

29 Milton Park

BASEMENT IMPACT ASSESSMENT

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1 GENERAL DESCRIPTION

To be read in conjunction with all Architects drawings and specifications.

A new build 2 storey structure with a glass extension is proposed on an infill site between terraces on Milton Rd and Milton Park Rd in Highgate, Haringey, London N6.

A single level basement is proposed with the 2 storey structure over.

This report constitutes a Basement Impact Assessment for the proposed basement construction prepared in accordance with the Haringey Council Draft Basement Development Guidance Note June 2012.

The report concludes that the basement can be safely constructed without significant disturbance to neighbouring property owners and without significant harm to the built / natural environment and local amenity.

2 PLANNING REQUIREMENTS

This document is produced to support a planning application for a new development at Milton Park Rd, Highgate, London N6. Haringey requires subterranean structures are executed as follows:

Specifically:

- *They will not adversely affect the structural stability of the host building, neighbouring buildings and other infrastructure including the adjoining highway, having regard to the local geological conditions.*
- *Does not increase flood risk to the property and adjacent properties from any source,*
- *Avoids harm to the appearance or setting of the property or the established character of the surrounding area.*
- *Will not adversely impact the amenity of adjoining properties by reason of noise or increased levels of internal or external activity and -*
- *Will not adversely impact the local natural and historic environment.*
- *In determining proposals for basements and other underground development the Council will require an assessment of the scheme's impact to drainage, flooding, groundwater conditions in the form of a Basement Impact Assessment and where appropriate a Basement Construction Management Plan.*

3 EXISTING

The proposed plot is on the corner of Milton Park Road and Milton Road in Highgate, Haringey, London N6.

The plot is currently occupied by a single storey brick extension to 29 Milton Park Road, and a paved driveway. 29 Milton Park Road is immediately west of the proposed plot. 29 Milton Park Road is a 3-storey semi-detached period property with a single storey basement. 29 Milton Road flanks the plot to the southeast. 29 Milton Road is a 3-storey semi-detached period property with a single storey basement.





4 PROPOSED DEVELOPMENT

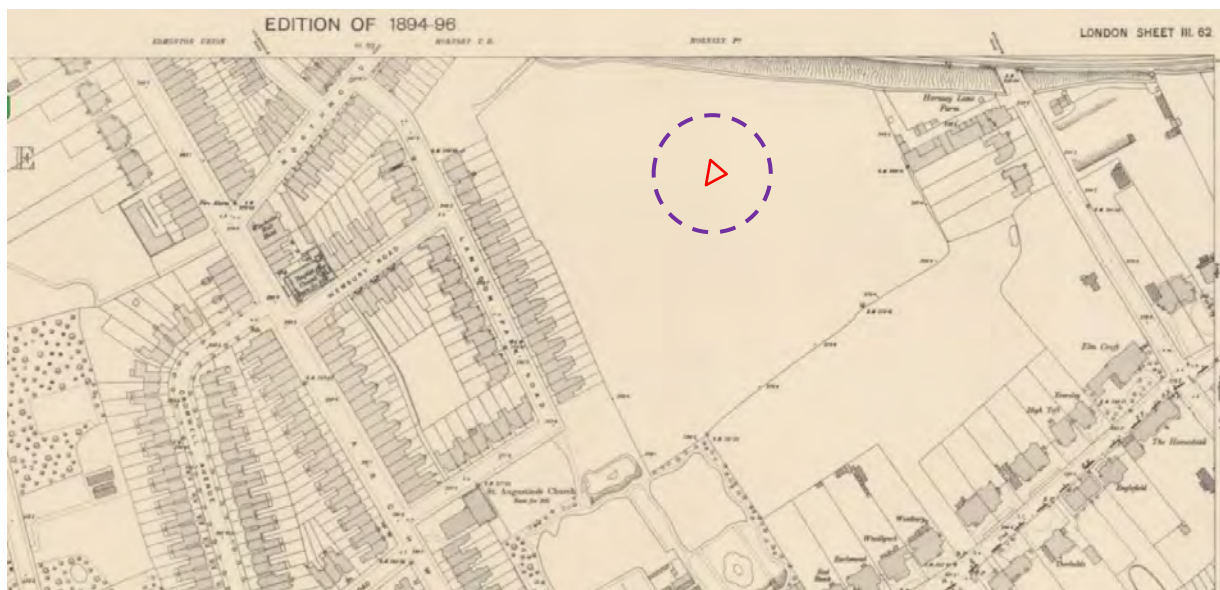
Please refer Appendix B.

New-build proposals have been prepared by ICE architects. They constitute a new build 2 storey structure with a glass extension, and a new single level basement.

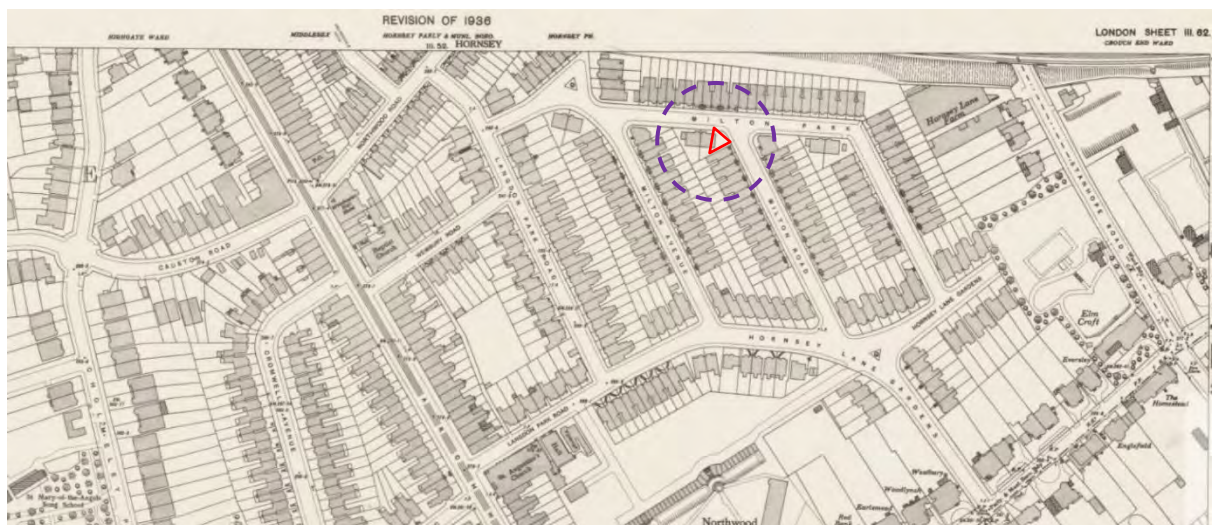
5 DESK STUDY AND SITE INVESTIGATION

Site History

The nineteenth century London Ordnance Survey (OS) plan shows the development site as open fields – part of Hornsey Lane Farm and the Conservation Area Appraisal gives a date for the construction of the Miltons by the 1890s. (2.2.17). Prior to this the site was undeveloped.



1894-96 Edition (<https://maps.nls.uk/view/101200947>)

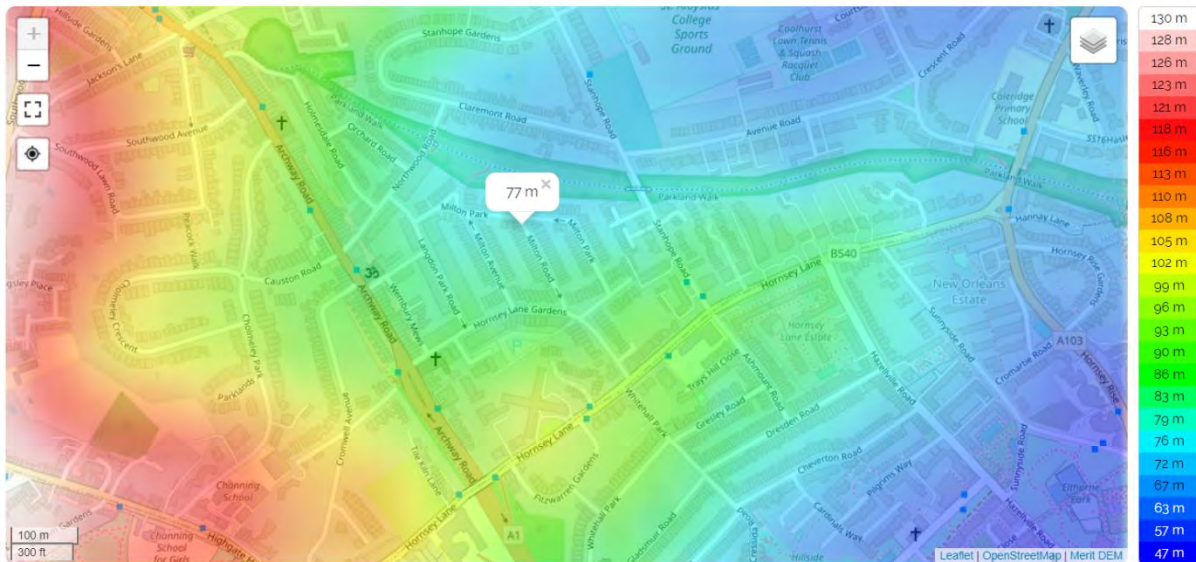


1930 Revision (<https://maps.nls.uk/view/231271956>)

Land and Arboricultural Features

There are no notable orographical or Arboricultural features.

The site has different altitudes, the difference from the south border to the north border is about 3.7 m (3.4°). The topographic map below (taken from the Haringey District website) show that the site is located on the slope of a hill.



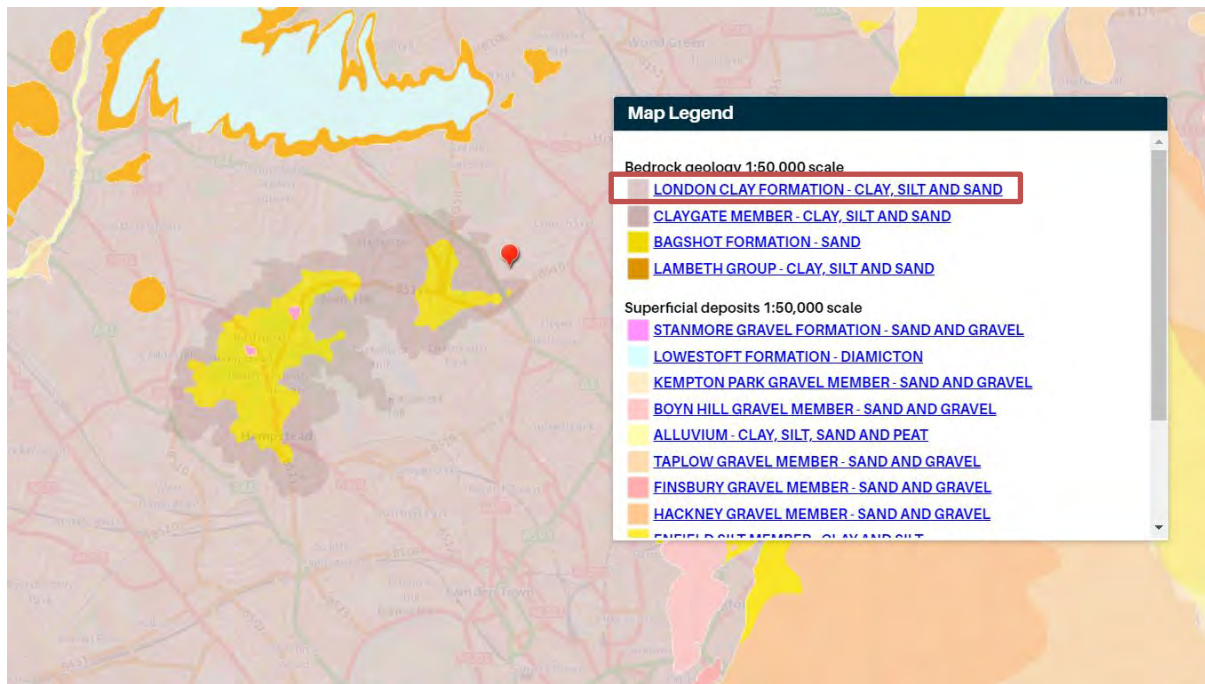
London Borough of Haringey, London, Wood Green, Greater London, England, United Kingdom (51.58793 -0.10541)



Geology



The British Geological Survey (BGS) indicate that the site is underlain by London clay. There is no note of Superficial deposits.



Ground investigation

According to the British Geological Survey and the surrounding borehole scans data an underlying geology of London Clay was expected.

This was verified through a trial pit against 29 Milton Rd – refer Appendix C.

The basement proposals in Appendix A are prepared in accordance with the information above.

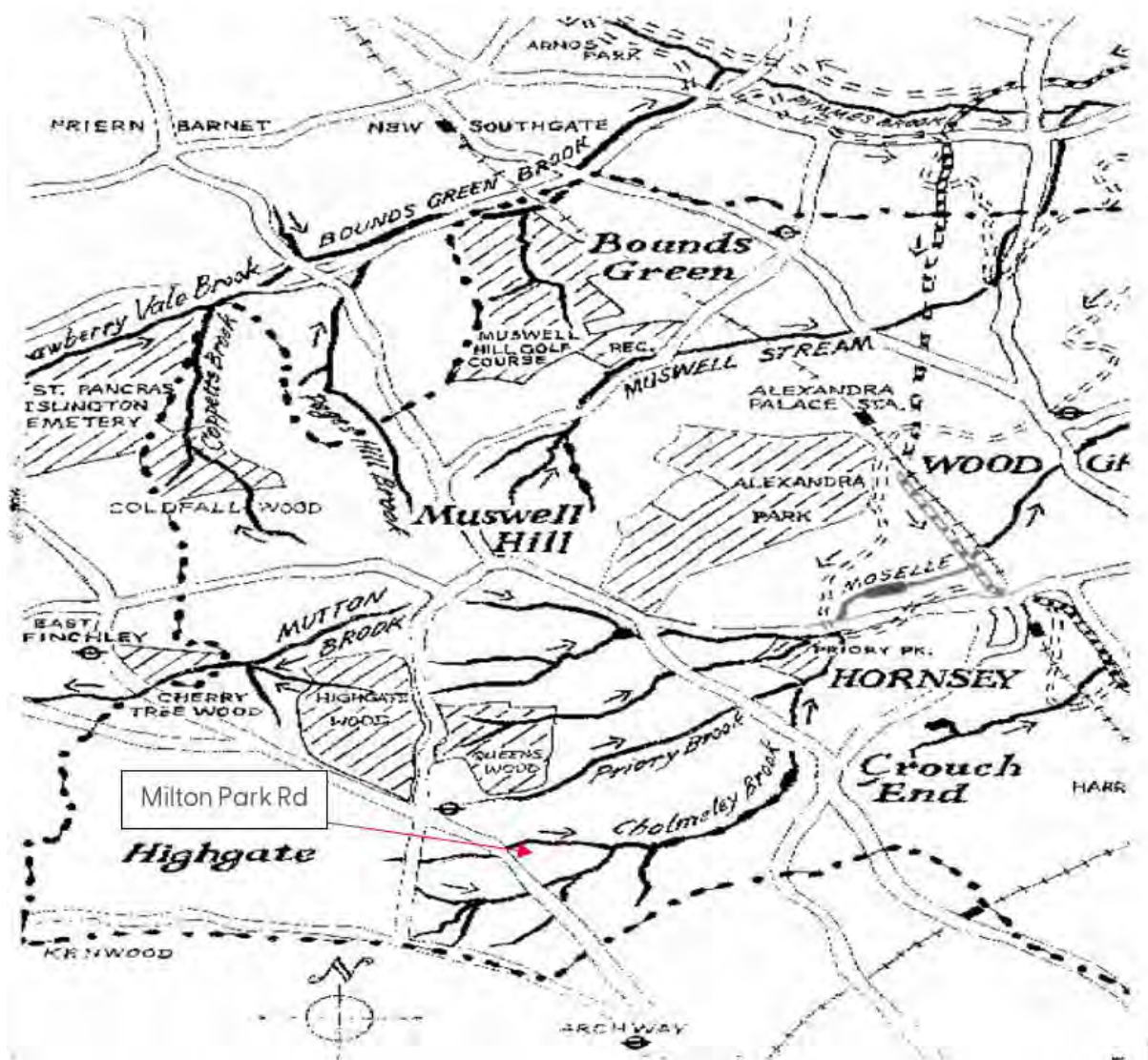
6 SURFACE WATER AND FLOODING

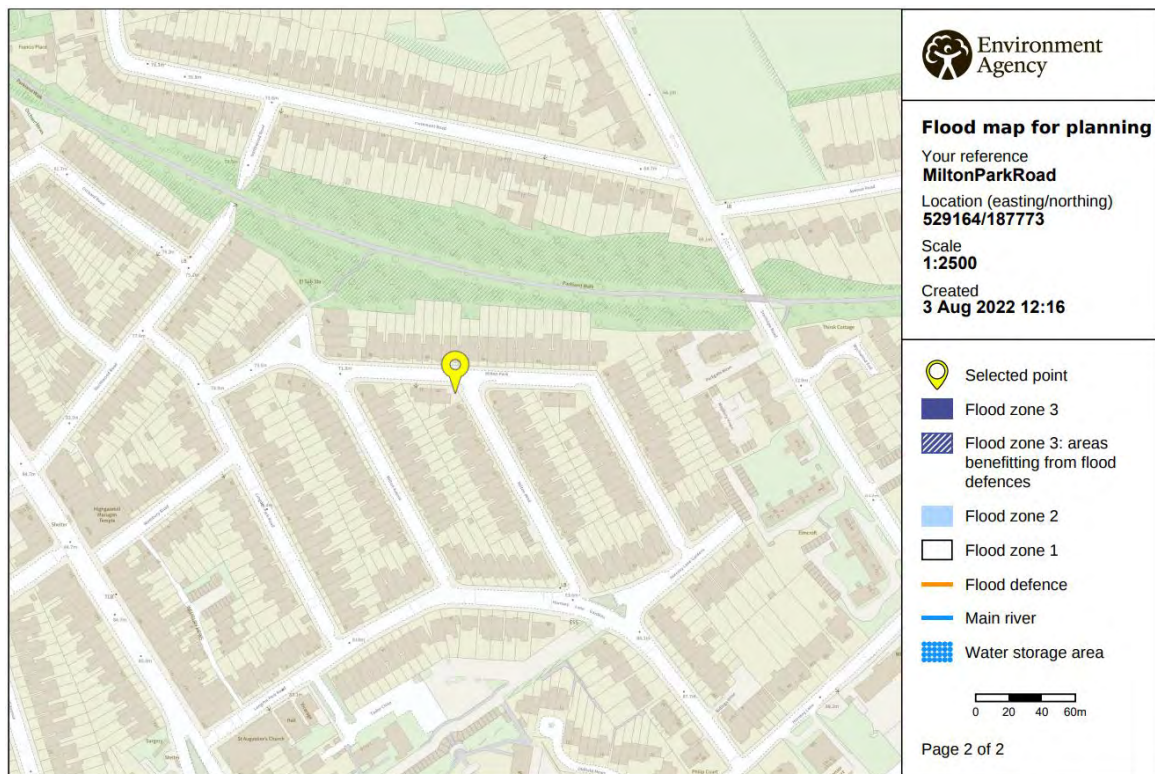
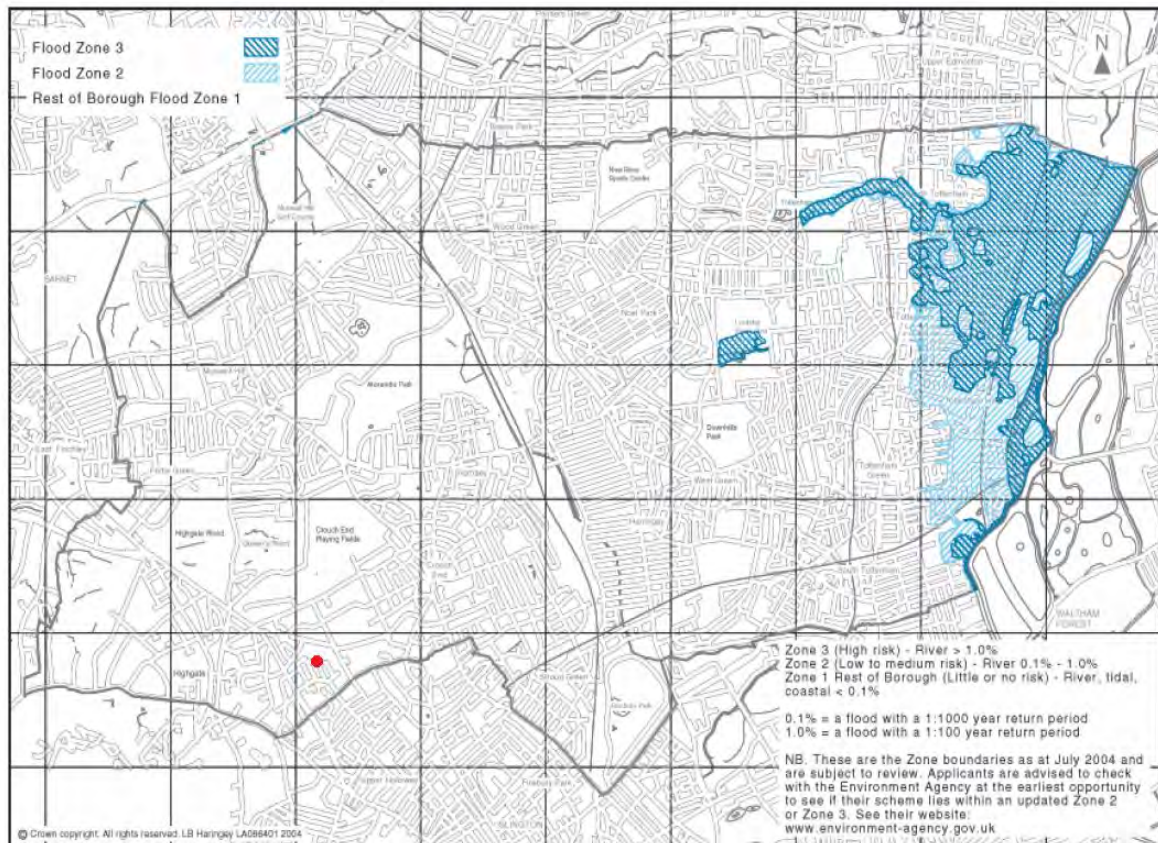
The site lies in a built-up suburban area. There are no natural surface water features within the vicinity of the building or within the site boundary.

Data from Haringey Council's Basement Development Guidance Note, 2012 indicates that the site does not line in an area of strategic flooding risk.

A search for up-to-date data on the Environment Agency website confirms that the site is in Flood Zone 1, meaning that each year this area has a chance of flooding of less than 0.1% from surface water or rivers and sea.

In the map below we can see that the risk of flood from river and sea is extremely low.





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7 BUILT ENVIRONMENT IMPACT

Neighbouring Properties

The neighbouring properties (highlighted in the picture below) are 29 Milton Park Road (to the west) and 29 Milton Road (to the southeast) borders of the site. Both properties have a basement accessed externally with stepped access from street level.



Proximity of Highways and Transport

Both Milton Park Road and Milton Road are less than 5m from the proposed basement..

The nearest metro line is the northern line, which is located approximately 120m from the building located more than 12 km from the building. This will not be affected by the basement.



Other

There are no National Power assets such as pylons or substations in the immediate vicinity of the site. There are 2 No. distribution boxes immediately north of the existing property wall along Milton Road.

Hydrogeology

The neighbouring properties on both sides have single storey basements. The structural proposal shown in Appendix A indicates the proposed basements does not infill the existing footprint allowing groundwater to migrate around the proposed basement.

8 STRUCTURAL DESIGN

General

The new structure will include new RC (reinforced concrete) walls. These will form the perimeter of the basement. These walls will form the raft foundation for the building and will transfer the weight of the building to the ground. The basement walls will be also be designed as retaining walls and will resist lateral loads.

Existing Properties – Impact Mitigation

The design approach will consider the implications of excavating close to nearby properties.

The following measures are proposed to reduce the risk of damage associated with the development:

- Employ a reputable firm that has extensive knowledge of basement works.
- Employ suitably qualified consultants
- Provide method statements for the contractors to follow
- Allow for unforeseen ground conditions such as loose soil

With the measures listed above, the maximum level of cracking anticipated is ‘Hairline’ cracking. This can be repaired with normal decorative works. A proposed method statement is appended.

Lateral Actions

Below ground level, lateral earth pressure exerts a horizontal force on retaining walls. The retaining walls will be checked for resistance to the overturning force this produces.

Lateral forces will be applied from:

- Earth loads
- Hydrostatic pressures
- Surcharge loading

Surcharge Loading

The following should be applied as surcharge loads to the retaining walls.

- Highways loading allow: 10kN/m² if within 45° of road
- Garden Surcharge: 2.5kN/m²

Dispersed loads from nearby foundations; this will depend on the depth and proximity of the foundations of nearby structures as well as the amount of load that they support

Retained Soils Parameter

The underlying geology is London clay as expected from our desktop studies and verified through our site investigation. The slope stability of clays is in the region of 20-25°. The design of the reinforced concrete (RC) retaining walls will take this into account.

Water Table and Hydrostatic Pressures

To allow for the worst-case groundwater conditions, the design of the retaining walls will account for hydrostatic pressures below the retaining wall to account for localised flooding (e.g. burst mains).

Drainage and Damp-proofing

It is recommended that a waterproofing specialist is employed to ensure all the water proofing requirements are met.

GL&SS would recommend that suitable waterproofing measures be proposed in conjunction with the structural design. A common and anticipated detailed design stage approach is to use internal dimpled membranes (Delta or similar). These will be integral to the waterproofing of the basement.

Any water from this will enter a drainage channel below the slab. This will be discharged into the exiting sewer system. As a minimum requirement, all drainage connections to sewers must be fitted with a one-way valve to prevent the drains flooding.

Temporary Works – Structural Method Statement

The following Structural Method Statement (SMS) will be adopted :

1. Demolish existing structure (kitchen).
2. Install temporary sheet pile wall along the highway perimeter (Milton Rd).
3. Install waler beam at top of sheet pile wall.
4. Excavate to raft formation level with a banked earth berm against the highway.
5. Place the temporary concrete thrust blocks 2 x 2 x 0.5m
6. Install diagonal props from waler to the new thrust block.
7. Excavate local to the sheet pile walls.
8. Install drainage and cast the ground floor slab.
9. Pour 300mm thick raft slab with perimeter kickers.
10. Install plywood and polythene form against the sheet pile wall.
12. Construct perimeter walls and ground slab.
13. Remove the highway sheet pile wall and temporary works props.
14. Construct above ground structure.

Prior to construction, temporary propping details will be required. This must be provided by the contractor. Their details should be forwarded to the structural engineer at detailed design stage for comment and formal approval.

It is noted that the basement will be excavated largely in clay, which has a high level of cohesion. This allows the sides of excavations to remain clean and relatively stable during construction.

Predicted Ground Movement

The basement will be to a depth of approximately 4m below ground level.

Both of the neighbouring properties have single level basements with formations at levels similar to the proposed basement.

The maximum damage category, as set out in CIRIA C760, is not expected to be greater than to Category 1. The proposed temporary works strategy will mitigate ground movement (i.e. propping at

head and base) any damage that may occur in the neighbouring buildings will be minor and can be repaired with standard decorative works.

CIRIA C580 and the more up to date C760 are currently the most widely used technical documents advising on the design of retaining walls. This includes guidance on predicting the damage category associated with the construction of retaining walls.

GL&SS has been involved in a number of basement designs of a similar scale to the proposed development. Many of these have been followed through to the construction phase and have involved the use of regular movement monitoring before, during and after the basement works are complete. It is in GL&SS's experience that basement construction of this scale to do not give rise to movements resulting in a damage category greater than Category 1.

The anticipated Damage Category for the new basement is between 0 and 1

Yours sincerely

A handwritten signature in black ink, appearing to read 'Tom Robertshaw', with a stylized, cursive script.

Tom Robertshaw

Director MA Hons Cantab CEng MIStructE

9 CONSTRUCTION MANAGEMENT STATEMENT

Full investigations and reports (such as ground investigations and construction traffic and management plans) will be carried out ahead of building works to formalise the best practical means to be used.

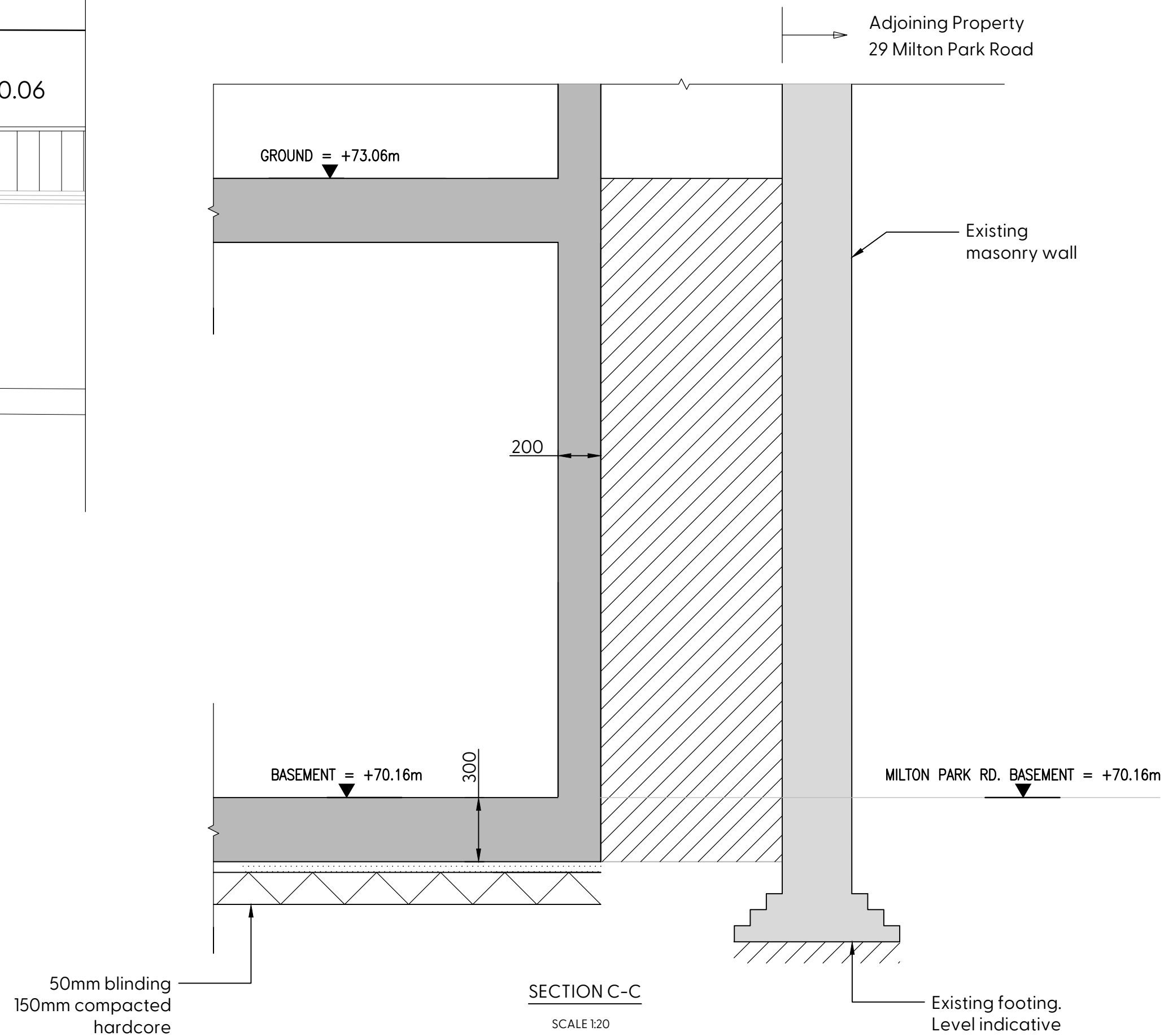
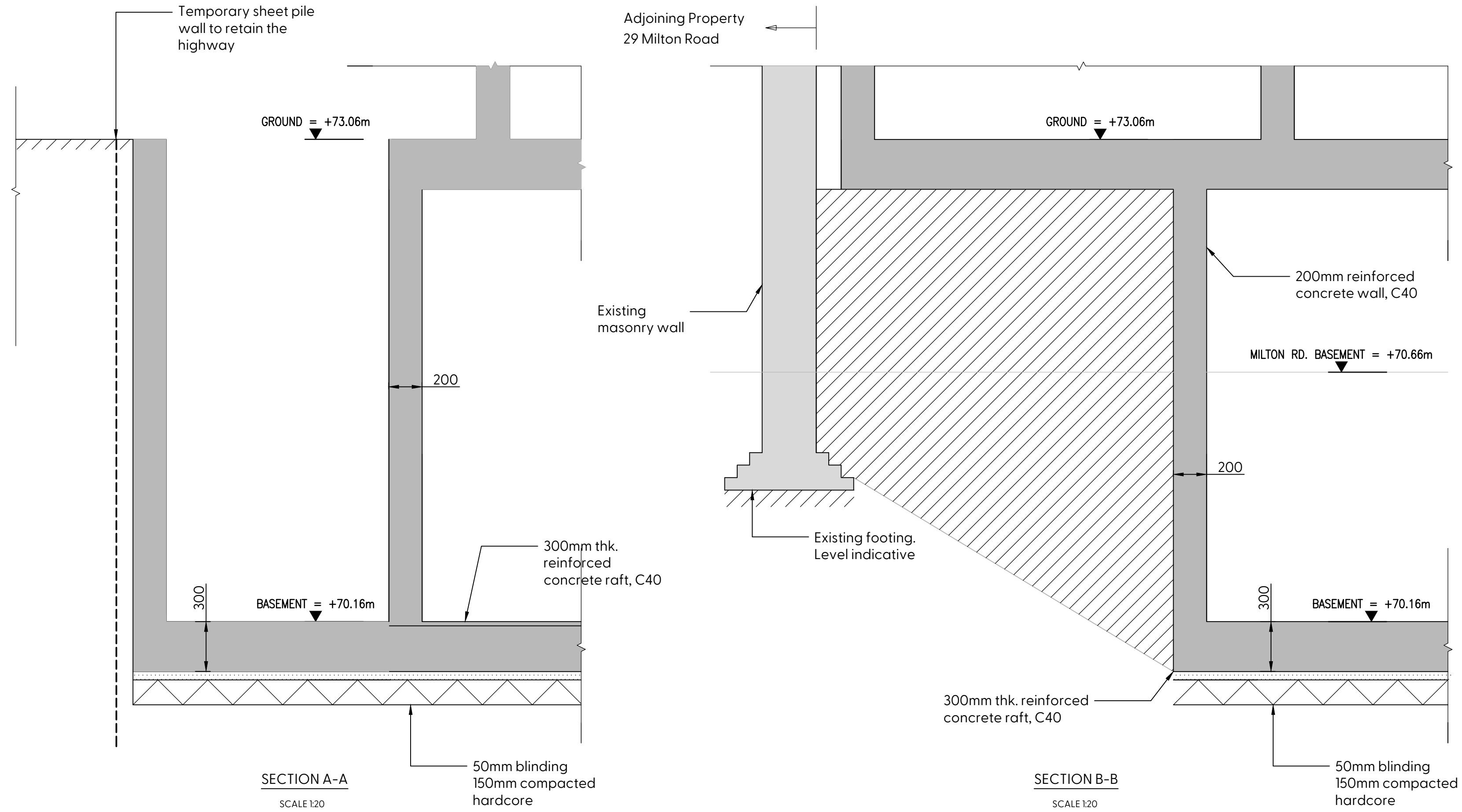
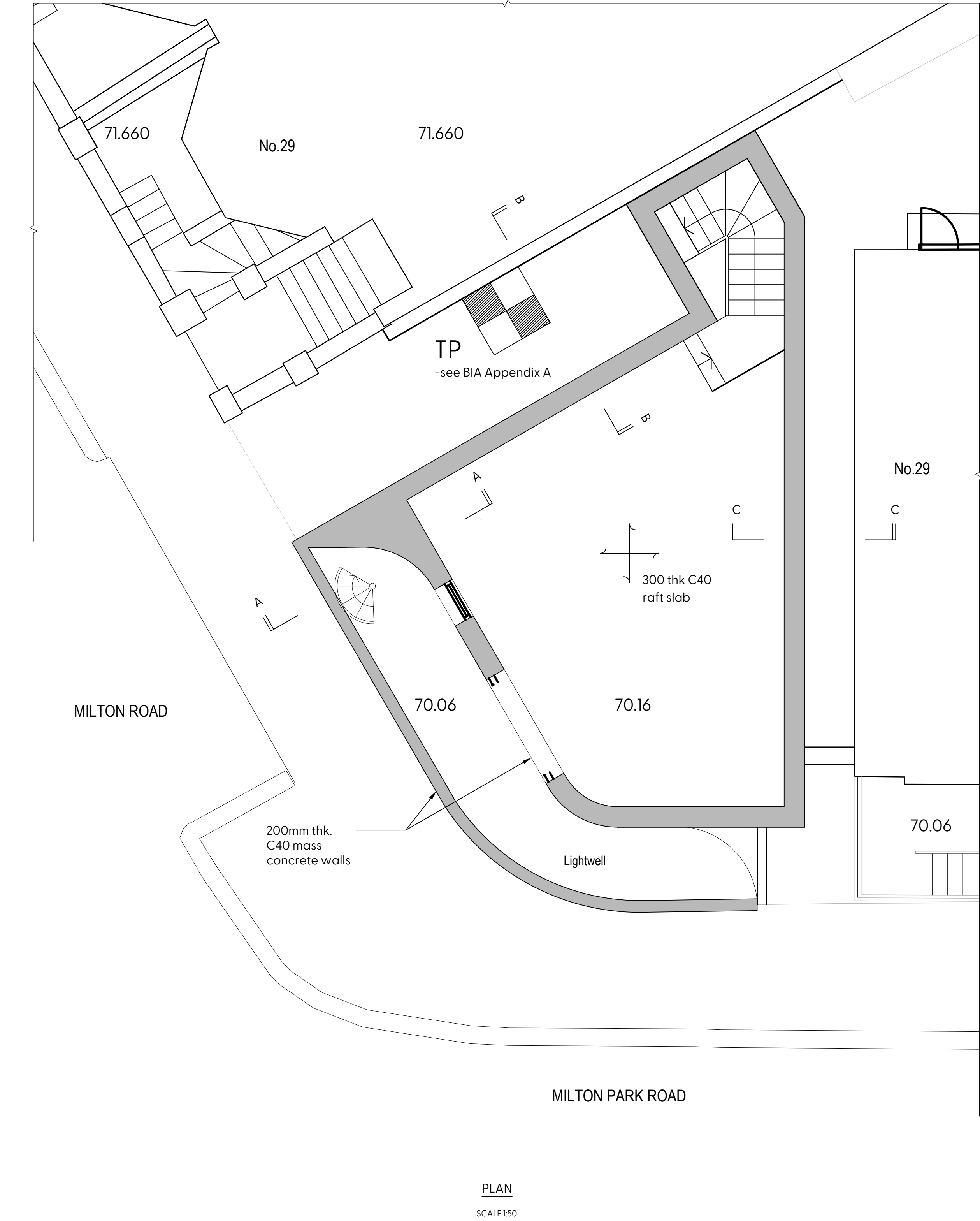
To meet the requirements of Haringey best practice construction methods will be chosen to reduce unnecessary noise, vibration and dust. The following table is a guidance to minimise the effect of these. Final construction management proposals should be produced by the Contractor.

CONSTRUCTION METHOD	MITIGATION MEASURES	NOISE	DUST	VIBRATION
In accordance with the best practical means, to be used				
To minimize, noise, vibration and dust during the construction of the basement, including the excavation, that is likely to affect adjacent residential premises and school(if any)				
1. Preparation of site to fully contain the area	Boarding to front of site enclosing entrance, for complete duration of construction	Boarding contains some of the noise inside the site. Stops airborne sound escaping	Dust from debris stored internally is partly contained within the site.	Any internal vibration is further reduced by additional boarding to absorb before emitting to neighbour: as timber absorbs vibration better than metal or glass.
	Temporary works and structure	Temporary works allow the house to be kept rigid and allow for small scale, less noise emitting methods of construction to be used.	Temporary works keep the house rigid and safe so stop other areas of the house degenerating through works and thus dust being created.	Temporary works keep the house rigid which stops vibrations.
2. Management and hours of working	Project manager to manage all works on site,	Hours of working are restricted and staff supervised to use tools	Hours of working are restricted and staff supervised to use tools	Hours of working are restricted and staff supervised to use tools appropriately and

CONSTRUCTION METHOD	MITIGATION MEASURES	NOISE	DUST	VIBRATION
		appropriately. No radio on site. Small team working reducing noise. Coordination between workers ensured.	appropriately with appropriate guarding to prevent dust migration.	reduced use of power tools to minimize vibration.
3. Excavation of basement	Non-percussive tools used for excavation where possible (ie hand dug)	Hand tools are quieter. Method chosen reduces need for any heavy noisy machinery	Less dust generated by hand tools than fast repetitive motor driven tools.	Vibration is minimized by not using percussive tools
	Removal of spoil	All spoil is hand bagged or stored in covered skips and stored internally by hand so no noise from skip or large refuse area, removed	Spoil hand bagged where practicable not using electric conveyor belt, and reducing emission of dust.	Spoil bagged by hand where practicable (ie shovel) so no machinery to transmit vibration
	Removal of debris	Bagged debris is stored within site in a covered area and removed by van timed to cause least disruption	Debris removed by hand; dust contained within refuse sack, or skip, sealed shut.	Debris removed by hand, where practicable, vibration minimized, in bags.
	Mixing and pouring of concrete for underpins	Concrete is mixed on site for small quantities for smaller pours, contained within the site for noise and for short period of time once underpin and shuttering	Area set aside and shuttered off for mixing concrete to contain dust. Only small quantities mixed at time. Only small amounts of dry	Concrete mixer put on level base in clear working area to avoid vibration.

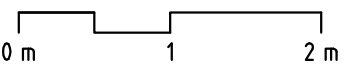
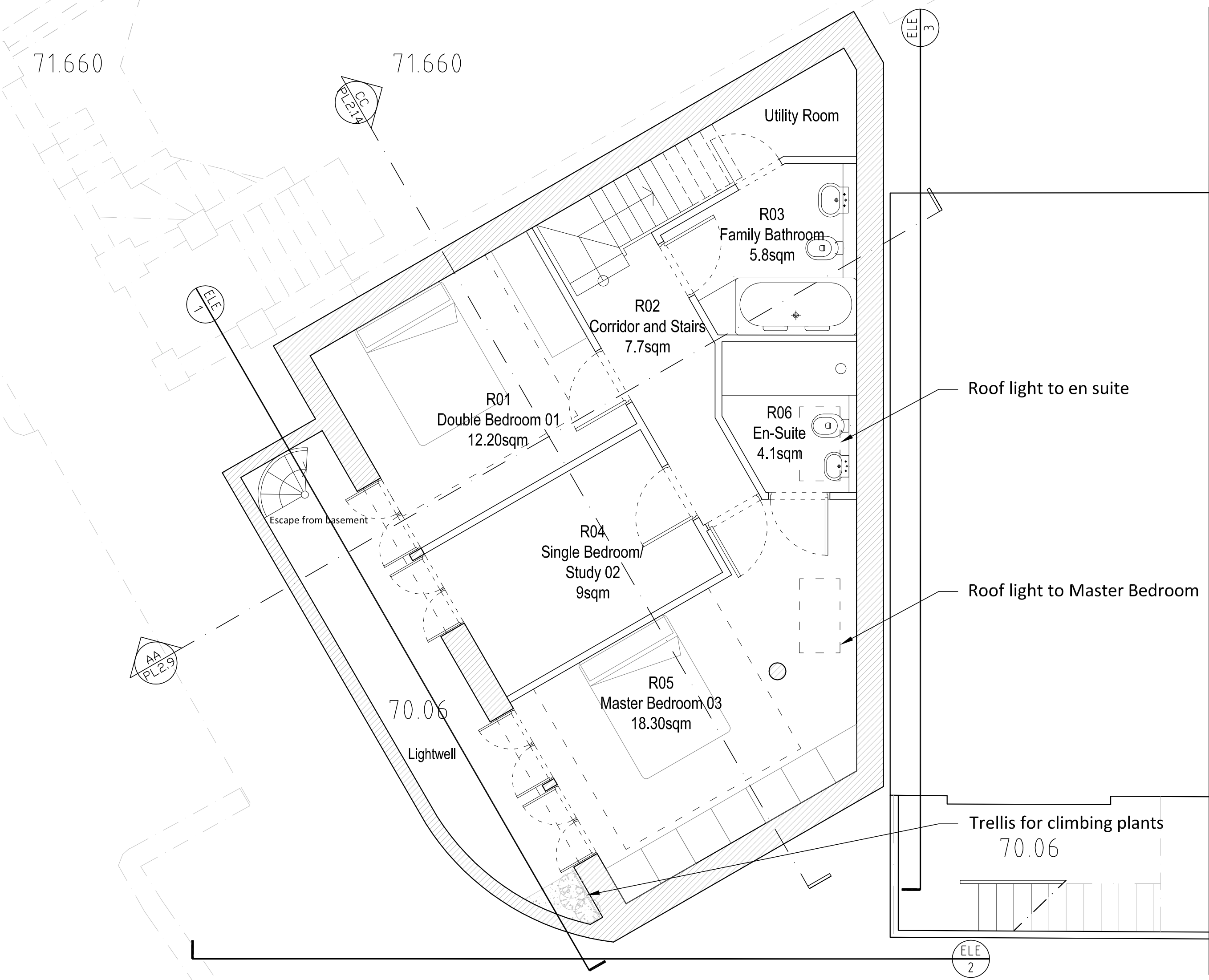
CONSTRUCTION METHOD	MITIGATION MEASURES	NOISE	DUST	VIBRATION
		formed (ie Separate activity)	concrete Stored on site in internal area to avoid unnecessary dust.	
	Delivery of concrete for floor reinforced floor slabs	Large quantities are not mixed on site but delivered and pumped by specialist lorry to site in speedy low noise method from front of house through hording	No dust emitted from delivery of liquid concrete, area of road washed down before and after delivery.	Large quantities of concrete mixed off site to reduce continuous vibration and delivered to site.

Appendix A – Structural Drawings



Notes	Status	Rev. No.	-	Date	-	Drawn by	RT	Approved by	TR	Comments	-	Job Title	29 Milton Park Road				GL&SS Limited 19 Britton Street London EC1M 5NZ United Kingdom +44 (0)20 7490 3446 info@glasslimited.com www.glasslimited.com	GL&SS	
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	2. Do not scale this drawings.											Job No.	1490	Drw. No.	050	Revision			00
												Scale	1:50/20	Size	A1	Date			10/08/22

Appendix B – Architectural Drawings

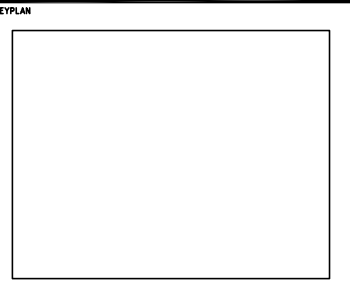


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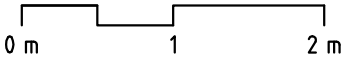
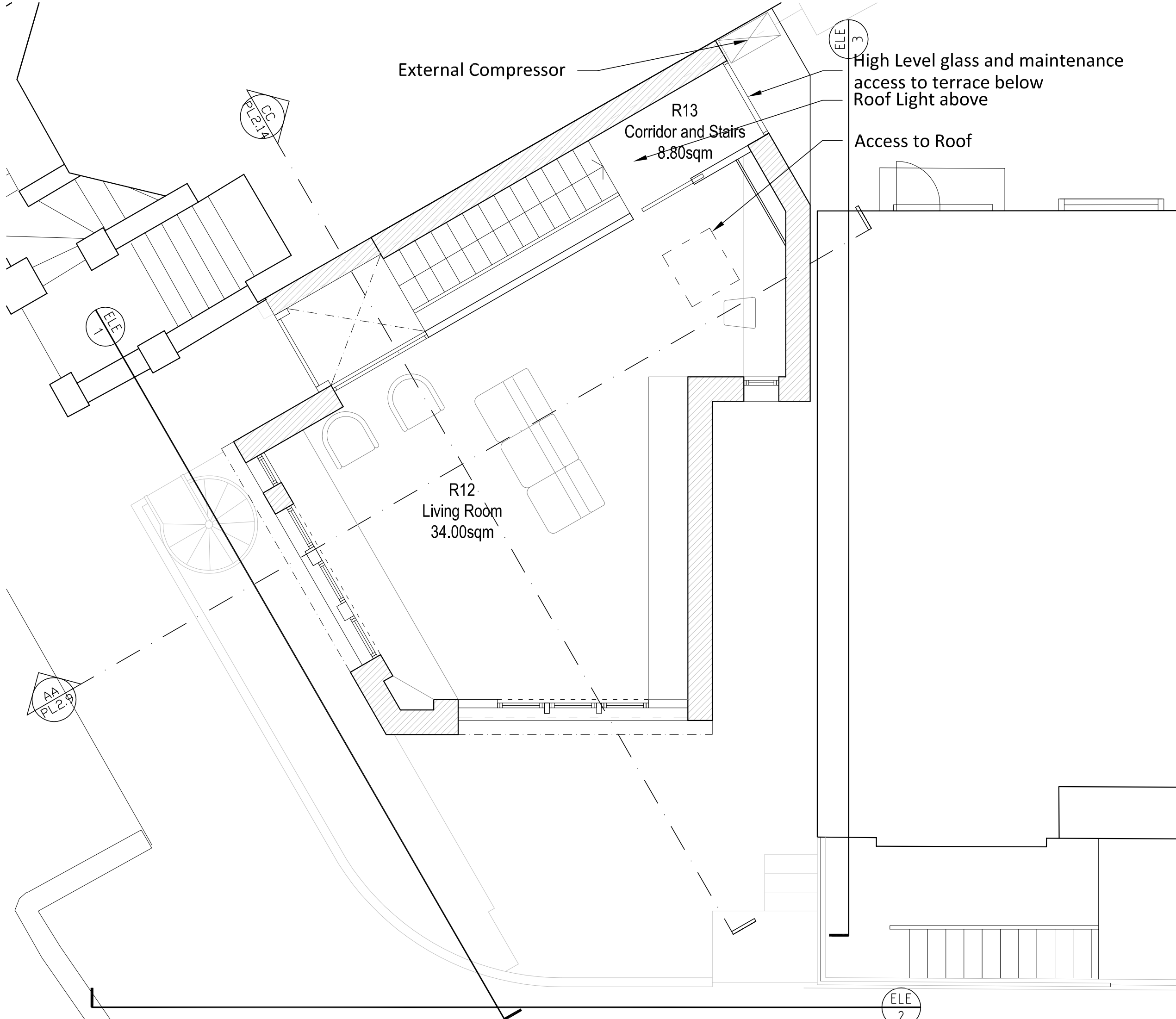
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E	04.04.2023	DRAFT02
D	22.12.2022	DRAFT - Post Refusal
C	16.08.2022	Planning Issue
B	22.07.2022	Post Pre Planning - Client Issue
A	28.06.2022	First Revision Post Pre Plan
-	22.04.2022	First Issue

NO.	DATE	ISSUE
REVISIONS		
PROJECT		

Land adjacent to
29 Milton Park

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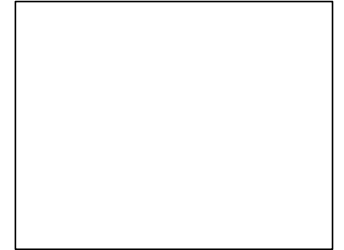
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KEYPLAN



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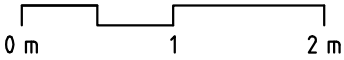
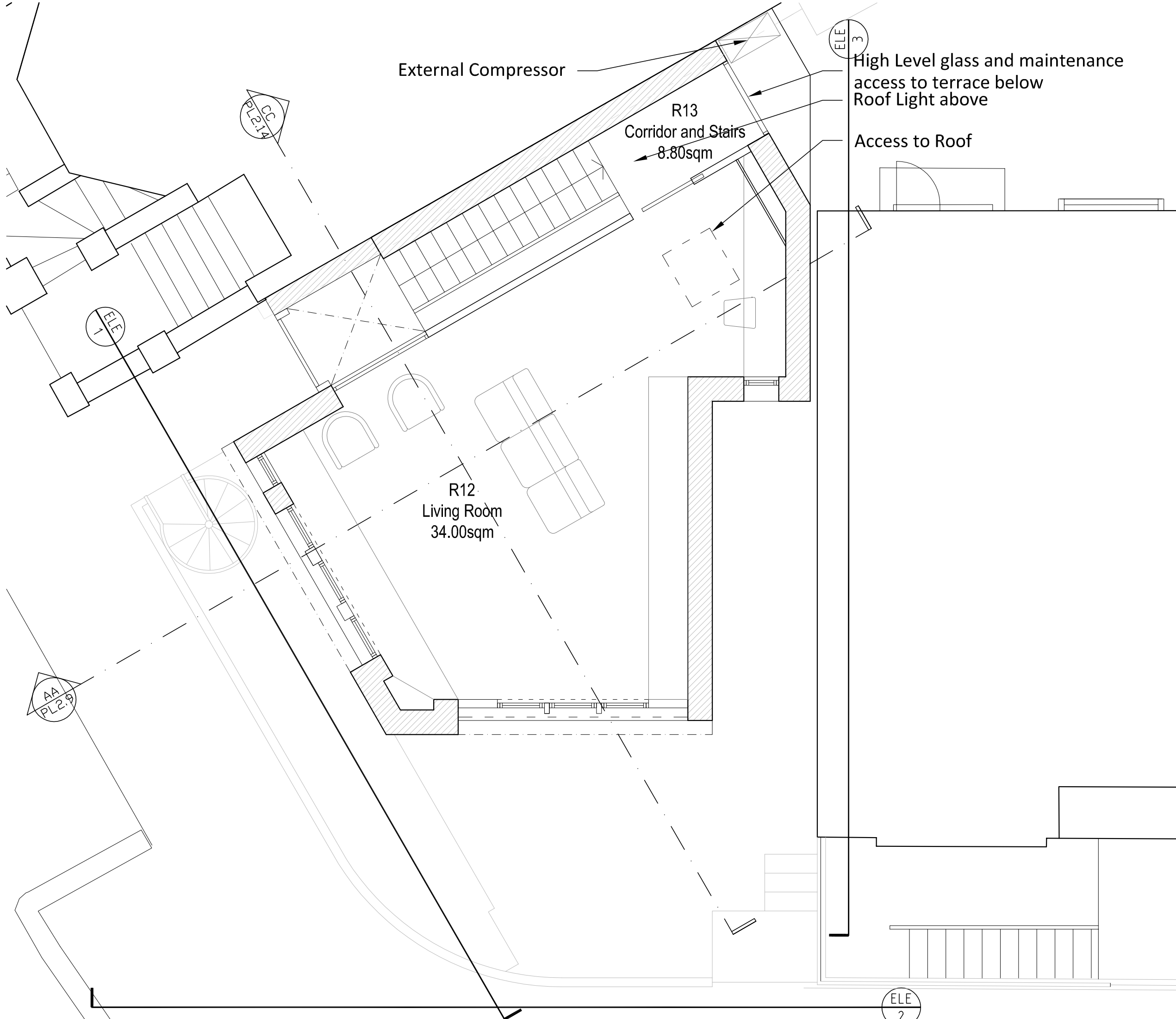
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DRAWING TITLE
**FIRST FLOOR PLAN -
PROPOSED**

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PL01		



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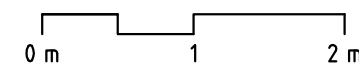
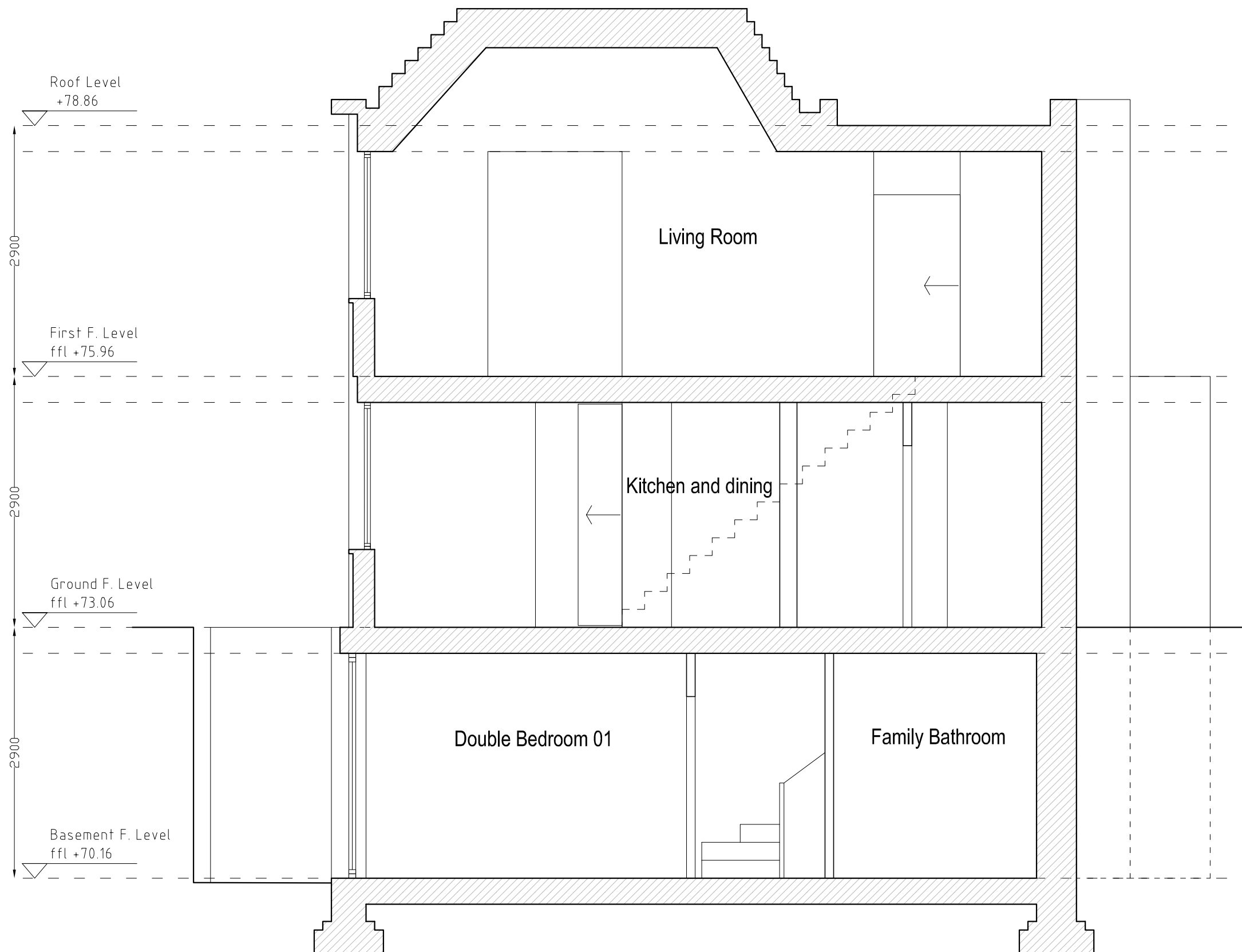
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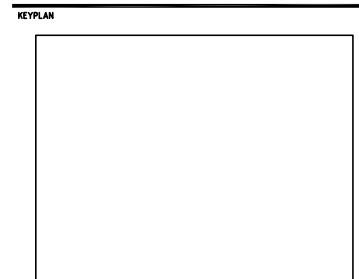
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Appendix C – Site Investigation





















