Land Adjacent to No. 46 Maresfield Gardens, London.

Structural and Civil Engineering Construction Method Statement

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Date	Revision	Notes/Amendments/Issue Purpose
Jun 2023	P01	For Information
Dec 2023	P02	For Planning
Jan 2024	P03	Re-titled as CMS
Feb 2024	P04	Planning Issue

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1 Introduction

Price & Myers have been appointed by the Client to provide structural and civil design consultancy in relation to the proposed development at the land adjacent to No. 46 Maresfield Gardens. Sergison Bates Architects are the appointed Architects and Lead Consultants. This document has been produced to assist in the production of information to be submitted for planning approval for the development.

This report outlines the progress of the design at Planning Application Stage.

The proposed development includes a new six storey multi-unit residential dwelling including a single storey basement. The site is currently occupied by temporary ancillary buildings which form part of the rear gardens to No. 39 Fitzjohn's Avenue as well as multiple existing trees and associated root Root Protection Areas (RPA's) and an air shaft which feeds the Belsize Tunnel to the North of the site.

1.1 Executive summary

This Construction Method Statement (CMS) is issued to demonstrate compliance with the London Borough of Camden (LBC) planning requirements for new basement construction. It has been prepared and reviewed by Structural Engineers experienced in the design of deep basements and excavation works.

This report provides:

- A detailed discussion of the proposed basement works at the land adjacent to No. 46 Maresfield Gardens.
- Survey information, in relation to adjacent properties and root protection areas.
- A summary of the geotechnical conditions, based on a Ground Investigation and Basement Impact Assessment report (Doc ref. J23181 dated December 2023) produced by Geotechnical and Environmental Associates (GEA). This describes existing ground conditions, groundwater levels and hydrology, and soil properties.
- Outline proposals for both the substructure and superstructure.
- An outline construction sequence.

2 The Site

2.1 Location

The site is located to the rear of 39 Fitzjohn's Avenue, London, NW3 5JY in Finchley, North London in the borough of Camden. It is bounded by neighbouring properties to the North and East, Nutley Terrace to the South, and Maresfield Gardens to the West.

The site is occupied by temporary ancillary buildings to the Rear of 39 Fitzjohn's Avenue as well as an existing air shaft which feeds the Belsize Tunnel to the North of the proposed building, a drawing of the existing air shaft can be found in appendix D.

The site is relatively flat with the existing external ground level sloping slightly up from 73760 AOD to the South West of the site to 74456 AOD to the North East of the site.

There are several tree root protection zones present on the site. A survey has been completed by Landmark Trees (Drawing ref. 'Tree Constraints Plan', dated November 2022) which can be found in appendix C.

Figure 2.1: Google map extract showing site aerial view

2.2 Site History

A review of historic Ordnance Survey (OS) maps indicates the site at number 39 was first developed around 1870. The site was again developed around 1940 when the existing building at 39a first appears on historic aerial photographs. The World War II bomb damage maps suggest blast damage was encountered, which may explain the redevelopment of the site around the 1940s-1950s.

Archive information also shows an airshaft was constructed within the site boundary by 1915, approximately 7.5m North of the proposed building, indicating the presence of the existing Belsize railway tunnel to the north of the site.

The Lost Rivers of London map indicated the site sits very close to one of the tributaries to the River Fleet and River Tyburn. A small pond can be seen in the 1866 historical maps which may have been part of a minor tributary to the River Tyburn. The pond is not visible in later maps which suggests the pond was infilled at the time of the 1870s development.

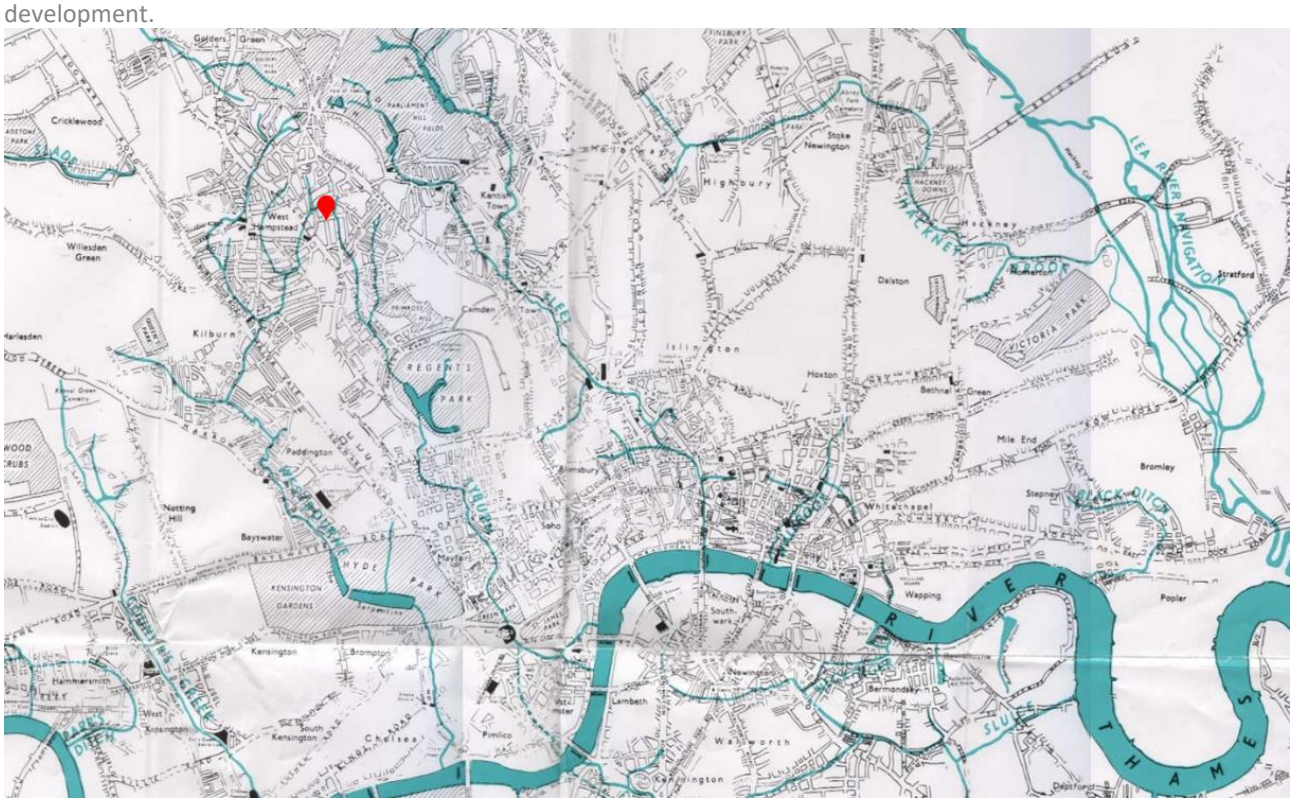


Figure 2.2: Extract from London lost rivers map showing approximate site location

2.3 Unexploded Ordnance (UXO)

A Preliminary UXO Risk Assessment has been completed for the site and is included as an appendix within the geotechnical report by GEA. The assessment has not indicated an above average risk of encountering UXO in this area and does not recommend that any further action is taken for the site.

2.4 Geology

The site is underlain by the expected London Clay formation with a moderate thickness of made ground above as confirmed by the Site Investigation report produced by GEA. The site's ground conditions are described in more detail in section 3 of this report.

2.5 Existing structures

There is an existing boundary wall as pictured in figure 2.3, which is leaning and at risk of collapse if not correctly remedied or rebuilt. There is also an air shaft to the North of the proposed building, which is to be retained in the development. According to historic maps, the site has never been developed and has always been used as either agricultural land or ancillary space to the adjacent properties.

Figure 2.3: Condition of existing boundary wall on Maresfield Gardens

2.6 Existing Utilities and Underground Services

A below ground utilities and services scan has been undertaken John Robinson Associates for No. 39 Fitzjohn's Avenue. The survey identifies a potential drainpipe of unknown size and depth as well as several chambers across the site, all of which serve Network Rail. It should be noted that this is a desk study and none of these chambers have been identified by the utility survey on site (nor any other surveys or information provided by Network Rail). Further below ground services investigations are required prior to detailed design.

2.7 Network Rail Tunnels

From historic drawings, the New Belsize Park railway tunnel is located directly to the North of the site and the 'Fast Belsize Tunnel' runs along the south of the site, underneath Nutley Terrace. The tunnels are expected to have an approximate diameter of 7.5m and run at circa 20m depth below ground level, see historic section in appendix D.

The proposed works will require early engagement with the Network Rail Asset Protection Team with a view to obtain a Basic Asset Protection Agreement (BAPA). The BAPA comprises several forms to be submitted sequentially, detailing the proposals, and providing adequate assurances. The proposals will have to satisfy Network Rail requirements:

- No piling allowed within a 5.0m zone measured from the extrados of the tunnel (vertically and horizontally).
- Piling may be allowed within a 10.0m zone measured from the extrados of the tunnel (annular distance), subject to review loading and details.
- Details of proposals and method statements for works within a 15.0m zone measured from the extrados of the tunnel shall be submitted to Network rail for comments.

3 Ground Conditions

A Ground Investigation and Basement Impact Assessment report has been completed by Geotechnical and Environmental Associates (GEA), ref. J23181 dated December 2023. The report includes a detailed output of the ground conditions found at the land adjacent to 46 Maresfield Gardens, and is summarised in the following section.

3.1 Geology

British Geological society (BGS) maps indicate the site is directly underlain by solid deposits of the London Clay Formation. The site is shown as being in an area with a covering of "Head Propensity", which is described as areas most likely to be covered by Quaternary Head Deposits. It is possible that due to the former alignment of the tributary of the River Tyburn, alluvial soils may locally be present below the site.

3.2 Site Investigations

The GEA site investigation comprised the following:

- Two boreholes to a depth of 15m
- Three boreholes to a depth of 5.45m
- SPT tests at regular interval within the boreholes
- Groundwater monitoring
- Contamination testing

Figure 3.1: Site Investigation scope from GEA report

The investigations have not identified any hazardous soil gases. GEA have made no comment on whether gas protection measures are required or not. It is assumed that the site is low risk, but this should be monitored further prior to any works taking place.

Site investigations have confirmed that the site is underlain by 0.3m to 1.3m of made ground underlain by 1m to 4.7m of weathered London clay underlain by un-weathered London clay.

3.3 Contamination

Three samples of made ground were analysed. The results of the contamination testing have identified elevated concentrations of total PAH and several individual PAH compounds, in addition to fibres of amosite asbestos in a single sample. Further contamination testing and sampling should be undertaken to determine the extent of the contamination encountered. It is likely in areas of proposed soft landscape that a suitable thickness of made ground will need to be removed and replaced with a 300mm thickness of clean subsoil and topsoil. Site workers should adopt suitable precautions when handling soil, particularly in relation to the presence of asbestos fibres.

3.4 Hydrology and Hydrogeology

The site is not close to any significant surface water features, however, several rivers from the Lost Rivers of London Map have been identified around the site.

The London clay formation is classified as unproductive strata and cannot support groundwater flow over any significant distance. Groundwater was not encountered during the investigation or the return visit. Standpipes were installed to a depth of 6m in the deep boreholes and GEA returned for a single monitoring visit.

3.5 Flood Risk

The Environment Agency (EA) flood map for planning shows that the site is in Flood Zone 1 and is therefore at 'low' risk of tidal and or fluvial flooding. The property has no recorded history of groundwater flooding, and the site investigation has not detected groundwater.

Refer to Flood Risk Assessment and Drainage Strategy Report (30846 PM - Flood Risk Assessment and Drainage Strategy Report) completed by Price and Myers for further information.

4 Proposed Structure

The proposed scheme is for the construction of a new six storey RC frame with a single storey, full footprint basement and associated lightwells. The proposed basement is founded approximately 3.5m below existing ground level and will be formed by constructing a series of contiguous piled walls to the North of the building and battering background to the South of the building and building RC retaining walls.

4.1 Substructure

Due to the anticipated loading, and the proximity of the site to TFL assets, the foundation layout for the apartment block is proposed to be a Raft slab at lower ground floor level. Figure 5.1 shows the current substructure proposals.

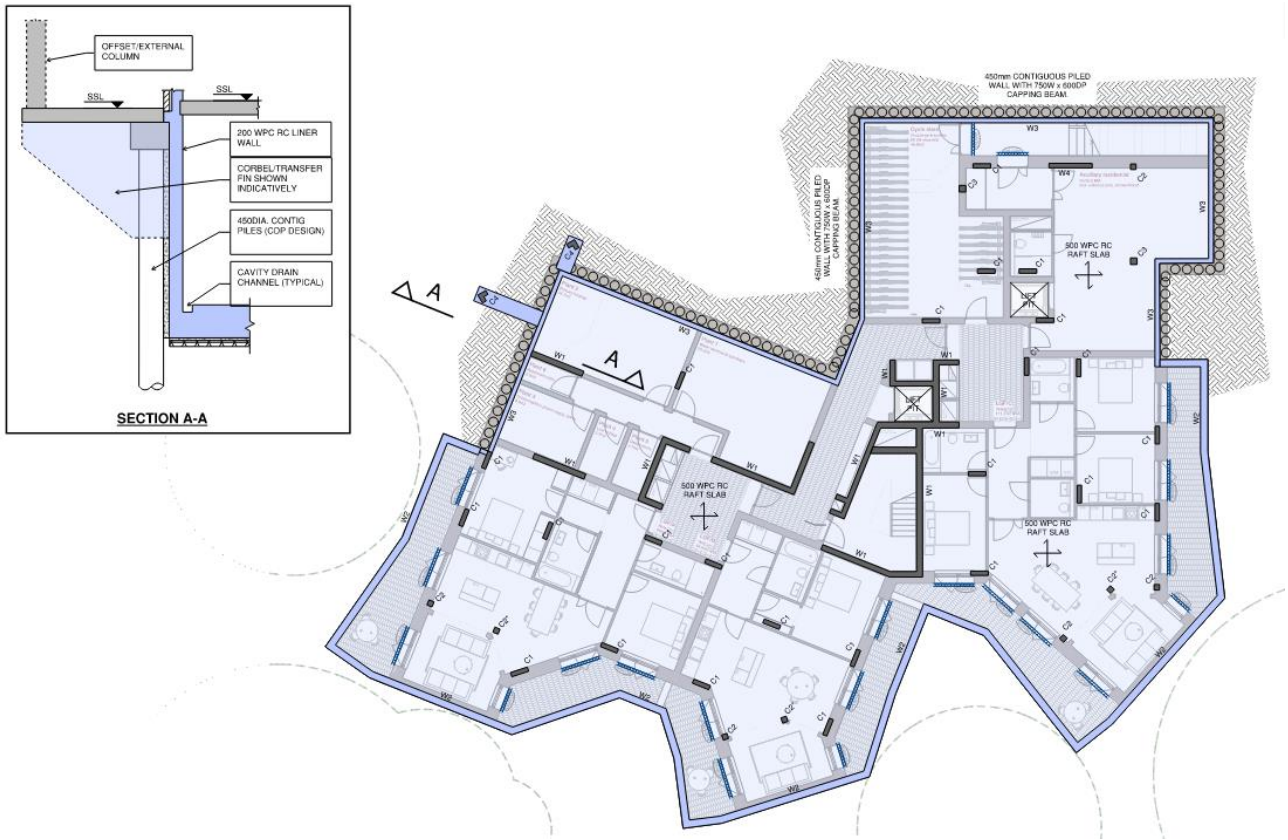


Figure 4.1: Proposed substructure layout

The superstructure loads will typically be applied to the foundations as a series of point loads from the columns, although there will also be a series of line loads beneath the core walls.

We have currently proposed a Raft foundation scheme with a 500mm deep raft at lower ground floor level, the design of which will need to be coordinated with the geotechnical engineers, GEA at detailed design stage. The proposed raft slab will be designed to spread the loads from the superstructure above in an even manner into the in-situ soils below to mitigate any effects of the TFL tunnels. The north of the basement will be formed by constructing a cantilevered contiguous piled wall around the perimeter of the building to mitigate the impact on existing root protection areas being retained. The contiguous piled wall will later have an RC liner wall cast to the internal face to form the wall of the proposed basement. The south of the basement will be formed by battering back the ground and installing RC

retaining walls ahead of backfilling which will allow for a bottom-up construction of the building. All the concrete below ground level is currently proposed to be waterproof concrete and will be constructed with the appropriate hydrophilic strips (water bars) at all construction joints and designed for a crack with of 0.2mm or less, dependant on the waterproofing specialist's requirements. The detailed design of the contiguous piled wall will be a CDP item and should be carried out by a suitably qualified and experienced piling specialist using a suitable factor of safety with the settlement at working load specified to meet any structural requirements. Careful consideration will need to be taken to ensure the piling does not interfere with the Network Rail exclusion zones. The piles are currently proposed to act as a temporary earth retaining structure to facilitate the excavation of the basement and will be designed as independent from the permanent structure (raft and walls). Final details of the interface between the proposed piles and the raft slab/retaining walls will be produced at detailed design stage.

4.2 Superstructure

The superstructure will be constructed as an in-situ RC frame with flat slabs, blade columns and shear walls. The combination of flat slabs and blade columns offers greater flexibility within residential layouts as the column spacing can be somewhat irregular and blade columns can be easily hidden within party walls or adjacent to partitions. The stability of the structure will be provided by shear walls surrounding the buildings cores and primary risers, as well as offset shear walls which will deal with any torsional effects on the buildings core. The flat slab structure typically follows a 5.5m column grid, which allows a 220mm deep structural slab to be used, typically.

Figure 4.2: Typical proposed upper floor arrangement.

5 Design Criteria

5.1 Codes and Standards

The design will be developed in accordance with the relevant Eurocode standards.

BS EN 1990	Load combinations and basis of design.
BS EN 1991-1	Dead and imposed loads.
BS EN 1991-3	Snow loads.
BS EN 1991-4	Wind loads.
BS EN 1992	Reinforced concrete structures.
BS EN 1993-1-1	Design of steel structures.
BS EN 1995-1-1	Design of timber structures.
BS EN 1997	Geotechnical design.

5.2 Loadings

In accordance with BS EN 1991-1

- Typical domestic floor loads of 1.5 kN/m2 for (A1 use) shall be used generally with suitable allowances for partitions.
- Typical domestic balcony load of 2.5kN/m2 for single dwellings (A5 use) and 3.0kN/m2 for communal areas (A6 use)
- Floor load of 3.0kN/m2 to be used for communal/circulation spaces within the development (C31 and C32 use)
- Floor load of 5.0kN/m2 to be used for the proposed gymnasium space at lower ground floor (C41 use)
- Roof load of 0.6kN/m2 for roofs not accessible except for normal maintenance and repair (H use)
- A load of 7.5kN/m2 shall be applied to the basement raft at plant locations.

An appropriate surcharge loading to be applied to the retaining wall structures in accordance with BS EN 1991-2 (UK NA) and BD37/01.

5.3 Design Life

The structures are to be designed with a 50-year design life in accordance with BS EN 1990 NA 2.1.

5.4 Design Fire Periods

The fire strategy will be developed by the Fire Engineer, but it is assumed the structural elements will be protected using the inherent resistance of the concrete frame. With a top storey below 18m above ground level, and basement less than 10 m deep, the anticipated period of fire resistance of the house is 60 minutes, in accordance with Building Regulations Approved Document B, Volume 1, 2019 edition, Table B4.

5.5 Disproportionate Collapse

As a six-storey residential building with a basement, the structure will be classified as Building Consequence Class 2B (Upper Risk Group) in accordance with Building Regulations Approved Document A, Table 11. Therefore, vertical and horizontal ties are required. The proposed superstructure is an RC frame, with monolithic connections which satisfy this requirement.

Table 11 Building consequence classes

Consequence Classes	Building type and occupancy
1	Houses not exceeding 4 storeys
	Agricultural buildings
	Buildings into which people rarely go, provided no part of the building is closer to another building, or area where people do go, than a distance of 1.5 times the building height
2a Lower Risk Group	5 storey single occupancy houses
	Hotels not exceeding 4 storeys
	Flats, apartments and other residential buildings not exceeding 4 storeys
	Offices not exceeding 4 storeys
	Industrial buildings not exceeding 3 storeys
	Retailing premises not exceeding 3 storeys of less than 2000m² floor area in each storey
	Single-storey educational buildings
	All buildings not exceeding 2 storeys to which members of the public are admitted and which contain floor areas not exceeding 2000m² at each storey
2b Upper Risk Group	Hotels, blocks of flats, apartments and other residential buildings greater than 4 storeys but not exceeding 15 storeys
	Educational buildings greater than 1 storey but not exceeding 15 storeys
	Retailing premises greater than 3 storeys but not exceeding 15 storeys
	Hospitals not exceeding 3 storeys
	Offices greater than 4 storeys but not exceeding 15 storeys
	All buildings to which members of the public are admitted which contain floor areas exceeding 2000m² but less than 5000m² at each storey
	Car parking not exceeding 6 storeys
3	All buildings defined above as Consequence Class 2a and 2b that exceed the limits on area and/or number of storeys
	Grandstands accommodating more than 5000 spectators
	Buildings containing hazardous substances and/or processes

Notes:

1. For buildings intended for more than one type of use the Consequence Class should be that pertaining to the most onerous type.
2. In determining the number of storeys in a building, basement storeys may be excluded provided such basement storeys fulfil the robustness requirements of Consequence Class 2b buildings.
3. BS EN 1991-1-7:2006 with its UK National Annex also provides guidance that is comparable to Table 11.

Figure 5.1: Extract from Approved document A showing building consequence class.

6 Construction

6.1 Outline Method statement

1. Remove any trees that are not to be retained. Remove any material that is currently stored at the site. Prepare ground for excavation.

2. A contiguous piled retaining wall and capping beam shall be installed around the North perimeter of the proposed building. The piled wall shall be designed as cantilevered (i.e. un-propped at the top of the wall).

3. Batter back the ground to the south of the proposed building and excavate down to subbase level of the basement Raft slab.

4. Form the Raft slab, allowing for a kicker for the proposed RC liner wall. Construct retaining walls to the south of the proposed building.

5. Form the RC liner wall at basement level as well as the RC columns and shear walls.

6. Form the ground floor slab, forming the permanent prop for the retaining walls.

7. Form upper floor structure in a sequence as per contractor's details.

6.2 Substructure

The basement shall be formed in a typical bottom-up construction sequence. Once the site has been cleared of trees and other material, works can begin. No demolition works are necessary. A piling mat is laid, and the contiguous piled wall is installed with CFA piles. The capping beam is then installed, the ground shall be excavated to basement formation level and raft slab formed. The reinforced concrete basement retaining walls, liner walls, columns and shear walls are then to be formed before the ground floor slab is formed. All columns and walls are to be supported directly off the basement raft slab.

6.3 Superstructure

From the ground floor up the construction will be entirely in-situ flat slab RC construction. With shear walls proving the lateral stability and the slabs acting as diaphragms, distributing the loads throughout the structure to the concrete frame. The concrete frame is to be clad in masonry. There are several loggias located throughout the structure, these are to be thermally broken from the internal structure.

6.4 External Works

As mentioned in the first section the proposed site is adjacent to two other development sites 39 and 39A Fitzjohn's Avenue. The external landscaping of the three sites is to be tied together by one 'masterplan'. The external works involve new pedestrian and cycle paths through the existing woodland, new hardstanding terraces and private gardens.

6.5 Construction Generally

All works will be undertaken by a suitably experienced contractor, familiar with the techniques proposed and the restrictions of the site. Construction in proximity to existing structures, piling works, and basement excavation are specialist works and the Structural Engineer will be involved in the selection of an appropriate contractor who will need to demonstrate they have the relevant expertise and experience for this type of project.

Some of the key issues that will affect the sequence of works are:

- Piling adjacent to/above a Network Rail asset.
- Excavations within/close to RPA's.
- Forming sensible access into the site to minimise disruption to the neighbouring residents.
- Providing a safe working environment.
- Sustainability.

6.6 Noise, Dust and Vibration

The Contractor shall undertake the works in such a way as to minimise noise, dust and vibration when working close to adjacent buildings to protect the amenities of the nearby occupiers. The Contractor will be expected to carry out the work in accordance with their Method Statements and Local Authority requirements using equipment to comply with EC Directives and UK Regulations set out in BS 5228- 1:2009+A1:2014. All demolition and excavations will be undertaken in a carefully controlled sequence, considering the requirement to minimise vibration and noise using low impact technique such as demolition munchers and bored or hydraulically jacked piling rigs, alternatives to percussive drills/hammers where possible. Steps would be taken to isolate the deconstruction works from the neighbours with erection of acoustic screens or enclosures wherever possible. Effective site management would be implemented to avoid unnecessary noise such as engines idling or revving, shouting and loud radios. Control of dust will be a high priority and mechanisms for dust control would be to use airborne dust wet suppression systems with fire hoses and diffuser nozzles or large area misters.

7 Conclusion

In conclusion, the construction of the above scheme is considered compliant with the London Borough of Camden's requirements as set out in 'Camden Planning Guidance' which was approved by Council on 15 January 2021. The proposed basement satisfies the following conditions as set out in the planning Guidance:

- The proposed basement does not cause harm to neighbouring properties, structural stability of the adjacent ground or the existing ground water conditions.
- The basement is sited directly below the host building and thus has minimal impact on the property/site.
- The basement is a single storey basement and occupies significantly less than 50% of the site.
- A site-specific Basement Impact Assessment (BIA) was produced by GEA, as referenced in Section 3 of this report.
- An outline construction sequence has been provided in Section 6 of this report. The construction of the proposed basement is straight forward and follows generally accepted principles in terms of basement construction in Camden and the UK and therefore a detailed construction sequence has not been provided, although this can be provided on request.

The Camden Local Plan conforms, in general, with the London Plan and approved alterations. The proposed development is in accordance with the Camden Local plan and satisfies the following conditions (in addition to those listed above):

- A Flood Risk Assessment and Drainage Strategy Report has been prepared by Price & Myers as detailed in Section 3.5 of this report.
- The proposed basement is less than 1.5 times the footprint of the host building in area.
- The proposed basement does not harm the amenity of Neighbours.
- The proposed development provides adequate hard and soft landscaping surrounding the proposed structure.

Further to the above Camden and London Plan requirements, the following conditions are satisfied in terms of the National Planning Policy Framework:

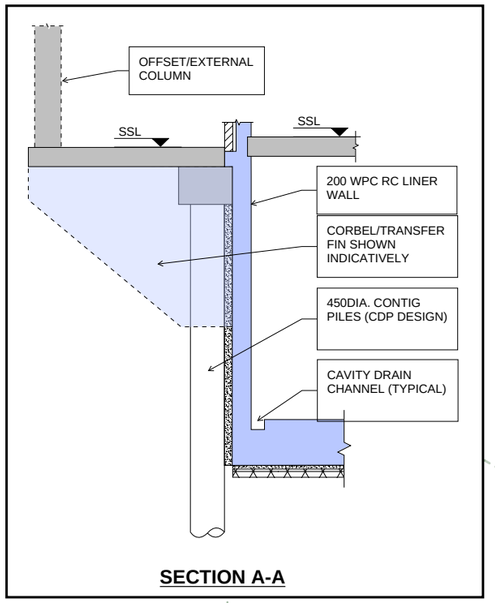
- The proposed development is set to provide 29 homes on a site which currently has no homes. This greatly supports the Governments objective of significantly boosting the supply of homes.
- The proposed development promotes an effective use of land, by creating new homes whilst maintaining/enhancing the public realm and hard/soft landscaping surrounding the proposed building thus providing multiple functions on the existing, unused site.
- The proposed development promotes and supports the development of under-utilised land and buildings, in an area where land supply is constrained by better utilising the available site.

Given the above, we are satisfied that the proposed development at the Land Adjacent to No. 46 Maresfield Gardens offers a positive response to all required planning guidance for the site, in terms of structural and civil engineering.

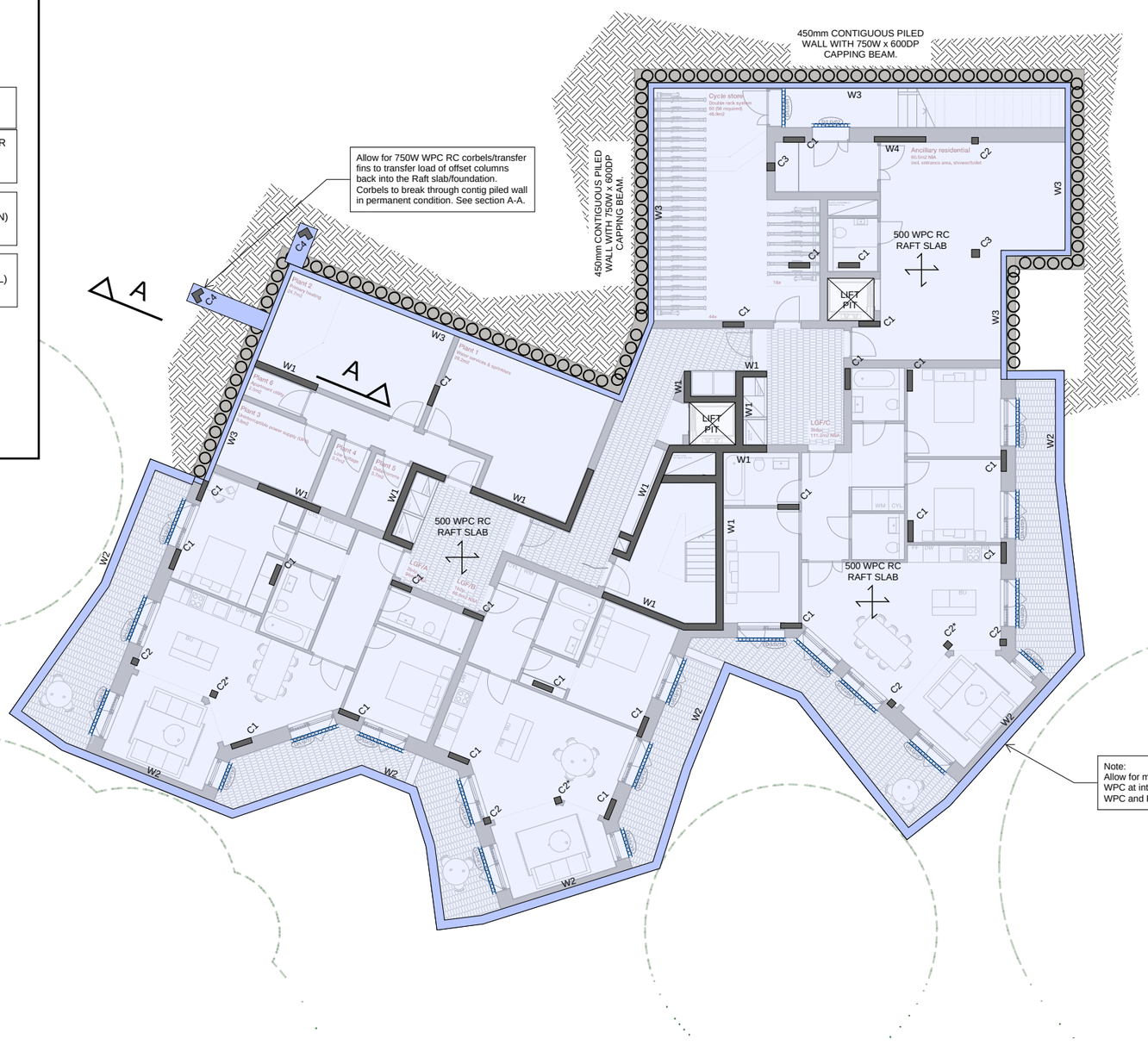
Appendix A
Proposed Structural GA's

PRICE & MYERS

Job No.	30846	Page	SK 005 (1/7)	Rev	P02
Date	21/11/2023	Eng	TL	Chd	LS
Job	Land adjacent to No. 46 Maresfield Gardens				



SECTION A-A



LOWER GROUND FLOOR

SCALE: 1:200@A3

WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
	WATERPROOF RC
	THERMAL BREAK
	MASONRY SUPPORT
	STRUCTURE UNDER
	SLOT DRAIN

Do not scale from this drawing, use stated dimensions only.

Structural elements are sized for a 90-minute fire rating.

Structural layouts shown are indicative and are subject to detailed calculations. Final setting out of structural elements TBC at a later stage.

RC 32/40 concrete to all slabs, walls, beams and columns (typical) unless noted otherwise.

Stairs to cores to be either in-situ concrete on permanent formwork (e.g. stairmaster) or precast concrete (typically).

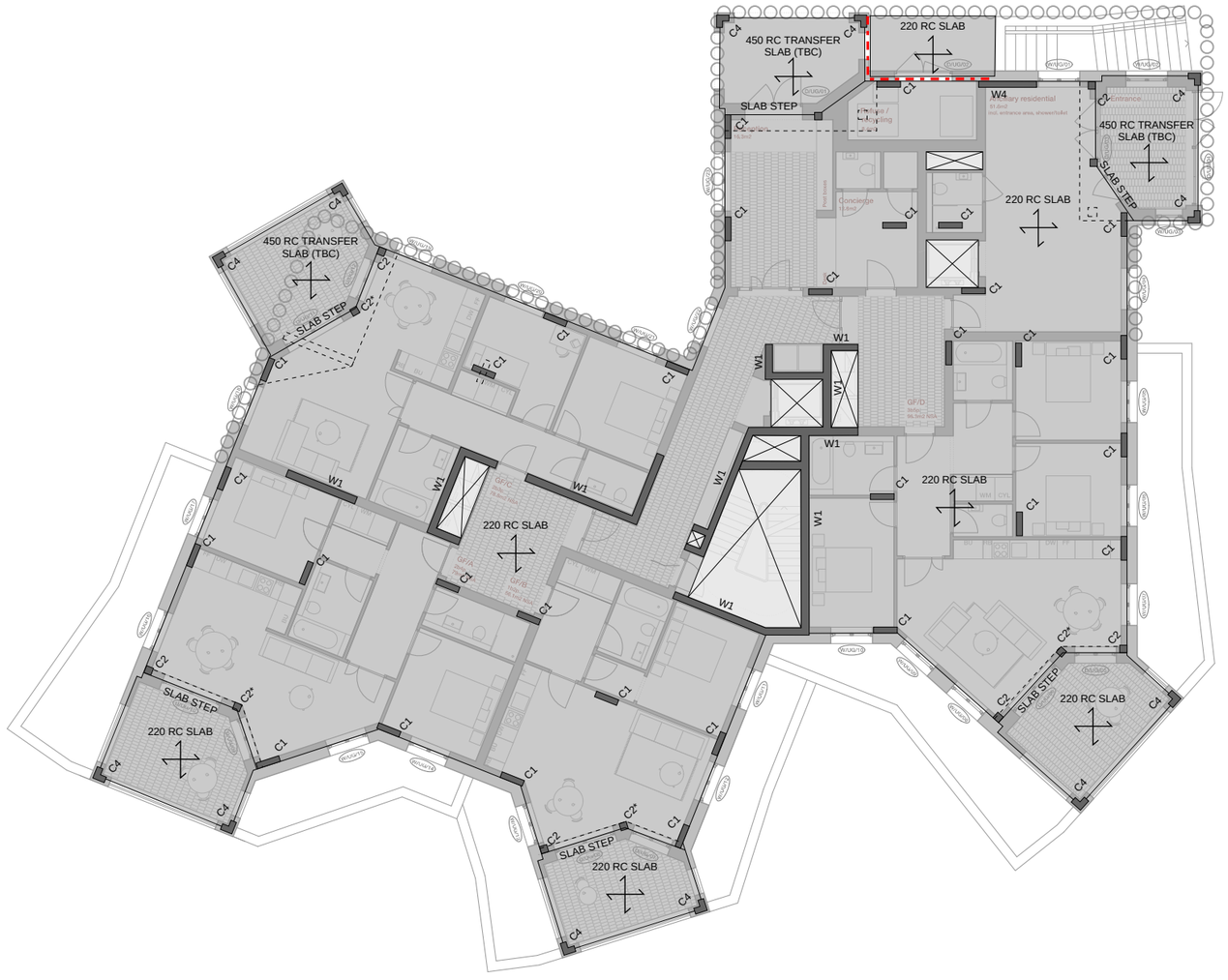
Thermal break connections required to all 220mm thick RC balconies unless noted otherwise.

Masonry support indicatively shown at every other slab level to perimeter of slab edge. Ancon or similar.

All fire protection of steelwork to the specification of others.

PRICE & MYERS

Job No.	30846	Page	SK 005 (2/7)	Rev	P02
Date	21/11/2023	Eng	TL	Chd	LS
Job	Land adjacent to No. 46 Maresfield Gardens				



UPPER GROUND FLOOR

SCALE: 1:200@A3

WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
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WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
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FIRST FLOOR

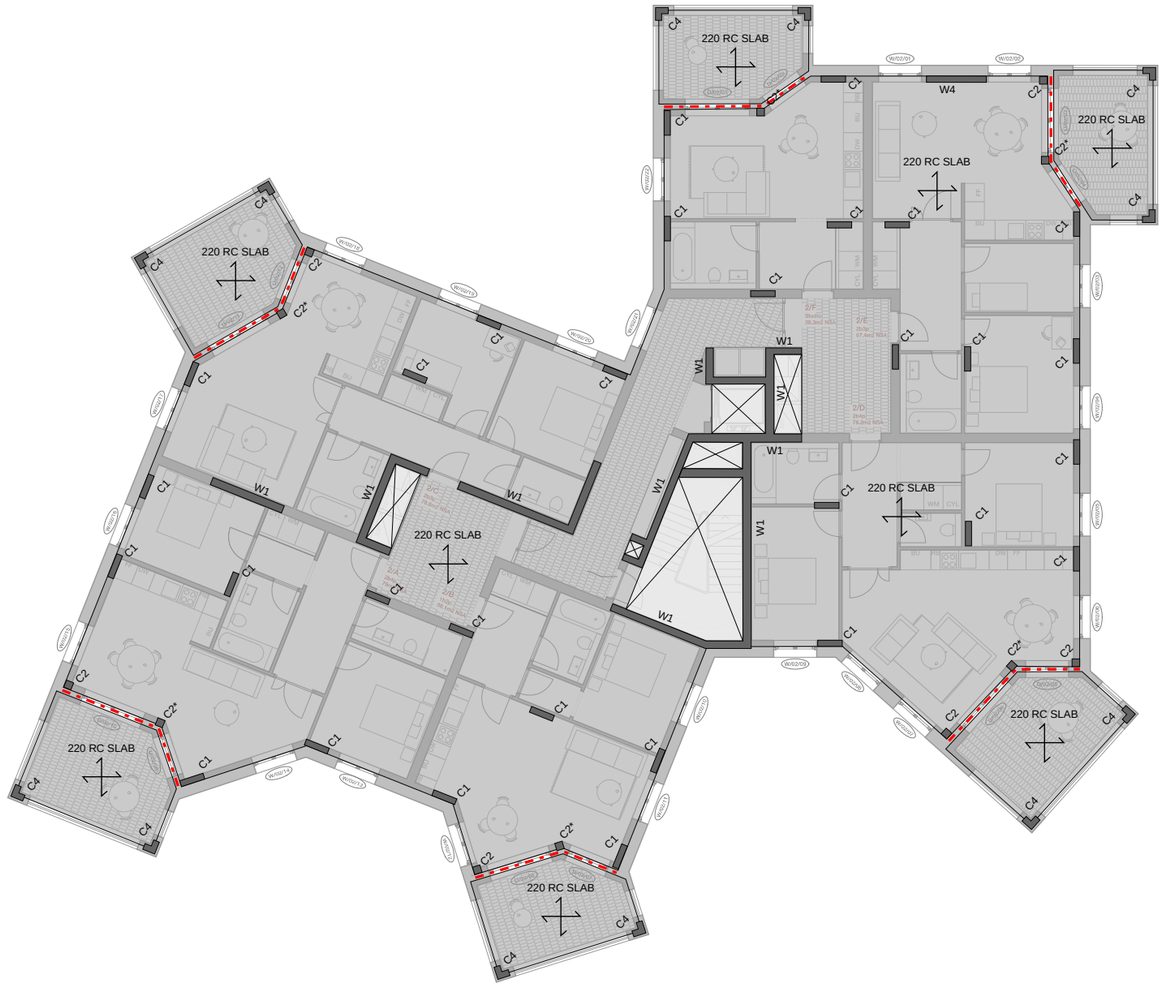
SCALE: 1:200@A3

PRICE & MYERS

Job No. 30846 Page SK 005 (4/7) Rev P02

Date 21/11/2023 Eng TL Chd LS

Job Land adjacent to No. 46 Maresfield Gardens



SECOND FLOOR

SCALE: 1:200@A3

WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
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Stairs to cores to be either in-situ concrete on permanent formwork (e.g. stairmaster) or precast concrete (typically).

Thermal break connections required to all 220mm thick RC balconies unless noted otherwise.

Masonry support indicatively shown at every other slab level to perimeter of slab edge. Ancon or similar.

All fire protection of steelwork to the specification of others.

PRICE & MYERS

Job No.	30846	Page	SK 005 (5/7)	Rev	P02
Date	21/11/2023	Eng	TL	Chd	LS
Job	Land adjacent to No. 46 Maresfield Gardens				

WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
	WATERPROOF RC
	THERMAL BREAK
	MASONRY SUPPORT
	STRUCTURE UNDER
	SLOT DRAIN

Do not scale from this drawing, use stated dimensions only.

Structural elements are sized for a 90-minute fire rating.

Structural layouts shown are indicative and are subject to detailed calculations. Final setting out of structural elements TBC at a later stage.

RC 32/40 concrete to all slabs, walls, beams and columns (typical) unless noted otherwise.

Stairs to cores to be either in-situ concrete on permanent formwork (e.g. stairmaster) or precast concrete (typically).

Thermal break connections required to all 220mm thick RC balconies unless noted otherwise.

Masonry support indicatively shown at every other slab level to perimeter of slab edge. Ancon or similar.

All fire protection of steelwork to the specification of others.

THIRD FLOOR

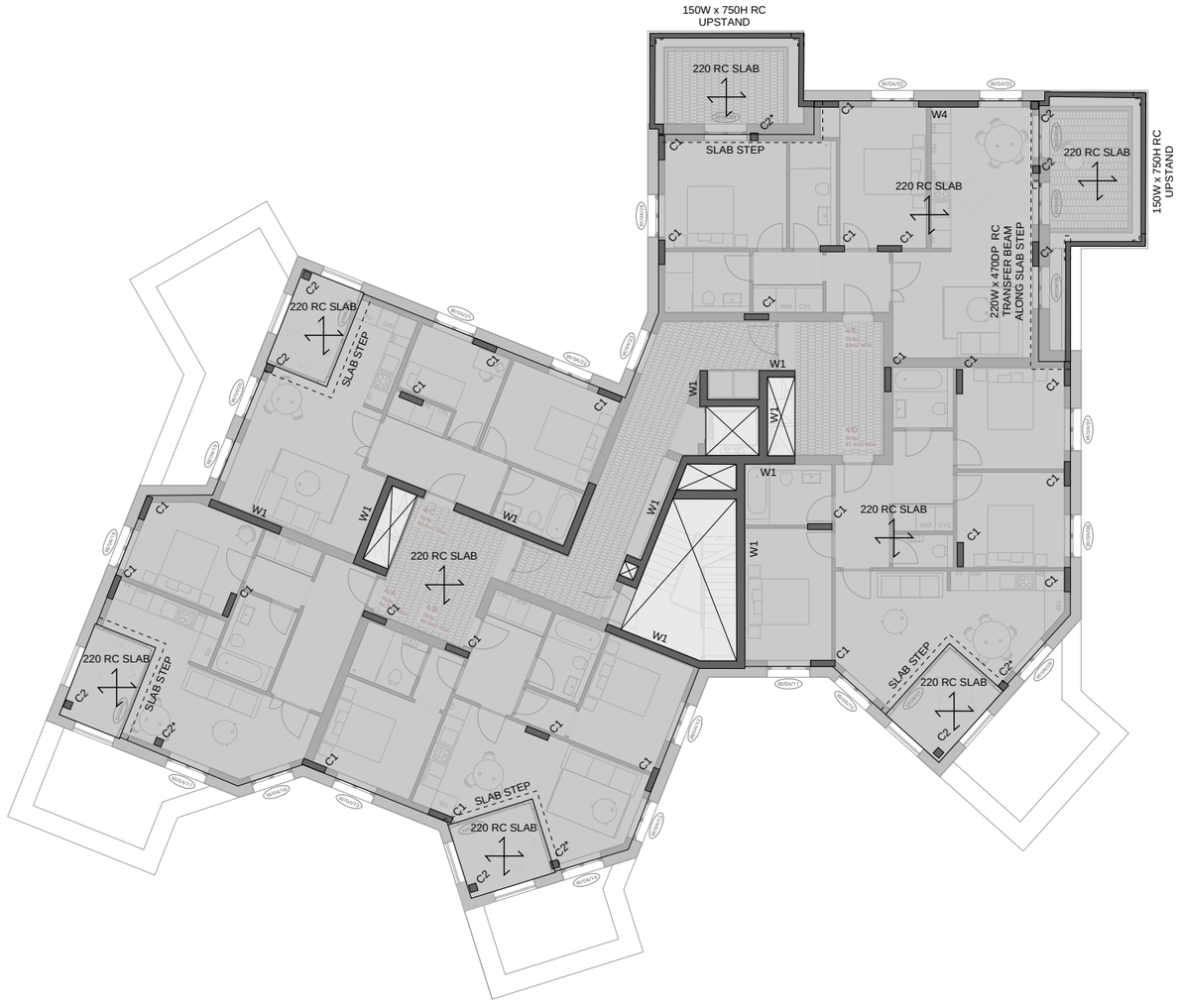
SCALE: 1:200@A3

PRICE & MYERS

Job No. 30846 Page SK 005 (6/7) Rev P02

Date 21/11/2023 Eng TL Chd LS

Job Land adjacent to No. 46 Maresfield Gardens



WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
	WATERPROOF RC
	THERMAL BREAK
	MASONRY SUPPORT
	STRUCTURE UNDER
	SLOT DRAIN

Do not scale from this drawing, use stated dimensions only.

Structural elements are sized for a 90-minute fire rating.

Structural layouts shown are indicative and are subject to detailed calculations. Final setting out of structural elements TBC at a later stage.

RC 32/40 concrete to all slabs, walls, beams and columns (typical) unless noted otherwise.

Stairs to cores to be either in-situ concrete on permanent formwork (e.g. stairmaster) or precast concrete (typically).

Thermal break connections required to all 220mm thick RC balconies unless noted otherwise.

Masonry support indicatively shown at every other slab level to perimeter of slab edge. Ancon or similar.

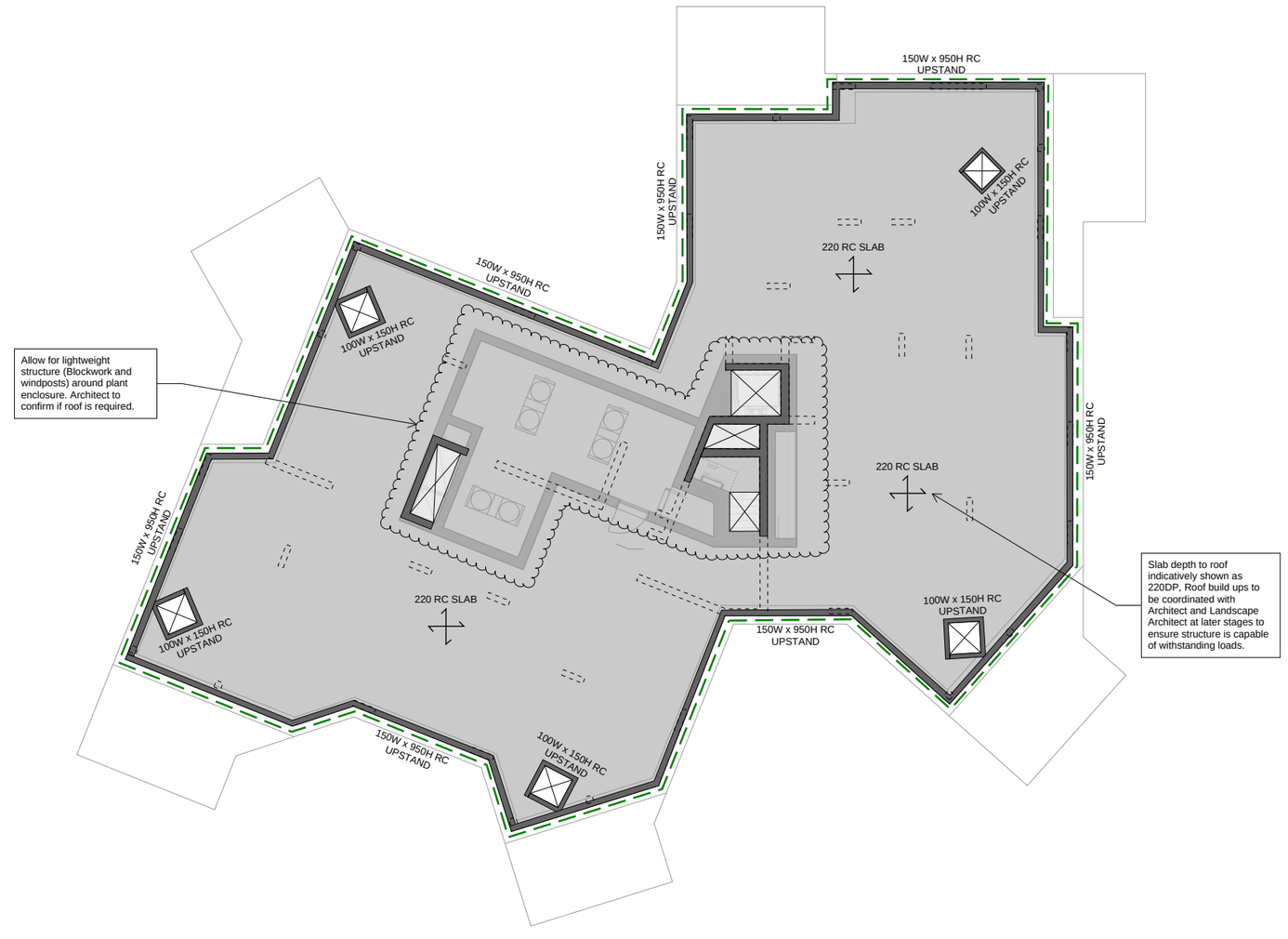
All fire protection of steelwork to the specification of others.

FOURTH FLOOR

SCALE: 1:200@A3

PRICE & MYERS

Job No.	30846	Page	SK 005 (7/7)	Rev	P02
Date	21/11/2023	Eng	TL	Chd	LS
Job	Land adjacent to No. 46 Maresfield Gardens				



WALL & COLUMN SCHEDULE	
W1	250THK RC WALL
W2	250 THK WPC RC RET. WALL
W3	200THK WPC RC LINER WALL
W4	200THK RC WALL
C1	200x800 RC COLUMN
C2	250x250 RC COLUMN OR 150x150X8.0 SHS (*)
C3	300x300 RC COLUMN
C4	415x415x200 RC COLUMN

LEGEND	
	WATERPROOF RC
	THERMAL BREAK
	MASONRY SUPPORT
	STRUCTURE UNDER
	SLOT DRAIN

Do not scale from this drawing, use stated dimensions only.

Structural elements are sized for a 90-minute fire rating.

Structural layouts shown are indicative and are subject to detailed calculations. Final setting out of structural elements TBC at a later stage.

RC 32/40 concrete to all slabs, walls, beams and columns (typical) unless noted otherwise.

Stairs to cores to be either in-situ concrete on permanent formwork (e.g. stairmaster) or precast concrete (typically).

Thermal break connections required to all 220mm thick RC balconies unless noted otherwise.

Masonry support indicatively shown at every other slab level to perimeter of slab edge. Ancon or similar.

All fire protection of steelwork to the specification of others.

ROOF

SCALE: 1:200@A3

Appendix B
Architect's Site Plan

48

45a

45

46

MARESFIELD GARDENS

FITZJOHN'S AVENUE

39a FJA

39 FJA

M G

NUTLEY TERRACE

Submerged rail tunnel

Submerged rail tunnel

184950N
526450E

37 c

37 b

37 a

8

32

0 2 5 10m

Sergison Bates architects LLP
Proposed site plan

Maresfield Gardens, NW3
Issued for information

Architects	Date	Scale
Sergison Bates architects 34 Clerkenwell Close London EC1R 0AU United Kingdom	05/12/23	1:400@A3

Tel +44 (0)20 7255 1564
e-mail studio
@sergisonbates.co.uk

325/4201

05/12/23 Rev -

Do not scale from this drawing
All dimensions to be verified on site
Limited Liability Partnership Registered in England & Wales
No. OC317501 Registered office as above

Appendix C
Tree Constraints Plan

T1 Plane B2
T2 Plane B2
T3 Poplar B2
T4 Birch C2
T5 Pear C/u
T6 Cherry C1
T7 Cherry C1
T8 Cherry C1
T9 Chestnut C1
T10 Plum C
T11 Plum C2
T12 Ash C1
T13 Chestnut C2
T14 Ash C1
T15 Chestnut C1
T16 Ash C
T17 Ash C2
T18 Ash U
T19 Ash U
T20 Ash C2
T21 Ash U
T22 Cherry B2
T24 Plum C
T25 Plum U
T26 Maple B2
T27 Maple C2
T28 Maple C2
T29 Hawthorn & Cotoneaster C2
T30 Holly C2
T31 Chestnut B1
T32 Birch B2
T33 Birch B1
T34 Birch C1
T35 Birch B2
T36 Birch B2
T37 Birch B2
T38 Birch B2
T39 Cherry C
T40 Cypress C2
T41 Beech C1
T42 Ash U
T43 Sycamore U
T44 Sycamore C2
T45 Ash B2
T46 Holly C2
T47 False Acacia C1
T48 Plane A2
T49 Plane A2
T50 Holly U
T51 Cotoneaster C
T52 Birch B2
T53 Birch C1
T54 Apple C1
T55 Apple C2
T56 Apple C2
T57 Apple C2
T58 Mixed shrubs C2
T59 Holly C2
T61 Elder C2
G23 Mixed shrubs C
G60 Mixed Broadleaves C2
G62 Apple & Pear C2

NOTE:
This survey is of a preliminary nature. The trees were inspected from the ground only on the basis of the Visual Tree Assessment method. No samples were taken for analysis. No decay detection equipment was employed. The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

Branch spread in metres is taken at the four cardinal points to derive an accurate representation of the crown.

Root Protection Areas (RPA) are derived from stem diameter measured at 1.5 m above adjacent ground level (taken on sloping ground on the upslope side of the tree base).

Landmark Trees
Holden House, 4th Floor, 57 Rathbone Place, London W1T 4JU
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 39 Fitzjohns Avenue | 1:200@ A1

Drawing Title: Tree Constraints Plan | November 2022

Key:
- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention
- Category
- Crown Spread
- Root Protection Area
- Tree Number
- Species
- Category
- Tree Position Approximate (not shown on original survey)

0 2 4

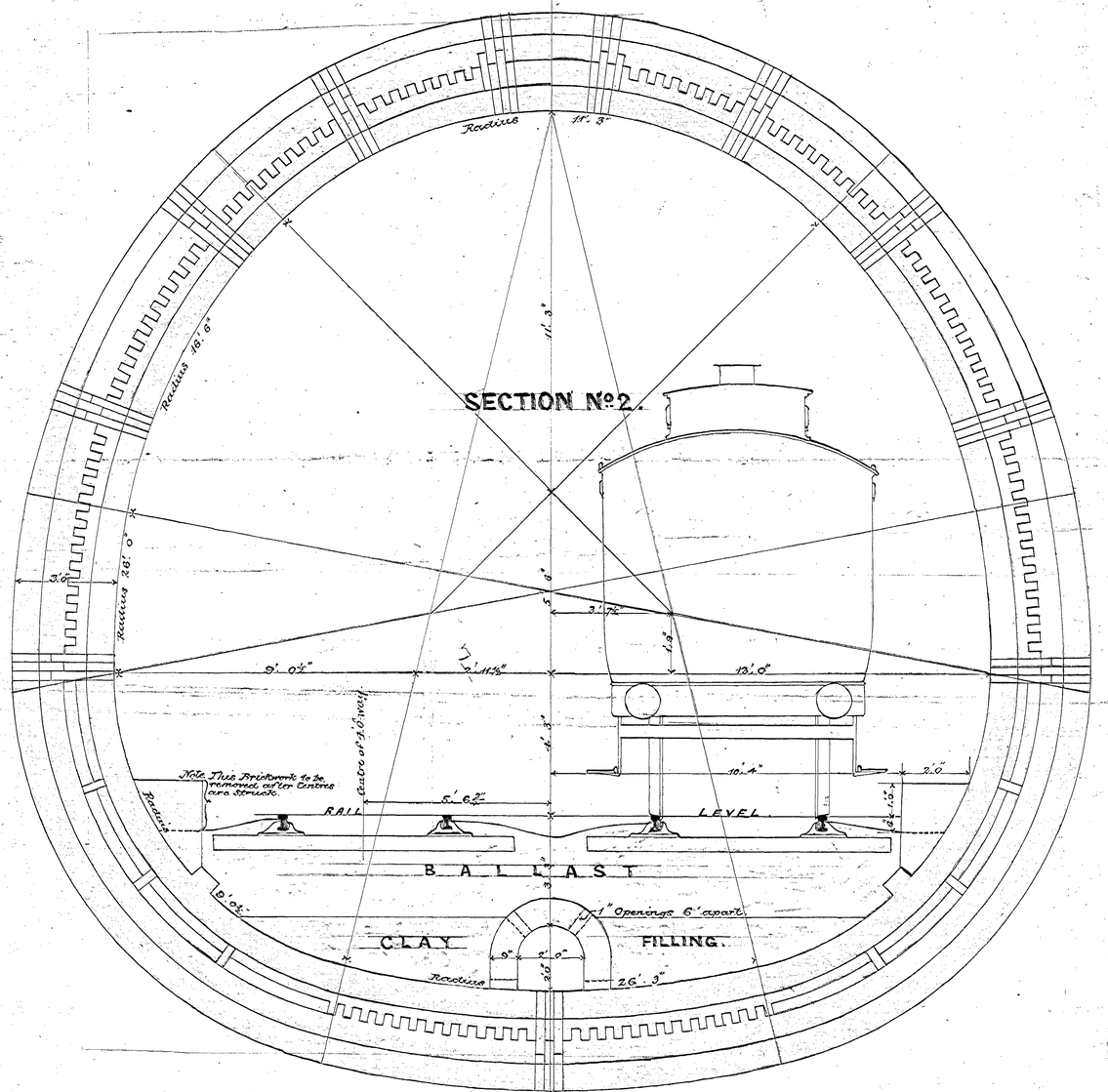
Appendix D
Network Rail Information

BOOK 1

M. Ry. BELSIZE SECOND TUNNEL.

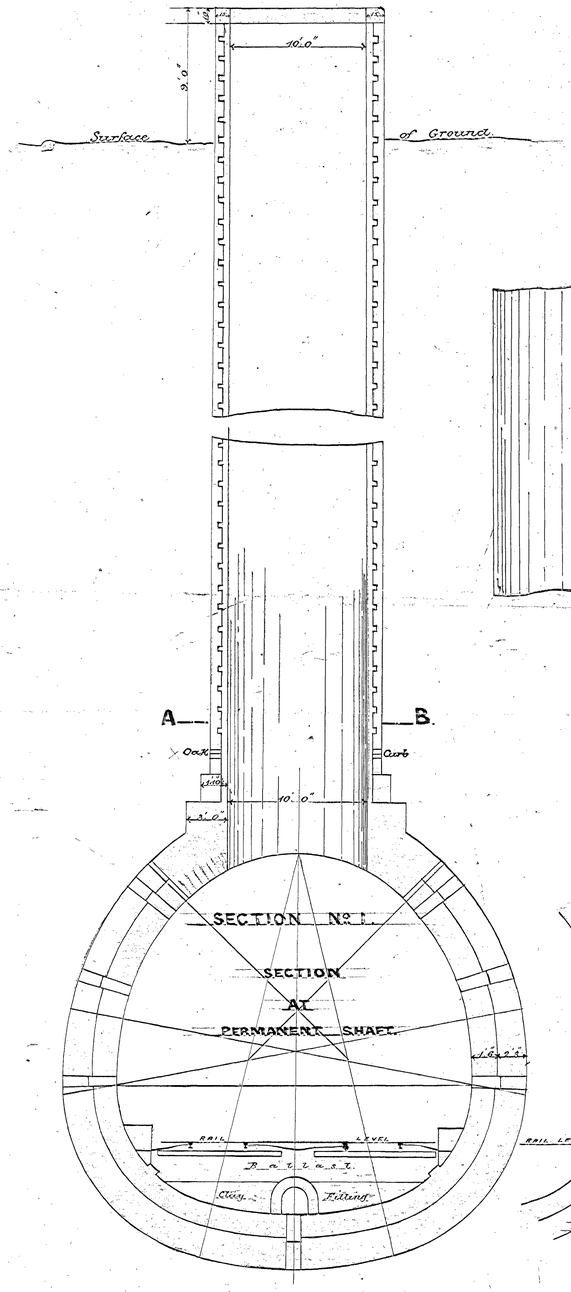
Passenger Tunnel — Bridge No 29.

GENERAL SECTION.

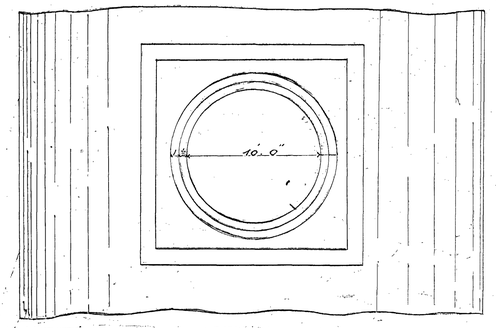


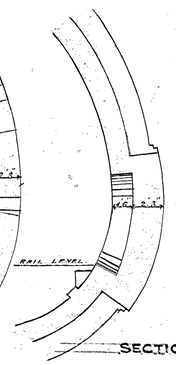
SECTION No 2.

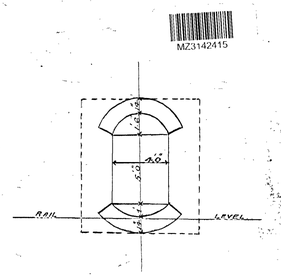
SCALE, ½ INCH TO ONE FOOT.



SECTION ON LINE A B.





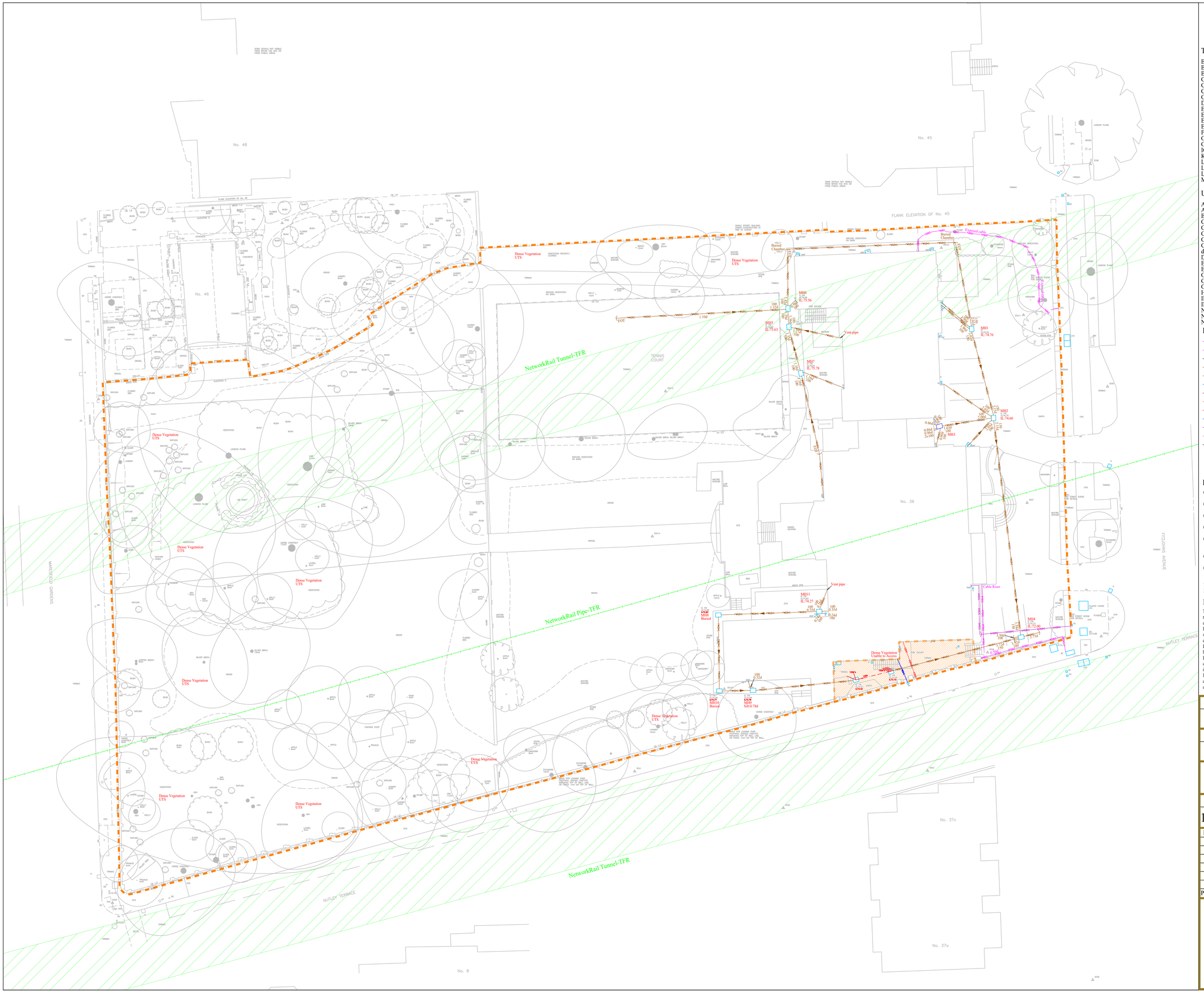


SECTION & ELEVATION OF REFUGE.

SCALE, 1 INCH TO 5 FEET.

MZ3142415

Appendix E
Below Ground Utilities Scan



INDICATIVE ONLY

Topographical Abbreviations

BH	Borehole	MKR	Marker
BOL	Bollard	MT	Mercury Telecom Cover
BT	British Telecom Cover	OHC	Overhead Cable
CATV	Cable TV Cover	OHP	Overhead Pipe
CCTV	Closed Circuit TV	PB	Post Box
CL	Cover Level	RE	Rodding Eye
CM	Cable Marker	RG	Road Gully
DP	Down Pipe	RS	Road Sign
EJB	Electricity Junction Box	RWP	Rain Water Pipe
EC	Electricity Cover	SC	Stop Cock
EP	Electricity Pole	STA	Survey Station
ER	Earthing Rod	SV	Stop Valve
FH	Fire Hydrant	SVP	Soil Vent Pipe
G	Gully	TB	Telephone Box
GV	Gas Valve	TJB	Telephone Junction Box
IC	Inspection Cover	TPT	Trial Pit
KO	Kerb Outlet	TL	Traffic Light
LB	Litter Bin	TP	Telephone Pole
LC	Lamp Column	VP	Vent Pipe
LP	Lamp Post	WM	Water Meter
MH	Manhole	WV	Water Valve

Underground Services Abbreviations

A	Approximate	OF	Offset Fill Point
AR	Assumed Route	OSA	Outside Survey Area
BD	Back Drop	PE	Polyethylene Pipe
CI	Cast Iron	PD	Pit Depth (in meters)
CO	Concrete	PRi	Pipe Riser
CP	Catch Pit	PS	Poor Signal
CPL	Catch Pit Base Level	SA	Survey Abandoned
CR	Cable Riser	SI	Spun (Grey) Iron
d	Depth to service (in metres)	SIL	Silt Level
DI	Ductile Iron	T	Tank
ED	Empty Duct	TFR	Taken From Records
EOT	End of Trace	UR	Unable to Rod
GR	Gas Raiser	UTF	Unable to Find
GPR	Ground Penetrating Radar	UTGA	Unable to Gain Access
GRP	Glass Reinforced Plastic	UTL	Unable to Lift
HV	High Voltage	UTS	Unable to Survey
IL	Invert Level	UTT	Unable to Trace
INT	Interceptor	VC	Vitrified Clay
NVD	No Visible Ducts	VR	Vapour Recovery
NVP	No Visible Pipes	WD	Water Depth (in meters)
NS	No Signal	WL	Water Level
		WR	Water Raiser

Legend

TV(B2)	Cable TV	LPG(B2)	LPG
CM(B2)	Communications	O(B2)	Offset Fill Pipe
AIR(B2)	Compressed Air	OP(B2)	Oil Pipe
CWS(B2)	Drainage - Combined	R(B2)	Radar Trace
FWS(B2)	Drainage - Foul		Survey Boundary
SWS(B2)	Drainage - Surface	BT(B2)	Telecoms
DU(B2)	Ducting	TC(B2)	Traffic Control
EA(B2)	Earth Cable		Trench Scar
E(B2)	Electric	U(B2)	Unidentified
FU(B2)	Fuel Pipe	VR(B2)	Vapour Recovery
GAS(B2)	Gas	V(B2)	Vent Pipe
GU(B2)	Fuel Guage Line	W(B2)	Water
H(B2)	Heating Pipe		
	Chamber Extents		Radar Area Anomaly
	No Access		End of Trace

PAS 128:2014 Quality & Confidence Levels

(A)	Horizontal and vertical position verified visually (Accuracy: Horizontal (±50 mm) Vertical (±25 mm))
(B1)	Horizontal and vertical location of the utility detected by multiple geophysical techniques used. (Estimated accuracy: ±150 mm or ±15% of detected depth whichever is greater).
(B2)	Horizontal and vertical location of the utility detected by one of the geophysical techniques used. (Estimated accuracy: ±250 mm or ±40% of detected depth whichever is greater).
(B3)	Horizontal location only of the utility detected by one of the geophysical techniques used. (Estimated accuracy: Horizontal (±500 mm) Vertical - Undefined)
(B4)	A utility segment which is suspected to exist but has not been detected and is therefore shown as an assumed route. (Estimated accuracy: Undefined)
(C)	Route transcribed from utility asset plans and correlated to visual indicators and surface features. (Estimated accuracy: Undefined)
(D)	Route transcribed from utility asset plans (Estimated accuracy: Undefined)

NB: 'P' suffixed to the quality level indicates GPR data has been post-processed. QL(A) is inferred at all MH's & IC's unless otherwise stated.

Disclaimer

This drawing and information contained within is issued in confidence and is the copyright of 128Mapping Limited. If the topographical information or base mapping has been supplied by a third party, 128Mapping Limited is not liable for any inaccuracies contained therein.
Electromagnetic and Ground Penetrating Radar techniques combined with visual inspection have been used to locate and map the underground services shown on this plan. 128Mapping Limited use all reasonable efforts expected of experienced and qualified staff combined calibrated equipment to perform our surveys, however, the completeness of any underground survey cannot be guaranteed.
Depths are provided as a guide only. Services shown as QL(C), QL(D) or TFR (taken from records) and QL(B4) or AR (assumed route) have not been proven on site and are not guaranteed.
Please note that not all buried pipes, utilities and features can be detected and mapped due to conditions outside of our control, such as depth, location, material type, geology and proximity to other services. It is recommended that trial holes are undertaken to confirm identification, location and depth of services at critical locations.
128Mapping Limited cannot be held responsible for any inaccuracies beyond those that could be reasonably expected of a competent company. No utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times in line with HSG47.

SITE DETAILS

39 Fitzjohn's Avenue, London, NW3 5JU

CLIENT DETAILS

MECSERVE

UTILITY MAPPING SURVEY

JOB No	DRAWING NUMBER	SCALE
128-22-5367	128-22-5367-U1	1:200@A0

Rev	Svyr	Drawn	QA	Revision Notes	Date
5	-	-	-	-	-
4	-	-	-	-	-
3	-	-	-	-	-
2	-	-	-	-	-
1	-	-	-	-	-
0	FP	FP	MW	First Complete Issue	07/12/2022
Prelim			-	Preliminary - Not Complete	-

John Robinson Associates
Utility Survey Specialists & Consultants

Appendix F
Drainage Layout

PRICE & MYERS

Job No.	30846	Page	30846-600	Rev	4
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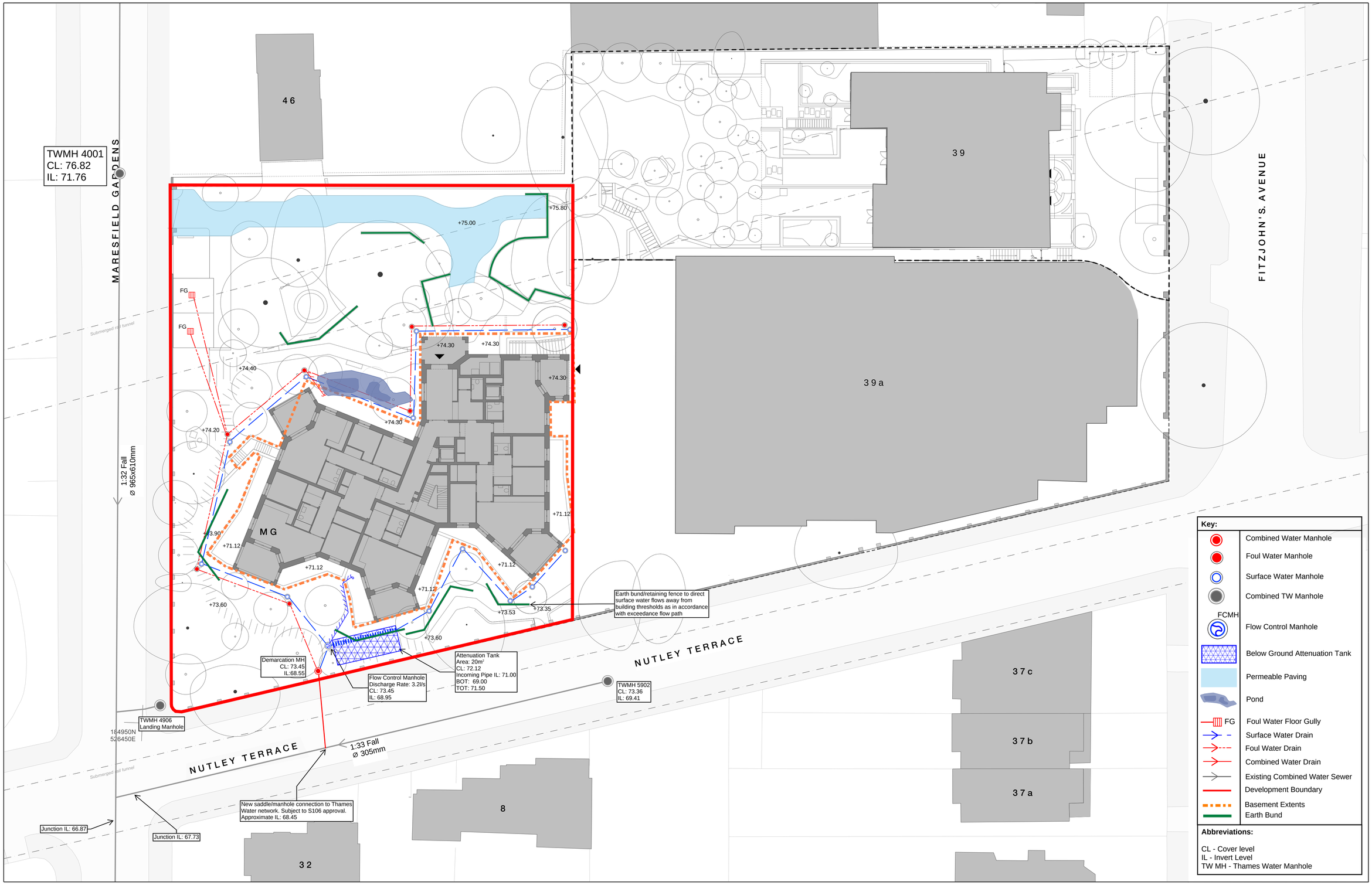

PRICE & MYERS

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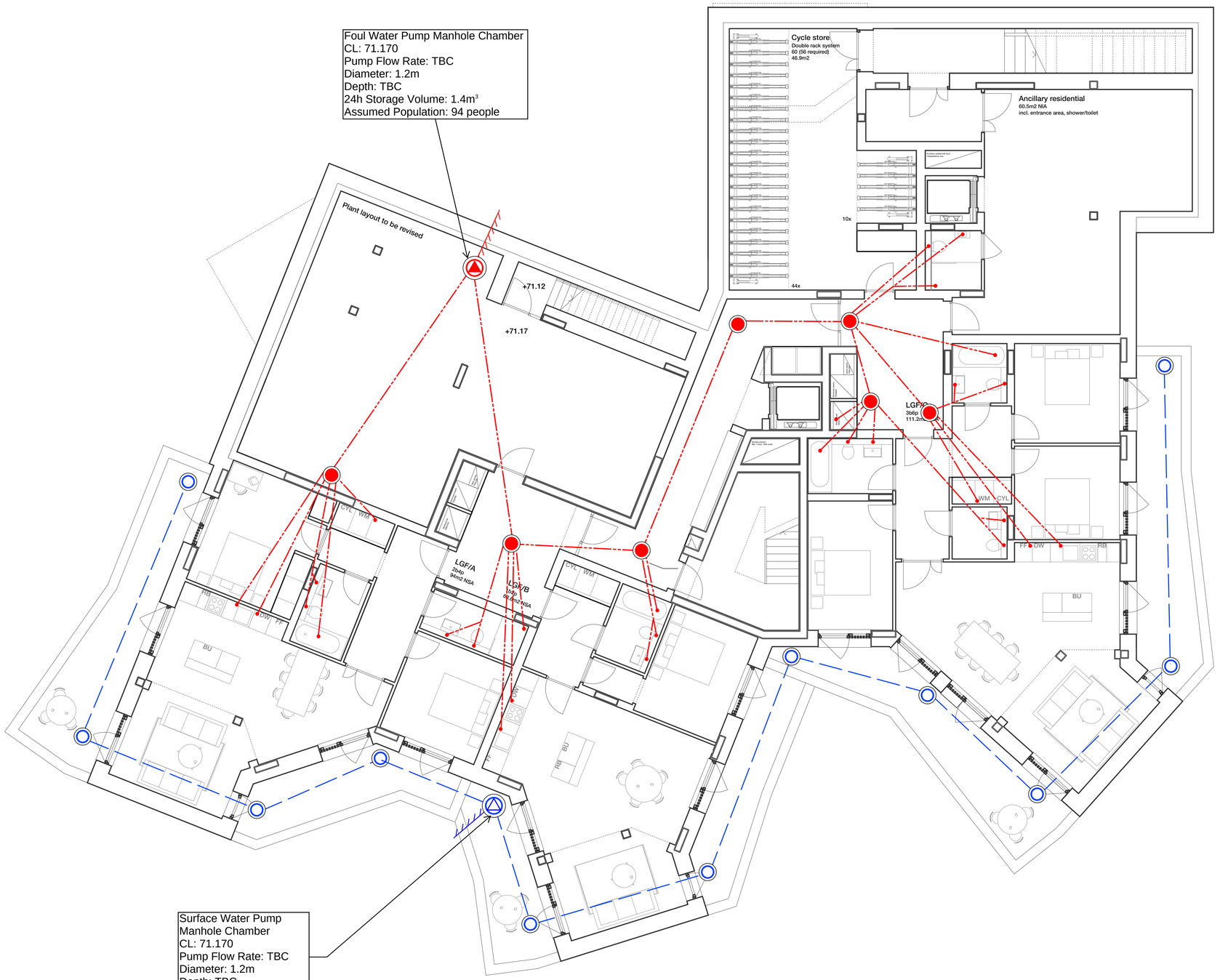

Key:	
	Foul Water Manhole
	Surface Water Manhole
	Pump Manhole Chamber
FCMH	Flow Control Manhole
	Below Ground Attenuation Tank
	Surface Water Drain
	Foul Water Drain

Abbreviations:

CL - Cover level
IL - Invert Level
TW MH - Thames Water Manhole