

15A Croftdown Road
NW5 1EL

Basement Impact Assessment
Audit

For
London Borough of Camden

Project Number: 12985-98
Revision: F1

March 2020

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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 15A Croftdown Road, NW5 1EL (planning reference 2019/6007/P). The basement is considered to fall within Category B as defined by the Terms of Reference.
- 1.2. An 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. The current audit is for the additional information submitted by the applicant in February 2020.
- 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 has been prepared by Soiltechnics Ltd. The qualifications of the individuals satisfy the requirements of CPG: Basements.
- 1.5. The site is currently occupied by a three-storey semi-detached house, with a basement under one half and an undercroft beneath the other half of the property. It is proposed to extend the existing basement and the undercroft, to provide a single basement of constant level.
- 1.6. Underpinning is the proposed construction methodology for the basement.
- 1.7. Based on a site investigation at the adjacent plot, the proposed basement will be founded in the London Clay, which is designated as an unproductive strata. Whilst it is indicated that perched water is likely to be encountered, the development will not impact the wider hydrogeological environment.
- 1.8. The site is generally flat with a slope gradient of 2 degrees and it is accepted that the proposed works will not result in unsupported slopes of greater than 7 degrees.
- 1.9. The proposal submitted initially indicated that the development will increase the impermeable surface area. Since the host property is within a Critical Drainage Area it was requested that an assessment be submitted to demonstrate that the development will not adversely impact the local hydrological environment. The revised submissions state that modifications have been made to the proposal such that the impermeable surface area will remain unchanged. A final drainage design should be agreed with LBC and Thames Water.
- 1.10. A ground movement assessment considers impact on adjacent properties and infrastructure. It is accepted that, considering the existing basements / lower ground floors of the adjacent

properties, impacts will be limited to within Category 1 (Very Slight), assuming good workmanship.

- 1.11. Based on the initial assessment, and a review of the additional information presented, the BIA meets the requirements of CPG: Basements.

2.0 INTRODUCTION

- 2.1. CampbellReith was instructed by London Borough of Camden (LBC) on 7th January 2020 to carry out a Category B Audit on the Basement Impact Assessment (BIA) submitted as part of the Planning Submission documentation for Flat A, 15 Croftdown Road.
- 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. The current audit is for the additional documentation submitted by the applicant in February 2020.
- 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 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;
 - d) 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 *"Enlargement of existing basement including creation of front and rear lightwells; erection of replacement rear extension and other external alterations"*
- 2.6. CampbellReith accessed LBC's Planning Portal and gained access to the following relevant documents for audit purposes:

- Basement Impact Assessment Report prepared by Soiltechnics Ltd (Reference No: STQ4636-BIA01, dated January 2019);
- Design and Access Statement prepared by KIMA Architecture and Interiors (Reference No: 1808, dated January 2019);
- Structural Engineers Report prepared by WCJ Ltd (dated February 2019);
- Planning Application Drawings consisting of:
 - Location Plan: A100_P01, dated 02 February 2019;
 - Existing and proposed plans: A100_P02, A101_P02, 17660/01_P2, 17660/02_P2, 17660/03_P2, 17660/07-P1;
 - Existing and proposed elevations and sections: A200_P02, A300_P02, A301_P02, A600-P0117660/04_P2, 17660/05_P2, 17660/06_P2;
- Planning Comments and Responses.

2.7. The following additional documents were forwarded to CampbellReith on 26 February 2020, in response to comments listed in the initial audit report:

- Letter regarding proposed drainage arrangements and change in impermeable surface area prepared by Soiltechnics Limited (Reference No. L-STQ4636_Rev A, dated 24 February 2020);
- Existing and proposed ground floor plan including indication of permeable area to garden (Reference No. A101_P03, dated 20 February 2020).

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	
Does the description of the proposed development include all aspects of temporary and permanent works which might impact upon geology, hydrogeology and hydrology?	Yes	
Are suitable plan/maps included?	Yes	
Do the plans/maps show the whole of the relevant area of study and do they show it in sufficient detail?	Yes	
Land Stability Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrogeology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Hydrology Screening: Have appropriate data sources been consulted? Is justification provided for 'No' answers?	Yes	
Is a conceptual model presented?	Yes	
Land Stability Scoping Provided? Is scoping consistent with screening outcome?	Yes	

Item	Yes/No/NA	Comment
Hydrogeology Scoping Provided? Is scoping consistent with screening outcome?	Yes	
Hydrology Scoping Provided? Is scoping consistent with screening outcome?	Yes	An assessment has been submitted to demonstrate that the development will not increase the impermeable surface area, and that it will not adversely impact the local hydrological environment.
Is factual ground investigation data provided?	Yes	The ground investigation data presented is for the neighbouring site 17 Croftdown Road (Reference: STN3576D-G01, dated June 2016).
Is monitoring data presented?	Yes	Refer ground investigation report for 17 Croftdown Road (Reference: STN3576D-G01, dated June 2016).
Is the ground investigation informed by a desk study?	Yes	Carried out for adjacent property.
Has a site walkover been undertaken?	Yes	
Is the presence/absence of adjacent or nearby basements confirmed?	Yes	Refer Sections 7.3.7 and 7.3.8 of the BIA.
Is a geotechnical interpretation presented?	Yes	Refer Section 7 of the BIA.
Does the geotechnical interpretation include information on retaining wall design?	Yes	
Are reports on other investigations required by screening and scoping presented?	Yes	
Are the baseline conditions described, based on the GSD?	Yes	

Item	Yes/No/NA	Comment
Do the base line conditions consider adjacent or nearby basements?	Yes	
Is an Impact Assessment provided?	Yes	Indicative values for variations in volume of surface water as a result of the proposed development is also required.
Are estimates of ground movement and structural impact presented?	Yes	
Is the Impact Assessment appropriate to the matters identified by screen and scoping?	Yes	An assessment has been submitted to demonstrate that the development will not increase the impermeable surface area, and that it will not adversely impact the local hydrological environment.
Has the need for mitigation been considered and are appropriate mitigation methods incorporated in the scheme?	Yes	
Has the need for monitoring during construction been considered?	No	However, not required at this stage assuming good workmanship is observed on site.
Have the residual (after mitigation) impacts been clearly identified?	Yes	Proposal revised to reduce impact on hydrology.
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	
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	
Are non-technical summaries provided?	Yes	

4.0 DISCUSSION

- 4.1. The Basement Impact Assessment (BIA) has been carried out by Soiltechnics Ltd. The author of the report is a Chartered Civil Engineer and the reviewer a Chartered Geologist with 20 years of experience as a hydrogeologist. The qualifications of the author and the reviewer conforms to the requirements of CPG: Basements.
- 4.2. The Design & Access Statement prepared by KIMA Architecture and Interiors, identified that 15A Croftdown Road is located in the Dartmouth Park Conservation area, and that the property is not listed.
- 4.3. The site is currently occupied by a three-storey semi-detached house, with a basement (formed at 2.0m below ground level (bgl)) under one half with an undercroft (formed at 1.1m bgl) beneath the other half of the property. It is proposed to extend the existing basement and the undercroft to 2.7m bgl, to provide a single basement of constant level. The maximum excavation depth is indicated to be no more than 3.0m bgl (Section 7.3.3).
- 4.4. The ground investigation data included in the BIA was undertaken for the neighbouring property 17 Croftdown Road in 2016. The proposed basement will be founded in the London Clay, which is designated as unproductive strata. Whilst it is indicated that perched water is likely to be encountered, the development will not impact the wider hydrogeological environment.
- 4.5. Underpinning is the proposed construction methodology for the basement. Outline structural information including proposed sequencing and propping is presented. The contractor will need to develop a temporary works strategy to deal with the inflow of perched water during construction to ensure stability.
- 4.6. The site is generally flat with a slope gradient of 2 degrees. It is accepted that the proposed works will not result in unsupported slopes of greater than 7 degrees.
- 4.7. It is stated that no trees will be removed as part of the scheme, that the site is remote from current watercourses, and that the site is not within an area of previously worked ground. The proximity of historic watercourses is discussed and assessed not to be impacted by the proposed development.
- 4.8. It is stated in the BIA that the proposed development results in an increase of 15m² of impermeable site area and is located within a Critical Drainage Area. It was requested that an assessment be presented to demonstrate that the development will not adversely impact the local hydrological environment. In the revised submissions, presented in February 2020, the impermeable surface area remains unchanged as a result of the introduction of additional lawn

areas and permeable paving. It is accepted that the residual impact on the local hydrology would be minimal. A final drainage design should be agreed with LBC and Thames Water.

- 4.9. The site is not considered to be at risk from surface water flooding although is at risk from reservoir flooding associated with the Hampstead Heath Ponds. It is stated in the BIA that the Hampstead Heath Ponds fall under the Reservoirs Act 1975 and is therefore subject to regular inspections and maintenance. It is therefore accepted that the probability of failure of the ponds is relatively low and that the proposed development does not increase the risk of flooding to neighbouring properties. The Design and Access Statement confirms the intention for an emergency escape ladder to be provided in the lightwell.
- 4.10. It is stated in the Design and Access statement that the current leaseholder has reported occasional flooding since December 2017, which is currently being controlled using a sump pit and pump. The cause for this flooding has not been identified and is not discussed in the BIA. The basement will require adequate waterproofing and drainage, as 4.8.
- 4.11. A ground movement assessment has been carried out to assess the potential impacts of the development on the stability of the surrounding structures and highways. The potential impacts to neighbouring structures are predicted to be a maximum of Category 1 (Very Slight), in accordance with the Burland Scale. The magnitude of movements predicted are within the range anticipated considering the proposed construction methodology, scale and depth of development. It is also noted that the adjoining 17 Croftdown Road has an existing basement at the same level as the proposed development, and that 13 Croftdown Road has a lower ground floor. It is accepted that, considering the existing basement and lower ground floor of the adjacent properties, impacts will be limited to within Category 1 (Very Slight), assuming good workmanship.
- 4.12. The BIA predicts very small amounts of settlement to impact the highway and underlying utilities. Asset owners should be consulted and asset protection agreements entered into, as applicable.
- 4.13. No proposals are provided for structural movement monitoring of adjacent structures or properties within the same building during excavation and construction. Criteria for limiting movements and impacts should be agreed under the Party Wall Act.

5.0 CONCLUSIONS

- 5.1. The qualifications of the BIA authors satisfy the requirements of CPG: Basements.
- 5.2. It is proposed to extend the existing basement and the undercroft, to provide a single basement of constant level.
- 5.3. Underpinning is the proposed construction methodology for the basement.
- 5.4. The proposed basement will be founded in the London Clay, which is designated as unproductive strata. The development will not impact the wider hydrogeological environment.
- 5.5. The proposed development will not impact upon slope stability.
- 5.6. The revised submissions demonstrate that the impermeable site area will remain broadly unchanged and not adversely impact the local hydrological environment.
- 5.7. It is accepted that impacts to structures will be limited to within Category 1 (Very Slight), assuming good workmanship.
- 5.8. Additional information requested has been presented. The BIA meets the requirements of CPG: Basements.

Appendix 1: Residents' Consultation Comments

Residents' Consultation Comments

Surname	Address	Date	Issue raised	Response
Cameron, Stephen	NA	12.01.2020	The proposed underpinning and footing encroaches into the neighbouring property - 13A Croftdown Road.	Not within remit of audit. Refer to LBC.

Appendix 2: Audit Query Tracker

Audit Query Tracker

Query No	Subject	Query	Status	Date closed out
1	Hydrology	The development will increase the impermeable surface area and is within a Critical Drainage Area. Assessment should be presented to demonstrate that the development will not adversely impact the local hydrological environment.	Closed. Discussion and supporting drawings provided. Final drainage proposals to be confirmed and agreed with LBC and Thames Water.	March 2020

Appendix 3: Supplementary Supporting Documents

Letter regarding proposed drainage arrangements and change in impermeable surface area prepared by Soiltechnics Limited (Reference No. L-STQ4636_Rev A, dated 24 February 2020)

Existing and proposed ground floor plan including indication of permeable area to garden (Reference No. A101_P03, dated 20 February 2020)

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FAO Mr Claudio Rocchetti
15A Croftdown Road
London
NW15 1EL

Date: 24th February 2020
Your Ref:
Our Ref: L-STQ4636-01
Revision: A

Dear Mr Rocchetti,

RE: Proposed Basement Development at 15A Croftdown Road

We undertook a Basement Impact Assessment for the project and submitted our findings in a report at that time (document reference: STQ4636-BIA01 date January 2019). Further to recent conversations and correspondence we understand an external audit of that report has raised a concern with respect to a drainage assessment not being carried out.

We understand that development proposals have been updated with respect to drainage issues. Specifically, we understand that an area of existing paving will be removed and replaced with lawn. The area of impermeable garden being returned to lawn is approximately equal to the area of garden being lost to the rear extension. It should also be noted that the site is directly underlain by London Clay, which is effectively impermeable. Given these factors we consider the development to have negligible impact to the local hydrological environment. Any future alterations to the proposed drainage arrangements will need careful consideration to ensure that this interpretation remains valid.

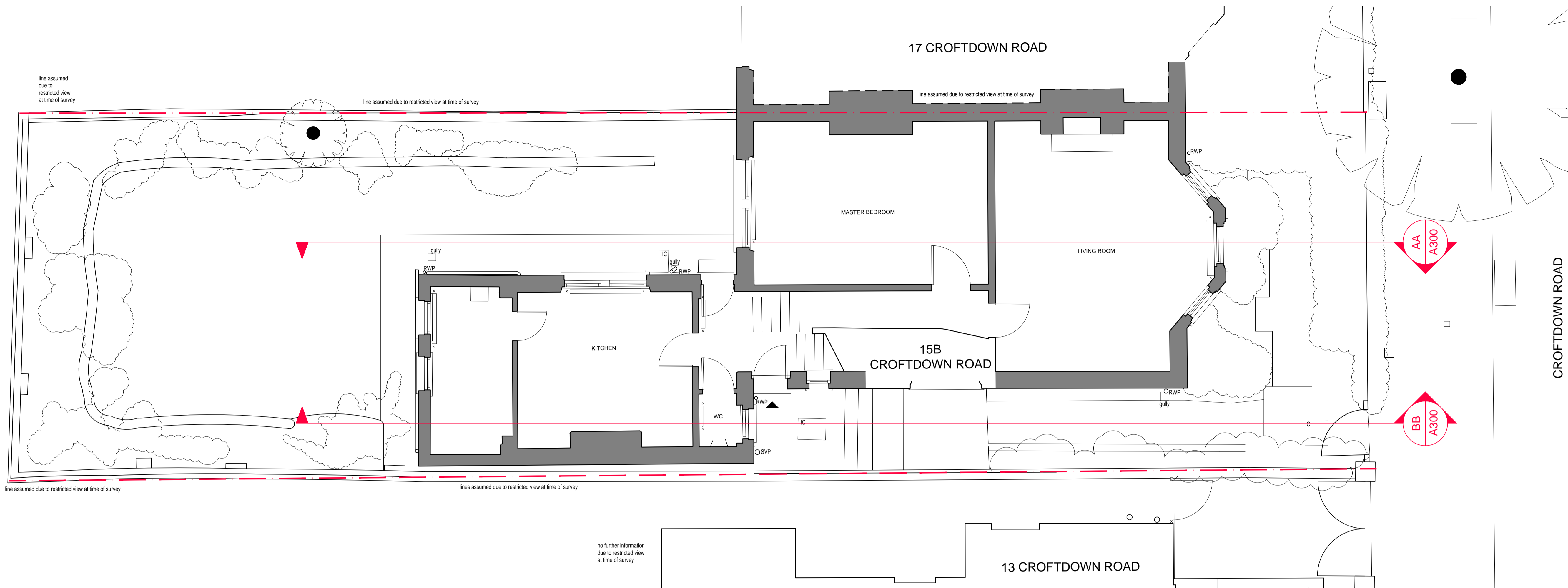
We trust this report provides you with the information you require. If you have any queries, please do not hesitate to contact us.

Yours sincerely,

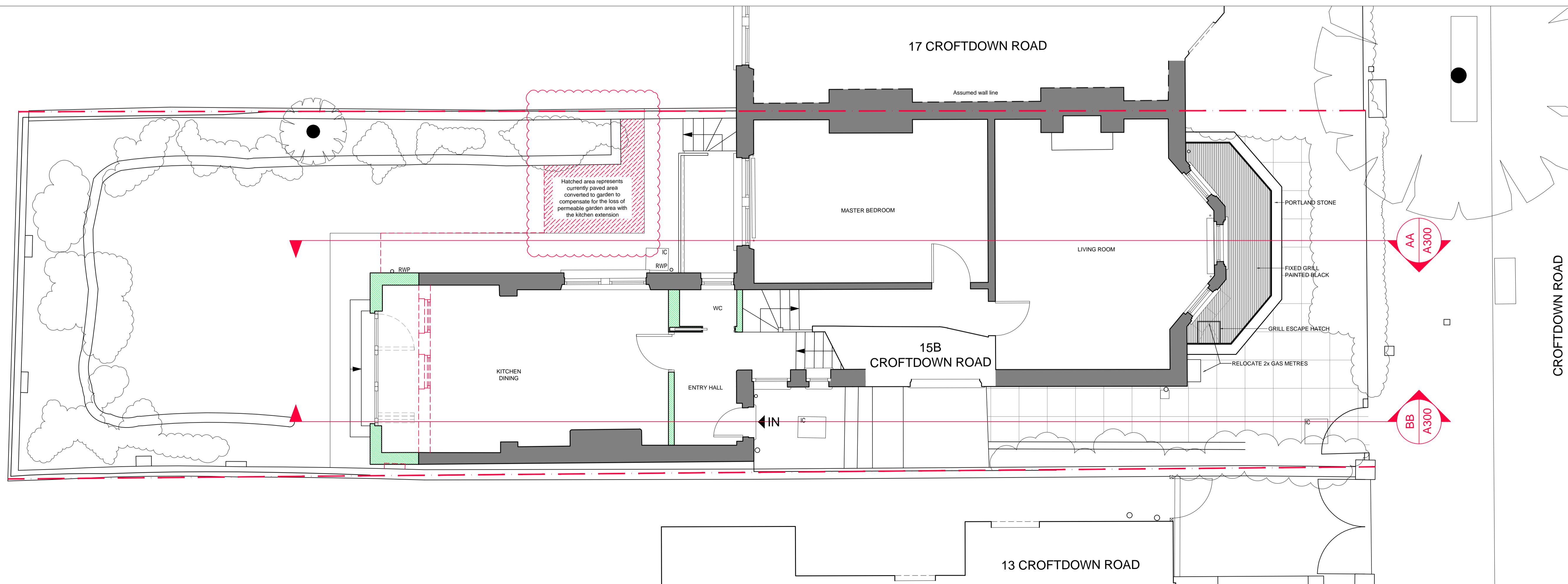
A handwritten signature in blue ink, appearing to read 'AW', is written over a light blue horizontal line.

Angus Wilson CEng., MICE., UK RoGEP (Professional)
Associate Technical Director, Soiltechnics Limited

soiltechnics





01 Existing Ground Floor Layout
1:50@A1



02 Proposed Ground Floor Layout
1:50@A1

GENERAL NOTES:
 All Dimensions and conditions to be checked and confirmed on site by the contractor. The contractor should inform the architect of any discrepancies before proceeding with the work.
 All elements of work and materials are to comply with Building Regulations and British Standards, good industry practice and the recommendations of material and component manufacturers.
 All products are to be suitable for their purpose. The contractor is to install all products where noted in accordance with manufacturers' recommendations/specifications and inform the architect of any discrepancies or changes in the specification before proceeding with the work.
 This drawing is to be read in conjunction with all other relevant documentation including that produced by other consultants, subcontractor and suppliers.
 Refer to Structural Engineer's drawings and specifications for all information on structural frame/elements
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SPECIFIC NOTES:
 NEW CONSTRUCTION
 EXISTING TO BE DEMOLISHED

KEY PLAN:

Status:		
PLANNING		
P03	Permeable area to garden	20.02.2020
P02	Issued for Planning	02.02.2019
P01	Issued for Pre-Planning	08.10.2018
Rev.	Comment	Date

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Client:

Project:
 15 CROFTDOWN ROAD

Title:
 EXISTING & PROPOSED
 GROUND FLOOR PLAN

Job No.:	Drawn by.:	Checked by.:
1808	CR	CR
Date.:	Scale.:	Scale.:
20.02.2020		1:50@A1
Drawing No.:	Revision.:	
A101	P03	

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