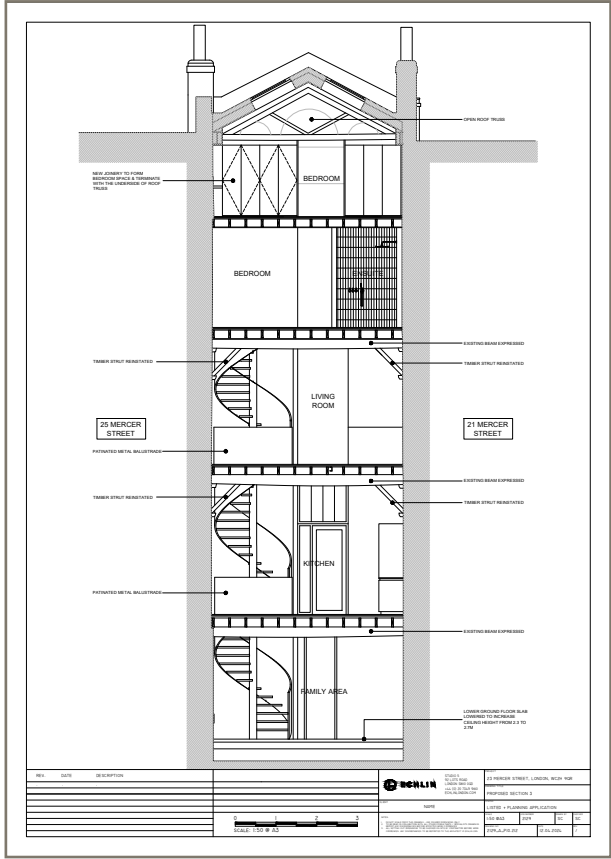


Proposed Long Section (Echlin)



Proposed Short Section (Echlin)

Lateral stability appears to be provided by flexible diaphragm action of the timber floor and roof structures which transfer horizontal loads into stiff perimeter walls. Stiff perimeter walls act as vertical cantilevers transferring the load into the ground via the foundations in bearing

A modern steel framed ‘goal post’ arrangement is located at lower ground floor below the rear elevation. This appears to have been installed to support the upper floors and wall whilst allowing the lower ground floor to extend into the rear lightwell with a full width opening. The steel downstand beam is supported by steel columns on ~500mm deep concrete pad foundations (see trial pit TP1).

4. Proposed Works

4.1 Proposed Development

The general scope of structural works involves the following:

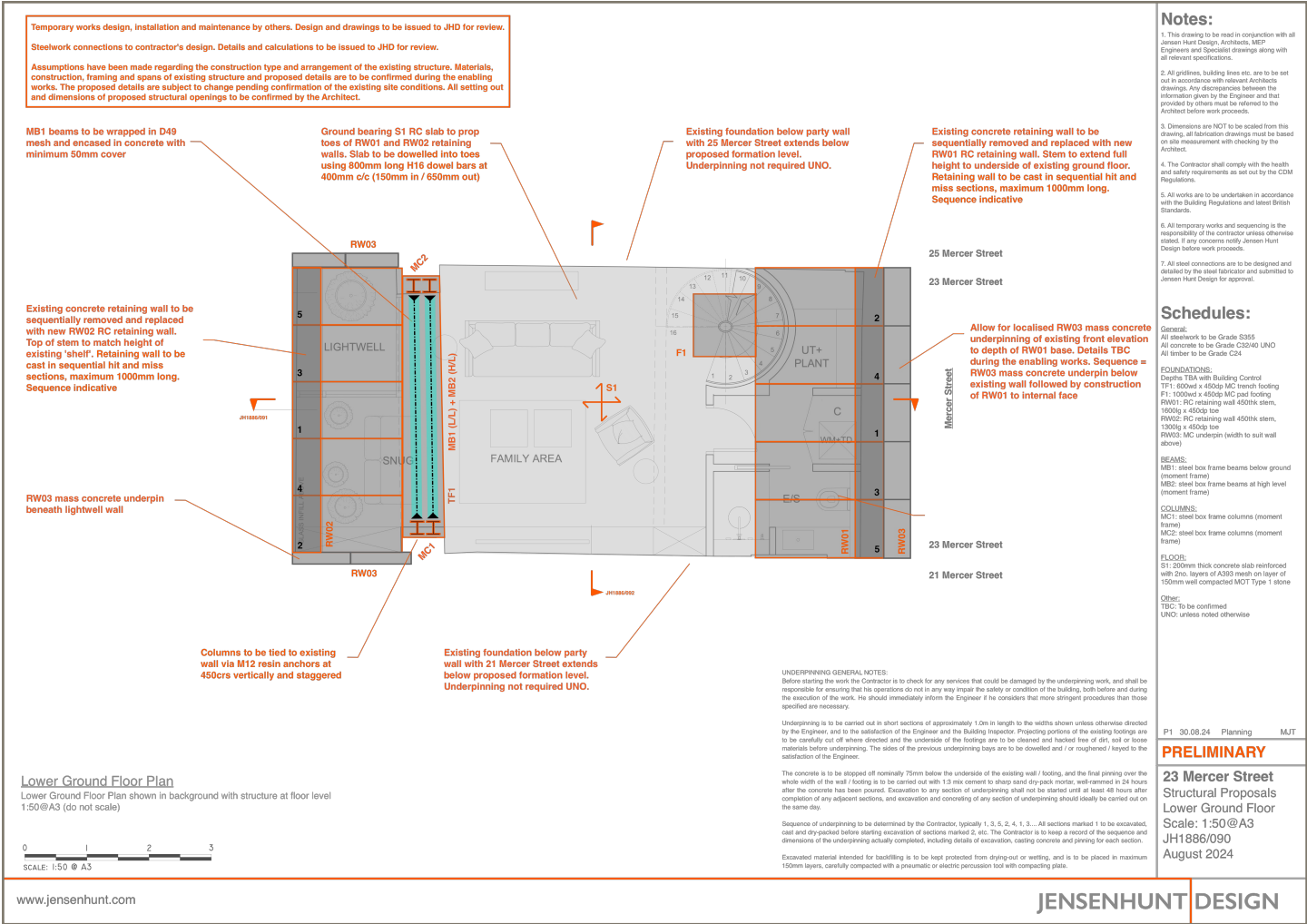
- Internal refurbishment of all floors
- Lowering of existing lower ground floor slab by circa 400mm
- Construction of new retaining structure to the front elevation
- Construction of new retaining structure to the rear elevation
- Construction of a new steel box frame at lower ground floor to replace the existing steel frame and maximise headroom within the lower ground floor
- Removal of existing staircase
- Installation of new spiral stair with new localised pad foundation and trimming out of stair voids to upper floors
- Removal of modern chimney breast from ground floor and upper levels
- Relocation of timber braces to existing central downstand beams
- Reconfiguration of two rooflights
- Relocation of existing timber roof truss to centralised position

4.2 Proposed Lower Ground Floor Structure

Trial pit investigations have confirmed the existing foundations below the party walls extend below the proposed formation level. Therefore no underpinning or retaining structure is required in these locations.

The existing retaining structure to the front elevation is to be sequentially removed and replaced with a new reinforced concrete cantilevering retaining wall. This will be propped at the base only by the new lower ground floor slab. The new retaining structure will be formed in a sequential ‘hit and miss’ approach with maximum 1m widths. Mass concrete underpinning may be required below the existing front elevation to a depth matching the underside of the new retaining wall. This will be confirmed during the enabling works once the existing underpin has been removed. The mass concrete underpin will carry the vertical load from the structure above as per the existing condition.

The existing retaining structure to the rear elevation is to be sequentially removed and replaced with a new reinforced concrete cantilevering retaining wall. This will be propped at the base only by the new lower ground floor slab. The new retaining structure will be formed in a sequential ‘hit and miss’ approach with maximum 1m widths.



Proposed Lower Ground Floor Plan

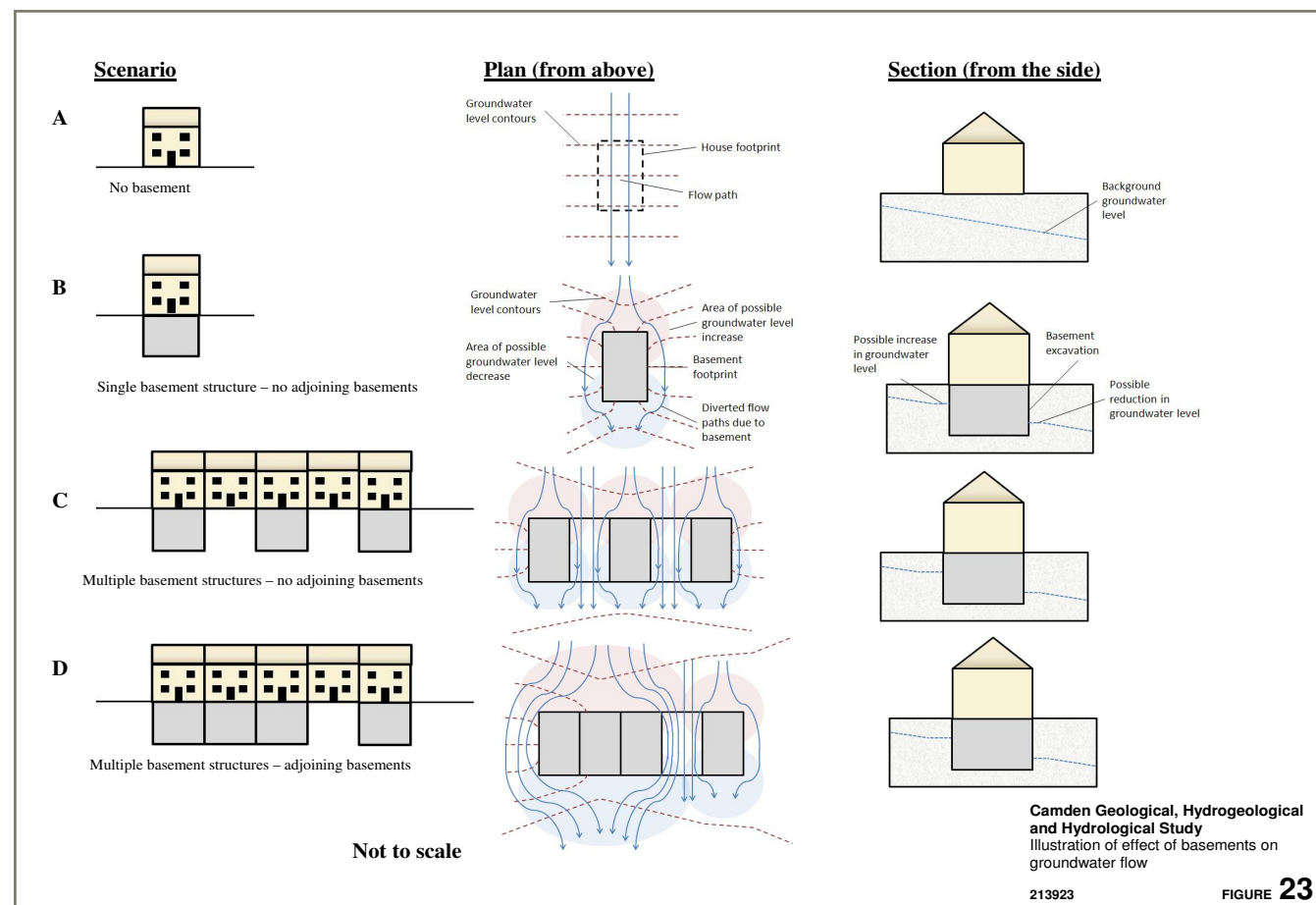


Illustration of the Effect of Basements on Groundwater Flow

The existing lower ground floor slab will be demolished and a new ground bearing reinforced concrete slab installed at the reduced level.

Vertical loads from the superstructure will be transferred to ground via the existing party walls and foundations below. Vertical load from the front elevation will be supported by the existing foundation and mass concrete underpin (if levels require). Vertical load from the rear elevation will be supported by the new steel box frame at lower ground floor. Load will be distributed into the bottom beam and transferred to ground via bearing on a new mass concrete trench foundation.

The new front and rear retaining walls have been designed for horizontal loads only (i.e. earth, water and surcharge).

At this stage, preliminary design calculations for all new substructure (i.e. RC retaining walls and foundations) are based on conservative design assumptions and extensive experience in the construction of below ground structures.

The formation level of all new substructure is assumed to be within the London Clay Formation or bearing on existing structure (i.e low level concrete slabs and footings exposed during trial pits). For the purposes of planning, we have conservatively designed to an allowable bearing pressure of 100kN/m².

Groundwater was not encountered in any of the trial pits investigations. The retaining walls have been conservatively designed for an assumed water table at 1m below ground floor level.

The new lower ground floor construction is to provide a Grade 3 ‘Habitable’ environment. In accordance with BS 8102:2009, the new structure will be designed to provide two forms of protection against water from the ground which could include barrier protection (i.e. membranes / layers / renders), structurally integral protection (i.e. waterproof concrete or designed concrete - crack control) or drained cavity protection. The design of any proprietary protection systems will be the responsibility of a specialist Contractor.

4.3 Proposed Ground Floor Structure

The existing timber joist ground floor structure will be retained and re-supported by the new steel box frame below the rear elevation.

4.4 Basement Stability

Horizontal loads resulting from wind and equivalent horizontal forces will be transferred from the façades to the timber floor / roof structures. These timber floor / roof structures will act as diaphragms transferring horizontal loads into stiff perimeter walls. Stiff perimeter walls will act as vertical cantilevers transferring the horizontal loads imposed on the structure into the existing foundations. The new retaining walls will support horizontal loads only (i.e. earth, water and surcharge).

4.5 Disproportionate Collapse

The existing and proposed structure are a single occupancy house comprising of four storeys over an existing lower ground floor storey and therefore defined as Consequence Class 2A in accordance with section A3 of Approved Document A - Structure, The Building Regulations 2010. The robustness requirements of Consequence Class 2A buildings are assumed to be provided by the existing building and will remain.

4.6 Hydrology and Hydrogeology

The neighbouring properties appear to be of similar construction with a single storey below ground floor level. It is anticipated that any groundwater will be able to follow a pathway beneath and around the new structure. This would also be applicable in the future if the floor levels were lowered beneath the adjacent properties.

Any potential effects of damming or restriction of groundwater flow are considered minimal. Therefore the proposed works are unlikely to significantly impact the hydrology of the area.

If groundwater is encountered during the excavation works, there may be a requirement to use sump pumps during construction but this is not expected to affect the local hydrology.

4.7 Sustainable Drainage Systems

There is no increase in hardstanding areas between the existing condition and proposed design. Therefore it is proposed to discharge surface water using the existing drainage network.

5. Screening

The London Borough of Camden guidance suggests that any development that includes a basement or light well should be screened to determine whether or not a full Basement Impact Assessment (BIA) would be required.

A screening assessment has been undertaken using the screening flowchart provided within ARUP’s ‘Guidance for subterranean development’ document. The findings of this assessment are described below.

5.1 Subterranean (Groundwater) Screening Assessment

Question	Response
1a. Is the site located directly above an aquifer?	Yes. The site is situated above the ‘Secondary A Aquifer’ as indicated on ARUP’s Camden Aquifer Designation Map.
1b. Will the proposed basement extend beneath the water table surface?	No. The lower ground floor level is to be lowered by circa 400mm. Site investigations extended beyond this depth and no ground water was encountered.
2. Is the site within 100 m of a watercourse, well (used/ disused) or potential spring line?	No. There are no known watercourses, wells or spring lines within 100m of the site.
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No. The site is not located within the catchment of the pond chains on Hampstead Heath.
4. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No. The lower ground floor plan area will remain the same as existing. It is proposed to lower the lower ground floor level only.
5. 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. The lower ground floor plan area will remain the same as existing. It is proposed to lower the lower ground floor level only.
6. 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. There are no known watercourses, ponds or spring lines within 100m of the site.

5.2 Slope Stability Screening Assessment

Question	Response
1. Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)	No. The site slope is less than 1 in 8.
2. Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)	No. The site will not be re-profiled.
3. Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)	No, as indicated on ARUP’s Slope Angle Map.
4. Is the site within a wider hillside setting in which the general slope is greater than 7°? (approximately 1 in 8)	No, as indicated on ARUP’s Slope Angle Map.
5. Is the London Clay the shallowest strata at the site?	No, the Lynch Hill Gravel Member is the shallowest strata at the site.
6. Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?	No trees will be felled as part of the proposed development. An arboricultural impact assessment report has not been commissioned.
7. Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	Yes. The underlying London Clay is susceptible to seasonal shrinkage and swelling (i.e. subsidence and heave). However, there is no evidence of such effects at the site including damage to the existing building and neighbouring properties.
8. Is the site within 100m of a watercourse or a potential spring line?	No. There are no known watercourses, wells or spring lines within 100m of the site.
9. Is the site within an area of previously worked ground?	No, the site is not located within an area of previously worked ground, as indicated on ARUP’s Camden Geological Map.
10. 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?	Yes. The site is situated above the ‘Secondary A Aquifer’ as indicated on ARUP’s Camden Aquifer Designation Map. If groundwater is encountered during the excavation works, there may be a requirement to use sump pumps during construction but we do not expect this to affect the local hydrology.
11. Is the site within 50m of the Hampstead Heath ponds?	No. The site is not located within the catchment of the pond chains on Hampstead Heath. This is indicated on ARUP’s Hampstead Heath Surface Water Catchments and Drainage Map.
12. Is the site within 5m of a highway or pedestrian right of way?	Yes. The site is bounded to the East by Mercer Street and West by Ching Court.
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No. The depth of foundations below the party walls will remain as existing. Foundations will be lowered along the front and rear elevations only by circa 400mm.
14. Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?	No, the site is not located over (or within the exclusion zone of) any tunnels. This is indicated on ARUP’s Transport Infrastructure Map and TFL Asset Map.

5.3 Surface Flow and Flooding Screening Assessment

Question	Response
1. Is the site within the catchment of the pond chains on Hampstead Heath?	No. The site is not located within the catchment of the pond chains on Hampstead Heath. This is indicated on ARUP’s Hampstead Heath Surface Water Catchments and Drainage Map.
2. 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. The lower ground floor plan area will remain the same as existing and the disposal of surface water will remain as existing.
3. Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	No. The lower ground floor plan area will remain the same as existing. It is proposed to lower the lower ground floor level only.
4. 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 watercourses?	No. The lower ground floor plan area will remain the same as existing and the disposal of surface water will remain as existing.
5. Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No. The proposed works will not result in any changes to the quality of surface water being received by adjacent properties or downstream watercourses.
6. 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 from flooding, for example because the proposed basement is below the static water level of nearby surface water feature?	Yes, EA flood maps suggest that the risk of surface water flooding is high.

6. Scoping

The following potential impacts have been identified by the screening process:

Potential Impact	Consequence
The site is situated above the ‘Secondary A Aquifer’ as indicated on ARUP’s Camden Aquifer Designation Map.	The site is underlain by a Secondary ‘A’ Aquifer. This has the potential of being able to support local water supplies as well as forming an important source of base flow for local rivers.
The underlying London Clay is susceptible to seasonal shrinkage and swelling (i.e. subsidence and heave).	The London Clay is prone to seasonal shrink-swell (subsidence and heave). However, there are no tress within the site boundary. The lower ground floor depth and foundations will be lowered, therefore there will be less impact from any seasonal shrink-swell effects.
The site is within 5m of a pedestrian right of way and public road.	Excavation to lower the existing lower ground floor level may result in soil disturbance and structural damage to the road or pavement.
EA flood maps suggest that the risk of surface water flooding is high.	It is proposed to lower the level of the existing lower ground floor only and there will be no change in lower ground floor plan area. Therefore the risk of surface water flooding will remain as existing.

7. Impact Assessment

The screening identified a number of potential impacts. The desk study information has been used below to review the potential impacts to assess the likelihood of them occurring and to scope for reasonable engineering mitigation.

7.1 Site situated in aquifer with the potential for effecting groundwater flow patterns:
The proposed works can be suitably designed to prevent hydrogeological impacts. Lowering the lower ground floor level will still allow groundwater flows both beneath and around the substructure.

7.2 Site underlain by London Clay subject to seasonal shrink-swell:
The London Clay is prone to seasonal shrink-swell (subsidence and heave) however there are no tress within the site boundary. The lower ground floor depth and foundations will be lowered, therefore there will be less impact from any seasonal shrink-swell effects compared to the existing condition.

7.3 Site situated within 5m of pedestrian right of way and public road:
Lowering of the existing lower ground floor slab may result in soil instability and damage to the road, pavement or any underground services buried in trenches beneath the road or pavement. In the temporary case, excavations will be shored using trench sheeting and temporary works to maintain soil stability. In the permanent case, the proposed RC retaining walls to the front and rear elevations will maintain the stability of the surrounding ground, thus protecting the adjacent road, pavement and any underground services. Careful workmanship will minimise ground movements.

7.4 EA flood maps suggest that the risk of surface water flooding is high:
It is proposed to lower the level of the existing lower ground floor only and there will be no change in lower ground floor plan area or change to hard surfaced / paved areas. Therefore the risk of surface water flooding will remain as existing.

The BIA has not indicated any concerns with regards to the effects of the proposed works on the site and surrounding area. It has been concluded that the impacts identified can be mitigated by appropriate design and standard construction practice.



Example of retaining wall construction in a 'hit and miss' sequence

8. Construction Sequence

The new RC retaining walls and ground bearing slab will be constructed by a suitably experienced Contractor comfortable in this form of construction. The Contractor must be a member of the Considerate Constructors Scheme. The proposed construction sequence is shown below.

1. Prior to commencing work, schedules of condition will be carried out to the adjoining properties as part of the Party Wall process. Any requirements for monitoring of adjoining structures will be agreed.
2. The works will commence with the setting up of a safe working area including protection for the public and residents of the neighbouring properties. The Contractor will establish a site office and welfare facilities.
3. The Contractor will undertake site investigations to confirm all existing foundation types, widths and depths. Any discrepancies are to be reported to the Structural Engineer to allow for the detailed design to be modified as required.
4. The Contractor is to undertake site investigations to confirm the type and location of temporary works required. The temporary works design is to be reviewed by the Structural Engineer with any comments returned prior to installation on site.

5. Works will commence with the new retaining structure inside of the front elevation. The existing retaining structure will be locally removed and replaced with new retaining wall in a 1 to 5 'hit and miss' underpinning sequence with at least 48 hours between adjacent sections being removed after concrete being cast. The sections of new wall are to be cast in maximum 1000mm widths.
6. Works will continue with the new retaining structure to the rear lightwell. The existing retaining structure will be locally removed and replaced with new retaining wall in a 1 to 5 'hit and miss' underpinning sequence with at least 48 hours between adjacent sections being removed after concrete being cast. The sections of new wall are to be cast in maximum 1000mm widths.
7. The retaining walls will require horizontal propping until completion of the new lower ground floor slab. All RC retaining walls are designed as cantilevered retaining walls in the permanent case i.e. propped at their base by the new RC lower ground floor slab.
8. It may be necessary to provide some limited groundwater control during the construction works.
9. When all the retaining walls have been constructed, the existing lower ground floor slab will be excavated to the required formation level with all new below slab drainage being installed at this stage.
10. The rear elevation is to be temporarily supported to enable construction of the lower ground floor box frame. Needles will be provided above ground floor level and back propped to foundation level. The existing ground floor structure will be backpropped to foundation level.
11. Once all temporary works are installed, the existing steel frame will be removed from lower ground floor level.
12. The new trench footing to the underside of the box frame will be excavated and cast.
13. The new box frame steelwork will be installed and dry packed to the underside of the existing rear elevation.
14. The ground floor structure will be re-supported by the steel box frame.
15. The box frame temporary works will be removed once the the drypack has had sufficient time to cure.
16. The new lower ground floor slab will be cast and dowelled into the toes of the new retaining structure.
17. Once the new lower ground floor slab has gained sufficient strength, all remaining temporary work across the site will be removed.

9. Impacts of Proposed Development on Existing & Neighbouring Structures

The method of construction as described in this report is primarily aimed at minimising potential ground movement and therefore any subsequent damage to the existing property and neighbouring buildings.

The choice of a competent and experienced Contractor who will follow the agreed design and method statements (for both temporary and permanent works) will mitigate the risk of damage to the surrounding properties.

The RC retaining walls and foundations will be designed as sufficiently stiff to minimise any lateral movement of the ground materials to within acceptable limits.

Any underpins and retaining walls will be constructed in sections each no wider than 1000mm, with no adjacent 'pins' constructed within a 48 hour period. This method of construction reduces the amount of potential ground movement and minimises the effects of settlements of the adjacent structures.

The proposed works, if executed correctly in accordance with the appointed Engineer's details and procedures, will pose no significant threat to the structural stability of the property or adjoining properties.

Minor lateral settlements will be limited to a maximum of Category 1 (very slight) as categorised by the Building Damage Classification table in CIRIA 580 (Table 2.5 - Classification of visible damage to walls (after Burland et al, 1977, Boscardin and Cording, 1989; and Burland, 2001)).

The temporary works will provide horizontal and vertical stability in the temporary condition and will be removed once the new structure has been completed and gained sufficient strength.

Condition surveys of the adjacent properties will be undertaken before and after the proposed works. A building monitoring strategy will be developed at a later stage and subject to discussions and agreements with the owners of the adjacent properties. This monitoring will assess any movement of the neighbouring properties during the key phases of the proposed works to ensure that any potential signs of unexpected ground movement are identified quickly and addressed as needed.

The Contractor should perform works between agreed working hours only. The strategy for noise, vibration and dust will be developed in the Contractor's method statement.

10. Site Constraints & Buildability

The following items have been identified as the key buildability and site constraints that will be considered during the next stages of the project:

- Party Walls - careful consideration of the proposed construction techniques will be required to minimise any damage to the neighbouring properties. Party wall agreements will be required.
- Temporary works - a temporary works design is to be prepared by the main Contractor and reviewed by Jensen Hunt Design. Temporary works will be required to support any underpins, retaining walls and adjacent properties during construction.

11. Health & Safety

Potential risks relating to the structural works, other than those which should normally be identified by a competent Contractor, will be highlighted on our construction drawings. A list of these risks will be circulated to the design team and updated as required.

12. Conclusions

- The ground conditions are deemed to be suitable for the proposed works following a detailed review of historic geotechnical investigations undertaken nearby and findings from site specific investigations undertaken by JHD in August 2024.
- No underpinning or retaining structure is required below the party walls where the existing foundations extend below the proposed formation level.
- A new reinforced concrete retaining wall be constructed at lower ground floor level internal of the front facade. This will replace the existing concrete underpinning in this location.
- A new steel box frame will be installed at lower ground floor level to support the rear elevation and maximise headroom within the lower ground floor.
- A new reinforced concrete retaining wall be constructed at lower ground floor level to support the rear lightwell. This will replace the existing concrete retaining walls in this location.
- Structural integrity and stability to the neighbouring properties will be maintained throughout the construction period provided a suitable temporary works strategy and construction methodology are implemented on site as agreed between the competent Contractor and the Structural Engineer.
- The proposed works will be designed to minimise any potential impact to the adjacent properties.
- All works should be carried out in accordance with the Party Wall Agreements and current CDM regulations.

13. Design Criteria & Outline Structural Specification

General:

The following design elements should be in accordance with the architects details:

- Water and damp proofing
- Setting-out
- Fire protection
- Floor separation and acoustic isolation
- External works
- Landscaping
- Finishes
- Internal partitions

The Contractor shall be responsible for all necessary setting out, datum lines and levels to enable the works to be set out to the requirements and accuracies of this specification.

All fire protection, insulation requirements and proposed setting out by the Architect.

Foundations:

Unless noted otherwise, JHD have not carried out any ground investigation works. Allowable bearing capacity is assumed to be 100kN/m2, to be verified on site and confirmed to JHD.

Unless noted otherwise, minimum foundation depth to be 1000mm below proposed ground level, subject to confirmation by the Local Authority Building Control Officer / Approved Inspector.

All existing foundations and underground obstructions within the foundation areas are to be removed to avoid hardspots developing under the new works. Live services are to be identified, protected, redirected or terminated as required.

Give notice if:

- A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.
- The formation contains soft or hard spots or highly variable material.
- Depth of proposed formation is greater or lesser than depth given of undisturbed bearing strata.

Concrete:

The concrete grades to be used are as follows:

- Blinding, Gen1
- Mass concrete to underpinning, Gen3
- Insitu RC concrete slabs, underpinning and walls, RC32/40

All formed surfaces to be Ordinary to BS EN 13670 and in accordance with the National Structural Concrete Specification (NSCS) unless noted otherwise.

All unformed surfaces to be Basic to BS EN 13670 and in accordance with the NSCS unless noted otherwise.

Steelwork:

All steelwork to be grade S355 to BS EN 10025 and in accordance with BS-5950 UNO.

All connections to have minimum 2no. M16 bolts, with minimum 6mm leg length continuous fillet welds, unless specifically noted.

The fabricator is to complete the detailing of all connections not fully detailed on the drawings, using design connection forces given by the Engineer. All fabrication drawings to be submitted to the Engineer for approval prior to fabrication.

All steelwork to be blast cleaned to SA2.5. Internal steelwork painted with 75 µm of zinc phosphate primer, 75 µm sealant. External steelwork to be galvanised to 140µm.

All steel beams to have a minimum of 100mm bearing onto masonry walls unless noted otherwise.

All bolts are to be grade 8.8 sheradized to BS 4921, class 1. All bolts, nuts and washers are to be to BS 5950 Part 2 clause 2.2. Washers are to be placed beneath the rotated item. All welds to be minimum 6mm leg length continuous fillet welds unless specifically noted otherwise. All full and partial penetration welds to be ground down smooth.

Timber:

All timber members are to be grade C24 to BS 5268 unless noted otherwise. Timber to be pressure impregnated with preservative and cut ends brush treated.

Lateral restraint straps for floors are to be minimum 900 long 30 x 5 galvanised MS straps at 1200crs with 150 bobend.

Masonry

All load-bearing blockwork is to have a minimum characteristic strength of 7.0N/mm2. All load-bearing brickwork is to have a minimum characteristic strength of 20N/mm2.

Refer to the Architect's drawings and specification for setting out of masonry, mortar types, coursing and bonding requirements and jointing details.

Lintels, unless noted otherwise, to internal walls and internal skins to be:

- Up to 1500 span: 100 deep prestressed lintel.
- 1501 to 2500 span: 140 deep prestressed lintel.
- 2501 to 3500 span: 215 deep prestressed lintel

Pockets for padstones etc. in party walls to be formed by carefully removing stretchers and snapping off headers where required.

All new non-load bearing masonry walls are to be fixed to adjoining new or existing masonry using 'Furfix' wall starters or similar approved. Head restraint to be provided by sleeved ties or galvanised ms angles fixed to the soffit.

Design Parameters

Codes of Practice - British Standards and Eurocodes:

Basis of Structural Design BS EN 1990
Actions on Structures BS EN 1991
Design of Concrete Structures BS EN 1992
Design of Steel Structures BS EN 1993
Design of Timber Structures BS EN 1995
Design of Masonry Structures BS EN 1996
Geotechnical Design BS EN 1997
Basements BS8102
Foundations BS8004
Balustrades BS6180

Building Regulations 2000:

Part 1 (Dead & Imposed Loads)
Part 2 (Wind Loads)
Part 3 (Imposed Roof Loads)
Approved Document A – Structure (2004 edition)
Approved Document H – Drainage & Waste Disposal (2002 edition)

Demolition Works to be carried out in line with ICE Demolition Protocol 2008.

Deflection:
Vertical deflections will be limited to:
Timber: Span / 360 or 14mm, whichever is less
Typical Floors Steel: Span / 360 or 25mm, whichever is less
Steel beams which support glazing: 5mm (imposed)

Design Loadings:

Imposed Loadings:

Typical residential - 1.5kN/m²
Residential balcony - 2.5kN/m²

The design dynamic wind pressure qs = 1.0 kN/m²

Existing Services and Drainage

The Contractor is entirely responsible for locating the positions of all services, including mains, cables, pipes, sewers and drains. Allow for carrying out excavation in roads, and elsewhere where services are present, by hand digging so as to ensure that no damage is caused to services.

General: Protect drains, manholes, inspection chambers, gullies, vent pipes and fittings still in use and ensure that they are kept free of debris.

Damage: Make good damage arising from demolition work. Leave clean and in working order at completion.

Carry out a CCTV survey of the existing drains at the end of the demolition works and submit to the Employer.

Temporary Works:

The Contractor is responsible for the design, installation and maintenance of all necessary

temporary works to ensure the strength and stability of the building throughout the construction process

Partly Demolished Structures:

General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Keep safe outside working hours.

Temporary works: Prevent debris from overloading.

Adjoining Property:

Temporary support and protection: Provide as directed by the Temporary Works Co-ordinator or Main Contractor to seek guidance from suitably qualified person and to maintain and alter as necessary as work progresses.

Party Wall thickness has been assumed and shown indicatively on drawings. If critical, on site investigations must be carried out.

Any Damage:

Minimise. Promptly repair.

Leave no unnecessary or unstable projections.

Make good to ensure safety, stability, weather protection and security.

Support to foundations: Do not disturb.

Defects: Report when exposed or becoming apparent.