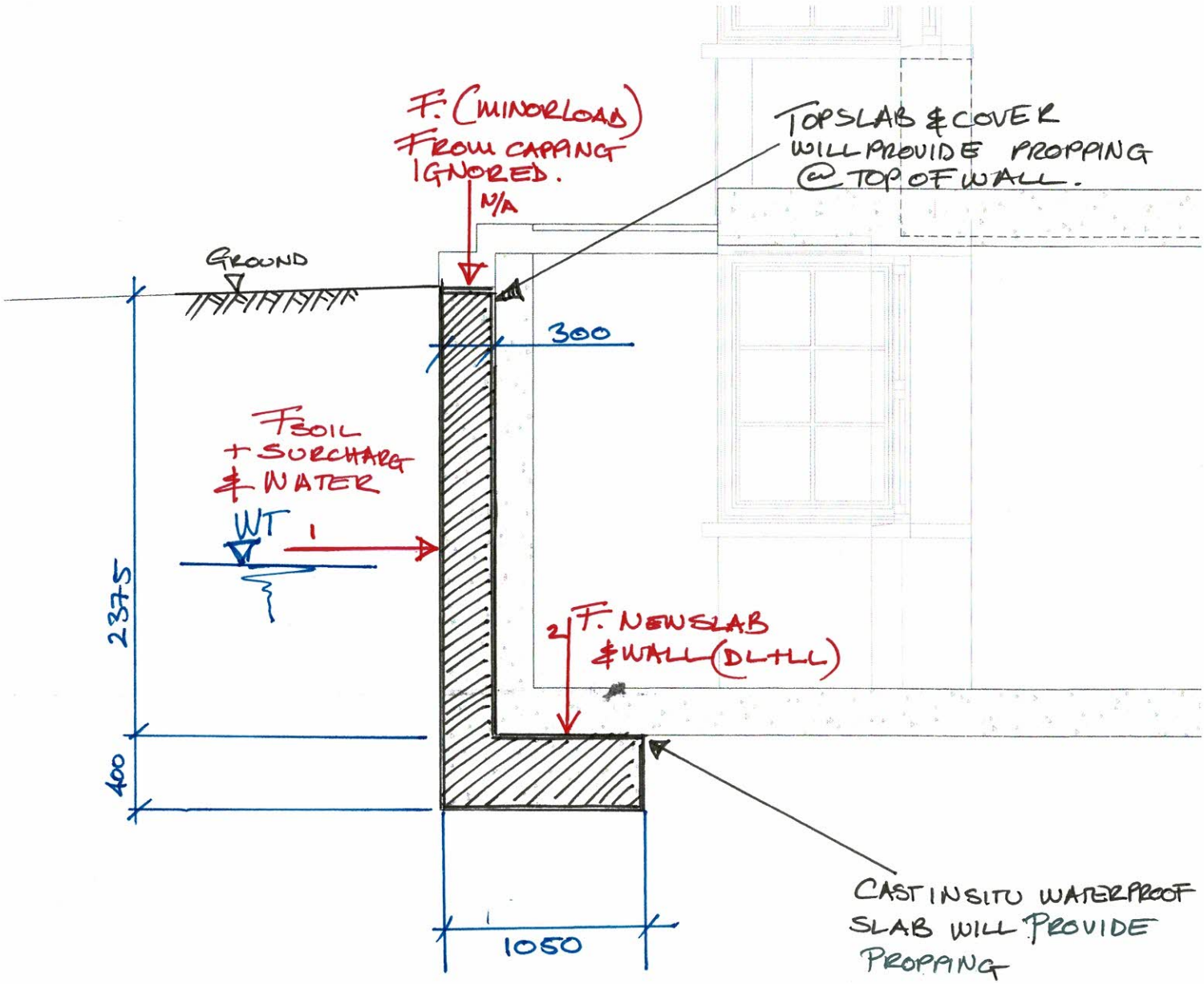
ALL DIMS IN MM
U.N.O.

PERMANENT STAGE

SOIL WILL BE UNDRAINED DURING PERMANENT STAGE



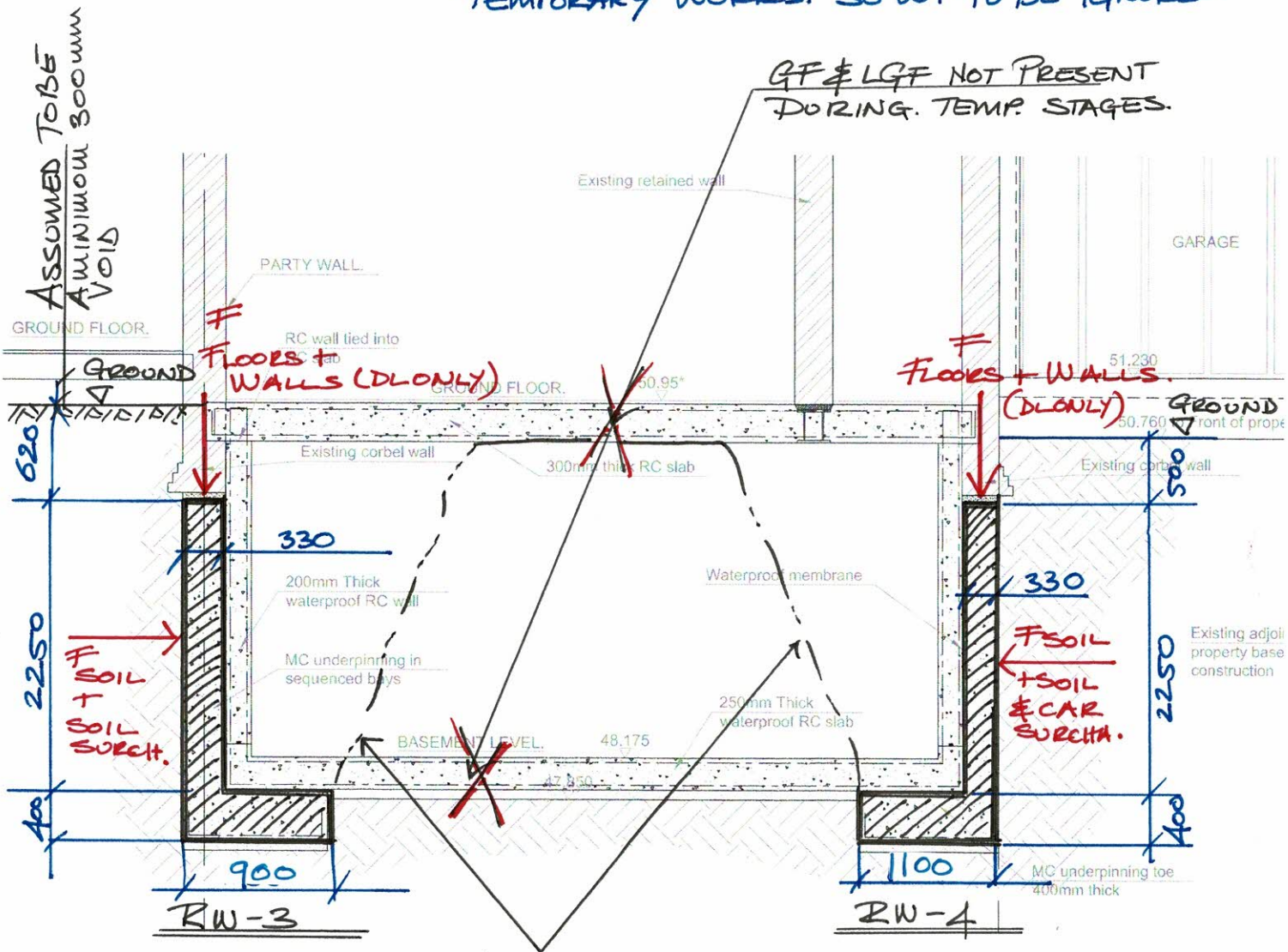
RETAINING WALL SECTION 1

NOTE: GROUND IS TAKEN AS "SILTY CLAY" ALL AROUND.
& SOIL PRESSURE COEFFICIENT TAKEN AT REST

ALL DIMS IN mm
O.N.O.

TEMPORARY PHASE.

NOTE: SOIL WILL BE DRAINED DURING THE TEMPORARY WORKS. SO WT TO BE IGNORED.



APPROXIMATED SOIL PROFILE (INTERNAL) DURING UNDERPINNING OPERATIONS.

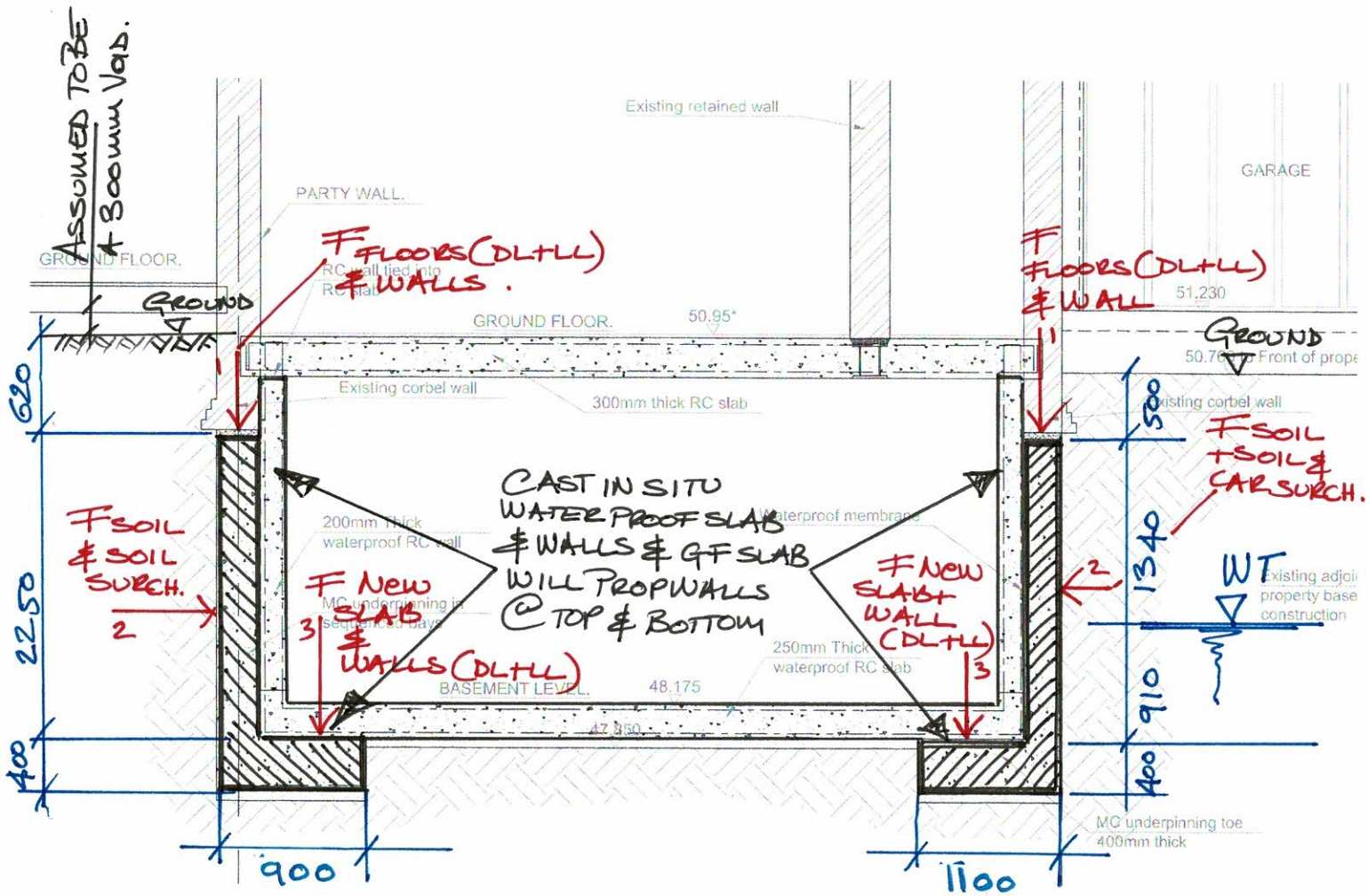
RETAINING WALLS . SECTIONS 3 & 4

NOTE! WALLS NOT TAKEN AS PROPPED DURING TEMP. STAGE.
SOIL PROFILE! TAKEN AS "SILTY-CLAY" FULL HEIGHT OF R.W. & UNDER BASE.

ALL DIMS IN mm.
U.N.O.

PERMANENT STAGE.

SOIL WILL BE UNDRAINED DORING PERMANENT STAGE.



R.W. -3

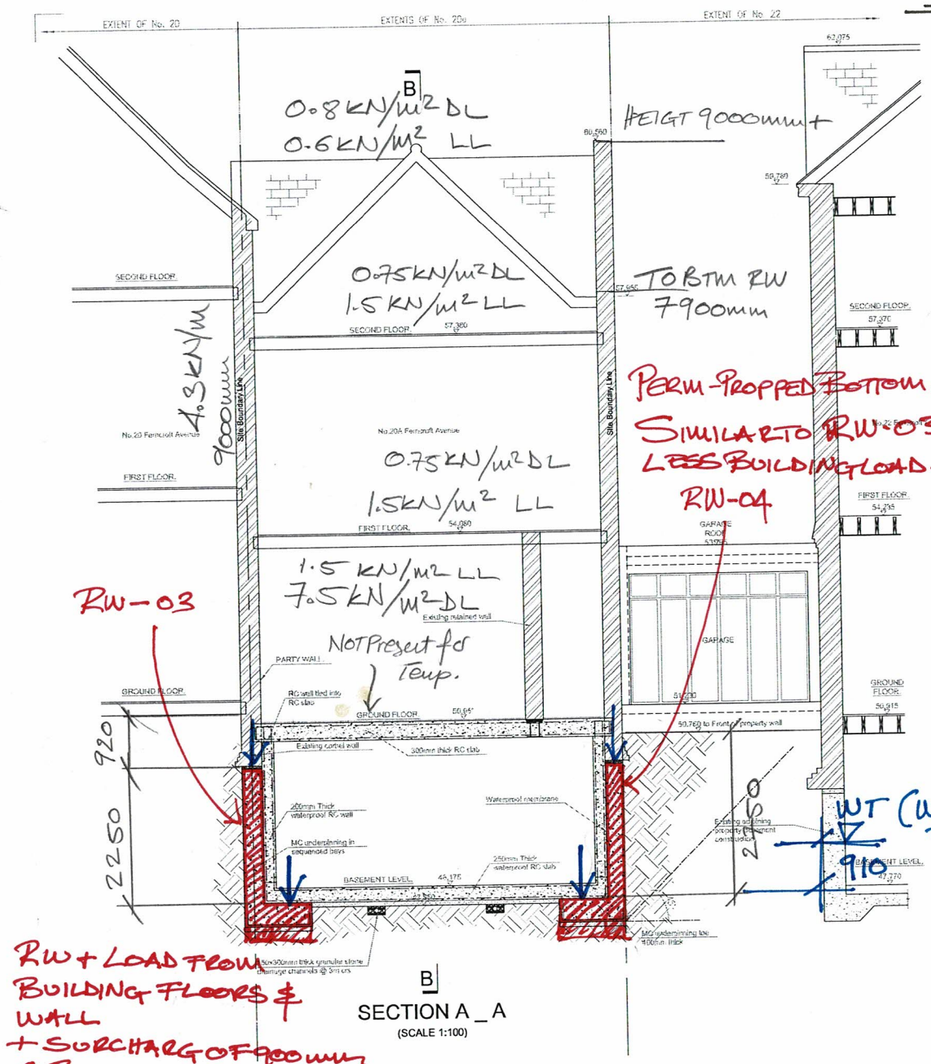
R.W. -4

RETAINING WALLS. SECTIONS 3 & 4

NOTE: GROUND TAKEN AS "SILTY CLAY" ALL AROUND.
& SOIL PRESSURE COEFFICIENT TAKEN AT REST.

PRELIMINARY DESIGN PHILOSOPY WORK SHEET

DO NOT SCALE

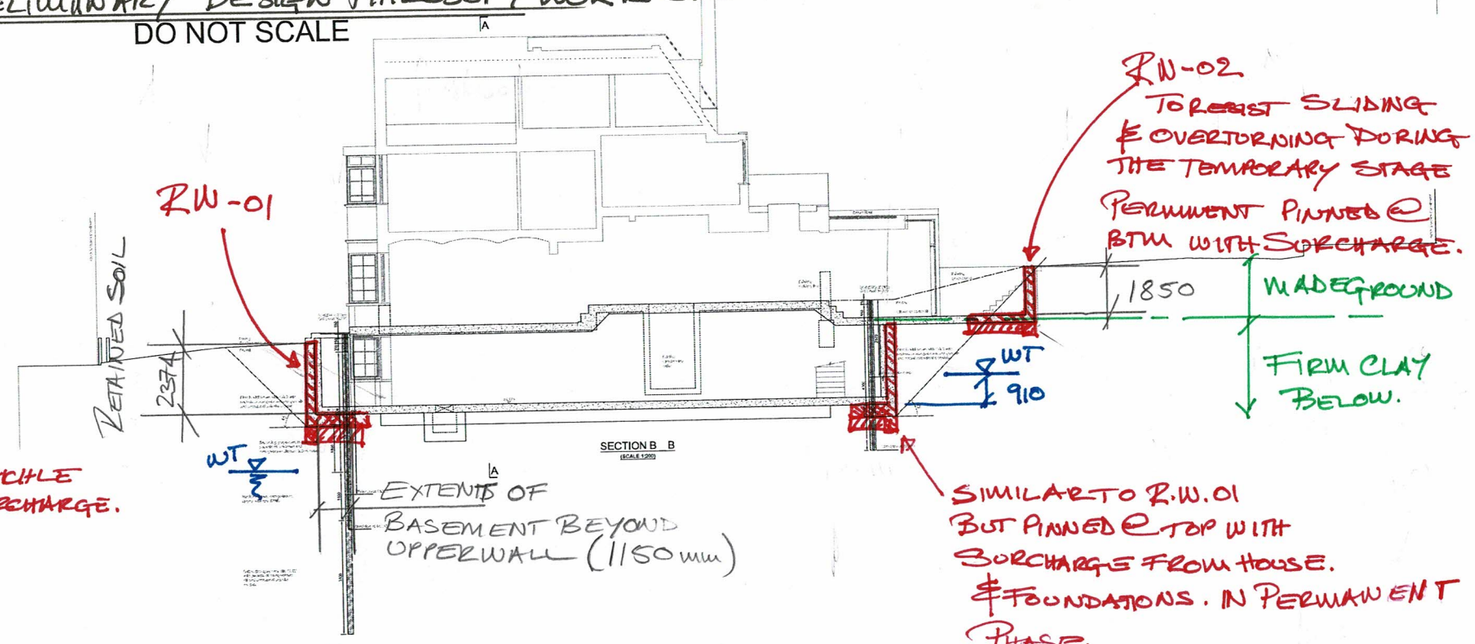


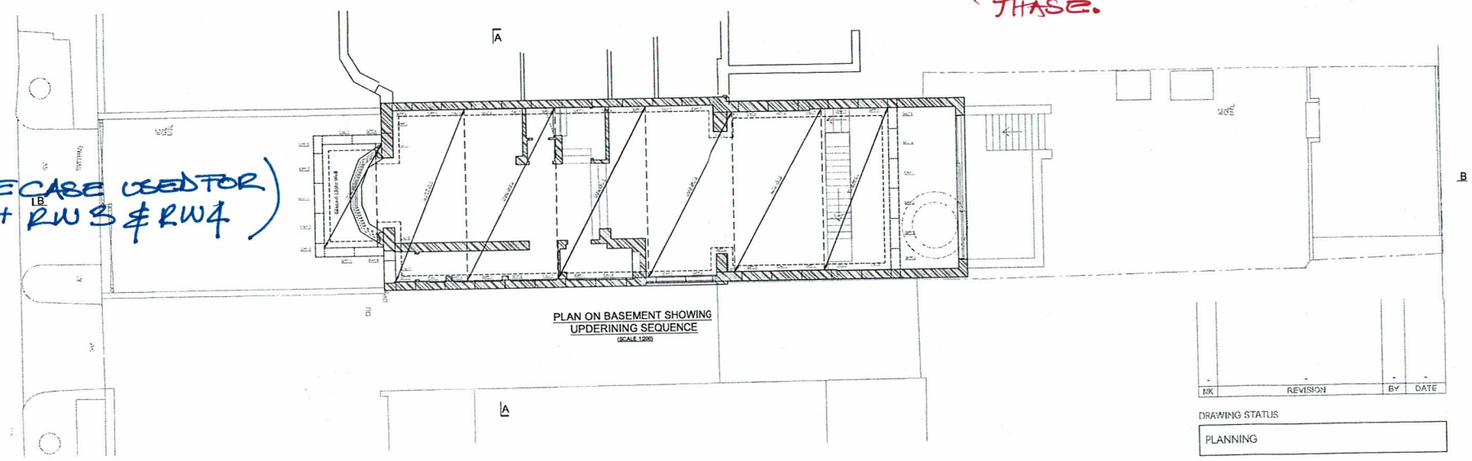
RW + LOAD FROM BUILDING FLOORS & WALL + SURCHARGE OF 1000mm OF SOIL

TEMP. ONLY DL. NO RC SLAB.

PERM DL + LL & ADDITIONAL RC SLABS @ GF & LGF.

& PROPPED BOTTOM.





SUGGESTED SEQUENCE OF WORKS

Install monitoring points on site and the surrounding area

Contractor to review proposed underpinning and excavation sequence and supply full method statements to Project Engineer for approval

All excavation is to be undertaken from with the existing building envelope and site boundary

Suggested Installation of Underpinning Bay Type One (for a five bay sequence repeated as Type One)

- Mass concrete in underpinning legs shall be grade C20, 20mm maximum aggregate size, with a minimum cement ration of 275kg per meter cube and a free water/cement ratio of 0.65. note that this specification is suitable for sulphate conditions up to class 2 (of B.R.E DIGEST 363).
- Underpinning pins shall be excavated in bays not exceeding 1m in length, concreted, and dry-packed up to the underside of existing footing before proceeding to the next leg in the sequence. The sequence of construction is as given on the plan; like numbered legs may be constructed simultaneously. Deviation from the stipulated sequence or configuration of legs may be permitted at the discretion of the engineer, but under no circumstances shall the unsupported length of the structure to be underpinned exceed 20%, ie not more than 1 bay in 5 bays to unsupported at any one time.
- The concrete in underpinning legs shall be placed immediately after the excavation is complete, and has been approved by the Engineer and local authority building inspector. If delay is anticipated, the excavation shall be blinded to protect the bottom and prop the underside of the existing footing, or a further 150mm layer removed immediately prior to concreting.
- The underside of the existing footing shall be thoroughly cleaned, and if irregular, carefully trimmed to create an essential flat and horizontal surface that will not impede the placement of dry pack mortar.
- Care is to be taken to avoid water lying in the foundations.
- Concrete shall be placed employing a shutter or other means to avoid segregation of the mix, and vibrated to ensure proper compaction. Shuttering shall be provided, as required, to restrict overspill into access excavation.
- 75mm thickness dry packing shall be carried out not earlier than 24 hours after casting the leg. Dry pack mortar (1:3 sulphate-resisting Portland cement/sharp sand, mixed with sufficient water to produce 'earth damp' consistency) shall be rammed in so as to completely fill the void with dense, compact material.
- Allow 24 hours minimum between concreting & dry-packing over.
- Allow 24 hours minimum between dry-packing and excavation of the next pin in the sequence.
- Joint faces between pours to be cast shuttered with 75mm shear key or cast against previous cast surface after removal of any soil and laitance.
- Backfilling of excess excavation to be either lean-mix concrete (nominally 15:1 all-in aggregate to ordinary Portland cement) or selected fill.
- Backfilling of pin working space to be by using selected granular fill (which may include as-dug material), taking care to compact it in layers not exceeding 200mm in thickness. In all other situations lean-mix concrete shall be used, unless specific directions are given otherwise.
- Care shall be taken to avoid damage to service connections to the building, gas water and electrical mains shall be properly supported and protected when exposed, and re-buried or sleeved in accordance with the requirements of the relevant statutory authority. Drainage connection shall be similarly protected to avoid damage, but where temporary disconnection is unavoidable. This must be by arrangement with the Contract Administrator. In any event reconnection of services should be made at the end of each working day.
- All works to be overseen at all times by competent staff and signed-off by the contractor's temporary works coordinator.
- The drawing shows a suggested sequence which the Contactor is to follow or submit a revised sequence to the Engineer in good time to allow for comment and/or approval.
- Suggested Installation of Slab Bay Type ONE- (for a Seven bay sequence repeated as Type One)
- With all underpinning to external and internal walls now in place the lower ground floor slab can be installed in a phased sequence as indicated on the drawing
- Excavate Type One slab 3m wide bay to formation level and locally to install drainage pipework, install MOT Type 1, 50mm concrete blinding and DPM, install mesh reinforcement with dowel bars for adjacent bays and cast slab in place
- Allow 48 hours minimum between casting slab bay Type one and excavation of the next slab bay in the sequence.

MK	REVISION	BY	DATE
-	-	-	-

DRAWING STATUS

PLANNING

DRAWING TITLE

UNDERPINNING SEQUENCE AND SECTIONS A _ A & B _ B THROUGH BUILDING AND ADJOINING PROPERTIES

PROJECT — Project Number - P19-461

20A FERNCROFT AVENUE,
LONDON,
NW3 7PH,

simpson
3, Dufferin Avenue
London
EC1y 8PQ
T.020 7253 2626
London Henley-on Thames, Gloucester and Exeter

Drawn	Ch'kd	Scales	Date
GB	Ch'kd	NTS	29.10.19

Purpose of Issue
BASEMENT IMPACT ASSESSMENT

Drawing Number	Revision
P19-461_SK08	-

A3

Appendix P

Ashley Tree Survey Arboricultural Impact Assessment dated November 2019

Ashley Tree Surveys

BS 5837:2012 Tree Survey
Arboricultural Impact Assessment

Commissioned by Elliot & Anne-Eva Graff

20A Ferncroft Avenue, Hampstead, London, NW3 7PH

November 2019

Planning Application Checklist	
BS 5837:2012 Tree Survey	✓
Tree Constraints Plan (TCP)	✓
Arboricultural Impact Assessment (AIA) Tree Protection Plan (TPP)	✓ ✓
Arboricultural Method Statement (AMS)	

Table of Contents

Appendix

1.0 Contact Details

Client:	Mr & Mrs Elliot & Anne-Eva Graff
Architect:	Mr Giles Lovegrove, Coupdeville Architects
Site Details:	20A Ferncroft Avenue, Hampstead, London, NW3 7PH
Date of Site Inspection:	12th November 2019
Arboriculturist:	Kate Ashley Dip Arb L4 ABC Tech. Arbor. A. Ashley Tree Surveys email: kateashley8@yahoo.co.uk 07967 013187
Proposal:	Demolition of existing rear extension and basement proposal, plus rear extension.

2.0 Executive Summary

2.1 Four trees were surveyed at 20A Ferncroft Avenue, Hampstead on 12th November 2019. All the trees are located towards the rear of the property and lie in the gardens of 20A and the neighbouring gardens of 20 and 22 Ferncroft Avenue.

2.2 The trees at this site are not protected by any individual Tree Preservation Order. This site lies within the London Borough of Camden Conservation Area.

2.3 The development proposals involve the demolition of the existing rear extension and the creation of a new basement to the property and a new rear extension with a green roof.

2.4 It was observed that there were 3 trees which are close to the intended development, all these 3 trees are Category 'C'. One tree (T1) will require removal and this tree (T1-Cherry), lies in the gardens of 20A Ferncroft Avenue, Hampstead. T1 exhibits poor form and its roots lie within the area intended for the new basement. It is proposed that this tree be removed and for a replacement tree to be planted further down the garden

2.5 The other 3 trees will not be affected as demonstrated in the enclosed TCP (Appendix 3). It should be particularly noted that the neighbours Category 'B' multi-stem mature sycamore (T4) which has a canopy extending into the garden, is well away from the construction zone.

3.0 Instruction & Purpose of the Report

3.1 This report was commissioned by Mr & Mrs Elliot and Anne-Eva Graff to assist with the proposed development (describe) at 20A Ferncroft Avenue, Hampstead, London, NW3 7PH. I have been asked to prepare the following surveys and assessments:

3.2 **Tree Condition Survey** - limited to trees that are located on or immediately adjacent to areas where the development is being proposed. The Tree Condition Survey consists of a visit to the site to undertake a detailed inspection of the tree's health and structure to determine their safe useful life expectancy (SULE), and then to categorise them in accordance to *"BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations"*. The results of the tree condition survey are provided in **Appendix 2**

3.3 **Arboricultural Impact Assessment (AIA**) – to include all trees in the gardens of Fairfield, as well as trees in the neighbouring gardens where appropriate. Data from the Tree Condition Survey has been used to prepare a Tree Constraints Plan (TCP)- see **Appendix 3**. The Tree Constraints Plan also shows the impact of this development and the mitigating measures used to assist the proposal, indicating the location of protective fencing

4.0 Scope of the Report – Methodology & Limitations

4.1 The tree survey comprised of a ground-based visual tree inspection only and where a further more detailed or aerial inspection is required this is indicated with the recommendations.

4.2 The report details all trees over 85mm at 1.5m above ground level. Tree stem diameters are measured (or where inaccessible estimated), to the nearest 50mm. For this survey, it was not possible to obtain direct access to all the tree stems so best estimates have been used in these cases.

4.3 Tree heights were measured using a Suunto clinometer, but where it has not been possible to accurately measure, it is estimated to the nearest 1m. Tree canopies have been measured or estimated if access was not possible or un-necessary.

4.4 The position of the trees stems is shown in the submitted Tree Constraints Plan (TCP) – **Appendix 3** - which provides information concerning the condition and quality of the tree stock via colour coding, as well as showing the extent of the Root Protection Areas (RPA's) and also indicates the extent of the tree canopies. The TCP should assist the planning process by demonstrating the impact of the proposals on the existing tree stock.

4.5 The soil type was not assessed during this visit. No tissue samples were taken nor any other internal investigation of the trees were undertaken during this tree survey.

4.6 This is not a Duty of Care Survey and will not assess a tree's safety. If concerns for tree safety exist, necessary further more detailed inspections should be carried out by an arboricultural professional.

5.0 Site Description & Location of Trees at Site

5.1 The survey site is comprised of the rear gardens of 20A Ferncroft Avenue, Hampstead, London NW3 7PH. The house is in a residential street in Hampstead and in the London Borough of Camden.

5.2 The report details all trees over 85mm at 1.5m above ground level. For this survey, it was not possible to obtain direct access to all the tree stems as 2 of the trees were in the gardens of neighbours and so good estimates to the DBH have been provided.

5.3 It was noted that there were a total of 4 trees which have been numbered and with their data recorded in the Tree Condition Survey – See **Appendix 2**
The trees are shown in TCP – **Appendix 3**

5.5 This garden is noted for being fairly narrow however extending to the North and there are some nearby trees which provide useful screening and interest. A valuable tree for the garden is the T2 silver birch which although having a slightly leaning stem, measures 15m and has a good tree canopy.

5.6 The Category 'B' sycamore T4 is also a neighbours tree and this large multi-stem tree has a canopy which extends into the garden by some 4m and an RPA which extends into the garden by some 6.3m. The tree has an extensive canopy but has been subject to regular tree work which now affects its form.

6.0 Tree Quality Assessment

6.1 The table of data in **Appendix 2** along with the Tree Constraints Plan submitted plan show the condition of the trees according *to "BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations".*

4 individual trees on this site have been surveyed for planning purposes & categorized according to BS 5837:2012. It was found that there were:

1 Category 'B' Trees
3 Category ' C' Trees

6.2 **CATEGORY 'B' TREE** (Trees of low medium quality with an estimated remaining life expectancy of at least 20 years **(T4)**

The only medium quality tree in the survey is the mature sycamore at the rear of the garden, this tree is multi-stem and has an extensive canopy but has been subject to tree work in the past. This tree is not located near the construction and will not be impacted.

T4 sycamore – located in neighbours garden with extensive canopy

T4 tree is a large multi-stem mature tree which has been subject to tree work

6.3 **CATEGORY 'C' TREE** (Trees of low quality with an estimated remaining life expectancy of at least 10 years **(T1, T2, T3)**

T1 Cherry with pronounced leaning stem due to proximity to T2 birch

T1 Cherry is positioned close to fence and between 2 garden storage sheds

This Category 'C' cherry (T1) is the owners tree, it suffers from having both a constricted canopy and also from its compromised planting position. The tree is out-competed by the adjacent and dominant T2 silver birch which has an extensive canopy. T1 can be shown to be leaning to the south to gain canopy space. The stem of T1 is also positioned between 2 storage sheds meaning that its planting area and drainage is not ideal. This tree is to be removed and a replacement tree further down the garden is proposed.

T2 Silver birch with extensive canopy – this is the neighbours tree (No. 20 Ferncroft)

T2 Silver birch with slightly leaning stem and additional leader now developing

The above Category 'C' T2 silver birch is the neighbours tree (20 Ferncroft) and this tree was noted to have a slightly leaning form stem until 2m which then straightens. The stem has also developed a new small "leader" which is gaining dominance and is growing a new secondary canopy from this leader. T2 has an extensive canopy and provides good screening, privacy and seasonal interest.

T3 Cherry is a small decorative tree located close to opposite fence – the tree has slight leaning form – leans to north.

7.0 Arboricultural Impact Assessment (AIA)

7.1 The Arboricultural Impact Assessment (AIA) considers how the proposed development is likely to affect the treescape at 20A Ferncroft Avenue, Hampstead, from both an environmental and also an amenity viewpoint

7.2 There are a wide range of construction activities which have the ability to cause some "Potential Development Impact", which can include:

- *Demolition of the existing dwelling and buildings*
- *Construction of the new proposed dwelling and footprints relative to RPA's*
- *Amendments and upgrades to areas of hard-standing (driveways, turning areas)*
- *Installation of services*
- *Landscaping*

7.3 The proposed extension demolition and basement proposal has been designed with efforts taken to ensure the safe retention of the high quality trees on the site, with protective measures being proposed around all the retained trees. The Tree Constraints Plan (TCP) – **Appendix 3** shows the extent of the RPA's of all the trees. Ideally there should be no encroachment into the RPA's of retained trees unless it is unfeasible to avoid. In such instances, specialist ground protection and installation will be adopted.

7.4 Adoption of a Tree Protection Plan (TPP) s critical to ensuring the protection of retained trees. Tree protection measures and fencing, should be retained throughout the entire project. Location of fencing are shown in **Appendix 3** and consists of both permanent fencing.

7.5 The proposed basement will extend further into the garden and will directly affect the T1 Cherry as its canopy and RPA are inside the intended basement area. It has been noted however that this tree is poorly positioned and struggles for canopy space as it being out competed by the nearby T2 birch. It is proposed that this tree be removed and for a replacement tree to be planted towards the rear of the garden.

7.6 The T2 silver birch is owned by neighbours of 20 Ferncroft and as demonstrated in **Appendix 3**, there will be no disturbance to its RPA through the demolition, excavation or new basement construction. There is a risk soil compaction to RPA of T2 however this is being addressed by the installation of tree protection fencing. T3 and T4 will similarly be set behind tree protection fencing to avoid root damage and soil compaction.

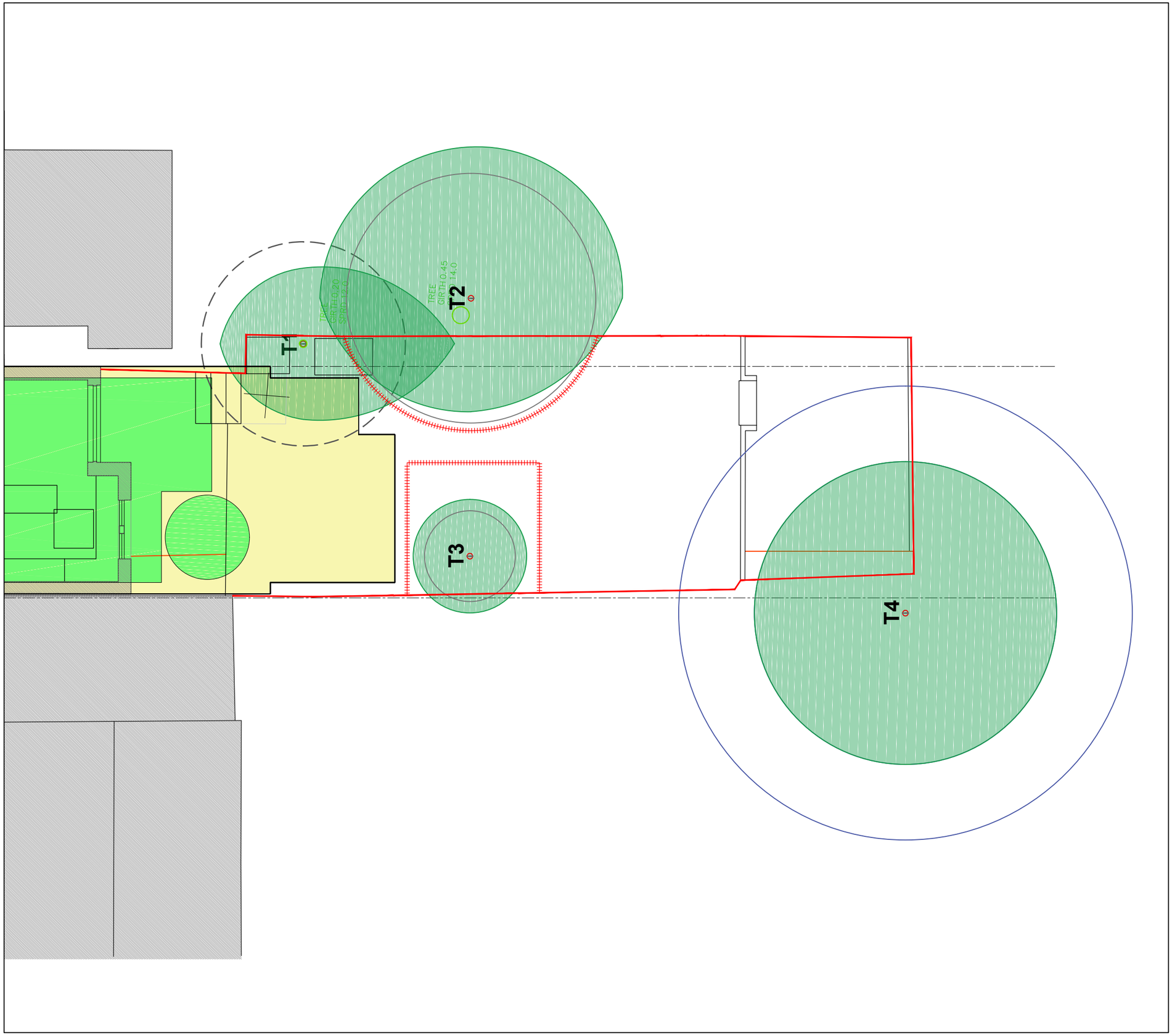
8.0 Tree Protection Plan

8.1 The tree protection fences are designed to be a substantial protective barrier, which once installed will be difficult to move. The fencing guards against impact damage to tree stems and branches of any trees which are being retained, as well as protecting the rooting environment from soil compaction. These measures are to ensure that the soil structure does not become compromised during construction operations. The specification on fencing is provided below.

8.2 It is important that the Tree protection fencing is installed before any construction activity is started and before any materials arrive on-site. Once erected the fencing should not be altered or moved without prior consent from the arborist or by approval from the Local Authority.

8.3 Care should be taken on the site to ensure that no materials, machinery, chemicals or fuel are stored inside CEZ's for the duration of the development. Areas must be allocated for materials storage, minimizing the need for on-site storage by having phased deliveries throughout the project.

8.4 Materials which might contaminate the soil should be carried out 15m away from RPA's, the effect of gradient on the movement of potentially harmful liquid spillages towards RPA's should also be considered. Materials mixing should only take place on a bund with an impermeable membrane on a scraped base to ensure that there is no possibility of materials escaping the bunded area.



Crown spreads are represented as coloured lines that reflect the crown spread measurements indicated in the tree schedule and accord with BS 5837/2012.

Tree numbers are preceded with a "T" for individual trees, a "G" for groups.

G Crown Spread (Group)

T Crown Spread (Individual tree)

B.S.Tree Category A

B.S.Tree Category B

B.S.Tree Category C

B.S.Tree Category U

Tree proposed for removal

The root protection areas (RPA) are shown as symmetrical brown circles plotted at the appropriate radial distance from the centre of the tree as specified in the tree schedule.

Protective fencing in accordance with BS 5837/2012 to be installed and maintained as specified in the AMS

Basement construction Zone

Ground Floor Extension Construction Zone

ASHLEY TREE SURVEYS
kateashley8@yahoo.co.uk
07967 013187

Job

INVESTIGATION INTO ROOT PROTECTION AREAS FOR PREAPP APPLICATION AT:

20a FERNCROFT AVENUE
LONDON, NW3 7PH

Title

TREE PROTECTION PLAN

Scale

1:100 @ A3

Drawing No	Date	Revision
-	04/12/19	-

9.0 Specifications for protective fencing and signage

BS 5837:2012 states that all *"Barriers should be fit for the purpose of excluding construction activity and should be appropriate to the degree of proximity of work taking place around the retained tree(s)"*

There is a default specification of barriers (Fig1) which is recommended and these are designed to be permanent barriers and positioned as per the TPP. In most instances this takes the form of welded 'Heras' panels, secured onto a scaffolding framework, which is then braced and secured into the ground. The panels should should be difficult to move and should form permanent rigid structures. Should site conditions mean this default fencing is impossible to install, then an alterative fencing can be suggested by the retained arboriculturist, to be approved by the local planning authority.

The protective fencing should also be accompanied by clear all-weather signage fixed securely to the barriers, examples of which are shown in Fig 2.

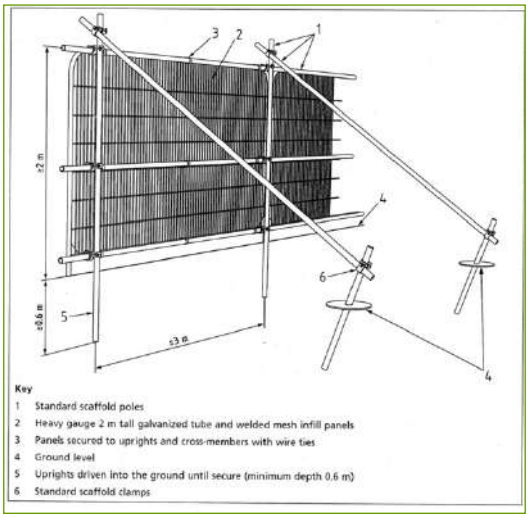


Fig 1 Shows the default specification of protective barriers (taken from BS 5837)

Fig 2 Shows examples of the all-weather signage to be attached to protective barriers.

10.0 Legal Constraints

10.1 There are no trees at this site which are are subject to specific statutory controls

10.2 The trees in the survey site are not protected by any individual Tree Preservation Orders however site lies in the London Borough of Camden Conservation Area.

10.3 Statutory Wildlife Obligations: The Wildlife & Countryside Act 1981 (Amended) provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist should be obtained before undertaking any works that might constitute an offence.

11.0 Conclusions

11.1 The survey site is comprised of the rear gardens of 20A Ferncroft Avenue, Hampstead, London NW3 7PH. The house is in a residential street in Hampstead and in the London Borough of Camden.

11.2 4 trees on this site have been surveyed and it was found that there were:
1 Category 'B' Trees - sycamore
3 Category ' C' Trees – silver birch and cherry

11.3 The proposed basement will extend further into the garden and will directly affect the T1 Category 'C' Cherry as its canopy and RPA are inside the intended basement area, but the tree is low quality and canopy constricted. This tree is to be removed and replaced with a new tree further away from the basement area.

11.4 There will be no impact on the Category 'B' sycamore at this site and all other retained trees are to be protected with tree protection fencing. This fencing should be installed prior to any work commencing.

APPENDIX

APPENDIX 1 - KEY TO BS 5837 TREE SURVEY DATA

APPENDIX 2 - ARBORICULTURAL TREE SURVEY DATA

APPENDIX 3 - TREE CONSTRAINTS PLAN (TCP) & TP FENCING

APPENDIX 4 - ADDITIONAL TREE IMAGES

APPENDIX 1 – KEY TO BS 5837:2012 TREE SURVEY

T / G	Tree or Group numbers which follow on the enclosed plan
Species	Common name followed by botanical name (Latin) in brackets
DBH:	The Diameter at Breast Height which measures the girth of the stem (in mm) measured at 1.5m from ground level
Height (H):	Approximate height of tree canopy, measured in meters
First Branch (FB):	Approximate height of the first significant branch and its cardinal directional
Canopy Spread (CS):	Approximate Canopy spread measured in metres, shown as compass points N,E,S,W
AGE CLASS:	Y : Young (less than 15 years old and 1/3 fully grown) SM : Semi-mature tree (1/3 to 2/3 full height tree) EM : Early Mature (2/3 to virtually full height tree) M : Mature – fully grown tree LM : Late Mature – fully grown tree possibly with declining vigor OM : Over mature – fully grown tree with declining vigor, but having historical or ecological value VET : Veteran tree, usually very old and having significant biological, cultural or aesthetic value
SULE:	Refers to the remaining **Safe Useful Life Expectancy** and is the estimated number of years the tree will continue to make a safe and useful contribution to its environment. SULE is recorded as <10 years, 10+, 20+ or 40+ years
RPA:	The **Root Protection Area**, the radius measured in metres, and area in metres squared. The RPA of a single tree tree is equal to a circle with a radius of 12 x stem diameter and is used to accurately site specialist protective fencing.

Key to BS Tree Categories:

Category A: High quality trees – with estimated remaining life expectancy of at least 40 years

Category B: Moderate quality trees – with estimated remaining life expectancy of at least 20 years

Category C: Low quality trees – with estimated remaining life expectancy of at least 10 years or stem diameter below 150mm

Category U: Dead or dying trees, (infected by pathogens), or trees which are actively suppressing superior quality

APPENDIX 2 –ARBORICULTURAL TREE SURVEY DATA

(SEE TABLE BELOW)

TREE or Group or Hedge	**Species Common Name** If tree offsite, record estimated measurements using '#'	**DBH at 1.5m** recorded in mm	Canopy **HEIGHT** in metres + **FIRST BRANCH** in m from ground level with cardinal direction	**Branch Spread** **N E S W** Recorded in m	**Age** **Y SM EM M LM OM Vet**	**SULE** **<10 10+ 20+ 40+**	**General Observations**	**Structural Form** **Good Fair Poor Dead**	**Physiological Form** **Good Fair Poor Dead**	**BS 5837 RC** **A B C U**	**BS 5837 RPA Radius** recorded in m and m²	**Recommended Works**
T1	Japanese Flowering Cherry	235	H 8m FB 1.5/N	N 2.2 E 2.0 S 4.0 W 2.0	EM	10+	*5.3m from rear of house* 0.25 from boundary fence Tree has developed pronounced lean, leans heavily to South due to competition from dominant T2 silver birch. New minor "leader" has developed and included bark observed at union Cherry has restricted rooting and compromised drainage due to proximity to garden sheds on either side of stem.	POOR	FAIR	C	R = 2.70	Recommend removal and replacement planting

TREE or Group or Hedge	**Species Common Name** If tree offsite, record estimated measurements using '#'	**DBH at 1.5m** recorded in mm	Canopy **HEIGHT** in metres + **FIRST BRANCH** in m from ground level with cardinal direction	**Branch Spread** **N E S W** Recorded in m	**Age** **Y SM EM M LM OM Vet**	**SULE** **<10 10+ 20+ 40+**	**General Observations**	**Structural Form** **Good Fair Poor Dead**	**Physiological Form** **Good Fair Poor Dead**	**BS 5837 RC** **A B C U**	**BS 5837 RPA Radius** recorded in m and m²	**Recommended Works**
T2	Silver Birch	280	H 15m 1m/N	N 4.5 E 4.0 S 4.0 W 3.0	EM	20+	*9.8m from rear of house* 1.0 from boundary fence Tree has developed a pronounced lean, leans to South to gain light, however has well balanced canopy. Birch has also developed new additional leader at 1m to create a co-dominant tree.	FAIR	GOOD	C	R = 3.30	NEIGHBOURS BOUNDARY TREE
T3	Japanese Flowering Cherry	95	H 3.5m 1.0m/S	N 1.5 E 1.5 S 1.5 W 1.5	SM	10+	*9.8m from rear of house* 1.0 from RHS boundary fence Small ornamental cherry with leaning form.	POOR	FAIR	C	R = 1.20	
T4	Sycamore	5x stems	H 18m FB 2m/S	N 4.0 E 4.0 S 4.0 W 4.0	EM	40+	*9.8m from rear of house* 1.0 from RHS boundary fence Mature multi-stem tree which offers amenity value and located at the rear right hand corner of the garden. Canopy extends into garden of 20A by approx. 4m. Evidence of tree work to maintain canopy, canopy has now regrown	FAIR	FAIR	B	R = 6.30	NEIGHBOURS MATURE TREE

APPENDIX 3 – TREE CONTRAINTS PLAN (TCP)

SEE ATTACHED PDF SHOWING TREE CONSTRAINTS PLAN (TCP) SHOWING LOCATION OF TREE PROTECTION FENCING

APPENDIX 4 – ADDITIONAL SITE IMAGES

Appendix Q

Designer's Hazard and Risk Identification.

3 Dufferin Avenue
London
EC1Y 8PQ
Email: mail@simpsoneng.com
www.simpsoneng.com

DESIGNER'S HAZARD AND RISK IDENTIFICATION

20A FERNCROFT AVENUE

LONDON

NW3 7PH

CLIENT: Mr Elliot Graff
20A Ferncroft Avenue
London, NW3 7PH

JOB NO: P19-461

DATE: 12th December 2019 – Rev 0

Revision	Date	Author	Checked	Notes

Revision History

INTRODUCTION

The existing site is a 3 storey residential semi-detached property set back 8m from Ferncroft Avenue. The existing building is solid masonry construction with ground floor concrete slab, timber floors above and timber roof structure and the site is 45.3m long x 6m wide

The proposed alterations are the refurbishment of the existing building with a new single storey rear extension with brown roof and skylights, the construction of a basement below the existing foot print extend at the rear and a light well to the front.

The works involve demolishing the existing rear walls and installing support steelwork, removing existing ground floor slab and underpinning the existing perimeter walls in a 5 BAY sequence below the new proposed basement slab level, installing Pynford system to support existing internal walls at ground floor level and installing a new ground floor slab tied into existing external masonry walls to support above internal walls. Then using the front light well area as a mole hole to excavate spoil from site and install the RC basement slab and retaining walls tied into the new ground floor slab all excavated in a 3m bay sequence.

The contractor is to review all relevant documentation especially The Basement Impact Assessment, Soil Investigation Report, the Arboricultural Impact Assessment the Architects and Structural engineers Drawings.

The contractor is to provide full method statements and temporary works drawings for review by the design team before undertaking any works on site.

The contractor is to review all existing services on site and make safe or divert to as necessary

Ground water dewatering is most likely to be required and a system of de-water wells is to be designed and installed by a specialist contractor with full details provide for review by the design team

The Main Contractor will be required to make particular reference to the Pre-contract Health and Safety Plan which summarises all salient points.

The designer's hazard identification sheets as contained within this document are generic to the site but also to a degree similar for all types of structural work undertaken.

Where possible unusual risks have been highlighted, it will be the Main Contractor's responsibility however to highlight any areas of the design which they feel could be improved upon with regard to safe construction and for themselves to become fully aware of the building and its environment and ask questions with regard to any health and safety aspects which are not clear, either within the pre-contract health and safety plan or within the contract documents.

LOCATION/PROCESS	HAZARD	RISK	CONTROLS/ACTION
Generic risks	• Contractor competence • Inadequate site supervision • Inadequate contact programme	• Building stability • Damage to site and adjoining properties • Contract period overrun	• Competent tender process • Contractor to have proven track record of similar projects • Contractor to have an experienced site supervision team and experienced sub-contractors • Contractor to provide CV's of site management personnel • Contractor to provide Method Statements & Risk Assessments • All works to be carried out to the agreed programme and sequence of phasing. Any changes to be adequately programmed and agreed prior to be carried out • Site monitoring and supervision • Removal of temporary propping scheme phased to coincide with basement construction of RC structure and removed only upon confirmation of required concrete design strength achieved and permission to be given by Project Engineer
Working on a shared site and adjacent to: Other Public & Residential Buildings, Public Footpaths and Roads	• Conflict with other contractors and subcontractors sharing the site • Conflict with other site and building users • Conflict with others outside the site boundary	• Personal injury • Damage to property	• Clear warning signs. • Safe routes for traffic and pedestrians. • Close liaison with other site users. • Appoint a Neighbour Liaison Officer. • Keep local neighbours informed of works on site that may affect them. • Temporary hoarding. • Temporary crash deck and safety netting/bags.
Cranes, Heavy lifting machinery	• Heavy machinery. • Falling debris. • Lifting and lowering of heavy loads near people / public.	• Being struck by machinery. • Machinery failure.	• Look-out in attendance. • Certified operators and certificates of maintenance for machinery. • Monitoring wind conditions. • Adequate outrigger spreaders to distribute loads.

Demolition works to existing structure Installing PYNFORD System	• Falls. • Falling debris. • Falling materials. • Noise. • Dust. • Live services. • Asbestos/cement roof sheets. • Out of plumb walls. • Stability of walls. • Cutting and removing existing steelwork. • Removing timber floor. • Collapse of enveloping walls. • Fire/explosion. • Demolishing walls. • Debris, walls falling, falling objects onto adjoining property. • Working adjacent to footpaths and publicly accessible areas.	• Injury to operatives from falling debris. • Shock and injuries from live services. • Noise/hearing damage. • Contaminated material ingestion, eye/skin irritation. • Dust inhalation. • Fire/explosion. • Flammable materials and gases. • Confined spaces. • Vibration. • Collapse.	• Contractor to check and survey for any live services. • Contractor to prepare method statements. • Contractor to provide all appropriate and necessary temporary works and support. • Provide protection from falling debris and materials. • Contractor to provide all necessary and appropriate PPE. • Refer to Code of Practice – Demolition BS6187 latest edition. • Provide all scaffolding, access to works, including guardrails, toe boards – all erected, regularly checked and inspected by competent persons. • Dust to be kept to a minimum – damp down. • Noise to be controlled – refer to BS5228 – Noise, latest edition. Provide baffling screens to reduce noise. • Dispose of waste safely to an approved source. • Check for asbestos/refer to asbestos survey. • Restrict personnel access in vicinity of demolition. • Vibration to be minimised. • Provide temporary shoring and propping to existing walls where required.
Sheet Shoring	• Heavy machinery. • Deep shafts. • Site traffic. • Manoeuvring of large loads	• Being struck by machinery. • Falling down shaft. • Trip hazards • Machinery failure. • Aligning sheet piles. • Danger to public and operatives when delivering ready mixed concrete.	• Look-out in attendance. • Open shafts to be covered over and clearly marked or cordoned off. • Provision of adequate access ramp and pile mat.

Excavations for basement floor, Underpinning Foundations, Drainage Trenches, Services Trenches	• Stability of excavations. • Heavy rain fall. • Confined spaces. • Falls into excavations. • Underground services. • Fire/explosion. • Contaminated soils. • Depth of excavation. • Underground drainage. • Water in excavation. • Breaking out obstructions. • Noise from plant. • Contaminated water.	• Injury to persons from collapsing excavations. • Damage to surrounding properties from excessive ground movement. • Injury/illness of site operatives/ personnel, eye/skin irritation. • Injury or electrocution from services. • Flying materials and debris from breaking out. • Gas/fuel pipes/tanks/methane. • Falls. • Hearing damage. • Dust inhalation & ingestion. • Giardiasis Syndrome (Wells Disease etc.).	• Adequate design and provision of suitable temporary propping scheme / permanent works to support excavations. • Monitoring of ground movement by installation of movement and vibration sensor monitoring points on site and surrounding buildings. • Properly sequenced phasing of excavation and propping. • Installation of Ground Water well points to control water ingress within excavated basement. • Leave soil formation 100mm above final excavation prior to excavation to final formation level. • Refer CIRIA reports. • HSE guidance notes. • Undertake survey to determine location of existing underground services crossing site and those within immediate vicinity. • Check with statutory authorities for underground services and drainage. • Protective barriers to be provided around all excavations. • Provision of all PPE. • Provision of pumps etc. to remove excess water. • Check for contaminated subsoils in excavations. • Disposal of contaminated materials to licensed tip. • COSHH assessment of materials. • Safe access to be provided with all necessary safety rails, harness, etc. • Investigate adjacent structures/ foundations. • Testing manholes, contaminated ground, etc for gas/methane. • Provide adequate personnel cleaning facilities on site.

Concrete works.	• Collapse of formwork/ shuttering/props. • Stability of framework. • Falls from heights. • Handling reinforcement. • Placing concrete • Sharp edges. • Spillage of materials. • Falling objects/debris. • Overhead working. • Projecting reinforcement. • Cement/concrete. • Weight of wet materials. • Delivery of ready mixed concrete.	• Tripping. • Injury from collapsing formwork, shuttering/frames. • Manual handling/muscular-skeletal injuries. • Injury/illness/skin irritation/inhalation/ ingestion. • Falls. • Fixing reinforcement. • Danger to public and operatives when delivering ready mixed concrete.	• Properly sequenced phasing of RC frame structure construction and removal of temporary propping scheme phased to coincide with basement construction of RC structure and removed only upon confirmation of required concrete design strength achieved. • Allow for concrete in fluid state. • Provision of all PPE. • Adequate design and specification of temporary works and supervision and installation. • Adequate design and specification for formwork, propping and adequate supervision and checking of installation. • COSHH assessment of materials. • Refer to HSE guidelines/notes. • Provision of guardrails and barriers. • Refer to building advisory services publications. • Provision of adequate lifting facilities. • Provision of off-street standing ready mixed concrete lorries.
Construction of brick and block work.	• Stability of walls during construction. • Weights of materials and components. • Falls. • Falling objects, debris. • Cement. • Off-loading. • Manoeuvring blocks in position. • Dust, debris, drilling when cutting & chasing. • Projecting ties. • Sharp edges. • Noise.	• Falling walls – injury to personnel. • Manual handling/muscular-skeletal injuries. • Falling components and debris. • Control of off-loading. • Illness/injury/skin irritation/ inhalation/ingestion/ cuts/hearing damage. • Falls.	• Walls to be temporarily supported laterally during construction. • Provision of adequate and suitable lifting facilities. • Provision of adequate scaffold, scaffold access towers, ladders with appropriate guardrails, toe boards, etc. all to be checked and inspected regularly by competent person. • Mechanical sawing and cutting of block and bricks to size and cutting chases. • Provision of all appropriate PPE. • COSHH assessment of materials. • Protect ends of projecting ties.

Steelwork Erection	• Weight of materials. • Sharp edges. • Raising and lifting material. • Site welding. • Site bolting. • Overhead working. • Cutting steelwork. • Falls from heights. • Manoeuvring steelwork into position. • Off/unloading materials.	• Control of off-loading materials, danger to operatives and general public. • Fire and explosion. • Falling materials, components, debris. • Manual handling/musculo-skeletal injuries.	• Refer to specification. • Protection against falling materials and components. • Protection from falling objects and debris. • Adequate and proper lifting facilities. • Hot work permits. • Adequate scaffolding, scaffold towers, including edge guards and guardrails. • Provision of all PPE. • Refer to British Standards and/or Codes of Practice for assembly and erection of steelwork. • Refer to HSE guidance notes and building advisory service publications. • COSHH assessment of paint and materials used for fire protection. • Provision of safety netting, harness, safety lines for erection of steelwork.
Construction and erection of timber framing	• Stability of floors and walls during construction. • Power tools/ cables • Weight of materials. • Falling objects, debris. • Sharp edges. • Raising and lifting material. • Dust, debris, drilling when cutting & chasing. • Site bolting/fixing. • Overhead working. • Cutting timber. • Falls from heights. • Manoeuvring timber into position. • Off/unloading materials.	• Falling walls – injury to personnel. • Electrocution/ trip hazards. • Control of off-loading materials, danger to operatives and general public. • Fire. • Falling materials, components, debris. • Illness/injury/skin irritation/ inhalation/ingestion/cuts/hearing damage. • Manual handling/musculo-skeletal injuries. • Falls/Tripping.	• Refer to specification. • Protection against falling materials and components. • Protection from falling objects and debris. • Adequate and proper lifting facilities. • Adequate scaffolding, scaffold towers, including edge guards and guardrails. • Provision of all PPE. • Refer to British Standards and/or Codes of Practice for assembly and erection of steelwork. • Refer to HSE guidance notes and building advisory service publications. • COSHH assessment of paint and materials used for fire protection. • Provision of safety netting, harness, safety lines for erection of timber.

TERMS, CONDITIONS AND LIMITATIONS OF REPORT

1. General

This report is confined to an inspection of the structural elements of the property only. Therefore, the report excludes any inspection or comment on electrical and mechanical installations, decorative conditions, damp proofing, non-structural timber fixtures, fittings, mouldings, coverings, windows, finishes, etc., and all other non-structural matters.

The purpose of this report is limited to an opinion on the structural condition of the property. We shall only report upon those structural defects that may materially affect the stability of the property and provided that these defects are reasonably detectable at the time of our inspection. Whilst we will use all reasonable skill and care in preparing this report, it should be appreciated that we cannot offer any guarantee that the property will be free from future defects or that existing ones will not suffer from further deterioration.

2. Roof Structures

It should be noted that roofs and roof timbers can be subject to deterioration and it would be necessary for you to make specific arrangements for the inspection of this area if you require confirmation about the condition.

3. Unexposed Parts

Internal inspection is made within the limits of ready accessibility and it is not normal practice to lift floor coverings or floor boards, remove panels or plaster, or move heavier items of furniture. Consequently, we have not been able to inspect woodwork or any other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect. Such unexposed parts may contain problems and you would need to make special arrangements for these areas to be investigated (where practicably possible) if you require confirmation about their condition.

4. Foundations

Where trial holes are excavated as part of a structural report, the condition of the footing and the founding soil relates only to the point of excavation and does not necessarily guarantee a continuation of the same conditions throughout the non-inspected areas of the structure. Whilst such trial pits will usually provide a reasonable indication as to the general state of the foundations and ground conditions, these cannot be determined with complete certainty. However, more detailed investigations could be carried out if we are so instructed.

5. Monitoring

Where the stability of a structure has been confirmed because of a series of monitoring readings during a given period of time, this does not guarantee the future stability of the structure beyond the monitoring period.

6. Disclosure to a Third Party

This report may not be relied upon by a third party for any purpose without the written consent of this practice. Furthermore, this report has been prepared and issued specifically for the benefit of the addressee and no responsibility will be extended to any third party for the whole or any part of its contents.

7. Methane/Radon

Testing for or enquiry about possible Methane presence from geological or organic sources, or the presence of or susceptibility to Radon Gas, have not been carried out as part of the structural report. Whilst the presence of such gases in harmful amounts is not a common occurrence, you should consider whether you wish such a test to be carried out since this may well affect the future value of the property/site and any prospects for future development.

8. Statutory Requirements

Enquiries with local or statutory authorities have not been carried out. Whilst attention may be drawn to any apparent breaches of statutory requirements relative to the building or site, the absence of any such comment does not imply compliance with such requirements.

9. Method of Inspection

External inspection of the building has been carried out from ground level by visual and optical sighting. This method means that parts of the structure may be incapable of inspection and we cannot confirm that they are free from defect. Special arrangements (where practicably possible) would need to be made before inspection of these areas could take place.

10. Contamination

The property and site have not been tested for any form of contamination, pollution or any other environmental impairment and we are unable to make any comment in this regard. However, such matters are an important consideration and may well affect the value of the property/site and any prospects for future development. Specific environmental audits can be arranged with appropriate specialists in this field.

11. Trees and Shrubs

Where there are trees and shrubs in close proximity to the property then there may be a risk of possible subsidence problems in the future and advice should be sought from an Arboricultural Association approved Tree Surgeon on the need for tree and shrub reduction or removal.