CampbellReith
consulting engineers

Flat 1, 43 Hillfield Road, London, NW6 1QD

Basement Impact Assessment Audit

For

London Borough of Camden

Project Number: 12985-27
Revision: F1

March 2019

Campbell Reith Hill LLP
Friars Bridge Court
41-45 Blackfriars Road
London
SE1 8NZ

T:+44 (0)20 7340 1700
E:london@campbellreith.com
W:www.campbellreith.com

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Author	H Pham, MSc CEng MIStructE
Project Partner	E M Brown, BSc MSc CGeol FGS
Project Number	12895-27
Project Name	Flat 1, 43 Hillfield Road, London, NW6 1QD
Planning Reference	2018/5111/P

Contents

Appendix

1.0 NON-TECHNICAL SUMMARY

1.1. CampbellReith was instructed by London Borough of Camden, (LBC) to carry out an audit on the Basement Impact Assessment submitted as part of the Planning Submission documentation for Flat 1, 43 Hillfield Road (planning reference 2018/5111/P). The basement is considered to fall within Category B as defined by the Terms of Reference.

1.2. The Audit reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development in accordance with LBC's policies and technical procedures.

1.3. CampbellReith was able to access LBC's Planning Portal and gain access to the latest revision of submitted documentation and reviewed it against an agreed audit check list.

1.4. The Basement Impact Assessment (BIA) has been prepared by engineering consultants and the author's qualifications meet CPG Basements 2018 requirements.

1.5. The building is not listed or adjacent to listed buildings and it is not within a conservation area. The site is within 5m of a highway or pedestrian right of way.

1.6. The proposal includes the demolition of the existing rear extension at ground floor, construction of a new rear extension, lowering the existing basement and extending it to the front and rear of the building.

1.7. A site investigation has been completed and it confirms that the proposed basement will be founded in London Clay.

1.8. Groundwater was recorded at depths between 1.64m and 2.06m below ground level during monitoring visits. The proposed development will not impact the wider hydrogeological environment.

1.9. LBC flood mapping indicates Hillfield Road was one of the streets flooded in 2002 flood event. The environment agency classes the site as Very Low Risk of surface flooding. The supplementary BIA reports states that mitigation measures would be included in the form upstands to entrances and lightwells to the basement. It is therefore acceptable that the development is at low risk of flooding.

1.10. The proposed basement will be formed by reinforced concrete underpins and the basement slab. Outline design calculations have been provided. Following the initial audit, further drawings have been provided to confirm the depth of the basement.

1.11. An outline structural methodology and proposed sequence of works have been provided. This includes the use of active propping to maintain movements within maximum predicted limits.

1.12. An updated ground movement assessment (GMA) is presented, based on the revised construction methodology, that predicts damage to neighbours to be a maximum of Burland Category 1 (Very Slight).

1.13. An outline movement monitoring strategy has been provided. Trigger levels and frequency of survey are considered reasonable to control the works and maintain a maximum of Category 1 damage to neighbouring properties.

1.14. An indicative works programme has been provided. A detailed programme should be provided by the appointed contractor at a later date.

1.15. It is accepted that the development will not impact on the wider hydrological environment and is not in an area subject to groundwater flooding.

1.16. Queries and requests for information are discussed in Section 4 and summarised in Appendix 2. Considering the updated information provided, the BIA meets the criteria of CPG Basements.

2.0 INTRODUCTION

2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 9 November 2018 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Flat 1, 43 Hillfield Road, London, NW6 1QD, Camden Reference 2018/5111/P.

2.2. The Audit was carried out in accordance with the Terms of Reference set by LBC. It reviewed the Basement Impact Assessment for potential impact on land stability and local ground and surface water conditions arising from basement development.

2.3. A BIA is required for all planning applications with basements in Camden in general accordance with policies and technical procedures contained within:

- Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners.
- Camden Planning Guidance: Basements (March 2018)
- Camden Development Policy (DP) 27: Basements and Lightwells.
- Camden Development Policy (DP) 23: Water.
- Local Plan Policy (2017): A5 (Basements).

2.4. The BIA should demonstrate that schemes:

a) maintain the structural stability of the building and neighbouring properties;

b) avoid adversely affecting drainage and run off or causing other damage to the water environment;

c) avoid cumulative impacts upon structural stability or the water environment in the local area, and;

evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design.

2.5. LBC's Audit Instruction described the planning proposal as "Excavation of basement extension; Erection of ground floor rear extension and front garden bin store."

2.6. The Audit Instruction also confirmed Flat 1, 43 Hillfield Road and neighbouring buildings are not listed buildings and do not reside within a Conservation Area.

2.7. CampbellReith accessed LBC's Planning Portal on 18/12/2018 and gained access to the following relevant documents for audit purposes:

- Planning Statement + Design and Access Statement dated 17 October 2018 by Studio McLeod.
- Camden Basement Policy A5: Requirements Statement dated 17 October 2018 by Studio McLeod.
- Location Plan, Site Plan, Existing Plan and Elevation Drawings dated 17 October 2018 by Studio McLeod.
- Demolition Plan and Elevation Drawings dated 17 October 2018 by Studio McLeod.
- Proposed Plan and Elevation Drawings dated 17 October 2018 by Studio McLeod.
- Basement Impact Assessment dated 28 September 2018 by Symmetrys Consulting Engineers Ltd.
- Existing Tree Position Drawing dated 17 October 2018 by Studio McLeod.

2.8. Following the issue of the initial audit report, further supporting documents were issued to CampbellReith for audit purposes on 31st January 2019, 18th and 26th February 2019:

- BIA Supplementary Report dated 23 January 2019 by Symmetrys Consulting Engineers Ltd.
- Updated Lower Ground Floor Plan Drawing, Ref. 17420 SK-01 Revision P5.
- Updated Ground Floor Plan Drawing, Ref. 17420 SK-02 Revision P4.
- Updated Section A-A Drawing, Ref. 17420 SK-03 Revision P3.
- Typical Underpinning Sequence, Ref. 17420 SK-04 Revision P3.

3.0 BASEMENT IMPACT ASSESSMENT AUDIT CHECK LIST

Item	Yes/No/NA	Comment
Are BIA Author(s) credentials satisfactory?	Yes	
Is data required by Cl.233 of the GSD presented?	Yes	The BIA Supplementary Report has confirmed the depth and extent of the proposed basement.
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	BIA and supporting documents.
Are suitable plan/maps included?	Yes	BIA sections 2 and 3.
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	BIA sections 2 and 3.
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Justification provided for all 'No' answers.
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	Justification provided for all 'No' answers.
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	The BIA Supplementary Report has provided further justifications to 'No' answers.
Is a conceptual model presented?	Yes	Refer to BIA Appendix 1 – Ground Investigation & Assessment
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	Refer to BIA Section 5.3
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	Refer to BIA Sections 5.1 and 5.2.

Item	Yes/No/NA	Comment
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Is factual ground investigation data provided?	Yes	Provided within BIA Appendices.
Is monitoring data presented?	Yes	See Ground Investigation Report pages 1 and 15.
Is the ground investigation informed by a desk study?	Yes	
Has a site walkover been undertaken?	Yes	A photographic record is provided in the BIA Appendix B.
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Refer to the BIA Supplementary Report.
Is a geotechnical interpretation presented?	Yes	Refer to BIA Appendix 1 – Ground Investigation & Assessment
Does the geotechnical interpretation include information on retaining wall design?	Yes	Refer to BIA Appendix 1 – Ground Investigation & Assessment
Are reports on other investigations required by screening and scoping presented?	Yes	Refer to the BIA Supplementary Report.
Are the baseline conditions described, based on the GSD?	Yes	Refer to the BIA Supplementary Report.
Do the base line conditions consider adjacent or nearby basements?	Yes	Refer to the BIA Supplementary Report.
Is an Impact Assessment provided?	Yes	See Audit section 4.13.
Are estimates of ground movement and structural impact presented?	Yes	See Audit section 4.13.
Is the Impact Assessment appropriate to the matters identified by screening and scoping?	Yes	
Has the need for mitigation been considered and are appropriate	Yes	

Item	Yes/No/NA	Comment
mitigation methods incorporated in the scheme?		
Has the need for monitoring during construction been considered?	Yes	BIA Section 7.4 provides a brief description of the movement monitoring proposal. See Audit section 4.15.
Have the residual (after mitigation) impacts been clearly identified?	Yes	
Has the scheme demonstrated that the structural stability of the building and neighbouring properties and infrastructure will be maintained?	Yes	
Has the scheme avoided adversely affecting drainage and run-off or causing other damage to the water environment?	Yes	See Audit section 4.12.
Has the scheme avoided cumulative impacts upon structural stability or the water environment in the local area?	Yes	
Does report state that damage to surrounding buildings will be no worse than Burland Category 1?	Yes	Accepted, considering updated assessment and provision of active propping.
Are non-technical summaries provided?	Yes	Refer to BIA Section 1.0.

4.0 DISCUSSION

4.1. The Basement Impact Assessment (BIA) has been prepared by Symmetrys Ltd and consists of the main assessment report and the Ground Investigation & Assessment prepared by LMB Geosolutions Ltd. The qualifications of the individuals involved meet the requirements of CPG Basements.

4.2. The LBC Instruction to proceed with the audit identified that the proposal does not involve a listed building or neighbour any listed buildings. The planning statement by Studio McLeod also states that the property is not within a conversation area.

4.3. The proposal is the refurbishment of an existing three storey terrace house above a basement at 43 Hillfield Road. The works include the demolition of the rear extension at ground floor, the construction of a new rear extension, lowering of the existing basement and also extending it to the front and rear of the building.

4.4. The proposed basement consists of a single storey construction formed by lowering the existing basement of the building. The basement will also be extended below the rear and front gardens to form lightwells. Following the initial audit, the supplementary BIA report has confirmed the depth and extent of the proposed basement.

4.5. Intrusive ground investigation works were undertaken between 27th and 30th July 2018 by LMB Geosolutions Ltd. The investigation consisted of 1 No. continuous flight auger borehole and 1 No. dynamic (windowless) sampler borehole (to depths of 8.00m bgl) to the front and rear of the property, and 5 No. hand excavated trial pits. The investigation confirms that the site is underlain by Made Ground, proven to 1.20m bgl, over London Clay.

4.6. Groundwater monitoring was undertaken following the completion of the fieldworks on 7th August and 22nd August 2018. The BIA states that no groundwater strikes were encountered during the investigation works but it was recorded at depths of between 1.64m and 2.06m bgl during the subsequent monitoring visits. The groundwater is stated not to represent a continuous aquifer, which is accepted, and there will be no impact to the wider hydrogeological environment.

4.7. The BIA states that the proposed basement will be formed by reinforced concrete underpins below the existing masonry walls. They will be constructed using the traditional method of underpinning in a hit and miss sequence. The underpins will be connected to the reinforced concrete basement slab which acts as lateral props to the underpins. The supplementary BIA report has confirmed that the basement slab is founded at 4.00m below the ground level.

4.8. Outline design calculations for the reinforced concrete underpins and the basement slab have been provided. The BIA states that the extent and the depth of the adjacent properties' basements are to be confirmed. Pending further investigations to confirm the adjacent buildings' basement levels, reasonably conservative assumptions have been adopted in the design and ground movement assessment.

4.9. An outline structural methodology and proposed sequence of works are included in Section 7.0 of the BIA. The proposal has considered temporary and permanent loading conditions. It is noted that the appointed contractor will be responsible for the design of the temporary supports, which will be required during the underpinning works. However, as discussed further in 4.13 and 4.14, the BIA states that active propping will be utilised in order to control movements within the maximum allowable limits assessed.

4.10. As part of the slope stability screening assessment in Section 4.2, it was stated there is no evidence of such shrink-swell subsidence effects on site. Its accepted that at the proposed founding levels, between 3.00m and 4.00m bgl, the foundations will not be influenced by shrink-swell movements.

4.11. It is accepted that the site is at low risk of surface water flooding.

4.12. It is accepted that the development will not impact on the wider hydrological environment.

4.13. A ground movement assessment (GMA) and damage category assessment has been carried out to assess effects on the surrounding properties, which has been updated to address the comments of the previous audit. The GMA adopts a reasonably conservative approach, based on:

- the maximum depth of the proposed basement;
- movements generated by installation of underpins;
- the use of high stiffness retaining walls, based on confirmation of the temporary and permanent propping to be utilised;
- and, considers damage to the flats at 43 Hillfield Road as well as surrounding structures.

4.14. The GMA states that providing horizontal movements are limited to 4mm, the damage impact to all neighbours (flats above and adjoining) is Burland Category 1 (very slight). In order to limit horizontal movements, active propping is proposed.

4.15. The updated GMA indicates that movements to the highway and utilities will be <5mm. Asset protection agreements should be agreed with asset owners, as required.

4.16. A outline movement monitoring strategy is provided in Section 7.4 of the BIA. Horizontal and vertical movement trigger levels have been proposed and they reflect the GMA's predicted ground movements. Prior to construction, a detailed monitoring strategy should be agreed with adjacent property owners, including the owners of the 1st floor and above, as part of the Party Wall agreements.

5.0 CONCLUSIONS

5.1. The authors' qualifications meet the requirements of CPG Basements.

5.2. The building is not listed or adjacent to listed buildings and it is not within a conservation area.

5.3. A site investigation confirms the site is underlain by Made Ground over London Clay.

5.4. It is accepted that the development will not impact on the wider hydrological environment.

5.5. An outline structural methodology and proposed sequence of works have been provided.

5.6. A ground movement assessment has been undertaken which identifies Burland Category 1 (Very Slight) to adjacent properties. This is accepted, on the basis of the revised structural information provided and the proposed use of active propping to limit movements to within the maximum assessed to be allowable.

5.7. An outline movement monitoring strategy has been provided. A final strategy should be agreed as part of the Party Wall agreements.

5.8. An indicative works programme has been provided. A detailed programme should be provided by the appointed contractor at a later date.

5.9. Queries and requests for information are discussed in Section 4 and summarised in Appendix 2. Considering the updated information provided, the BIA meets the criteria of CPG Basements.

Appendix 1: Residents' Consultation Comments

None

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Stability	Depth and extent of the proposed basement to be confirmed	Closed	March 2019
2	Stability	Depth and extent of adjacent properties' basements to be confirmed.	Closed	March 2019
3	Stability	Further justification is required regarding shrink-swell subsidence in the local area.	Closed	March 2019
4	Stability	Ground movement assessment to consider the comments in Section 4.	Closed	March 2019
5	Hydrology	Further justification is required regarding surface water and flooding screening. Proposed flood risk mitigation measures to be adopted within the development should be stated.	Closed	March 2019

Appendix 3: Supplementary Supporting Documents

Updated Lower Ground Floor Plan Drawing, Ref. 17420 SK-01 Revision P5

Updated Ground Floor Plan Drawing, Ref. 17420 SK-02 Revision P4

Updated Section A-A Drawing, Ref. 17420 SK-03 Revision P3

Typical Underpinning Sequence, Ref. 17420 SK-04 Revision P3

QD A1

FOUNDATIONS HAVE BEEN SIZED BASED ON A SAFE GROUND BEARING PRESSURE OF xxxkN/m² ON XXXX MEMBER (TBC). THE ENGINEER AND LOCAL AUTHORITY BUILDING CONTROL OFFICER ARE TO BE AFFORDED THE OPPORTUNITY OF INSPECTING THE FOUNDATIONS PRIOR TO CONCRETING. THE CONTRACTOR SHOULD ALLOW A SUITABLE CONTINGENCY FOR POURING DEEPER FOUNDATIONS FOLLOWING THE INSPECTION OF THE BUILDING CONTROL OFFICER. THE CONTRACTOR SHOULD ALSO BE AWARE OF THE WATER TABLE AND SOIL CONDITIONS NOTED IN THE SITE INVESTIGATION REPORT

REFER TO ARCHITECTS DRAWINGS FOR ALL SETTING OUT DETAILS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SUPPORTS AND RESPONSIBLE FOR STABILITY OF THE STRUCTURE DURING WORKS

LEGEND

- DENOTES EXISTING MASONRY OR TIMBER WALLS
- DENOTES NEW MASONRY WALLS BUILT IN 15N/mm² COMPRESSIVE STRENGTH BRICKWORK AND GRADE iii MORTAR
- DENOTES NEW MASONRY WALLS BUILT IN 7N/mm² COMPRESSIVE STRENGTH BLOCKWORK AND GRADE iii MORTAR
- DENOTES NEW NON LOAD BEARING STUD WALL BY ARCHITECT
- SEE DETAIL FOR TYPICAL RESTRAINT
- DENOTES PROPOSED REINFORCED CONCRETE SLAB
- (2) DENOTES SEQUENCE OF PROPOSED UNDERPINS. THE CONTRACTOR WILL HAVE TO PROVIDE HIS OWN SEQUENCE OF WORKS AND ALL METHOD STATEMENTS ONCE APPOINTED

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 BASEMENT EXCAVATION PERIMETER, AND 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: MONITORING POSITIONS (TARGETS) WILL BE ESTABLISHED WITHIN THE PROPOSED EXCAVATION AND ON THE ADJACENT STRUCTURES THEMSELVES.

1) THE PERIMETER TEMPORARY/PERMANENT WORKS WILL BE MONITORED AT GROUND LEVEL, AT INTERVALS NOT EXCEEDING 3–4M CENTRES, MEASURED FROM THE TARGETS INSTALLED ON THE FIRST LEVEL ON THE UNDERPIN RETAINING WALL.

2) THE EXISTING FACADES WILL BE MONITORED NEAR GROUND LEVEL AND AT ROOF LEVEL, AT INTERVALS NOT EXCEEDING 3M CENTRES.

3) 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.

4) POINTS/TARGETS SHALL BE MEASURED FOR 3D POSITIONING, AT NOT LESS THAN THE FOLLOWING INTERVALS:

   FOR THE EXISTING FAÇADE, BEFORE ANY WORKS COMMENCE (BASE READING) AND THEN WEEKLY DURING THE PERIOD OF BASEMENT EXCAVATION/CONSTRUCTION AND MONTHLY DURING THE COURSE OF THE REMAINDER OF THE WORKS. A FINAL READING IS TO BE UNDERTAKEN 6 MONTHS AFTER THE COMPLETION OF ALL CONSTRUCTION WORKS. FOR THE NEW BASEMENT PERIMETER, AT THE TIME OF COMPLETION OF THE FIRST LEVEL OF UNDERPINNING BEFORE EXCAVATING (BASE READING) AND THEN WEEKLY DURING THE PERIOD OF BASEMENT EXCAVATION/CONSTRUCTION AND MONTHLY DURING THE COURSE OF THE REMAINDER OF THE WORKS.

5) 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 HOURS OF MEASUREMENT, GRAPHICALLY AND NUMERICALLY.

6) 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.

7) TRIGGER MOVEMENT LIMITS ARE PROPOSED AS FOLLOWS:

   A) FACADES HORIZONTAL MOVEMENT/FACADES VERTICAL MOVEMENT

      AMBER +/–3
      – ALL PARTIES NOTIFIED.

      RED +/–4MM
      – WORKS STOP AND REVIEWED
      – CONSULTATION BETWEEN THE PARTY WALL SURVEYORS

   B) THE GARDEN WALLS AND EXCAVATION

      AMBER +/–3MM
      – ALL PARTIES NOTIFIED.

      RED +/–4MM
      – WORKS STOP AND REVIEWED
      – CONSULTATION BETWEEN THE PARTY WALL SURVEYORS

   C) CRACKS TO PARTY WALLS
      AMBER 3MM
      RED 4MM

CONTRACTOR/SPECIALIST DESIGN ELEMENTS

1. ALL TEMPORARY WORKS
2. ALL TANKING DETAILS
3. ALL REINFORCEMENT DRAWINGS AND BAR BENDING SCHEDULES
4. DESIGN OF ALL STEELWORK CONNECTIONS. THE FABRICATOR WILL HAVE TO SUBMIT THEIR CALCULATIONS TO BUILDING CONTROL FOR APPROVAL
5. STEEL FABRICATION DRAWINGS

NOTES

– ALL STEELWORK IN THE EXTERNAL WALLS ARE TO BE GALVANISED (125 MICRONS)

– LOCATION OF EXISTING AND PROPOSED DRAIN RUNS ARE TO BE CONFIRMED BY THE SERVICE ENGINEER

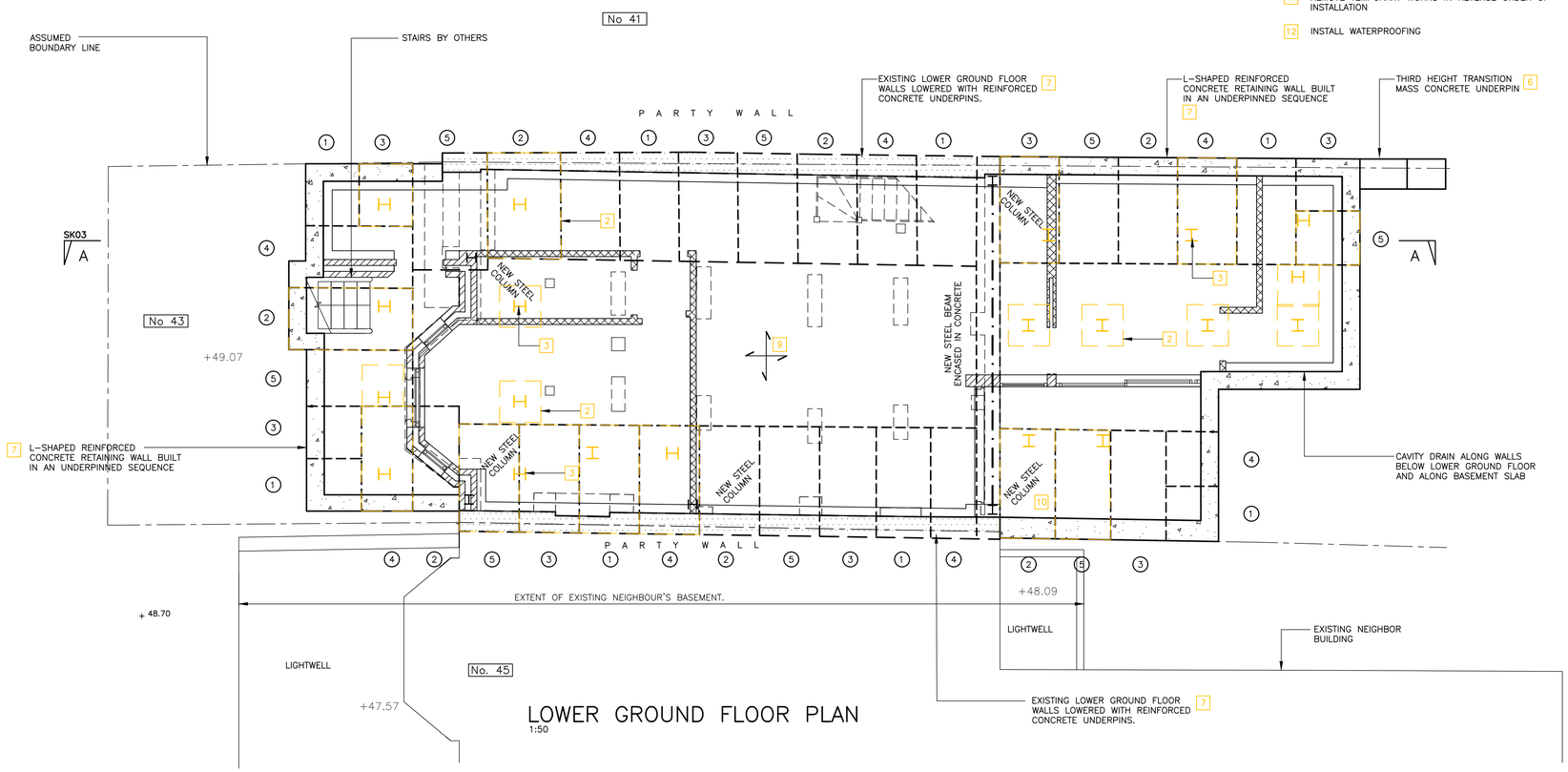
– PLEASE REFER TO ARCHITECTS DRAWINGS FOR ALL SETTING OUT DETAILS, INSULATION AND VENTILATION DETAILS, DAMP PROOF COURSES AND ALL TANKING DETAILS

– FOR ALL FIRE WORK PROTECTION TO STEELWORK REFER TO THE ARCHITECTS DRAWINGS

– CONTRACTOR SHOULD ALSO REVIEW MECHANICAL ENGINEERS DRAWINGS FOR EXACT LOCATION OF SERVICE PENETRATION PRIOR TO CUTTING

PROPOSED METHOD STATEMENT/ SUGGESTED SEQUENCE OF WORKS

1. DEMOLISH EXISTING REAR CONSERVATORY
2. LOCALLY UNDERPIN WALLS AT POSITIONS MARKED TO BE USED TO SUPPORT TEMPORARY WORKS
3. INSTALL TEMPORARY STEELS TO PICK UP THE INTERNAL LOAD BEARING WALLS BY NEEDLING THE WALL AT A MAXIMUM OF 1200mm CENTRES USING 152x30 UC SUPPORTED ON A 203 UC MAIN BEAM SUPPORTED ON PADSTONES AND TEMPORARY COLUMNS/ SLIMSHORES
4. DEMOLISH ALL NON–LOAD BEARING WALLS AT LOWER GROUND FLOOR
5. REMOVE LOWER GROUND FLOOR SLAB
6. INSTALL TRANSITION UNDERPINS
7. INSTALL ALL HYDRAULIC TEMPORARY PROPS AND FORM THE NEW CONCRETE UNDERPINS AND PERIMETER FOUNDATIONS IN AN UNDERPINNED SEQUENCE. SEE DRAWING SK05 FOR PROPOSED PROPPING TO UNDERPINS
8. EXCAVATE BASEMENT IN 1m DEEP INCREMENTS ADJUSTING HYDRAULIC PROPS TO KEEP HORIZONTAL DEFLECTIONS BELOW 4MM. MEASUREMENTS AND ADJUSTMENTS TO BE UNDERTAKEN WEEKLY
9. INSTALL ALL DRAINAGE AND THEN FORM BASEMENT SLAB
10. KEEPING IN POSITION ALL TEMPORARY WORKS INSTALL ALL BASEMENT AND LOWER GROUND FLOOR STEEL WORK AND THEN INSTALL COMPOSITE FLOOR SHEETING AND POUR CONCRETE SLAB
11. REMOVE TEMPORARY WORKS IN REVERSE ORDER OF INSTALLATION
12. INSTALL WATERPROOFING



LOWER GROUND FLOOR PLAN
1:50

Notes

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & ENGINEERS DRAWINGS AND SPECIFICATIONS
2. DO NOT SCALE FROM THIS DRAWING

Rev	Date	Chkd	Amendments
P5	18.02.26	AH	FOR PLANNING – REVISED AS CLOUDED
P4	18.02.19	AH	FOR PLANNING – REVISED AS CLOUDED
P3	28.01.19	AH	FOR PLANNING – REVISED AS CLOUDED
P2	20.09.18	AH	FOR PLANNING
P1	12.09.18	AH	FOR PLANNING

Drawing Status: PLANNING

Symmetrys Limited
Consulting Structural Engineers
6 The Courtyard, Lynton Road
London, N8 8SL
T: 020 8340 4041
W: www.symmetrys.com
E: info@symmetrys.com

Job Title

43 HILLFIELD ROAD
NW6 1QD LONDON

Drawing Title

LOWER GROUND FLOOR PLAN

Job No.	Drawing No.	Revision
17420	SK–01	P5

Scales 1:50 AT A1 — Original Size A1

Drawn By JNS Date MAY 2018

Company No. 5873122
VAT Registration No. 894 2993 61
Registered In England And Wales

QD A1

REFER TO ARCHITECTS DRAWINGS FOR ALL SETTING OUT DETAILS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SUPPORTS AND RESPONSIBLE FOR STABILITY OF THE STRUCTURE DURING WORKS

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- DENOTES NEW NON LOAD BEARING STUD WALL BY ARCHITECT
- SEE DETAIL FOR TYPICAL RESTRAINT
- DENOTES PROPOSED REINFORCED CONCRETE SLAB
- PS — DENOTES NEW MASS CONCRETE PADSTONE
- 150 RIB DECK FLOOR
- DENOTES PROPOSED GROUND BEARING SLAB
- DENOTES DOUBLED UP TIMBERS BOLTED TOGETHER WITH M12 AT 400 CENTRES STAGGERED TOP AND BOTTOM

NOTES

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– FOR ALL FIRE WORK PROTECTION TO STEELWORK REFER TO THE ARCHITECTS DRAWINGS

– CONTRACTOR SHOULD ALSO REVIEW MECHANICAL ENGINEERS DRAWINGS FOR EXACT LOCATION OF SERVICE PENETRATION PRIOR TO CUTTING

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3. ALL REINFORCEMENT DRAWINGS AND BAR BENDING SCHEDULES
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6. INSTALL TRANSITION UNDERPINS
7. INSTALL ALL HYDRAULIC TEMPORARY PROPS AND FORM THE NEW CONCRETE UNDERPINS AND PERIMETER FOUNDATIONS IN AN UNDERPINNED SEQUENCE. SEE DRAWING SK05 FOR PROPOSED PROPPING TO UNDERPINS
8. EXCAVATE BASEMENT IN 1m DEEP INCREMENTS ADJUSTING HYDRAULIC PROPS TO KEEP HORIZONTAL DEFLECTIONS BELOW 4MM. MEASUREMENTS AND ADJUSTMENTS TO BE UNDERTAKEN WEEKLY
9. INSTALL ALL DRAINAGE AND THEN FORM BASEMENT SLAB
10. KEEPING IN POSITION ALL TEMPORARY WORKS INSTALL ALL BASEMENT AND LOWER GROUND FLOOR STEEL WORK AND THEN INSTALL COMPOSITE FLOOR SHEETING AND POUR CONCRETE SLAB
11. REMOVE TEMPORARY WORKS IN REVERSE ORDER OF INSTALLATION
12. INSTALL WATERPROOFING

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 BASEMENT EXCAVATION PERIMETER, AND 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: MONITORING POSITIONS (TARGETS) WILL BE ESTABLISHED WITHIN THE PROPOSED EXCAVATION AND ON THE ADJACENT STRUCTURES THEMSELVES.

1) THE PERIMETER TEMPORARY/PERMANENT WORKS WILL BE MONITORED AT GROUND LEVEL, AT INTERVALS NOT EXCEEDING 3–4M CENTRES, MEASURED FROM THE TARGETS INSTALLED ON THE FIRST LEVEL ON THE UNDERPIN RETAINING WALL.

2) THE EXISTING FACADES WILL BE MONITORED NEAR GROUND LEVEL AND AT ROOF LEVEL, AT INTERVALS NOT EXCEEDING 3M CENTRES.

3) 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.

4) POINTS/TARGETS SHALL BE MEASURED FOR 3D POSITIONING, AT NOT LESS THAN THE FOLLOWING INTERVALS:

FOR THE EXISTING FAÇADE, BEFORE ANY WORKS COMMENCE (BASE READING) AND THEN WEEKLY DURING THE PERIOD OF BASEMENT EXCAVATION/CONSTRUCTION AND MONTHLY DURING THE COURSE OF THE REMAINDER OF THE WORKS. A FINAL READING IS TO BE UNDERTAKEN 6 MONTHS AFTER THE COMPLETION OF ALL CONSTRUCTION WORKS. FOR THE NEW BASEMENT PERIMETER, AT THE TIME OF COMPLETION OF THE FIRST LEVEL OF UNDERPINNING BEFORE EXCAVATING (BASE READING) AND THEN WEEKLY DURING THE PERIOD OF BASEMENT EXCAVATION/CONSTRUCTION AND MONTHLY DURING THE COURSE OF THE REMAINDER OF THE WORKS.

5) 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 HOURS OF MEASUREMENT, GRAPHICALLY AND NUMERICALLY.

6) 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.

7) TRIGGER MOVEMENT LIMITS ARE PROPOSED AS FOLLOWS:

A) FACADES HORIZONTAL MOVEMENT/FACADES VERTICAL MOVEMENT

AMBER +/–3
– ALL PARTIES NOTIFIED.

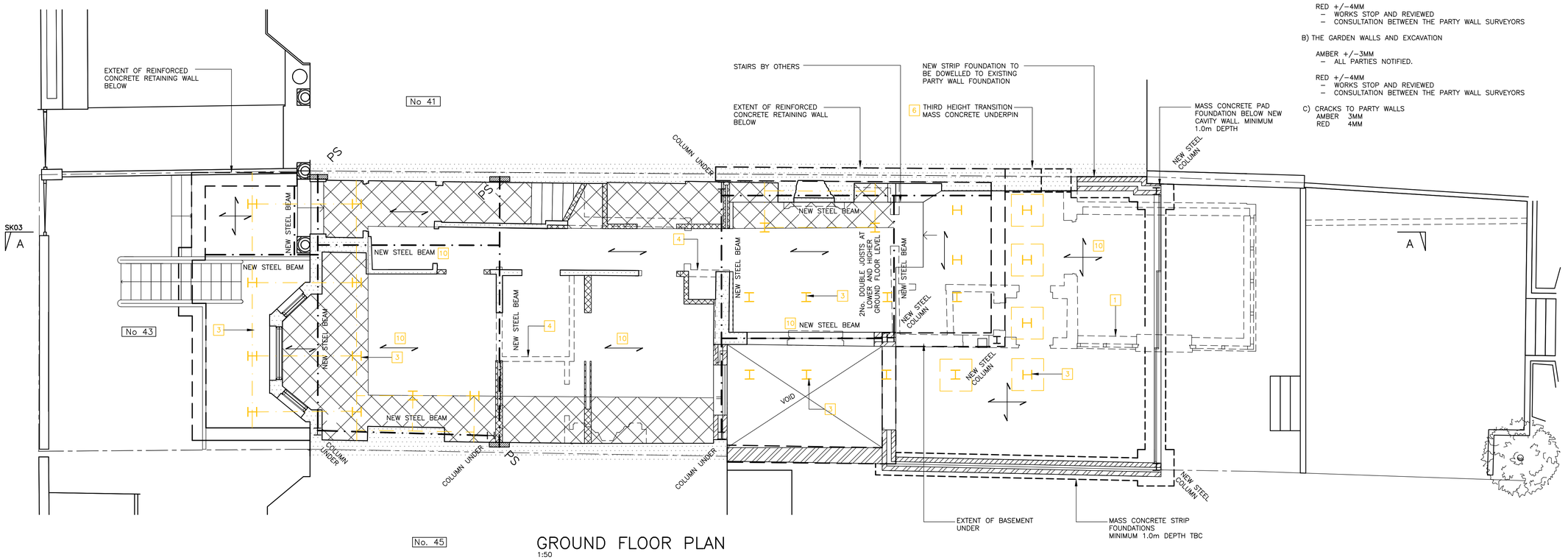
RED +/–4MM
– WORKS STOP AND REVIEWED
– CONSULTATION BETWEEN THE PARTY WALL SURVEYORS

B) THE GARDEN WALLS AND EXCAVATION

AMBER +/–3MM
– ALL PARTIES NOTIFIED.

RED +/–4MM
– WORKS STOP AND REVIEWED
– CONSULTATION BETWEEN THE PARTY WALL SURVEYORS

C) CRACKS TO PARTY WALLS
AMBER 3MM
RED 4MM



No. 45

GROUND FLOOR PLAN
1:50

Notes

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & ENGINEERS DRAWINGS AND SPECIFICATIONS
2. DO NOT SCALE FROM THIS DRAWING

Rev	Date	Chkd	Amendments
P4	18.02.26	AH	FOR PLANNING – REVISED AS CLOUDED
P3	18.02.19	AH	FOR PLANNING – REVISED AS CLOUDED
P2	20.09.18	AH	
P1	12.09.18	AH	FOR PLANNING

Drawing Status
PLANNING

Symmetrys Limited
Consulting Structural Engineers
6 The Courtyard, Lynton Road
London, N8 8SL
T: 020 8340 4041
W: www.symmetrys.com
E: info@symmetrys.com

Job Title
43 HILLFIELD ROAD
NW6 1QD LONDON

Drawing Title
GROUND FLOOR PLAN
FLOOR PLAN

Job No.	Drawing No.	Revision
17420	SK–02	P4

Scales 1:50 AT A1 — Original Size A1
Drawn By JNS Date MAY 2018

Company No. 5873122
VAT Registration No. 894 2993 61
Registered In England And Wales

QD A1

REFER TO ARCHITECTS DRAWINGS FOR ALL SETTING OUT DETAILS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SUPPORTS AND RESPONSIBLE FOR STABILITY OF THE STRUCTURE DURING WORKS

LEGEND

- DENOTES EXISTING MASONRY OR TIMBER WALLS
- DENOTES NEW MASONRY WALLS BUILT IN 15N/mm² COMPRESSIVE STRENGTH BRICKWORK AND GRADE iii MORTAR
- DENOTES NEW MASONRY WALLS BUILT IN 7N/mm² COMPRESSIVE STRENGTH BLOCKWORK AND GRADE iii MORTAR
- DENOTES NEW NON LOAD BEARING STUD WALL BY ARCHITECT

NOTES

– ALL STEELWORK IN THE EXTERNAL WALLS ARE TO BE GALVANISED (125 MICRONS)

– LOCATION OF EXISTING AND PROPOSED DRAIN RUNS ARE TO BE CONFIRMED BY THE SERVICE ENGINEER

– PLEASE REFER TO ARCHITECTS DRAWINGS FOR ALL SETTING OUT DETAILS, INSULATION AND VENTILATION DETAILS, DAMP PROOF COURSES AND ALL TANKING DETAILS

– FOR ALL FIRE WORK PROTECTION TO STEELWORK REFER TO THE ARCHITECTS DRAWINGS

– CONTRACTOR SHOULD ALSO REVIEW MECHANICAL ENGINEERS DRAWINGS FOR EXACT LOCATION OF SERVICE PENETRATION PRIOR TO CUTTING

CONTRACTOR/SPECIALIST DESIGN ELEMENTS

1. ALL TEMPORARY WORKS
2. ALL TANKING DETAILS
3. ALL REINFORCEMENT DRAWINGS AND BAR BENDING SCHEDULES
4. DESIGN OF ALL STEELWORK CONNECTIONS. THE FABRICATOR WILL HAVE TO SUBMIT THEIR CALCULATIONS TO BUILDING CONTROL FOR APPROVAL
5. STEEL FABRICATION DRAWINGS

PROPOSED METHOD STATEMENT/ SUGGESTED SEQUENCE OF WORKS

1. DEMOLISH EXISTING REAR CONSERVATORY
2. LOCALLY UNDERPIN WALLS AT POSITIONS MARKED TO BE USED TO SUPPORT TEMPORARY WORKS
3. INSTALL TEMPORARY STEELS TO PICK UP THE INTERNAL LOAD BEARING WALLS BY NEEDLING THE WALL AT A MAXIMUM OF 1200mm CENTRES USING 152x30 UC SUPPORTED ON A 203 UC MAIN BEAM SUPPORTED ON PADSTONES AND TEMPORARY COLUMNS/ SLIMSHORES
4. DEMOLISH ALL NON–LOAD BEARING WALLS AT LOWER GROUND FLOOR
5. REMOVE LOWER GROUND FLOOR SLAB
6. INSTALL TRANSITION UNDERPINS
7. INSTALL ALL HYDRAULIC TEMPORARY PROPS AND FORM THE NEW CONCRETE UNDERPINS AND PERIMETER FOUNDATIONS IN 4N UNDERPINNED SEQUENCE. SEE DRAWING SK05 FOR PROPOSED PROPPING TO UNDERPINS
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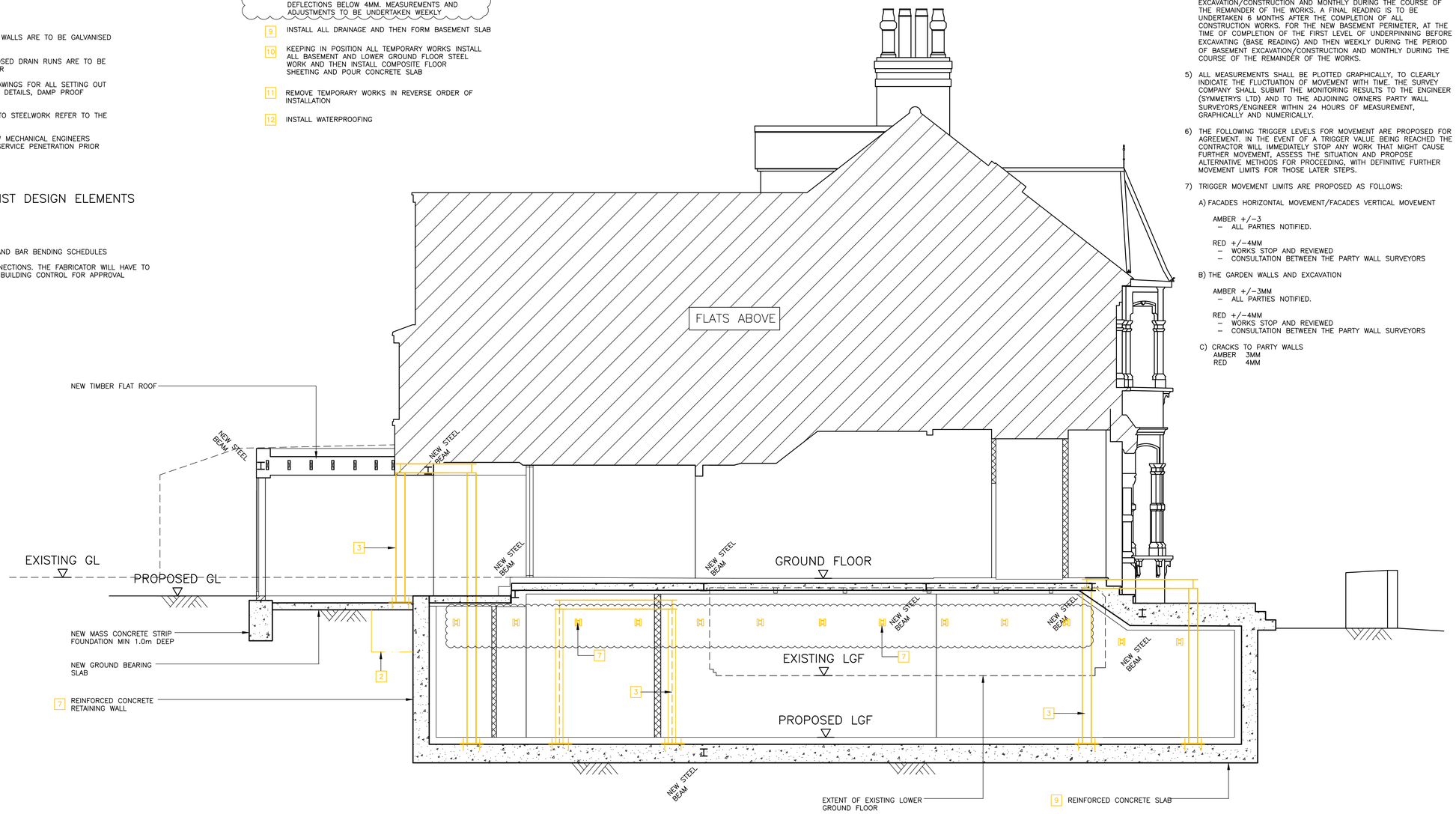

SECTION A–A
1:50

MONITORING

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      AMBER 3MM
      RED 4MM

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Rev	Date	Chkd	Amendments
P3	18.02.19	AH	FOR PLANNING
P2	12.09.18	AH	FOR PLANNING
P1	12.09.18	AH	FOR PLANNING

Drawing Status: PLANNING

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Job Title

43 HILLFIELD ROAD
NW6 1QD LONDON

Drawing Title

SECTION A–A

Job No.	Drawing No.	Revision
17420	SK–03	P3

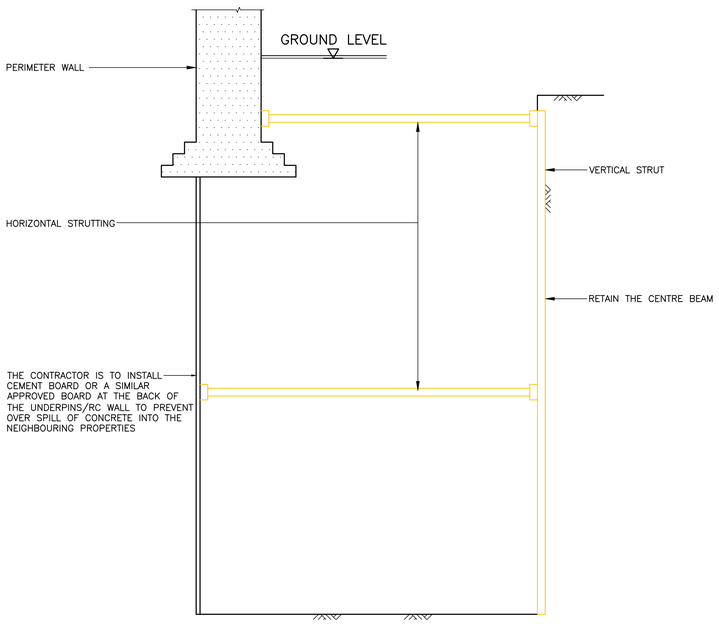
Scales 1:50 AT A1 — Original Size A1

Drawn By JNS Date MAY 2018

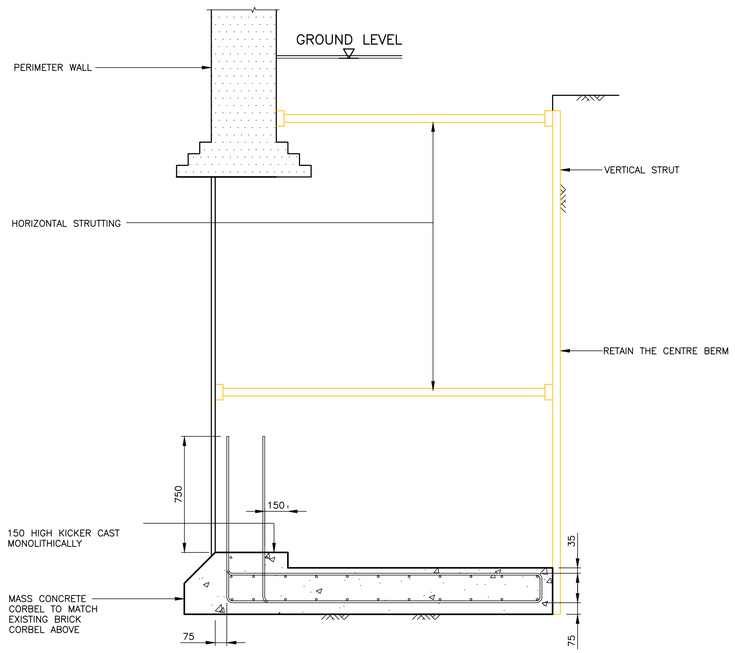
Company No. 5873122
VAT Registration No. 894 2993 61
Registered In England And Wales

QD A1

NOTE:
UNDERPINS TO BE DOWELLED INTO EACH OTHER WITH 6No. MIN H20 DOWELS WITH 400mm MIN. EMBEDMENT



SEQUENCE 1
1:20



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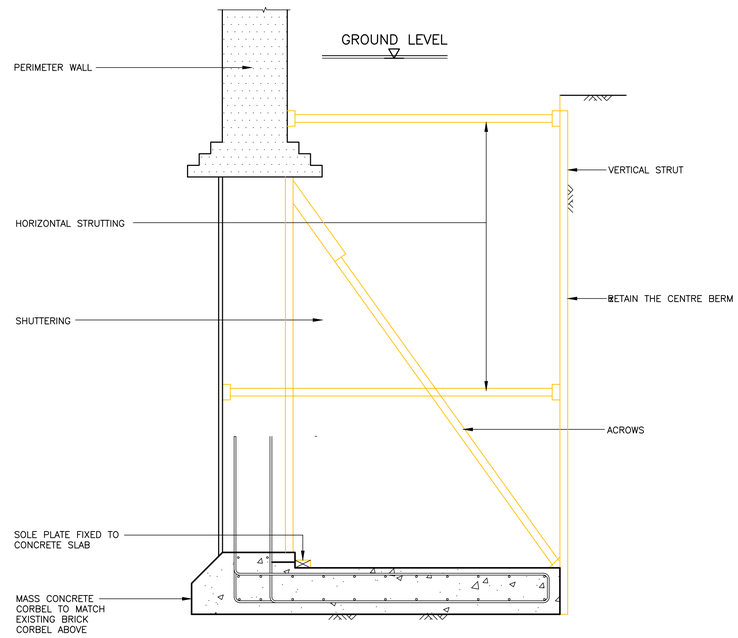

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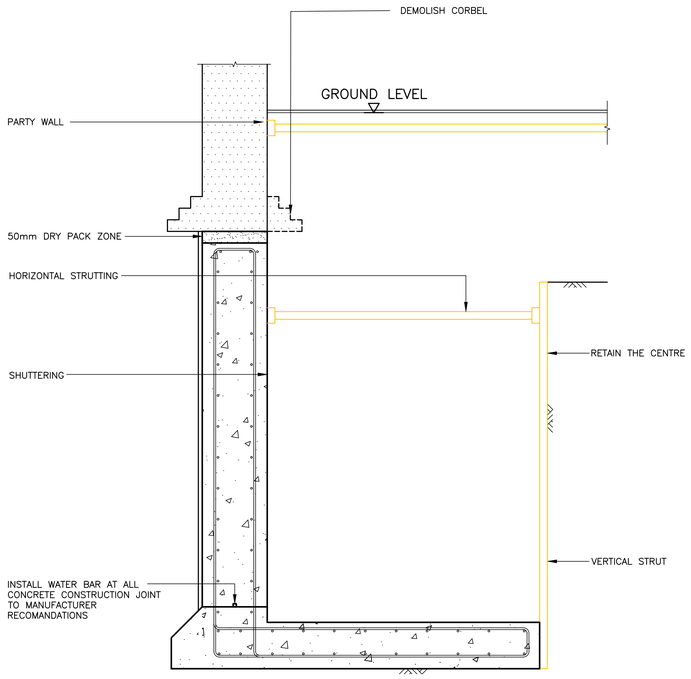

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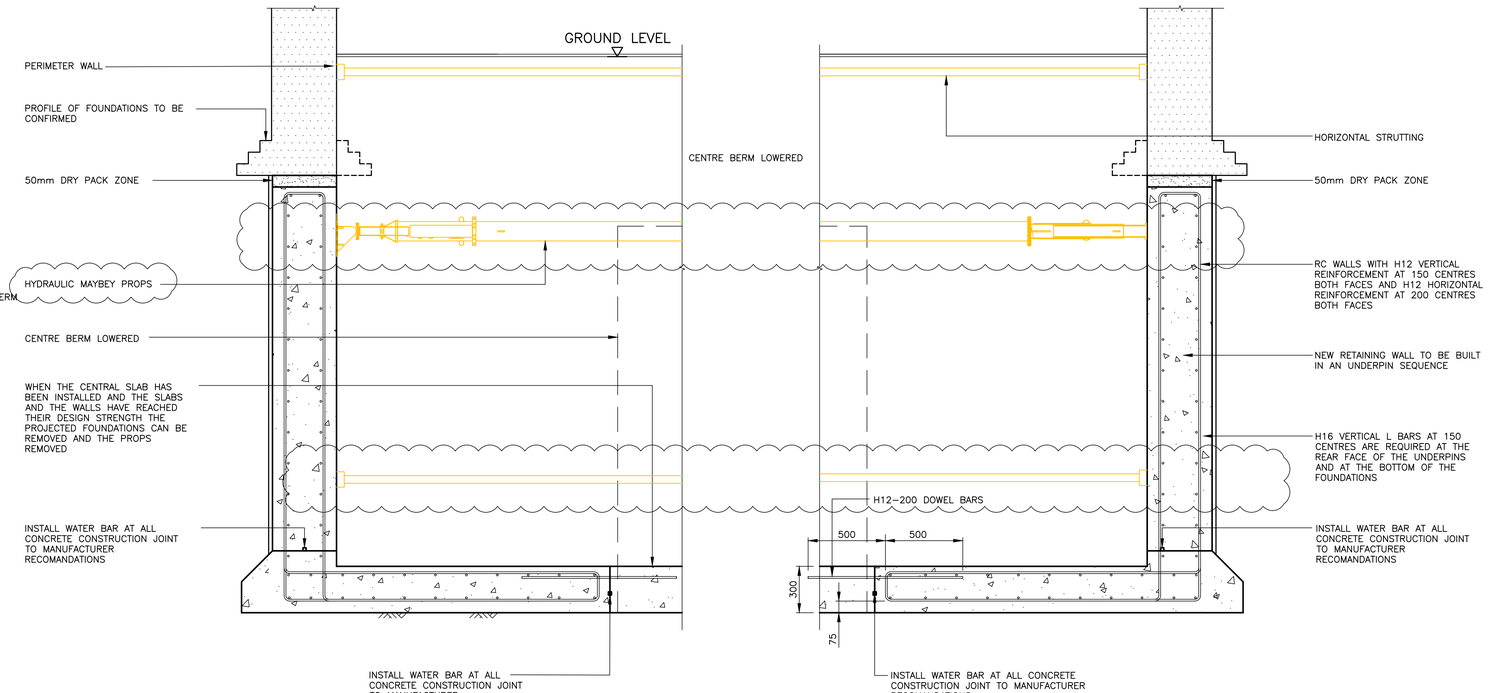

SEQUENCE 5
1:20

Company No. 5873122
VAT Registration No. 894 2993 61
Registered In England And Wales

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P3	26.09.19	AH	REVISED AS CLOUDED
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P1	12.09.18	AH	FOR PLANNING

Drawing Status
PLANNING

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Job Title
43 HILLFIELD ROAD
NW6 1QD LONDON

Drawing Title
TYPICAL UNDERPINNING SEQUENCE

Job No.	Drawing No.	Revision
17420	SK-04	P3

Scales 1:20 AT A1
Original Size A1
Drawn By JNS Date MAY 2018

London

Friars Bridge Court
41- 45 Blackfriars Road
London, SE1 8NZ

T: +44 (0)20 7340 1700
E: london@campbellreith.com

Birmingham

Chantry House
High Street, Coleshill
Birmingham B46 3BP

T: +44 (0)1675 467 484
E: birmingham@campbellreith.com

Surrey

Raven House
29 Linkfield Lane, Redhill
Surrey RH1 1SS

T: +44 (0)1737 784 500
E: surrey@campbellreith.com

Manchester

No. 1 Marsden Street
Manchester
M2 1HW

T: +44 (0)161 819 3060
E: manchester@campbellreith.com

Bristol

Wessex House
Pixash Lane, Keynsham
Bristol BS31 1TP

T: +44 (0)117 916 1066
E: bristol@campbellreith.com

UAE

Office 705, Warsan Building
Hessa Street (East)
PO Box 28064, Dubai, UAE

T: +971 4 453 4735
E: uae@campbellreith.com