



Basement Impact Assessment

For

**47 Albert Street
London
NW1 7LX**

Structural Methodology Statement In Support
Of Planning Application

18/01/16 2016044/CC: Rev B
04/01/16 2016044/CC: Rev A
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22/08/16 2016044/CC: Rev P1



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1. INTRODUCTION

1.1 Symmetrys Limited has been engaged by Inside Out Architecture to carry out a structural report for the proposed extension of the existing lower ground floor and ground floor of a 4 storeys building at 47 Albert Street, North West London. The proposal is to extend the existing lower ground floor and ground floor in the back garden by demolishing and rebuilding the rear extension. The front vaults will also be extended below the existing front garden. The remaining parts of the house will be refurbished and new structural elements will be introduced in order to reinforce the existing structure.

1.2 Our drawings and this report will be included within our client's planning application. Our documents are not intended for, and should not be relied upon by, any third party for any other purpose. Proposed and existing general arrangement drawings were passed to us from Inside Out Architecture.

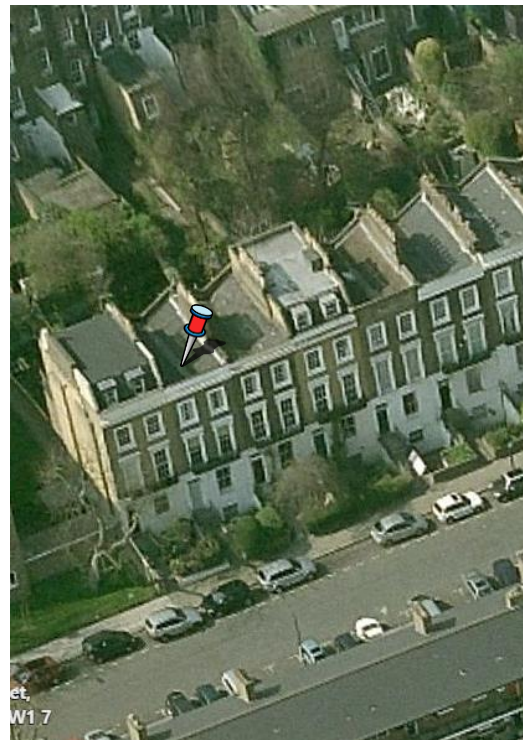


Photo 1 – Birds eye view front elevation

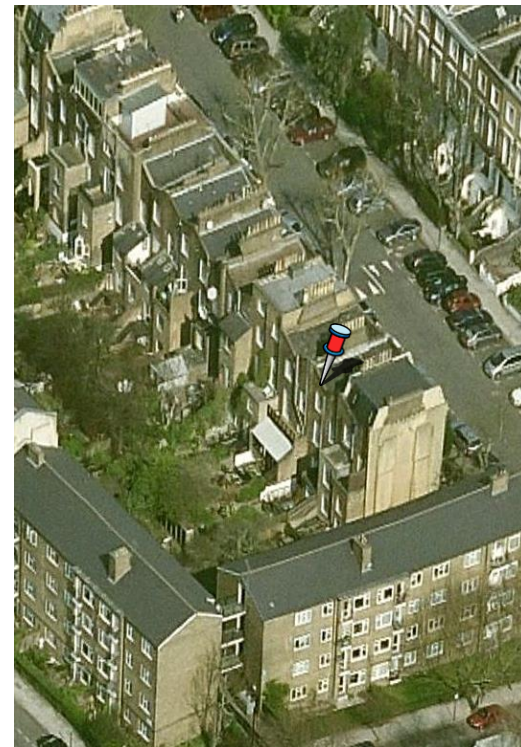


Photo 2 – Birds eye view rear elevation

1.3 Reference documents

The following documents have been used as guidance to complete this Structural Report:

- 1, Camden Planning guidance: Basements and Lightwells – July 2015
- 2, Camden's Core Strategy CS14
- 3, Camden Development Policy DP25
- 4, National Planning Policy Framework: Section 12.
- 5, The Lost Rivers of London, Nicholas Barton

2. EXISTING CONDITION

2.1 The existing dwelling is located in Camden.

2.2 The existing structure is 4 storeys high with a two storey outrigger to the rear. The structure is load bearing masonry with timber floor joists spanning front to back and a butterfly roof. The property exhibits no signs of excessive deformation or cracking other than would be expected of a property of this type and age.

2.3 Symmetrys envisage opening up works will be undertaken to further establish the condition of the existing building prior to undertaking detailed design to enable existing defects to be considered.

3.0 DESIGN PROPOSALS

3.1 The proposal is to extend the existing lower ground floor below the front and into the rear garden of the property, see structural drawings in Appendix A. The extended areas will be undertaken by using sequential reinforced concrete underpins which is a well-known and frequently used technique to form basements. The use of temporary propping will ensure that the basement does not cause any local ground movements whilst the construction is taking place.

3.2 Front vault

To form the lower ground floor extension under the front courtyard, the structure of the previously altered coal holes will be demolished. It is proposed to reinstate the historic the shape of the vaults within the new retaining wall. This retaining wall will be formed in an underpinned sequence using reinforced concrete L-shaped pins. This will ensure that the basement slab resists any potential soil pressure due to heave of hydrostatic loads from localised perched water, leaking pipes, etc. The floor level of the vaults will also be lowered using mass concrete underpins under the existing brick wall supporting the new ground bearing slab.

3.3 Rear Extension

The rear extension at lower ground floor will be formed using reinforced concrete L-shaped pins excavated within the rear garden. It is also proposed to lower the existing lower ground floor by 100mm for the courtyard and 260mm for the bathroom by using a concrete ground bearing slab. This will be undertaken by underpinning the existing brick wall using L-shaped reinforced concrete retaining wall as for the front vaults.

To ensure continuity between the RC retaining walls and the masonry walls, dowels will be drilled into the underside of the masonry walls and cast in with the RC walls.

3.4 Rear Garden

The lower ground floor courtyard will extend into the rear garden, by 1.8 meters. The remaining garden will be landscaped as per architect’s drawings. Also green roofs are proposed on top of the new rear extension as part of the SuDS strategy for the development.

3.5 Waterproofing

BS8102 sets out guidance for the waterproofing of basement structures according to their use. With this in mind the use of tanked, integral and/or drained methods of waterproofing will have to be considered. These items will be considered once a tanking specialist has been employed.

3.6 Roof

It is proposed to reinstate the roof by carrying out structural repair where necessary. This will involve replacing the existing rotten rafters to avoid any risk of failure and water ingress and strengthen the existing spine wall support.

4. **STAGE 1: SCREENING**

A screening process has been undertaken based on the flow screening charts of the Camden Planning Guidance CPG4.

The tables below identify any matters that are relevant in the proposed scheme. Each question is answered by “Yes” or “No”. “No” answers are justified in the last column of the screening charts. “Yes” answers are discussed further in “Stage 2: Scoping”.

Subterranean ground water flow screening chart

1a: Is the site located directly above an aquifer?	No	No Groundwater was recorded during the site investigation and monitoring visit. The London Clay is designated Unproductive Strata.
1b: Will the proposed basement extend beneath the water table surface?	No	No Groundwater was recorded during the site investigation and monitoring visit.
2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No	First watercourse is 1km from the site. The Lost River of London extract in figure 3 shows the river Fleet 500m away from site.
3: Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site is located near Morning Crescent, around 2 km from Hampstead Heath.

4: Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	Yes	There will be a decrease of hard surfaced area (≈ 3m ²) provided by the landscape arrangement of the rear garden and the two green roofs over the rear extension.
5: As part of the site drainage, will more surface water than at present be discharged to the ground?	No	There will be little changes in the surface water discharge.
6: Is the lowest point of the proposed excavation close to, or lower than, the mean water level in any local pond or spring line?	No	There is no local pond or spring line nearby.

Slope stability screening flowchart

1: Does the existing site include slopes, natural or manmade, greater than 7 degrees?	No	The site is level.
2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7 degrees?	No	There is no proposed change in the slope of the site.
3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7 degrees?	No	There is a railway track 90 metres from the site, see figure 2. This is considered to be reasonable distance, the basement development will be affect the railway line.
4: Is the site within a wider hillside setting in which the general slope is greater than 7 degrees?	No	The site is not located on a wider hillside.
5: Is the London Clay the shallowest strata at the site?	Yes	Please refer to scoping stage.
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	The proposed scheme will not impact any tree protection zones. No tree is to be fell as part of the proposed basement extension.
7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	No	Although some small cracks were noticed in the render of walls as described in the Preliminary Risk Assessment, they are not considered to be significant.
8: Is the site within 100m of a watercourse or a potential spring line?	No	The site is not located in proximity of an existing watercourse.

9: Is the site within an area of previously worked ground?	No	The house at 47 Albert Street is a listed building from mid-19 th century.
10: Is the site within an aquifer? Is so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No	No Groundwater was encountered during the site investigation.
11: Is the site within 50m of the Hampstead Heath ponds?	No	The site is located in Morning Crescent, around 2km from Hampstead Heath.
12: Is the site within 5m of a highway or pedestrian right of way?	Yes	Please refer to Scoping stage.
13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes	Please refer to Scoping stage.
14: Is the site over any tunnels, railway lines?	No	The closest line is the Overground, 90 metres away from the site.
Surface flow and flooding screening flowchart		
1: Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site is located near Morning Crescent, around 2km from Hampstead Heath.
2: As part of the proposed site drainage, will surface water flows be materially changed from the existing route?	No	There will be no changes in the surface water flowing route.
3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	Yes	There will be a decrease of hard surfaced area ($\approx 3m^2$) provided by the landscape arrangement of the rear garden and the two green roofs over the rear extension.
4: Will the proposed basement result in changes to the profile of the inflows of surface water being received by adjacent properties or downstream watercourses?	No	There will be no material change in the requirements of the local drainage infrastructure.
5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	There is no change in the surface water quality received by the neighbouring properties.

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 ?	No	No ground water was encountered during the site investigation and the site is not located in a flood risk zone, as shown on figure 4. It is also an area considered to have a very low to low risk from surface water flooding.
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5. **STAGE 2: SCOPING**

From the screening process, five relevant matters have been identified and require definition of the scope of investigation to be undertaken.

5.1 Subterranean ground water flow

4: Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?

Answer: The existing rear garden will be landscaped as part of the refurbishment of the house. There will be a small increase of hard surfaced area which will be counterbalance by the two green roofs proposed for the rear extension providing a 3m² decrease of the impermeable area of the site. Please refer to architect's drawings for the landscaping proposals.

Scoping: As it is proposed to increase the permeable surface of the site which will provide attenuation to the surface water run-off, no further assessment will be required.

5.2 Slope stability screening flowchart

5: Is the London Clay the shallowest strata at the site?

Answer: Yes. The local geological survey maps indicates that the underlying strata is London Clay.

Scoping: London Clay has a high volume change potential. A Ground Movement Assessment has been undertaken, to predict the potential heave and settlement actions on the proposed structure.

12: Is the site within 5m of a highway or pedestrian right of way?

Answer: Yes. The site is located on Albert Street, the proposed development will be at less than 5 metres from the public highway.

Scoping: The ground movements due to the excavation of the extension of the historic coal holes needs to be considered. A Ground Movement Assessment has been undertaken, to predict the damage category.

13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?

Answer: It is proposed to underpin the neighbouring party wall with No. 45 to extend the lower ground floor in the rear garden. It is also proposed to lower the slab in the front vaults and rear extension. This would require to underpin the existing foundations around the perimeters.

Scoping: The effect of the works on the neighbouring building and ground stability will need to be considered. LMB Geosolutions carried out a ground movement assessment which assess the damage category of the proposal.

5.3 Surface flow and flooding screening flowchart

3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?

Answer: The existing rear garden will be landscaped as part of the refurbishment of the house. There will be a small increase of hard surfaced area which will be counterbalance by the two green roofs proposed for the rear extension providing a 3m² decrease of the impermeable area of the site. Please refer to architect's drawings for the landscaping proposals.

Scoping: As it is proposed to increase the permeable surface of the site which will provide attenuation to the surface water run-off, no further assessment will be required.

5.4 Summary of the assessments required

The screening and scoping process three issues all relative to the land stability of the site and the potential ground movements. All three have been assessed in the ground movement report, see appendix D.

6.0 **STAGE 3: SITE INVESTIGATION AND STUDY**

6.1 Desktop Study

The first stage of a site investigation is to develop an understanding of the site and immediate surroundings. LMB carried a desktop study including a site walkover in their site investigation report, see Appendix C.

6.2 Ground Conditions

The local geographical survey maps, accessible via the British Geological Society website <http://mapapps.bgs.ac.uk/geologyofbritain/home.html?mode=boreholes>, indicated that the underlying soil strata is London Clay. Having reviewed borehole-s cut in the vicinity of the property on Albert Street, with particular respect to Northeast, with the BGS reference TQ28SE311 (see figure 1), stiff clay was confirmed down to 9m.



Figure 1 - Historical bore hole log map taken from the British Geological Surveys

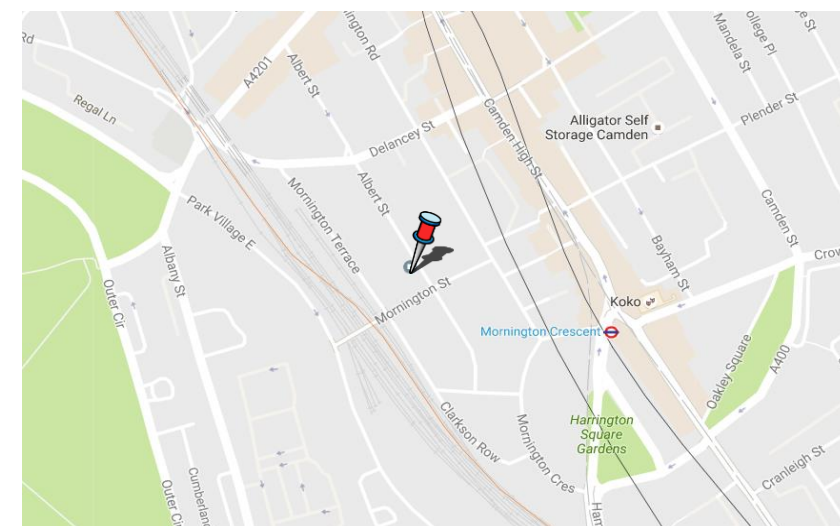


Figure 2: Map showing local transport tunnels

6.3 Ground Investigation / Opening-Up Works Undertaken:

6.3.1 One window sampler was cut in the front light well at lower ground floor level to determine safe bearing loads and cohesion values, traditional foundations. Furthermore the extent of any ground contamination and ground water levels was established. Should planning be granted then additional trial pits will be undertaken.

6.3.2 Four trial pits were excavated along the exterior walls of the house to reveal the existing foundations and to take samples of soil for laboratory testing.

6.4 Existing foundations

Trial pits were dug by LMB Geosolutions Ltd on the 18th of July 2016 to reveal the full profile of the existing foundations. Sections representing the results of the trial pits can be found in the factual report of the basement impact assessment in Appendix C.

6.5 Ground Investigation and Geology

6.5.1 The interpretative report of the site specific investigation has been undertaken by LMB Geosolutions Ltd. The findings and recommendations are described in their report dated August 2016.

6.5.2 The ground conditions are summarised as follows:

Window Sampler 1	
G.L to 1.70m	Made Ground
1.1m to 4.0m	Soft becoming firm Brown Clay – London Clay
4.0m to 7.0m	Stiff Brown Clay – London Clay
7.0m to 8.35m	Stiff Dark Grey / Brown Clay – London Clay

6.5.3 Ground Water Monitoring :

No groundwater strikes were recorded during the ground investigation works and groundwater was not recorded during return monitoring visits.

6.5.4 The report confirms that the proposed lower ground floor extension can be founded on London Clay which would allow a safe bearing pressure of 120KN/m².

6.6 Hydrology

Referring to the “The Lost Rivers of London” by Nicholas Barton the closest known watercourse is described to be on the east of the site approximately 500m away which is known as the Fleet which runs from Hampstead Heath heading southwards. This is a significant distance away and will not have any impact on the local hydrology, see figure 3 below.

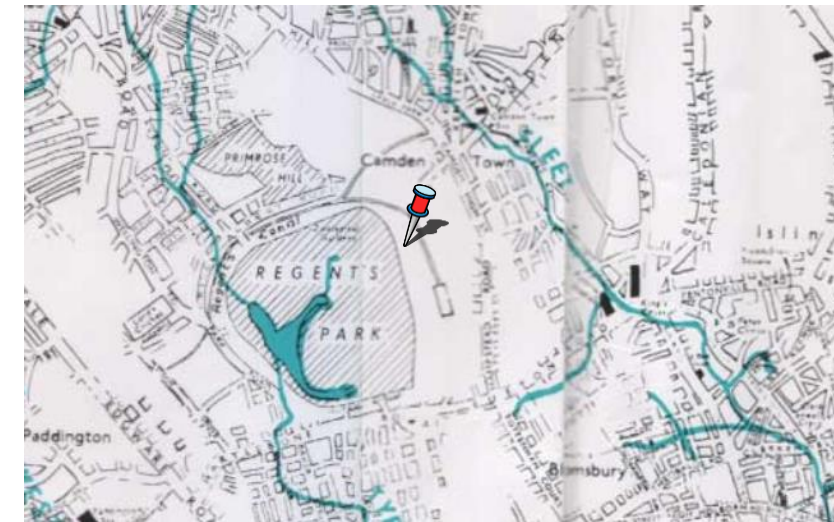


Figure 3 : Extract from the Lost River of London by Nicholas Barton

6.7 Flooding

Referring to the Camden strategic flood risk assessment, the proposed basement does not lie in a Local Flood Risk and therefore having a less than 1 in 1000 annual probability of river or sea flooding any year. Therefore no further assessment is required.

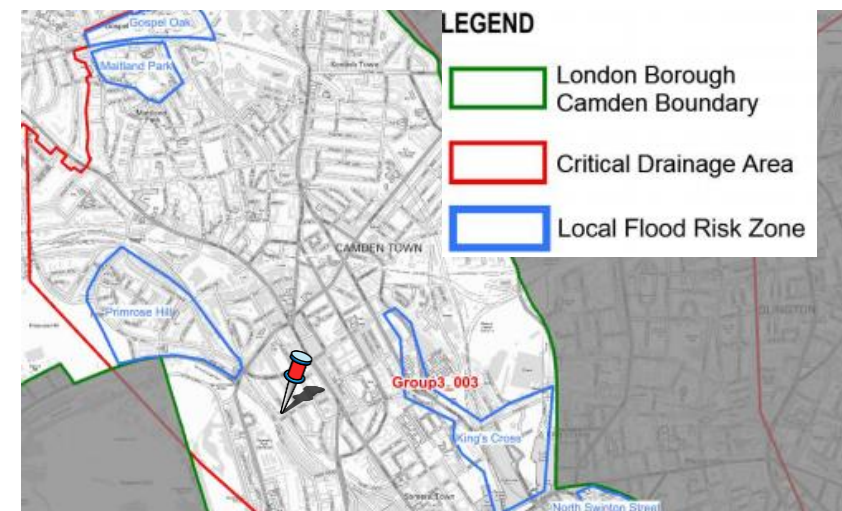


Figure 4 : Extract from Camden Strategic Flood Risk Assessment

7.0 PROPOSED SEQUENCE OF WORKS

7.1 The structural method statement provided, (see Appendix A), is for the purpose of the design team's design development and for the purpose of the client's planning application. The appointed contractor will be responsible for all temporary supports and for the stability of the structure during the works. The method of construction adopted minimises the need for temporary works. However, propping during the underpinning sequencing will be required to minimise the risk of ground movement occurring.

To ensure that the retained engineer's intent is correctly interpreted by the contractor, they will be required to submit all temporary works proposals to review a minimum of 7 working days prior to commencing excavation. The contractor should also submit a dewatering strategy to ensure a strategy is agreed should water be encountered.

7.2 Below Existing Building

Temporary propping to the newly formed retaining walls forming the extensions will be required until the lower ground floor has been formed. For further details please see Appendix A for construction sequence and method statements.

7.3 Dewatering Strategy

As ground water was not recorded during site investigation, a dewatering strategy is not necessary for this planning application.

8.0 CONSTRUCTION METHOD STATEMENTS

Please see Appendix A for construction sequence and method statements.

9.0 CONSTRUCTION MANAGEMENT PLAN

A Construction Traffic Management plan will be undertaken may planning be granted. The works are expected to be completed over a 8-9 months program split in the three phases below:

- 2 months excavation
- 3 months construction
- 3/4 months fit out.

Once appointed, the contractor will be responsible for providing a program with anticipated starting date.

10.0 STAGE 4: IMPACT ASSESSMENT

10.1 Due to the robust engineering principles and construction method applied, the extent of movement is limited in accordance with British and European codes. We can confirm that the proposed structural design and method of construction of the basement has been developed with a view to ensuring structural safety, and that if constructed in accordance with this document the works will be able to be completed without any adverse impact on the structural stability of the neighbouring properties, other adjacent structures, adjoining land and gardens or the adjoining Public Highway.

10.2 The reinforced concrete structure will be designed to accommodate surcharges from the neighbouring property, public highway and ground pressures. The structure will have adequate stiffness to ensure that the lateral deflections do not exceed the appropriate limits recommended by British Standards Codes of Practice in order to ensure that potential ground movements be kept to acceptable limits.

10.3 The structures will be designed to transfer vertical loads into the ground safely. As the basement extension will involve very limited excavation works and will be carried out in an underpinned sequence, it is unlikely to cause any critical damages to the neighbouring structures.

10.4 Ground Movement Assessment

10.4.1 Ground movement assessment report has been undertaken by LMB Geosolutions Ltd and can be found in Appendix D.

10.4.2 LMB's report confirms that the ground movement model predicts movement to fall between Category 1 (very slight) and Category 2 (slight), which is described in the adjacent table.

Category of damage	Description of typical damage (Nature of repair in italic type)
0	Hairline cracking which is normally indistinguishable from other causes such as shrinkage and thermal movement. Typical crack widths 0.1mm. <i>No action required</i>
1	Fine cracks which can <i>easily be treated using normal decoration</i> . Damage generally restricted to internal wall finishes: cracks rarely visible in external brickwork. Typical crack widths up to 1mm.
2	<i>Cracks easily filled. Recurrent cracks can be masked by suitable linings.</i> Cracks not necessarily visible externally: <i>some external repointing may be required to ensure weather tightness.</i> Doors and windows may stick slightly and <i>require easing and adjusting.</i> Typical crack widths up to 5mm.
3	Cracks which <i>require some opening up and can be patched by a mason.</i> <i>Repointing of external brickwork and possibly a small amount of brickwork to be replaced.</i> Doors and windows sticking, service pipes may fracture. Weather-tightness often impaired. Typical crack widths are 5 to 15mm, or several of, say 3mm.
4	Extensive damage which <i>requires breaking-out and replacing sections of walls</i> , especially over doors and windows. Windows and door frames distorted, floor sloping noticeably*. Walls leaning or bulging noticeably; some loss of bearing in beams. Service pipes disrupted. Typical cracks widths are 15 to 25mm, but also depends on number of cracks.
5	Structural damage which <i>requires a major repair job, involving partial or complete rebuilding.</i> Beams loose bearing walls lean badly and require shoring. Windows broken with distortion. Danger of instability. Typical crack widths are greater than 25mm, but depends on the number of cracks.

Important Note. Crack width is one factor in assessing category of damage and should not be used on its own as a direct measure of it. * Local deviation of slope, from the horizontal or vertical, of more than 1/100 will normally be clearly visible. Overall deviations in excess of 1/150 are undesirable.

Figure 5: Building damage categories used by the IStructE and ICE

10.5 Figure 2, shows the position of the Northern Line and Overground relative to the proposed basement. Due to the tunnels being 90m away, which is considered a significant distance, no consultation with the London Underground Asset Protection team will be undertaken.

10.6 Cumulative effects are considered unlikely on this project as there are no record of basement development in the neighbouring properties.

11.0 PARTY WALL MATTERS

11.1 The scope of works falls within the Party Wall Act 1996. Procedures under the Act will be dealt with by the client's Party Wall Surveyor. The Party Wall Surveyor will prepare and serve necessary Notices under the provision of the Acts and agree Party Wall Awards in event of disputes. The Contractor will be required to provide the Party Wall Surveyor with the appropriate drawings, method statements and all other relevant information covering the works notifiable under the Act. The resolution of the matters under the Act and provision of Party Wall Awards will protect the interests of all owners.

11.2 Monitoring

It is proposed that the structural stability of the surrounding/adjacent properties is safeguarded by a system of movement monitoring.

The Contractor shall monitor the position and movements of the elevations of the adjacent properties around the perimeter of the proposed excavation. The monitoring shall be undertaken by a specialist survey company. The monitoring system will have at least the following characteristics:

- 1) The existing facades of the neighbouring properties as well as the flank wall of the neighbouring building will be monitored near ground level and at roof level, at intervals not exceeding 3m centres.
- 2) Monitoring points (targets) shall be firmly attached, to allow 3D position measurement, for the duration of the work, to a continuous and uninterrupted accuracy of +/- 1mm. A suitable remote reference base/datum unaffected by the works will be adopted, one located at least 50m from the site.
- 3) Points/targets shall be measured for 3D positioning on, at not less than the following intervals:
 - Before any works commence (base reading)
 - Every two weeks during the period of basement excavation/construction.
 - Upon completion of all construction works.
- 4) All measurements shall be plotted graphically, to clearly indicate the fluctuation of movement with time. The survey company shall submit the monitoring results to the Engineer (Symmetrys Ltd) and to the Adjoining Owners Party Wall Surveyors/Engineer within 24 hour of measurement, graphically and numerically.

5) The following trigger levels for movement are proposed for agreement. In the event of a trigger value being reached the Contractor will immediately stop any work that might cause further movement, assess the situation and propose alternative methods for proceeding, with definitive further movement limits for those later steps.

6) Trigger movement limits are proposed as follows:

- A) **Existing Buildings Horizontal/Vertical movement**
 Amber +/-5mm All parties notified.
 Red +/-10mm Works reviewed

- B) **The garden walls and excavation**
 Amber +/-5mm All parties notified.
 Red +/-10mm Works reviewed

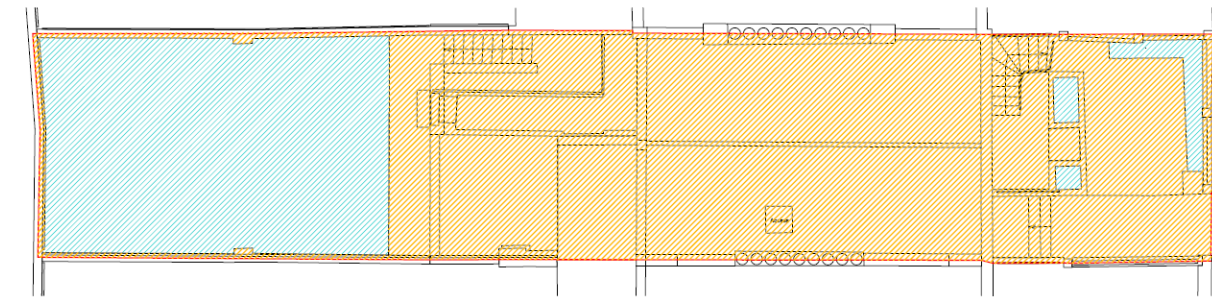
12.0 DRAINAGE

12.1 The development is a subterranean extension of a single family dwelling house. As no additional utilities or units are being created there will be no material change in the requirements of the local drainage infrastructure.

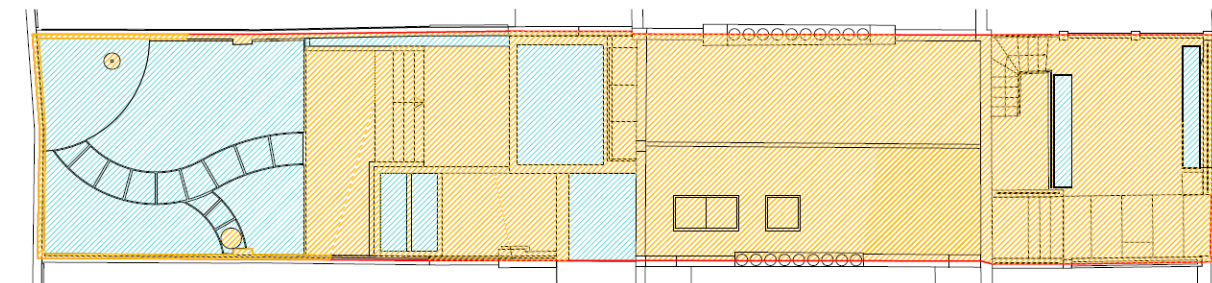
12.2 The above ground drainage will be subject to invert levels, drained by gravity to the existing combined sewage system. The below ground drainage will be drained to a submersible package sewage station situated below the basement slab which will then be pumped via a rising drain to the nearest available inspection chamber on the existing gravity drainage system. This can then flow by gravity into the existing combined sewage system. To mitigate the risk of back flow suitable measures such as non-return valves will be incorporated into the drainage design.

12.3 *It is proposed to extend the lower ground floor into the rear garden and to refurbish the rest of the garden. Figure 6 demonstrates that the impermeable areas are not increased and there is an increase of the soft landscaped areas and hence a small reduction in discharge into the Thames water sewer. This will be achieved using permeable paving in the rear garden and using a sedum blanket system on the roofs of the new extension.*

The proposed green roof system will be a Bauder Xero Flor XF301 or similar.



EXISTING DRAINAGE CATEGORISATION



PROPOSED DRAINAGE CATEGORISATION

LEGEND

— SITE BOUNDARY




DRAINAGE CATEGORISATION	EXISTING	PROPOSED	DIFFERENCE
 OUTSIDE PROPERTY			
 HARD SURFACING RAINFALL IS NOT ATTENUATED AND ENTERS THE SURFACE WATER DRAINAGE SYSTEM	111.2m ²	110.6m ²	-0.8m ²
 LANDSCAPE / GARDEN AREAS RAINFALL DOES NOT ENTER THE SURFACE WATER DRAINAGE SYSTEM	47.3m ²	47.9m ²	+0.8m ²

Figure 6: Extract from drainage categorisation drawings

13.0 SUSTAINABILITY

As the proposed extension at lower ground floor will involve significant amounts of concrete, cement replacement alternatives should be considered. Cement replacements can be used to replace up to 40% of the cement in concrete mix. These replacements are typically waste products from the energy production industry such as PFA (pulverised fuel ash) and GBFS (granulated blast furnace slag) are recycled and not sent to landfill sites. Furthermore this also reduces the amount of cement that needs to be mined. Concrete should be bought from a local supplier to further reduce the carbon footprint of transport.

There is a significant amount of reinforced concrete on the project for which steel reinforcement bars will be required. By specifying reinforcement from a UK supplier it ensures that the rebar is made from 100% recycled steel. Any structural steelwork should be sourced from a British manufacturer to ensure that rolled sections are made from at least 60% recycled steel. Sourcing the steel from a local supplier will further reduce the transport carbon footprint.

The use of timber as a structural element is to be maximised as timber production actively negates greenhouse gas production. Furthermore all timber is to be FSC certified insuring that the timber is produced from a sustainable source.

14.0 STAGE 5: REVIEW AND MITIGATION MEASURES

The table below summarises the potential impact of the lower ground floor extension on the natural environment and local amenity.

Potential Impact	Mitigation Measures
Land Stability : Impact on neighbouring structures	Monitoring of neighbouring buildings will be undertaken.
	The lower ground floor extension will be constructed following the construction method statement The contractor will adopt the practices outlined within the Demolition Protocol and the Considerate Constructors Scheme
Ground Water Flow : Impact on aquifer	The lower ground floor extension will not prevent groundwater flow.
Surface Flow and Flooding : Increase of surface water run off to drainage system	The proposed development will include green roofs which will provide some attenuation of the surface water run-off to the local drainage system.


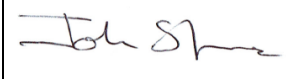
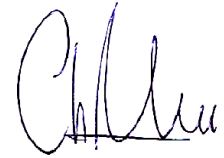

15.0 NON TECHNICAL SUMMARY

15.1 It is essential that a thorough review of all temporary works, contractors' method statements and calculations for these works is undertaken by a suitable qualified structural engineer prior to works starting. The permanent works will also be submitted to Building Control and the necessary Party Wall Surveyors for approval prior to the works commencing on site.

15.2 The findings of this Basement Impact Assessment can be summarised as per below:

- The lower ground floor extension will be predominantly within London Clay,
- Groundwater is not expected to be encountered,
- The development is expected to have negligible impact on surface water flow and flooding,
- *From the results of the Ground Movement Assessment, the predicted damage category is between Category 1 and Category 2. This is below the limit imposed by Camden Council and will only be a risk of aesthetic damages.*
- Monitoring of adjacent properties will be undertaken
- The proposed development is not expected to provoke any cumulative effect as no existing basement was identified in the adjacent properties.

15.3 The proposed works at 47 Albert Street have been designed with robust structural principles and methods of construction that are widely used and known. This will ensure the integrity of neighbouring structures and roadways are not compromised during its construction. This assumed Method Statement and Structural report has been completed by Symmetrys Limited.

Report Prepared by:		Report Reviewed by:	
			
Camille Corvec MEng Structural Engineer	John Strawson MICE	Christopher Atkins CEng MStructE Managing Director of Symmetrys Limited	Philip Lewis FGS, CGeol Managing Director of LMB Geosolutions Ltd