damage to adjacent property, i.e. anticipated no worse than Damage Category 0 or 1, as defined by the Burland Scale, Table 4.

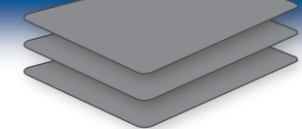
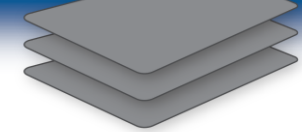


Table 4: Burland Scale

| Damage category    | Description                                                                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0<br>(Negligible)  | Hairline cracks, typically <0.1mm wide.                                                                                                                                                                      |
| 1<br>(Very slight) | Fine cracks that can easily be treated during normal decoration (crack width typically <1mm).                                                                                                                |
| 2<br>(Slight)      | Cracks easily filled; redecoration probably required. Some repointing may be required externally (crack width typically <5mm)                                                                                |
| 3<br>(Moderate)    | The cracks require some opening up and can be patched by a mason. Repointing of external brickwork and possibly a small amount of brickwork to be replaced (crack width typically 5 to 15mm or several >3mm) |
| 4<br>(Severe)      | Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows (typical crack width 15mm to 25mm but depends on number of cracks)                           |
| 5<br>(Very severe) | This requires a major repair involving partial or complete re-building (crack width usually >25mm but depends on number of cracks)                                                                           |

## 5.4 Construction sequence

Until the substructure design is complete, a construction method statement has not been prepared and the construction sequence cannot be confirmed. In due course, this will be prepared, taking into consideration the proposed tree removal, root protection areas, anticipated piling, proposed basement excavation and the proximity of the adjoining dwellings. The construction process may also incorporate a programme of monitoring of the site boundary.

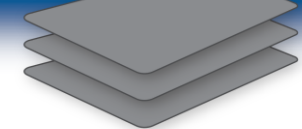


## 6. NON-TECHNICAL SUMMARY

The above screening assessment indicates there is likely to be no significant adverse impact arising from the proposed development, subject to confirmation of the geotechnical design. The published geology indicates the site to be underlain by the London Clay Formation, which is likely to be of very low permeability. Groundwater is not expected to be present beneath the site, with regional groundwater at a significant depth within deeper strata. On this basis, impact on throughflow of ground water, and therefore properties situated up and down hydraulic gradient of the site, is concluded as negligible.

In the absence of confirmed geotechnical properties and limited design information, it isn't possible to undertake a detailed movement assessment at this stage. However, based on the expected ground conditions, anticipated loadings and depth of excavation, and through the adoption of good practice during construction, ground movements due to the proposed excavation and construction are considered likely to be maintained within acceptable development limits and are unlikely to cause significant damage to property. The excavation and construction are not considered abnormal and are typical of urban/residential basement developments.

It is recommended that in addition to undertaking intrusive ground investigation as part of the geotechnical design, a monitoring strategy is implemented during development.



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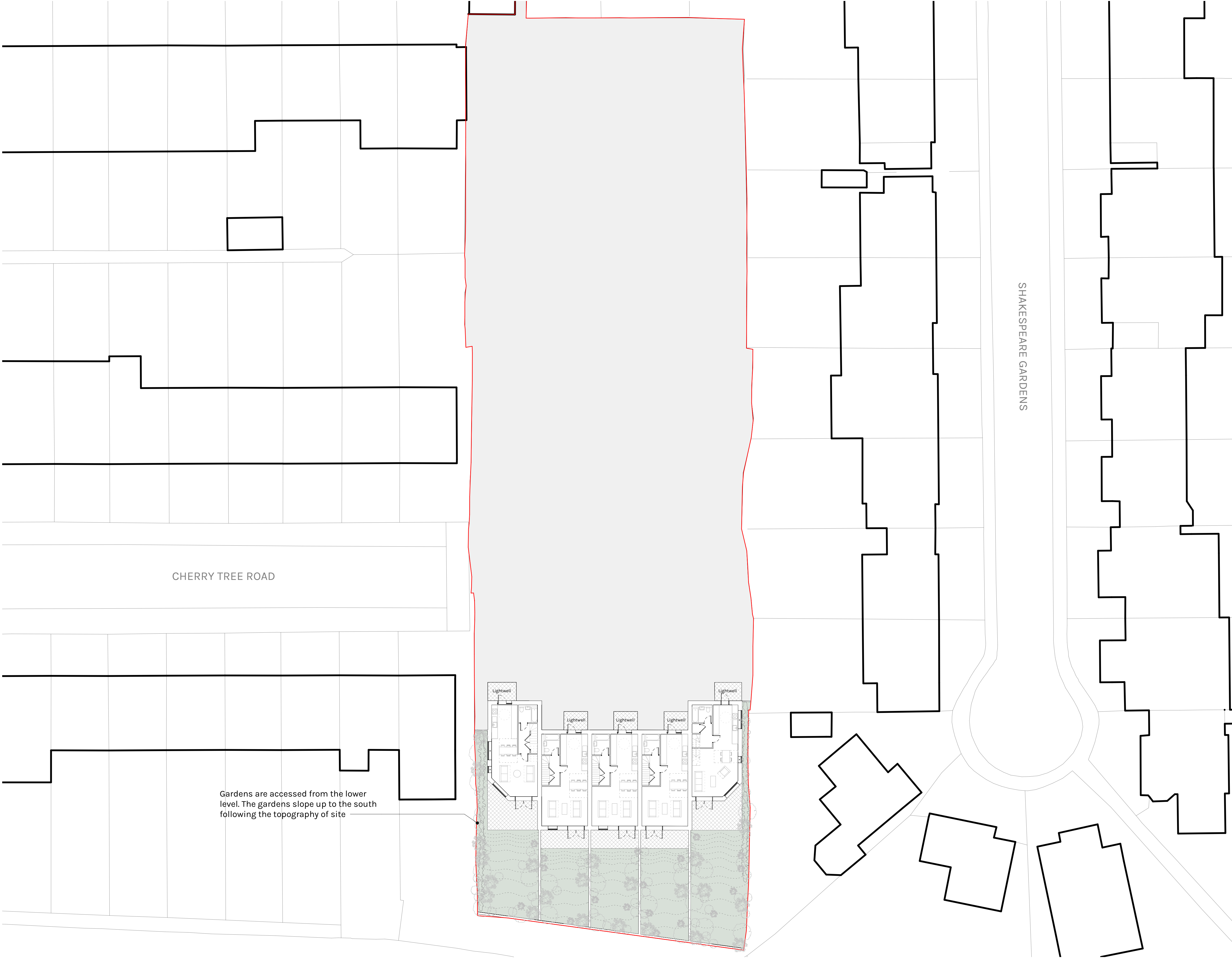
## AUTHORISED FOR ISSUE

| QC checked for issue by:              | Signed:                                                                           | Date:      |
|---------------------------------------|-----------------------------------------------------------------------------------|------------|
| I Cutler MEng, CEng, MICE<br>Director |  | 25/03/2024 |



## **APPENDIX A**

### PROPOSED DEVELOPMENT PLANS



1 -01 Lower Ground Plan  
1: 200

DOWEN FARMER ARCHITECTS

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Peckham Levels,  
95A Rye Ln,  
London  
SE15 4ST  
  
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W: www.dowenfarmer.com

Project

Fortis Green Tennis  
Club

Project address

Fortis Green Tennis Club  
31 Southern Road  
East Finchley  
London N2 9LH

Client

Fortis Green LLP

Sheet number

1143-DFA-PL\_0201

Sheet name

Proposed Lower Ground Floor

Sheet scale

1: 200 @ A1

Date/time

12/10/2023 15:12:41

| Rev | Description | Date | Issued | Checked |
|-----|-------------|------|--------|---------|
|-----|-------------|------|--------|---------|

Key  
\* Obscure Window

Project status

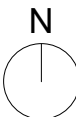
## Draft Planning

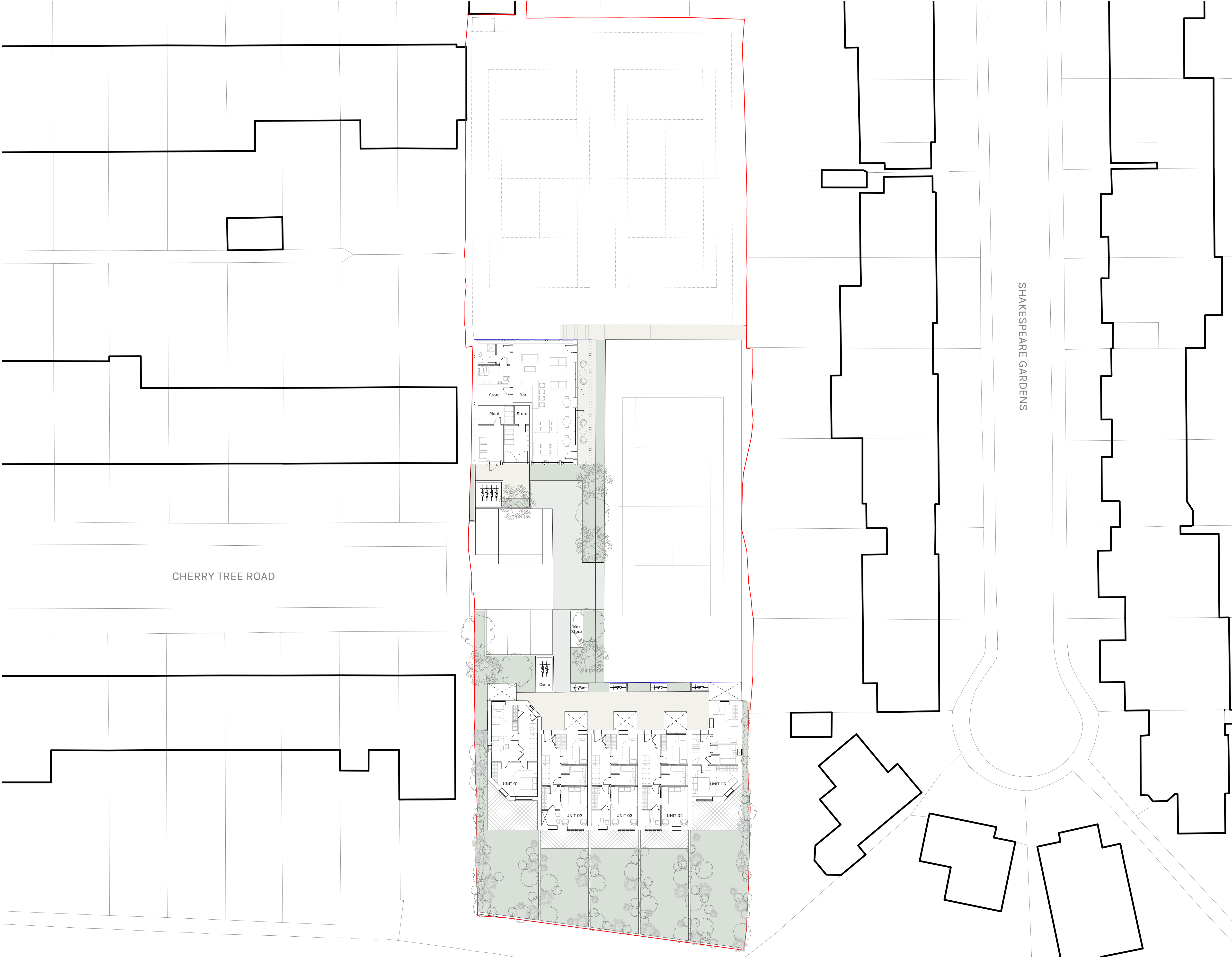
GENERAL NOTES:

This drawing is not for construction and is for information purposes only. Contractor to provide detailed design and construction information. This drawing is to be read in conjunction with all relevant architects' and engineers' drawings and specifications. Drawings to be read in line with the approved inspectors plan check and all dimensions to be checked on site with any discrepancies reported to the architect.

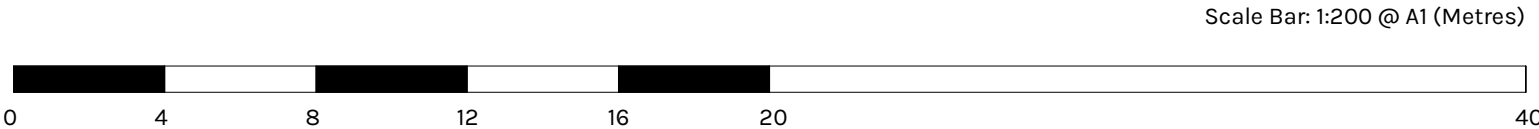
OS information no accurate and not to be used for measurements.

Dowen Farmer Architects Ltd is incorporated in England & Wales. Company registration number 10861309.





1 00 Ground Floor Plan  
1: 200



# DFA

## DOWEN FARMER ARCHITECTS

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Peckham Levels,  
95A Rye Ln,  
London  
SE15 4ST  
  
T: 020 8058 7997  
W: [www.dowenfarmer.com](http://www.dowenfarmer.com)

### Project

Fortis Green Tennis Club

### Project address

Fortis Green Tennis Club  
31 Southern Road  
East Finchley  
London N2 9LH

### Client

Fortis Green LLP

### Sheet number

1143-DFA-PL\_0202

### Sheet name

Proposed Ground Floor

### Sheet scale

1: 200 @ A1

### Date/time

12/10/2023 15:12:43

| Rev | Description | Date | Issued | Checked |
|-----|-------------|------|--------|---------|
|-----|-------------|------|--------|---------|

### Key

- Freehold boundary
- \* Obscure Window

### Project status

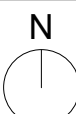
## Draft Planning

### GENERAL NOTES:

This drawing is not for construction and is for information purposes only. Contractor to provide detailed design and construction information. This drawing is to be read in conjunction with all relevant architects' and engineers' drawings and specifications. Drawings to be read in line with the approved inspectors plan check and all dimensions to be checked on site with any discrepancies reported to the architect.

OS information no accurate and not to be used for measurements.

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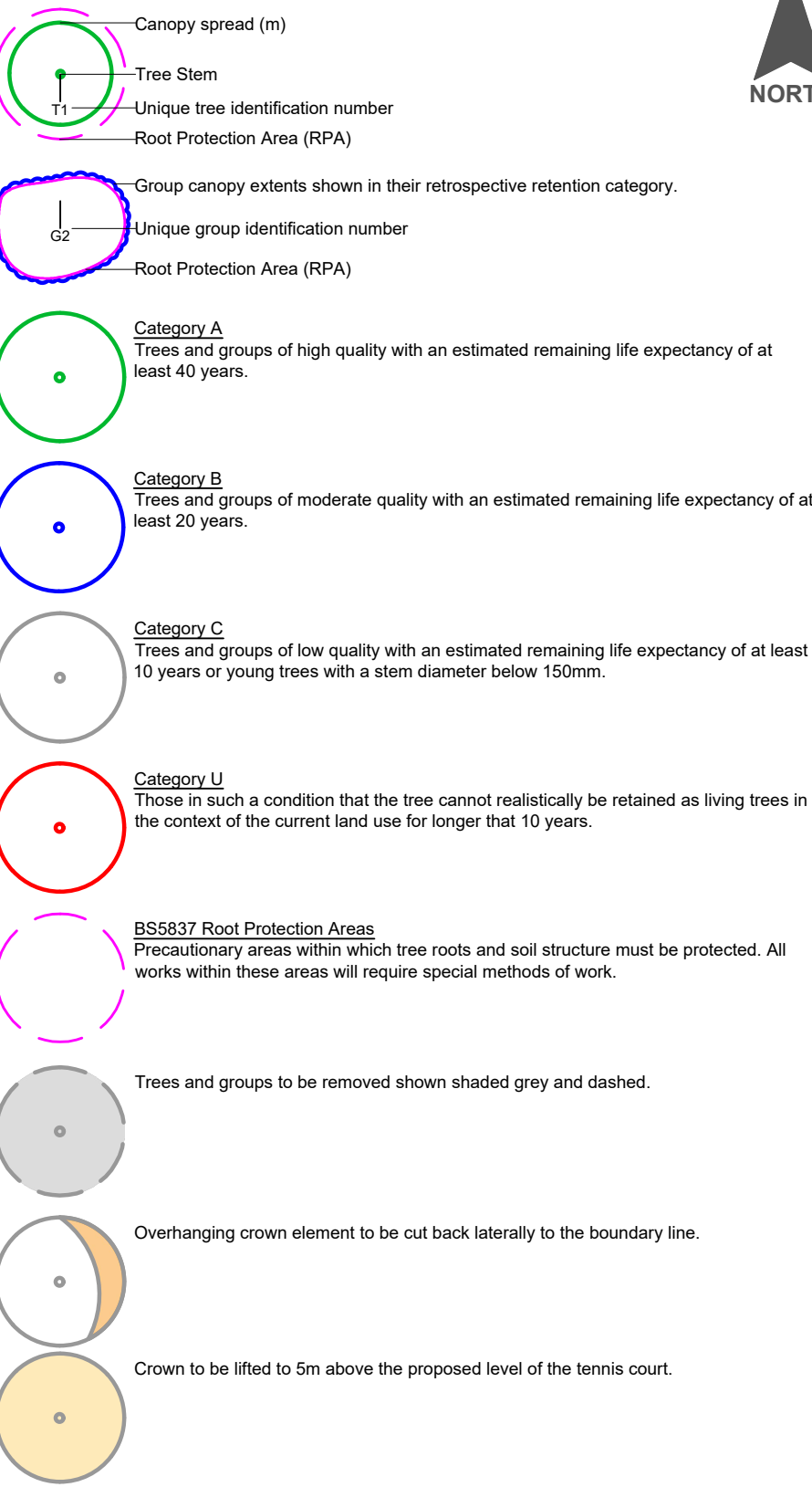
0 5m 10m 15m 20m 25m

SOUTHERN ROAD

IERLEE GARDENS

OAD TREE ROAD

BS 5837:2012 TREE RETENTION CATEGORIES



|                                       |          |                                                                        |          |
|---------------------------------------|----------|------------------------------------------------------------------------|----------|
| b                                     | 05.10.23 | 1143-DFA-GR_00_M3_A_0001_JusyT8X44 - Floor Plan - 00 Ground Floor Plan | HR       |
| a                                     | 27.03.23 | Client updated                                                         | HR       |
| rev                                   | date     | description                                                            | drawn by |
| Base Drawing: 0204 Proposed Roof Plan |          |                                                                        |          |

Title  
Proposed Layout and Tree Works

Client  
Fortis Green LLP

Project  
Fortis Green Tennis Club, Southern Road,  
East Finchley, N2 9LH

|      |          |          |    |            |    |
|------|----------|----------|----|------------|----|
| Date | 24/03/23 | Drawn by | HR | Authorised | LD |
|------|----------|----------|----|------------|----|

|            |             |     |   |       |          |
|------------|-------------|-----|---|-------|----------|
| Drawing No | 220552-P-11 | Rev | b | Scale | 1:250@A1 |
|------------|-------------|-----|---|-------|----------|



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0845 094 3268 | info@tma-consultants.co.uk  
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arboriculture ecology landscape innovation



## **APPENDIX B**

### BGS BOREHOLE RECORDS



| BOREHOLE RECORD<br>TERRATEC SERVICES |      |      |      | Consulting Civil, Structural<br>and Geotechnical Engineers |        | SCHEME 17 THE BISHOPS AVENUE, N2 OAL.<br>CLIENT BRIGHT SERVICES LTD |        | BOREHOLE 2.<br>Grid Ref<br>Sheet 1 of 2                                          |                                                                 |         |      |                                     |       |
|--------------------------------------|------|------|------|------------------------------------------------------------|--------|---------------------------------------------------------------------|--------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|---------|------|-------------------------------------|-------|
| SAMPLING                             |      |      |      | STRATA                                                     |        |                                                                     |        | PROPERTIES                                                                       |                                                                 |         |      |                                     |       |
| Depth                                | Type | No   | Run  | Depth                                                      | Level  | Thick-<br>ness                                                      | Legend | Description                                                                      | %<br>Mg/m <sup>3</sup>                                          | mb<br>% | N    | c <sub>v</sub><br>KN/m <sup>2</sup> |       |
|                                      |      |      |      | 0.00                                                       |        | 0.20                                                                |        | TOP SOIL                                                                         |                                                                 |         |      |                                     |       |
| 0.40                                 | C    | 1    |      | 0.20                                                       |        | 0.45                                                                |        | DISTURBED/FILL MATERIAL<br>consisting of mid brown<br>plastic clay and hardcore. | 32.46                                                           |         | 52   | 21                                  |       |
| 0.80                                 | V    | 3    |      | 0.65                                                       |        |                                                                     |        | Firm<br>mid brown / grey<br>plastic<br>CLAY                                      | 30.38                                                           |         | 72   | 23                                  |       |
| 1.00                                 | V    | 4    |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         | 73   | 24                                  |       |
| 1.20                                 | V    | 5    |      |                                                            |        | 1.30                                                                |        |                                                                                  |                                                                 |         | 75   | 25                                  |       |
| 1.50                                 | V    | 6    |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         | 86   | 26                                  |       |
| 1.80                                 | V    | 7    |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         |      |                                     |       |
| 2.00                                 | V    | 8    |      | 1.95                                                       |        |                                                                     |        | Stiff<br>mid grey / brown<br>plastic CLAY<br>with<br>some SEPTARIA.              | 30.17                                                           |         | 86   | 27                                  |       |
| 2.20                                 | V    | 9    |      |                                                            |        | 1.15                                                                |        |                                                                                  | 28.79                                                           |         | 118  | 28                                  |       |
| 2.40                                 | V    | 10   |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         | 128  | 29                                  |       |
| 2.60                                 | V    | 11   |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         |      |                                     |       |
| 2.80                                 | M    | 12   |      |                                                            |        |                                                                     |        | Very stiff<br>mid grey / brown<br>plastic CLAY<br>with<br>some SEPTARIA.         |                                                                 |         | 115  | 30                                  |       |
| 3.00                                 | M    | 13   |      | 3.10                                                       |        |                                                                     |        |                                                                                  | 27.29                                                           |         | 125  | 31                                  |       |
| 3.20                                 | M    | 14   |      |                                                            |        | 0.90                                                                |        |                                                                                  |                                                                 |         | 92   | 32                                  |       |
| 3.40                                 | M    | 15   |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         |      |                                     |       |
| 3.60                                 | M    | 16   |      |                                                            |        |                                                                     |        |                                                                                  |                                                                 |         |      |                                     |       |
| 3.80                                 | M    | 17   |      | 4.00                                                       |        |                                                                     |        |                                                                                  | 27.38                                                           |         | 85   | 33                                  |       |
|                                      |      |      |      |                                                            |        |                                                                     |        | (cont. on page 2)                                                                |                                                                 |         |      |                                     |       |
| DRILLING                             |      |      |      | GROUNDWATER                                                |        |                                                                     |        |                                                                                  |                                                                 |         |      |                                     |       |
| Type                                 | From | To   | Size | Drill<br>Fluid                                             | Struck | Behaviour                                                           | Sealed | Date                                                                             | Time                                                            | Depth   | Hole | Casing                              | Water |
| MACK.<br>PROBE                       | 0    | 4.00 | 55   | None                                                       | Yes    | Seepages mainly<br>at Septaria<br>layers.                           | No     |                                                                                  |                                                                 |         |      |                                     |       |
| REMARKS                              |      |      |      |                                                            |        |                                                                     |        |                                                                                  | Start Date 09-12-04<br>Finish Date 09-12-04<br>Logged by F.S.K. |         |      |                                     |       |



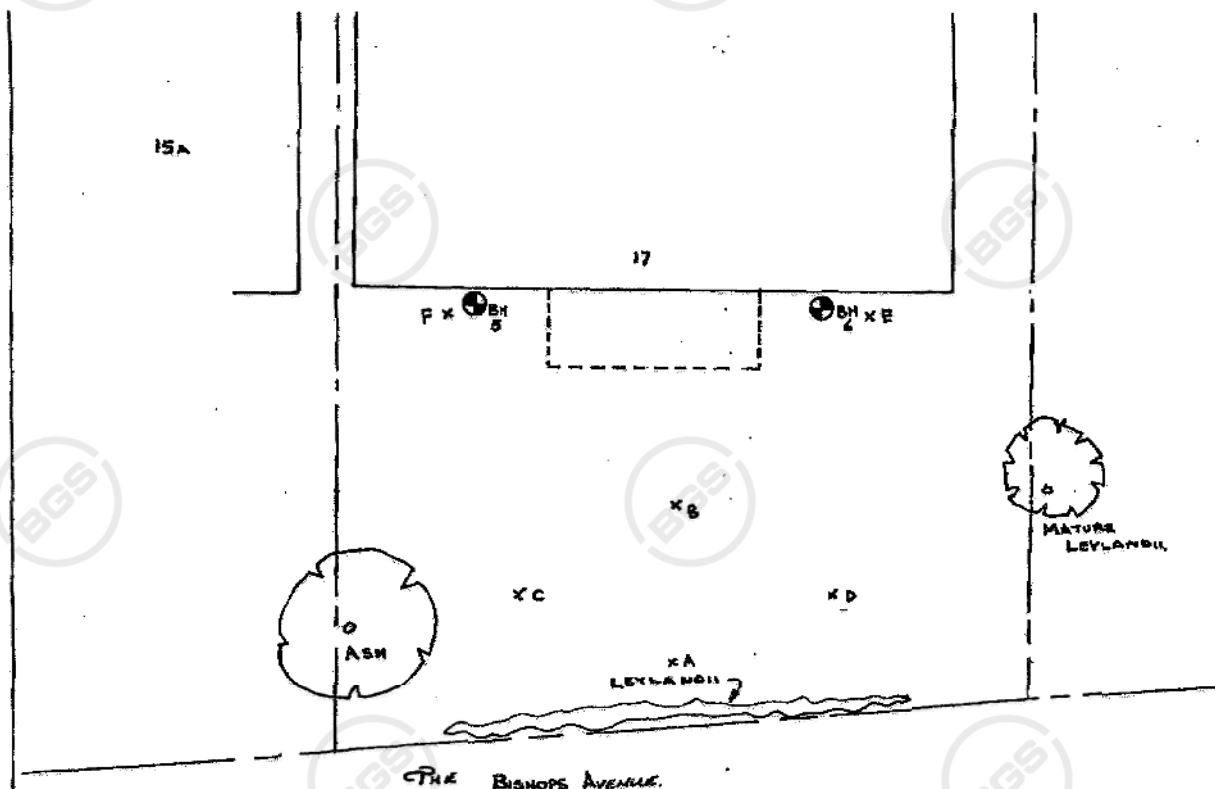
| BOREHOLE RECORD<br>TERRATEC SERVICES |        |          |      | Consulting Civil, Structural<br>and Geotechnical Engineers |        |                                        |        | SCHEME 17 THE BISHOPS AVENUE, N2 0AL<br>CLIENT BRIGAT SERVICES LTD.                        |                                                                 |                     |        | BOREHOLE 2.<br>Grid Ref<br>Sheet 2 of 2 |  |  |  |
|--------------------------------------|--------|----------|------|------------------------------------------------------------|--------|----------------------------------------|--------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------|--------|-----------------------------------------|--|--|--|
| SAMPLING                             |        |          |      | STRATA                                                     |        |                                        |        | PROPERTIES                                                                                 |                                                                 |                     |        |                                         |  |  |  |
| Depth                                | Type   | No       | Ref  | Depth                                                      | Level  | Thick-<br>ness                         | Legend | Description                                                                                | γ <sub>s</sub><br>Mg/m <sup>3</sup>                             | w <sub>c</sub><br>% | N<br>% | c <sub>u</sub><br>kN/m <sup>2</sup>     |  |  |  |
| 4.00                                 | M<br>B | 16<br>17 |      | 4.00                                                       |        |                                        |        | Very stiff mid<br>grey / brown<br>plastic<br><u>CLAY</u><br>with<br>some <u>SEPTARIA</u> . | 27.98                                                           | 85<br>50            |        |                                         |  |  |  |
| 4.50                                 | M      | 18       |      |                                                            |        | 1.50                                   |        |                                                                                            | 90<br>50                                                        |                     |        |                                         |  |  |  |
| 6.30                                 | M<br>B | 19<br>20 |      | 5.50                                                       |        |                                        |        | Hard<br>grey / brown<br>plastic<br><u>CLAY</u><br>with<br>some<br><u>SEPTARIA</u> .        | 27.69                                                           | 85<br>50            |        |                                         |  |  |  |
| 6.20                                 | M      | 21       |      |                                                            |        | 2.50                                   |        |                                                                                            | 65<br>50                                                        |                     |        |                                         |  |  |  |
| 7.10                                 | M<br>B | 22<br>23 |      |                                                            |        |                                        |        |                                                                                            | 27.75                                                           | 62<br>50            |        |                                         |  |  |  |
| 8.00                                 | M      | 24       |      | 8.00                                                       |        |                                        |        |                                                                                            |                                                                 | 50<br>50            |        |                                         |  |  |  |
| DRILLING                             |        |          |      | GROUNDWATER                                                |        |                                        |        |                                                                                            |                                                                 |                     |        |                                         |  |  |  |
| Type                                 | From   | To       | Size | Drill<br>Fluid                                             | Struck | Behaviour                              | Sealed | Date                                                                                       | Time                                                            | Depth               |        |                                         |  |  |  |
|                                      |        |          |      |                                                            |        |                                        |        |                                                                                            |                                                                 | Hole                | Casing | Water                                   |  |  |  |
| MACK<br>PROBE                        | 4.00   | 8.00     | 55   | None                                                       | Yes    | Seepages mainly<br>at Septaria layers. | No     |                                                                                            |                                                                 |                     |        |                                         |  |  |  |
| REMARKS                              |        |          |      |                                                            |        |                                        |        |                                                                                            | Start Date 09-12-04<br>Finish Date 09-12-04<br>Logged by F.S.W. |                     |        |                                         |  |  |  |



P.8/28

TD:6773379

19-JAN-2005 17:06 FROM:



**TERRATEC SERVICES**

Consulting Civil, Structural  
and Geotechnical Engineers

R.S. Kellford  
CEng, MHT, MICE (and associated), FGS  
K.D. Marlow  
ASSOCIATE

Fax No.  
0273 - 517020



CLIENT  
**BRIGHT SERVICES LTD.**

DRAWING NUMBER  
**11/2540/3.**

TITLE **17, THE BISHOPS AVE, LONDON N2.**  
**BOREHOLE LOCATION PLAN.**

DATE  
**DEC. 2004.**

SCALE  
**1/200**

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*[Signature]*

**0273 517020**



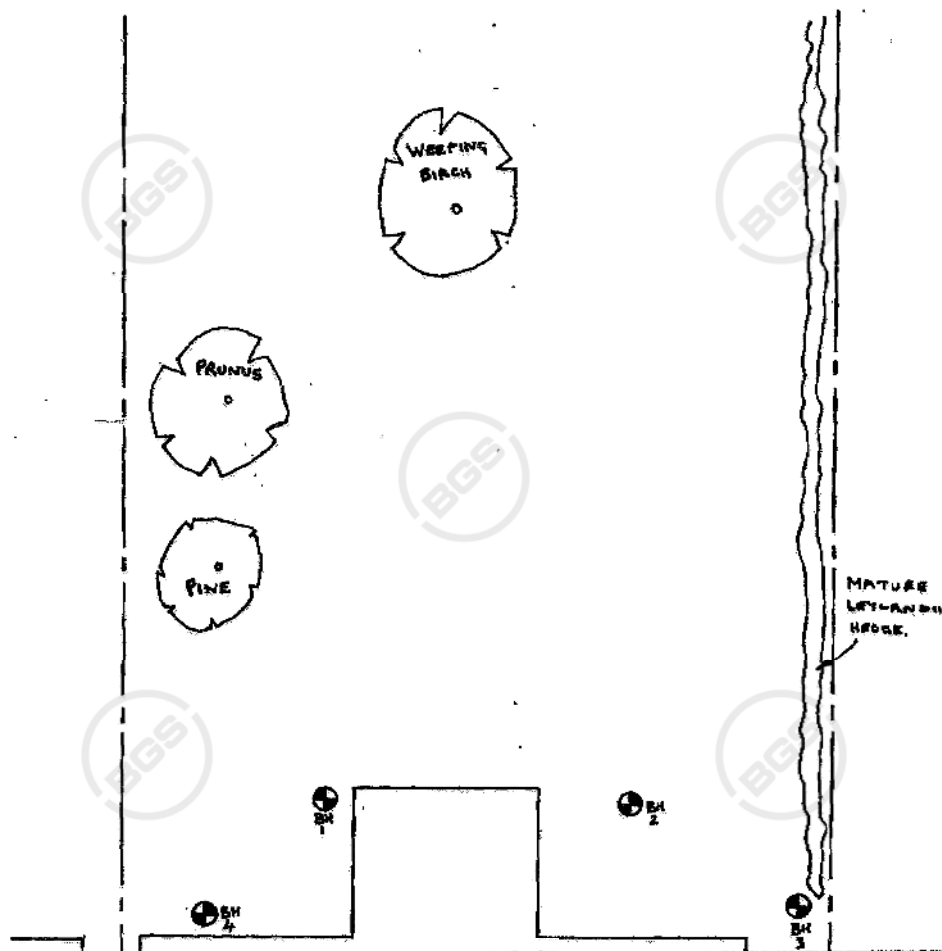
Home Lodge, Piddinghoe Mead, Lewes Road,  
Newhaven, East Sussex BN9 6RN



P.9/28

T0:8773379

19-JAN-2005 17:07 FROM:





TQ 28/181

TQ 28NE 200

|                                                                       |  |                   |  |                                          |  |                                 |  |
|-----------------------------------------------------------------------|--|-------------------|--|------------------------------------------|--|---------------------------------|--|
| Fortis Green N.10. Woodside Avenue                                    |  |                   |  | TQ 28-181                                |  |                                 |  |
| Owner                                                                 |  | Licence No.       |  | Nat. Grid Ref. 281 891                   |  |                                 |  |
| Occupier                                                              |  | IGS Ref. No.      |  | Status                                   |  |                                 |  |
| Ground Level                                                          |  | m OD              |  | ft. OD                                   |  | Aquifer                         |  |
| Level of Well Top                                                     |  | 88.04             |  | m OD                                     |  | ft. OD                          |  |
| Rest Water Level                                                      |  | m bwt             |  | ft. bwt                                  |  | Summary of Geological Section   |  |
| (Date 9.12.81)                                                        |  | -17.13            |  | m OD                                     |  | ft. OD                          |  |
| Construction                                                          |  |                   |  | New Datum 8788 10/09/82 TWB Modification |  | Thickness                       |  |
| Depth bwt                                                             |  | Dia.              |  | Linings (below well top)                 |  | Depth                           |  |
|                                                                       |  |                   |  | From To Dia. Type                        |  | m                               |  |
| 178m.                                                                 |  |                   |  |                                          |  | 100                             |  |
|                                                                       |  |                   |  |                                          |  | 119                             |  |
|                                                                       |  |                   |  |                                          |  | 176                             |  |
|                                                                       |  |                   |  |                                          |  | 178                             |  |
|                                                                       |  |                   |  |                                          |  | log information rec from Thomas |  |
|                                                                       |  |                   |  |                                          |  | 17.12.90.                       |  |
| Abstraction Rates                                                     |  | Type of Pump      |  |                                          |  |                                 |  |
| gph                                                                   |  | Chem./Bact. Anal. |  | YES NO                                   |  |                                 |  |
| gpd                                                                   |  | Well Driller      |  |                                          |  |                                 |  |
| If insufficient space has been allowed, continue in 'Notes' overleaf. |  |                   |  |                                          |  |                                 |  |



256/931

|                                                                       |  |                                           |  |                         |  |                               |  |
|-----------------------------------------------------------------------|--|-------------------------------------------|--|-------------------------|--|-------------------------------|--|
| Forts Green N.10. Woodside Avenue                                     |  |                                           |  | TQ 28-181               |  |                               |  |
| Owner                                                                 |  | Licence No.                               |  | Nat. Grid Ref. 281 891  |  |                               |  |
| Occupier                                                              |  | IGS Ref. No.                              |  | Status                  |  |                               |  |
| Ground Level                                                          |  | m OD                                      |  | ft. OD                  |  | Aquifer chalk                 |  |
| Level of Well Top 88.04                                               |  | m OD                                      |  | ft. OD                  |  |                               |  |
| Rest Water Level                                                      |  | m bwt                                     |  | ft. bwt                 |  | Summary of Geological Section |  |
| (Date 9.12.81) -17.13                                                 |  | m OD                                      |  | ft. OD                  |  | Thickness                     |  |
| Construction                                                          |  | New Datum 87.88 10/09/82 Twp Modification |  | London Clay             |  | 100 100                       |  |
| Depth bwt                                                             |  | Dia.                                      |  | Lining (below well top) |  | Woolwich Reading Beds         |  |
|                                                                       |  |                                           |  | From To Dia. Type       |  | 19 119                        |  |
| 178m.                                                                 |  |                                           |  |                         |  | Upper Chalk                   |  |
|                                                                       |  |                                           |  |                         |  | 57 176                        |  |
|                                                                       |  |                                           |  |                         |  | Middle Chalk                  |  |
|                                                                       |  |                                           |  |                         |  | 2 178                         |  |
|                                                                       |  |                                           |  |                         |  | Information rec from Thames   |  |
|                                                                       |  |                                           |  |                         |  | due to an enquiry             |  |
|                                                                       |  |                                           |  |                         |  | 17.12.90.                     |  |
| Abstraction Rates                                                     |  | Type of Pump                              |  |                         |  |                               |  |
| gph                                                                   |  | Chem./Bact. Anal.                         |  | YES NO                  |  |                               |  |
| gpd                                                                   |  | Well Driller                              |  |                         |  |                               |  |
| If insufficient space has been allowed, continue in 'Notes' overleaf. |  |                                           |  |                         |  |                               |  |

