Pre-development Arboricultural Survey and Report

Land at 26 Christchurch Hill, Hampstead London NW3 1LG

A report to: Erica Jong Architect on behalf of Mr. Ron Pascalovici

Date: 27th October 2016

Report No: WAS 28/2016 REV A

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Report Verification

This study has been undertaken in accordance with British Standard 5837:2012 “Trees in relation to design, demolition and construction - Recommendations”.

Disclaimer

The contents of this report are the responsibility of Wassells Arboricultural Services Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Wassells Arboricultural Services Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees and groups on site and to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

Introduction and Scope of Report

This document has been produced to provide a detailed survey of trees that could be affected by the proposed development and that are within, surrounding and nearby to this report site demise.

The scope of this report follows the recommendations and guidance described within ***BS 5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations*** which sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.

The report will assess the quality, amenity and landscape value of all surveyed trees as described by the tree category system within BS 5837 (see section below).

The protection of all trees to be retained and where they are likely to be affected by the proposed development construction activities are described as provisional Tree Protection Measures, which are for information purposes only and shall require a site specific Arboricultural Method Statement once a final plan is agreed.

The report will also indicate, where necessary, the likely impact the proposals may have on those trees in the future.

The report will also recommend any required tree works to enable access and also to mitigate potential damage from construction activity and for the future well being of the trees concerned.

This is intended to support the planning application for development of this site.

The tree survey for the site can be found in Addendum 3 below

Abbreviations:

RPA = root protection area

CEZ = construction exclusion zone

CWA = construction working area (including materials storage)

AMS = arboricultural method statement

TPO = tree preservation order

AS = Arboricultural Supervision

Arboricultural Impact Assessment

Proximity of Proposed Development to existing Trees

Ref: Addendum 1 -Table 1, Addendum 3

All trees in or near the above site have been surveyed and that information is shown in addendum 3 below.

The site proposed for development forms approximately the northern half of the whole garden, which surrounds the listed property in Hampstead. The garden is situated on the side of a hill and is surrounded on two sides by Christchurch Hill to the west and Well Road to the north.

All the trees T1 to T8 that form part of the survey are situated on the boundary of the site that surrounds the proposed development area, except for T7 which is a recently planted pot grown Olive tree in a raised bed and T8 which is a Sweet Gum street tree near to the Northern boundary of the site.

The majorities of the trees surveyed contribute visually to the surrounding area (except Olive tree T7) and have reasonable to important amenity value for this part of high Hampstead.

The trees are within a Conservation area and tree T4 does have an old TPO designation, albeit this tree is moribund and of no value for TPO visual amenity purposes.

Common Lime T2

The proposed development consists of a basement construction to the side and north of the existing building and extending to the north boundary and under the existing office and the Lime tree T2.

The basement is proposed to start at a point below ground level, of 1.65 metres nearest to the existing building and at the point where there is a current terraced level change in the garden. The proposal is to tunnel horizontally from this point to the north in the uphill direction and end up beneath the Lime tree T2 on the northern boundary of the site at an increased depth of over 1.8 metres directly beneath the tree.

The tunneling is proposed to be done using the “pipe jacking “technique and as described by the Price & Myers structural engineering drawings as part of the planning submission. This is a drilling system so there is minimum disruption to the above ground soil area from vibration etc.

The basement area beneath the tree shall extend to cover just fewer than 50% of the typical rooting zone of the Lime tree T2. The depth of retained rooting zone beneath the Lime tree and above the horizontally tunneled roof of the basement is considered to be of sufficient volume to sustain the tree now and in the future. The proposed new basement excavation beneath the tree will not have an effect on the hydro geological setting of the area and as described within the Basement Impact Assessment Report – *Ref. GEA J15258 October 2016*

Extracts of this report from section 9 are shown below for reference purposes

POTENTIAL IMPACT:
The proposed basement extends beneath the water table surface

SITE INVESTIGATION CONCLUSIONS:
Although groundwater will be encountered in the basement excavation, given the relatively open space between the site and the neighbouring properties and given the small number of properties with basement levels, it is therefore considered that the proposed development will not have an effect on the hydrogeological setting.

POTENTIAL IMPACT:
The proposed development will extend within a tree protection zone of a tree to be retained

SITE INVESTIGATION CONCLUSIONS:
There will not be an increase or decrease in surface water run-off into the area below the tree canopy and there will not be a material change in the drainage routes in that surface water will still be drained to combined sewers. The proposed basement extending into the protection zone will maintain a 1.50 m thickness of soil above, and will therefore not have an impact to the hydrology and is unlikely to affect the tree.

The Lime tree shall be monitored over a 3 year period to identify any changes that may occur in condition and growth following the approval and construction of the tunneled basement. This inspection shall be recorded and reported back to the Local Authority as necessary and/or required.

It is proposed to demolish the existing office and dig out behind the foundations to form the new basement below the proposed garage. Piling along the northern edge of the garage next to Well Road is required but this is unlikely to impact the tree. It is proposed to underpin the existing foundations of the garage in order to form the basement walls in that area.

The western foundations of the garage are likely to have formed an obstacle to the root growth from the Lime tree in the past and it is unlikely that excavation beneath the garage shall impact the root zone of the tree.

Please refer to drawing 0036.P.00.005B which shows the section for the proposed basement

Common Lime T6

The proposed outer edge of the basement beneath the existing building does skirt the edge of the typical RPA for this tree.

The foundations of the existing property are likely to have been an obstacle to roots from the Lime tree and it is probable that rooting will have taken place mainly in the grass areas of the garden that surround one side of this tree. However, it is difficult to predict where the main rooting of this tree is because of the topography of the site and its location next to a road on a steep hill.

The proposed contiguous piling that forms the outer edge of the basement shall need to be undertaken with the minimizing of impact to any roots that may be present in the piling line. This shall be covered as an AMS and as part of the construction management plan for the site.

Culinary Apple T1

This tree is in poor condition and is proposed for removal and replacement as part of a landscaping scheme for the site.

Remaining trees T3, T4, T5, T7 & T8

None of these trees shall be impacted by the proposed development.

Protection during construction shall be required for these trees.

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Tree Protection Measures - AMS

Ref: Addendum 1 & 2

**** Please also refer to Construction Management Plan – ref. Pro-forma V2 Price & Myers October 2016****

Excavation within RPA of Retained Trees

Ref: Addendum 1

* **Please see addendum 1 section on Excavation within RPA of retained trees.**

- Care shall need to be undertaken when carrying out the piling along the outer edge of the RPA of Lime tree T6.
- Prior to piling starting as above, the top 0.5 metre of ground shall be hand dug to determine if there are any roots there and if so all roots above 25mm in diameter are to be pruned by an Arborist. AS to be on site when this work is carried out
- The tunneling beneath Lime tree T2 is to start at a minimum depth of 1.65 metres below the existing lower terrace level and as shown on the Price & Myers structural engineering drawings

Tree Protection Barriers & Construction Exclusion Zone

***Please see specification for tree protection barriers shown below**

- Tree protection barrier to be as : Site Hoarding specification in addendum 1 below
- The line of the tree protection barrier is shown on drawing 0036_P_00_004_B below in addendum 5

Ground Protection of Existing Surfaces within Root Protection Area (RPA) of Nearby Trees

Ref: Addendum 1

* **Please see addendum 1 section on Ground Protection System**

- The existing paving and raised bed beneath the Lime tree T6 is to be retained during construction and to act as ground protection for the RPA of this tree
- On-site ground protection is required and is as described by the hatched area on drawing 0036_P_00_004_B below in addendum 5
- Ground protection to be as specified in addendum 1 below

Access Facilitation Pruning & Tree Works

Ref: Addendum 2

- Recommended tree works are shown in the end column of addendum 3 below

Site Access and Construction Working Area (CWA)

- To be outside of the tree protection barrier as described on drawing 0036_P_00_004_B below in addendum 5

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Site Storage and Accommodation

- Not to be within the RPA of retained trees
- Not to be within the CEZ areas as shown on drawing 0036_P_00_004_B below in addendum 5
- Spoil pile location to be as shown on drawing 0036_P_00_004_B below in addendum 5

Installation of Services

- Arrangements for this element of the development of the site are unknown as at time of writing this report but are likely to remain as existing.
- Changes to the service routes will be carefully considered using the AS below to advise on protection of nearby trees prior to commencement on site.

Arboricultural Supervision (AS)

- AS shall be required during work within and adjacent to the RPA of retained trees. It must be undertaken at regular intervals with a written record of the meetings maintained with suitable photographic record in support.
- The AS must include a pre-construction commencement site visit, to be arranged by the Site Manager under instruction from Architects, and thereafter at specific events that affect the retained trees on site to enable sign-off by the AS. These are typically as follows:

1. Erection of tree protection fencing
2. Installation of ground protection to retained trees whose RPA are affected by the CWA
3. Start of Excavation/piling of foundations within the RPA of retained trees
4. Tree pruning requirements to prevent crown damage from construction activity
5. Start of Excavation/installation of paths, roads and car parking within RPA of retained trees
6. Installation of underground services within the RPA of retained trees
7. Tree condition survey on completion of construction work

Conclusion

Provided the recommendations shown above and the methodology for protection of any retained trees are followed, there will not be an effect on the current or future condition of those trees that are retained as part of the proposed scheme.

Tree Grading Categories

Ref: Grading Category as per BS 5837:2012 Section 4.5 Table 1 & Table 2 – Tree quality assessment chart. Tree Survey Schedule in Addendum3 below for description of trees categorized

The grading categories are based on the following criteria:

A= those trees of high quality and value with an estimated life expectancy of at least 40 years

B= those trees of moderate quality and value with an estimated life expectancy of at least 20 years

C= those trees of low quality with an estimated life expectancy of at least 10 years or with a stem diameter of less than 150mm

U=trees of such a condition that they cannot realistically be retained as living trees in the context of the current land use

NG = not graded. Those trees not considered to be in any of the above categories

Categories A, B and C have further sub-categories with regards to the reasons for tree retention as follows:

1: Mainly arboricultural qualities.
2: Mainly landscape qualities.
3: Mainly cultural values, including conservation.

Trees categorized within this report:

1 Category A trees = none

2 Category B trees = T2, T4 and T6

3 Category C trees = T3

4 Category U trees = T1 and T5

5 NG trees = none

Trees proposed for removal on this site:

T1

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Age Categories and Distribution

Those trees assessed as being young (Y) in age can generally be considered to have significant growth potential. Whilst these specimens are not likely to make a substantial contribution to the landscape character of the site at present they will, if retained, provide succession for the eventual removal of mature or over- mature trees as a result of declining physiological or structural condition.

Semi mature trees (SM) will generally make a significant contribution to the landscape character and appearance of the site and their retention will provide more immediate succession. These trees will also have significant growth potential.

Mature trees (M) are not considered to have significant future growth potential and have generally reached their maximum expected size for the location. These trees will generally make the highest contribution to the landscape contribution of the site however a tree stock over dominated by mature trees will require careful management to ensure that continuation of canopy cover can be achieved.

Over-mature trees (OM) do not have the potential to increase in size and may in fact reduce in size as their crowns begin to break up. These trees will often make a significant contribution to the landscape character of the site and are likely to have ecological value. However the retention of these trees within new development must be carefully planned as they are approaching the end of their useful life expectancy and they will often have structural defects. Where over-mature trees are to be retained in new development it is essential that access is available for their eventual removal.

Veteran trees (V) are those that show features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species. These trees have negligible potential to increase in size. Veteran trees are usually of a high ecological value and they will require sensitive management where they are to be retained in new development. As such it is again essential that they are located in areas where access is available to undertake management operations and where there is a reduced risk of harm occurring from failure of the trees.

References

1. BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations
2. BS3998:2010 Tree Work – Recommendations
3. NJUG Volume 4 Issue2 2007 – Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.
4. NHBC Standards – Section 4.2 Building Near Trees
5. British Geological Survey – London & the Thames Valley
6. Principles of Tree Hazard Assessment – Lonsdale 2001
7. Diagnosis of Ill Health in Trees – Stouts & Winter 2004
8. Tree Survey Plan – at end of report
9. Existing and proposed plans – Erica Jung Architect drawings
10. Proposed Engineering plans – Price & Myers drawings
11. Design & Access Statement – Erica Jung Architects
12. Construction Management Plan
13. Basement Impact Assessment - GEA

Declaration

This Tree Survey, Impact Assessment and provisional tree protection measures report, have been undertaken, written and checked by Richard Wassell of Wassells Arboricultural Services Ltd.

The report is provided without prejudice as an objective and professional assessment of the trees described.

Signed: R.J.Wassell Date: 27.10.MMXVI

Richard Wassell. Director

MCIHort MArborA NDArb (RFS) Kew Diploma NEBOSHlevel3

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Addendum 1 – Tree Protection

Ref: BS 5837:2012 in Tables C.1 & D.1of annex C & D

Table 1 -Tree protection measurements

Tree Number As per tree survey plan & schedule	Stem Diameter @ 1.5 metres agl. Millimetres	Root Protection Area (RPA) - Radius *measured from centre of stem* Metres	Tree/Root Protection Area (RPA) Sq. Metres	Affect of building proposal on the total RPA
T1	175	2.1	14	Proposed for removal and replacement to facilitate construction of sunken courtyard
T2	525	6.3	124	Potential for impact – see impact assessment at beginning of report
T3	3 x 250	4.2	55	Not affected
T4	900	N/A		Not affected
T5	250	3	28	Not affected
T6	800	9.6	290	Potential for impact – see impact assessment at beginning of report
T7		N/A		Not affected
T8	150	1.8	10	Not affected

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Protecting Root Zone of Trees (BS 5837:2012 section 6.2 Figs. 2 & 3):

The Root Protection Area (RPA)

This is the area surrounding a tree that is deemed to contain sufficient roots and rooting volume to maintain the trees viability in the future. The root system is typically concentrated in the uppermost 600 – 1200mm of the soil and is not necessarily symmetrical around the tree, being dependant on a number of factors such as water, nutrients, oxygen, soil penetrability and physical obstructions such as existing foundations or changes in level (terracing).

The RPA is a design layout tool that is deemed to be a minimum area around a tree where the protection of roots and soil structure are treated as a priority. This area is envisaged as and portrayed with a circle around each tree but where there appears to be restrictions to root growth the circle is reshaped to reflect more accurately the likely distribution of the rooting area of the tree concerned.

Key Points

1. AVOID building works within the RPA if at all possible but if not then carefully consider the following: where the RPA is likely to be severely affected because of site design constraints then felling and planting replacement(s) trees in a more suitable location on the site will need to be considered.
2. Where possible do not use strip foundations within the RPA, if absolutely necessary consider using a trenching saw or excavate by hand to avoid 'shatter damage' to the root system.
3. Consider using piling techniques for foundations @ maximum 350 mm diameter with ground beams on or above the surface of the root zone.
4. Unless unavoidable, do not exceed entering the root zone by more than one fifth of RPA radius.
5. Do not trench tangentially across the root zone for footings and services unless it cannot be avoided.
6. Consider 'no dig' techniques for services installation, with radial service lines being preferable to tangential across the root zone. Where this is undertaken then boring must be carried out below 600mm deep.
7. Any hard surfacing, paths and roads need to have the same considerations for the RPA and as in the above points. Where possible paths and hard surfacing (patios etc) need to be surface constructed (cellular) and semi-porous to allow water penetration and gaseous exchange into the root system of trees.

Excavation within Root Protection Area of trees

Where trees are to be retained then any proposed foundation, underground services work and hard surfacing such as roads/paths falling within the RPA of trees that are to be retained shall be kept as far away from tree stems as possible(SEE NOTE 1 ABOVE). Where any such works are necessary within the RPA there will be a requirement to dig carefully by hand and ensure any roots encountered of maximum 25mm in diameter shall be exposed and correctly pruned back by a competent Arborist. Where larger roots are encountered of above 25mm in diameter then advice from the Arboricultural Supervisor (AS) for the site must be sought prior to any work being undertaken.

Any roots exposed/ pruned back as part of the above operation shall NOT be left exposed to drying out. All roots exposed/pruned shall be either covered with damp Hessian sacking prior to backfill or backfilled/covered immediately with a suitable open and free draining compost/loam.

Site Hoarding

Site hoarding shall be no closer than 1.5 metres away from the stem of retained trees and consist of 2400mm high x 1200mm wide x 20mm thick plywood sheets supported by minimum 100mm square posts and 100 x 50mm rails with posts at 2.5 metre centres.

Post holes for site hoarding that are required within the RPA of nearby trees shall be dug by hand and are to be a maximum of 300 x 300mm and 450mm deep

Posts to be supported in the ground with 1 bag of “PostCrete” per post or use of “Meta Posts” if applicable

Ground Protection System Specification:

- Level area of RPA concerned by blinding with sharp sand at maximum depth of 50mm
- Lay geo-textile membrane such as ‘Terram’ to cover area concerned
- Cover geo-textile with maximum of 100mm MOT Type 1 sub-base
- Retain MOT type 1 with edge restraint such as 30 x 100mm edging board pegged every 2 metres to prevent migration of the sub-base
- OR
- Use 20mm minimum thickness plywood sheets instead of MOT type 1 and ensure they are secured from moving

Other manufactured ground protection systems are available such as Eve Tracking and can be used as an alternative where suitable.

Addendum 2 – Tree Works

Ref: Addendum 3

Schedule of Tree Works

1. All proposed tree removal and tree pruning works are described in the management recommendations of the tree survey in addendum 3

2. Tree work to be carried out to the following standards and guidelines:

   - BS 3998:2010 Recommendations for Tree Work

   - Tree pruning cuts will be carried out using the 'Natural Target Pruning' technique as defined by: *BS 3998:2010 section 7.2.5 and Fig. 2 The Pruning of Trees, Shrubs and Conifers: George E. Brown & Tony Kirkham – 2nd edition revised & enlarged 2004 and Section 3.1.27 of The Arboricultural Association Specification for Tree Works June 2008.*

   - Crown clean involves removal of dead, diseased & dying wood from tree crown, thinning of overcrowded crown, and removal of Ivy and all epicormic growth within crown including stem & basal epicormic growth.

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Addendum 3 - Schedule of Tree Survey Information – BS5837:2012 section 4.4

SITE: 26 Christchurch Hill, Hampstead London NW3 1LG DATE: 11th February 2016

Tree Number	**Species**	**Diameter Class** mm	**RPA radius** metres	**Height** metres	**Crown Spread** metres	**Crown height**	**Age Class**	**Grading Category**	**Estimated Life Expectancy**	**Structure**	**Physiology, Condition & other factors**	**Management recommendation**
1	Apple	175	2.1	6	N=1 S=1 E=3 W=0	L	M	U	<10	P	D Roots exposed and leaning heavily to the East. Poor quality tree	Remove and replace as part of landscaping scheme at ground level next to steps
2	Common Lime	525	6.3	20	N=2 S=4 E=6 W=3	L	M	B2	20 to 40	M	A Co-dominant stems from 3 metres with possible IBU at fork? Leaning in Easterly direction over shed and garage	Retain LC 4M RC by 2M on garage side
3	Common Lime	3 x 250	4.2	14	N=4 S=4 E=4 W=4	L	M	C2	20 to 40	M	A Previously pollarded at 3 metres. Broken out stem at 1.2 metres, over road with scar and cavity on the stem	Retain LC4M
5	Sweet Chestnut	900	N/A	3				U	<10	Rotten	Moribund very old large stump. Has re-grown with basal shoot and described as T4	
4	Sweet Chestnut	250	3	14	N=3 S=3 E=3 W=3	M	SM	B2	40+	G	A Basal shoot growing from base of T5	Retain
6	Common Lime	800	9.6	20	N=4 S=4 E=4 W=4	L	OM	B2	20 to 40	M	A Co-dominant stems from 2 metres with small wet cavity at the fork.	Retain LC4M RC by 2M on house side
7	Olive			2.5	N=1 S=1 E=1 W=1		Y				Pot grown and recently planted in raised bed	Transplant to elsewhere in the garden as required.

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Tree Number	**Species**	**Diameter Class** mm	**RPA radius** metres	**Height** metres	**Crown Spread** metres	**Crown height**	**Age Class**	**Grading Category**	**Estimated Life Expectancy**	**Structure**	**Physiology, Condition & other factors**	**Management recommendation**
8	Sweet Gum	150	1.8	8	N=2 S=2 E=2 W=2	M	Y	B2	20 to 40	G	AA Street tree growing in pit on south side of Well Road. Good specimen	N

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TREE SURVEY KEY:

Tree Number and Species = number of tree on plan and Common Name as per reference book: A Field Guide to the Trees of Britain and Northern Europe by Alan Mitchell 1974 ISBN: 0 00 219213 6

Height = estimated height of tree from surrounding ground level +/- 3 metres

Diameter Class = diameter of main stem @ 1.5 metres above ground level

Crown Spread = maximum extent of branches measured radially from the base of the tree, trees with asymmetrical crowns are shown with distances in relation to compass points. N = north etc.

Crown Height = height of canopy and/or first major branch above ground level. Low (L) = below 3 metres | Medium (M) = 3 to 6 metres | High (H) = above 6 metres

Age Class = Young(Y): age less than 1/3rd life expectancy | Semi-mature(SM): 1/3rd to 2/3rd life expectancy | Mature (M): Over 2/3rd life expectancy | Over mature (OM): mature and in state of decline | Veteran (V): Surviving beyond typical age range for species

Grading Category: As per BS 5837:2012 Table 1 – Tree quality assessment, which refers to tree quality and landscape/amenity value; A=high, B=moderate, C=low, U = not suitable for retention, NG= not graded

Estimated Life Expectancy = estimated useful and remaining contribution to the site in years

Structure = structural condition of the tree based on roots, trunk, and major stems/branches along with the presence of any structural defects and decay organisms. Categories are: Very Good (VG); Good (G); Moderate (M); Poor (P); Hazardous (H)

Physiology/Condition = Overall health, condition and function of the tree in comparison to a 'normal' specimen of its species and age. Categories are: Above average (AA); Average (A); Declining (D)

Other factors = any other physical/environmental factors that could influence the tree now/in the future

Management Recommendations: N = no work required**. CC** = removal of dead, diseased & dying wood from tree crown, thinning of overcrowded crown, removal of Ivy from crown & stem and removal of all epicormic growth within crown including stem & basal epicormic growth on Lime trees.**LC** = lift crown. **TC** = thin crown. **RC** = reduce crown. **P** = pollard. **SP** = scaffold pollard. **RE** = remove epicormic and basal growth. **FP** = Formative prune **F** = fell to ground level. **FG** = fell and grind out stump. **R** = carry out replacement planting. **AI** = 3 yearly Arboricultural inspection

RPA radius = radius of typical root protection area, described as a circle and measured around centre of the tree

N/K = not known

 # = estimated data

NDG = Next door garden

g.l. = ground level

Alan Mitchell System = Estimate of tree age based on open grown tree with full crown. Age in years = Girth (circumference) in centimetres measured at 1.5 metres above ground level and divided by 2.5 i.e. Tree of girth 250 cm = 100years old

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Addendum 4 – Tree Protection Barriers and Tree Care Flow Chart

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CONSTRUCTION EXCLUSION ZONE

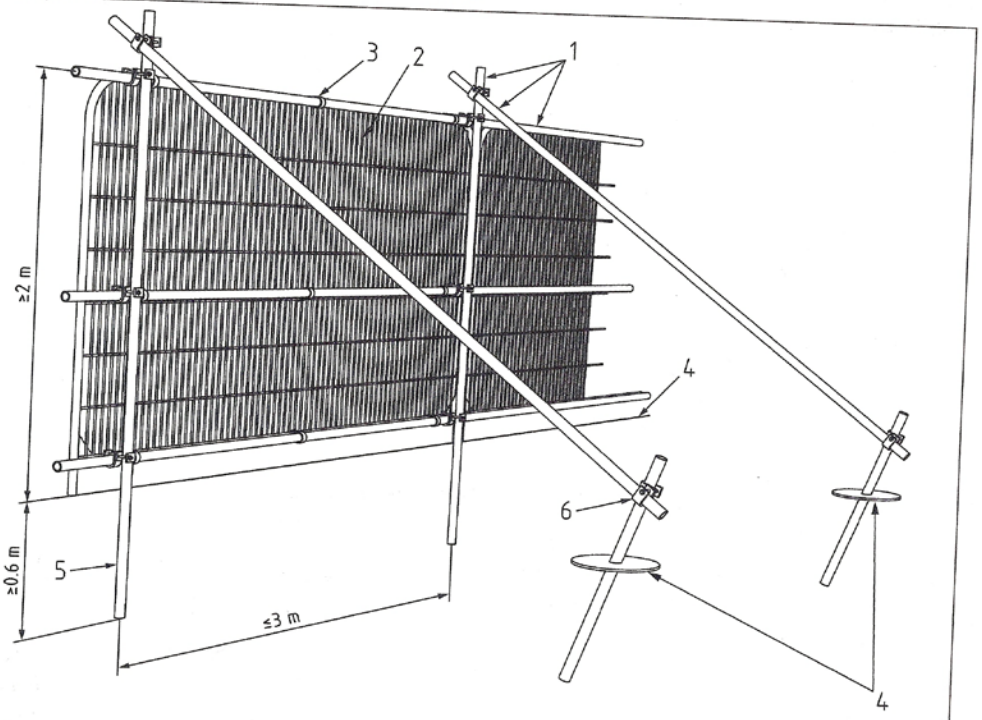
NO ACCESS

PLEASE REPORT IMMEDIATELY ANY DAMAGE TO TREES OR FENCING TO THE SITE MANAGER

TO BE LAMINATED SIZE A3 AND FIXED TO EVERY TREE PROTECTION BARRIER PANEL

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

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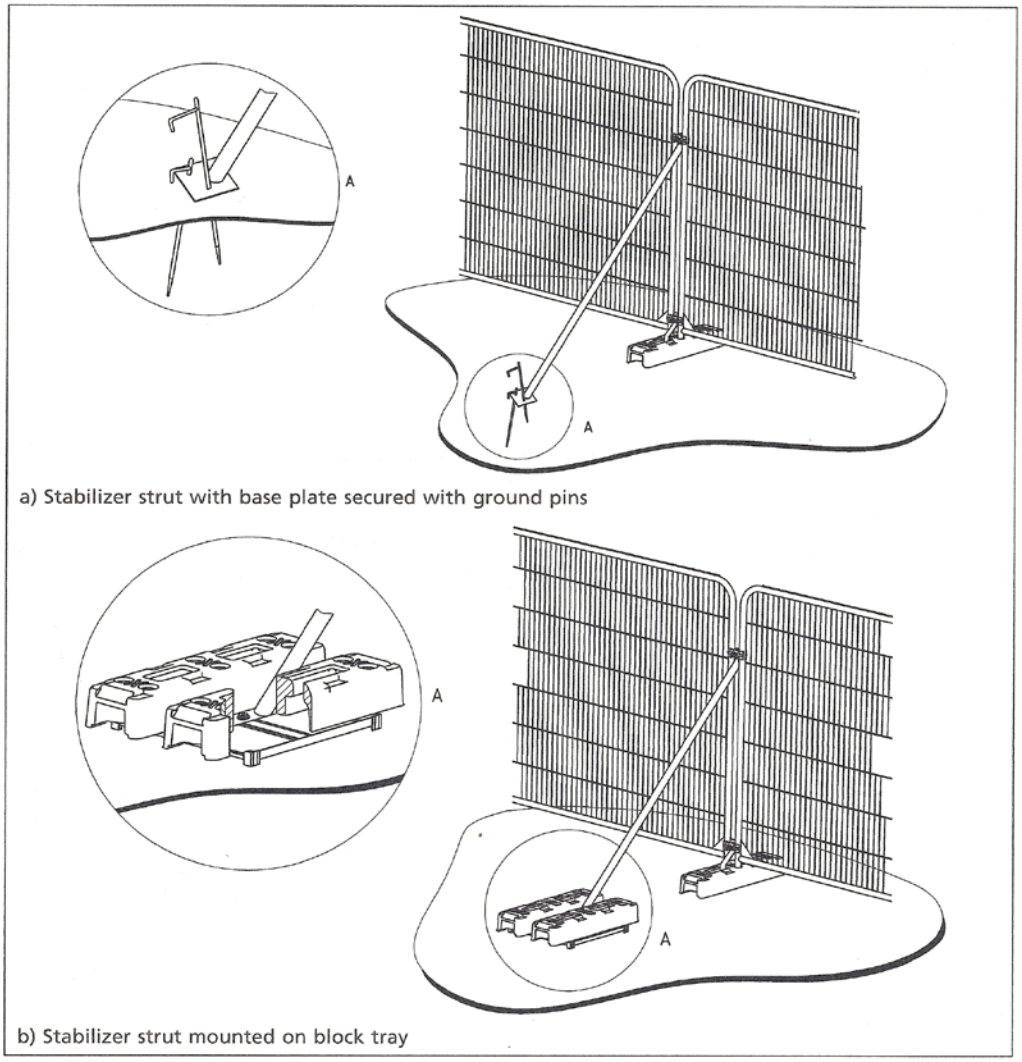
Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

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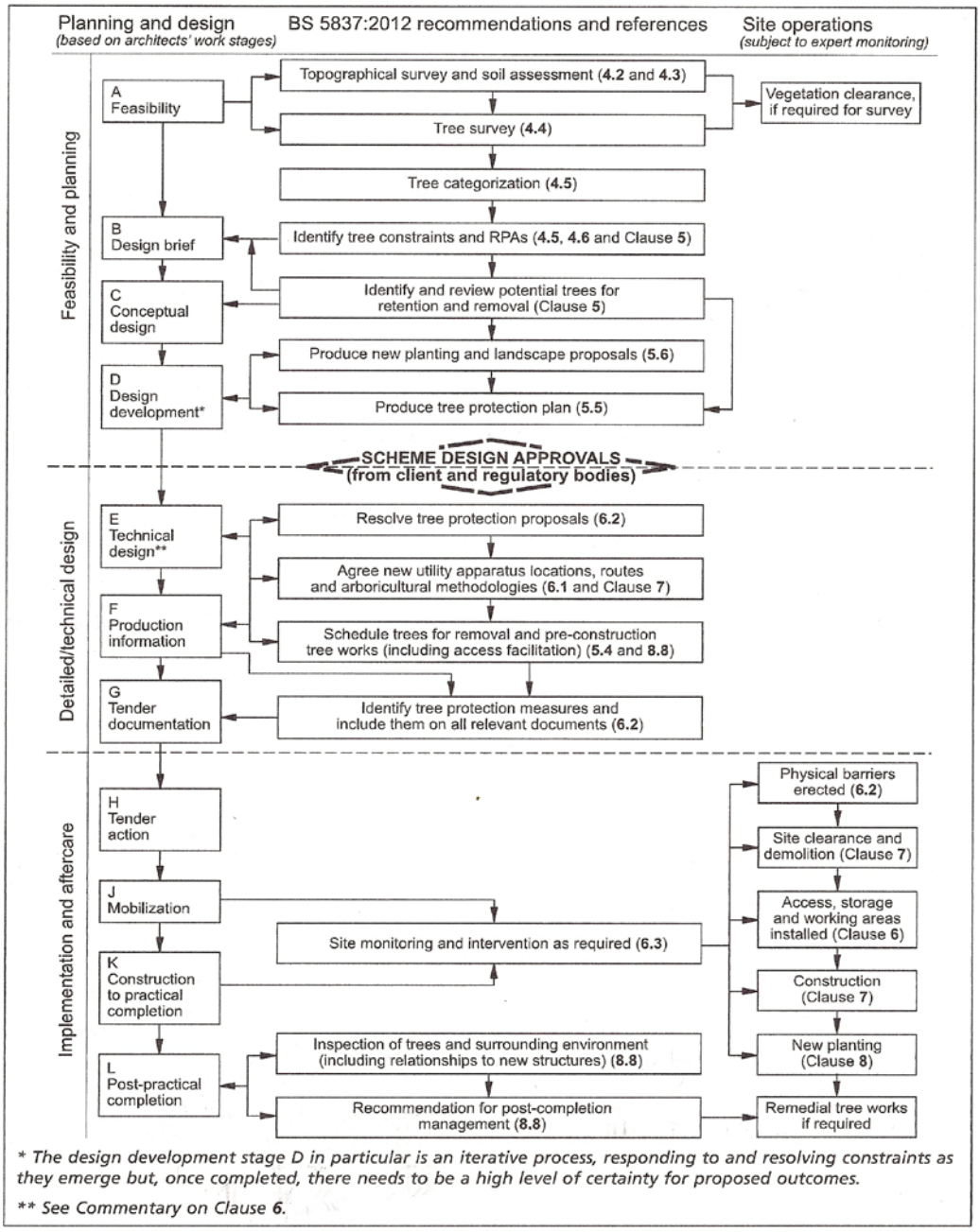
Figure 1 **The design and construction process and tree care**



** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause 6.*

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Addendum 5 – Plans and Picture Gallery

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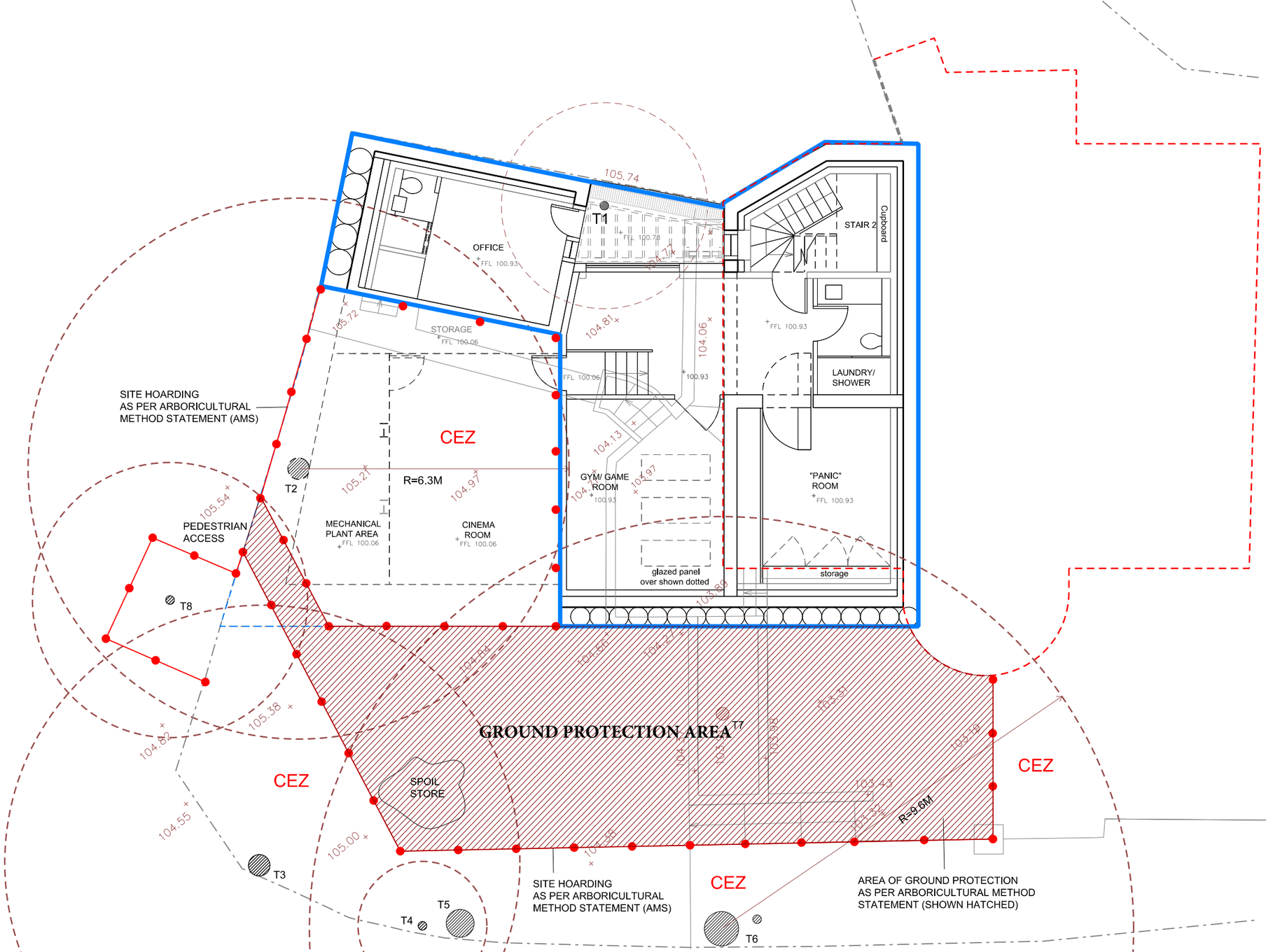


LEGEND

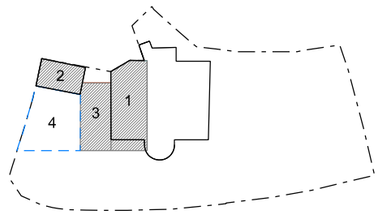
- EXISTING HARD LANDSCAPING
- EXISTING FOOTPRINT OF THE MAIN DWELLINGHOUSE
- PROPOSED BASEMENT FOOTPRINT
- PROPOSED 'TUNNEL' SECTION OF THE BASEMENT FOOTPRINT
- 104.37 EXISTING SPOT LEVEL
- FFL 100.98 PROPOSED FINISHED FLOOR LEVEL
- PROPOSED LINE OF CONTIGIOUS PILING
- DENOTES TYPICAL TREE PROTECTION AREA

● ● ● = LINE OF TREE PROTECTION BARRIER

TREE SURVEY INFORMATION (SEE ADDENDUM 3)

T1 = CULNARY APPLE
T2 = COMMON LIME
T3 = COMMON LIME
T4 = SWEET CHESTNUT
T5 = MORIBUND SWEET CHESTNUT (TPO)
T6 = COMMON LIME
T7 = OLIVE (GROWING IN RAISED BED)
T8 = SWEET GUM (STREET TREE)

1. CEZ = CONSTRUCTION EXCLUSION ZONE
2. FACILITATION PRUNING AS REQUIRED BY REPORT TO PREVENT UNNECESSARY DAMAGE TO TREE CROWNS



1 PROPOSED BASEMENT FLOOR PLAN

REVISION

-	04.03.2016	ISSUED FOR PRE-PLANNING APPLICATION ADVICE (2016)
A	15.10.2016	DRAFT - ISSUED FOR INFORMATION
B	24.10.2016	ISSUED FOR LISTED BUILDING CONSENT & PLANNING APPLICATION

NOTES:
- THIS IS A "SCHEME LEVEL DRAWING" AND IS INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT OF THE PROJECT PROPOSALS FOR THE PURPOSE OF PLANNING APPLICATION
- THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION
- DO NOT SCALE FROM THIS DRAWING
- ALL DIMENSIONS MUST BE VERIFIED FROM SITE

1cm 5cm
1m 5m

CLIENT MR RON PASCALOVICI

PROJECT 26 CHRISTCHURCH HILL
LONDON NW3 1LG

TITLE PROPOSED BASEMENT FOOTPRINT
WITH SITE CONSTRAINTS

DWG No 0036.P.00.004_B

1:50 @ A1
SCALE 1:100 @ A3

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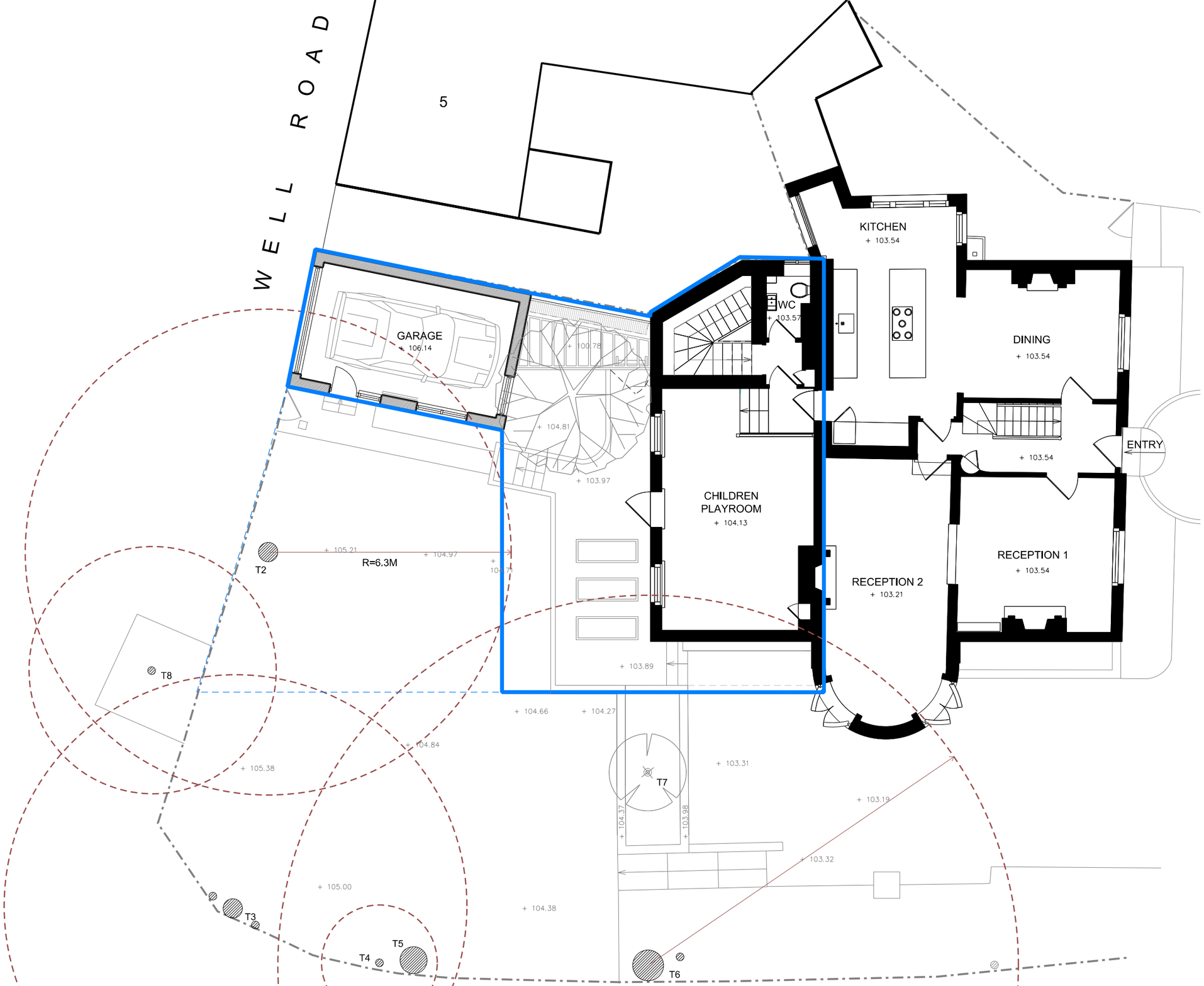
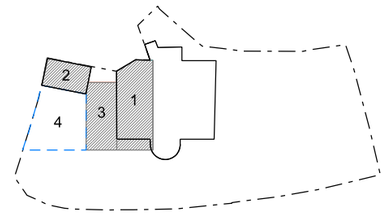


LEGEND

- EXISTING HARD LANDSCAPING
- EXISTING MAIN DWELLINGHOUSE
- EXISTING STUDIO TO BE DEMOLISH & REBUILD BASED ON ORIGINAL MATERIALS & DESIGN
- PROPOSED BASEMENT FOOTPRINT
- PROPOSED BASEMENT 'TUNNEL' FOOTPRINT
- 104.37 + EXISTING SPOT LEVEL
- +FFL 100.98 PROPOSED FINISHED FLOOR LEVEL
- PROPOSED LINE OF CONTIGIOUS PILING
- DENOTES TYPICAL TREE PROTECTION AREA



1 PROPOSED GROUND FLOOR PLAN

REVISION

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1cm 5cm
1m 5m

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LONDON NW3 1LG

TITLE PROPOSED BASEMENT FOOTPRINT
@ GROUND FLOOR
WITH SITE CONSTRAINTS

DWG № 0036.P.00.005_B

SCALE 1:50 @ A1
1:100 @ A3

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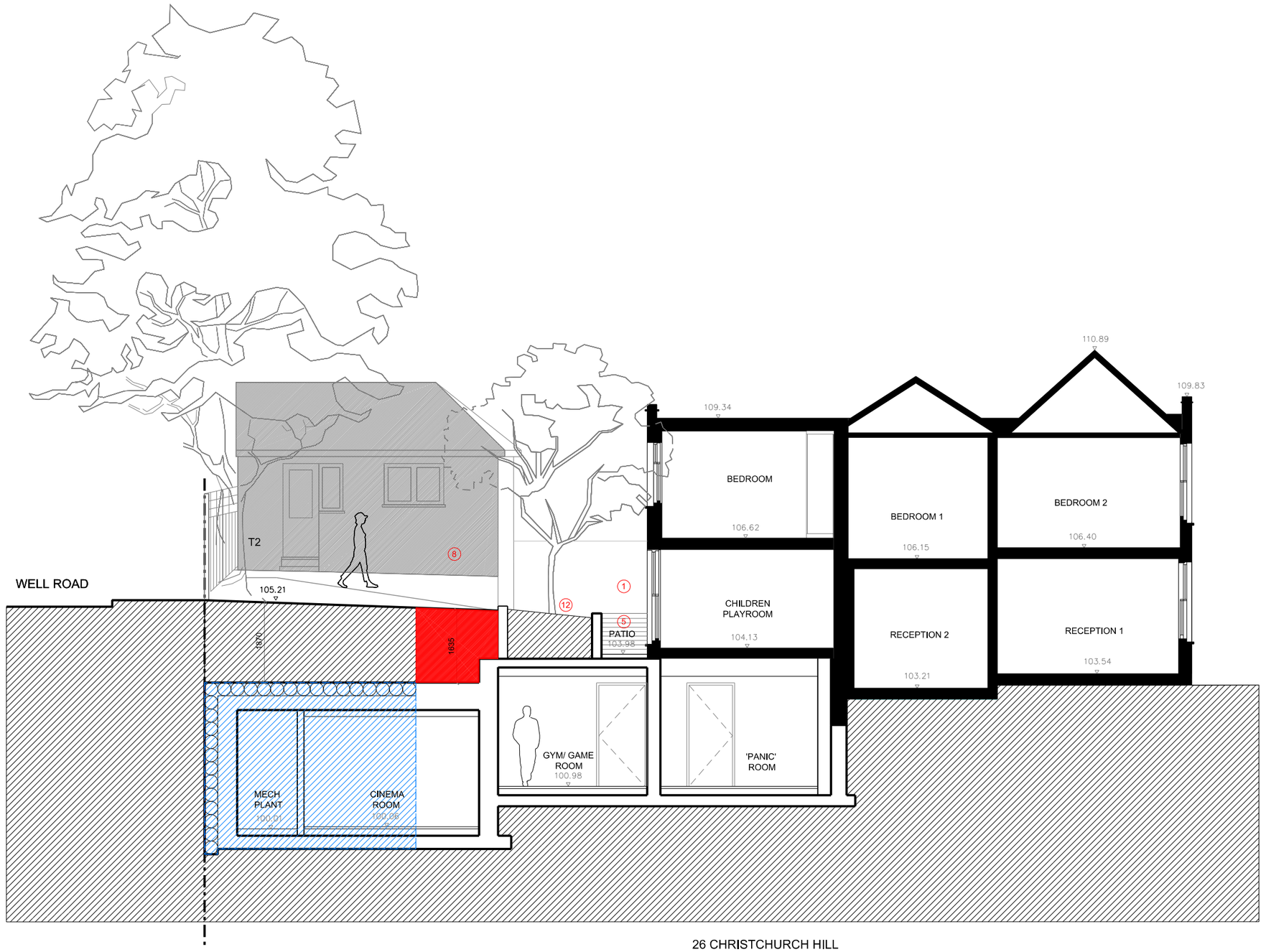
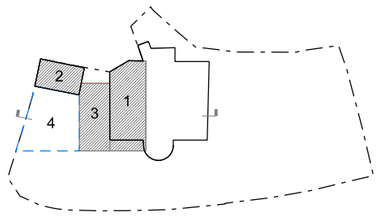


26 CHRISTCHURCH HILL

LEGEND

- EXISTING MAIN DWELLINGHOUSE
- PROPOSED BASEMENT STRUCTURE
- DEMOLISH & REBUILD BASED ON ORIGINAL MATERIALS & DESIGN
- PROPOSED 'TUNNEL' SECTION OF BASEMENT
- AREA FALLS WITHIN RPAs - PROPOSED TRADITIONAL CONSTRUCTION METHOD
- 103.98 PROPOSED FINISHED FLOOR LEVEL
- PROPOSED 'TUNNEL' CONSTRUCTION - ROOF & WALL FORMED BY PIPE-JACKING



1 PROPOSED SECTION

REVISION

-	04.03.2016	ISSUED FOR PRE-PLANNING APPLICATION ADVICE (2016)
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1m 5m

CLIENT
MR RON PASCALOVICI

PROJECT
26 CHRISTCHURCH HILL
LONDON NW3 1LG

TITLE
PROPOSED BASEMENT SECTION
WITH SITE CONSTRAINTS

DWG No
0036.P.00.006_B

SCALE 1:50 @ A1
1:100 @ A3

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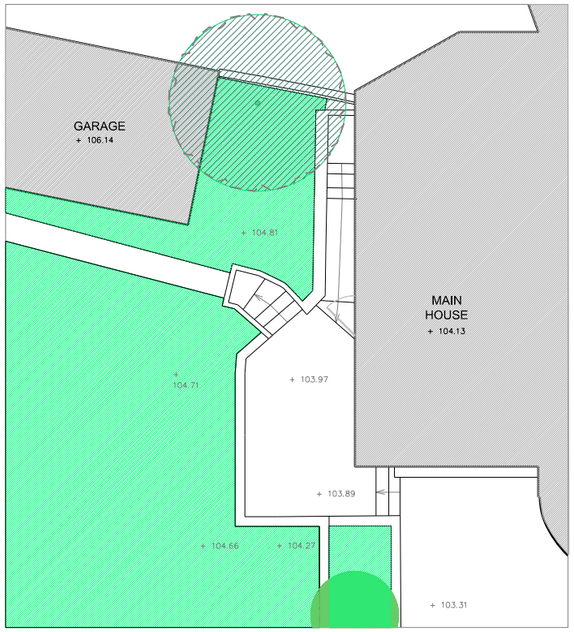
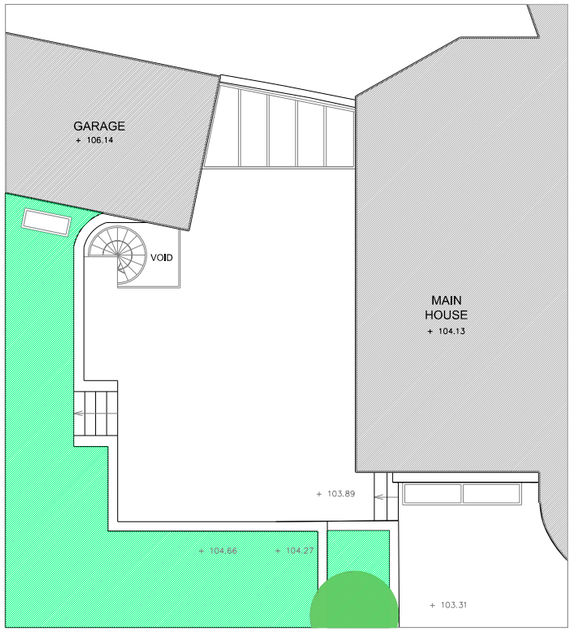
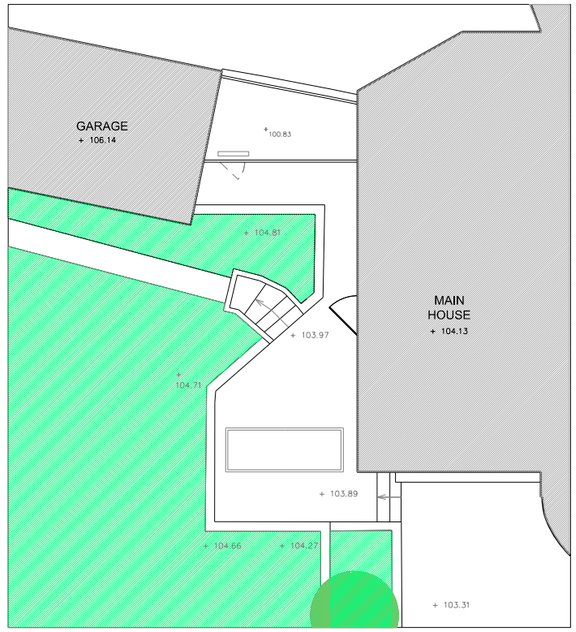


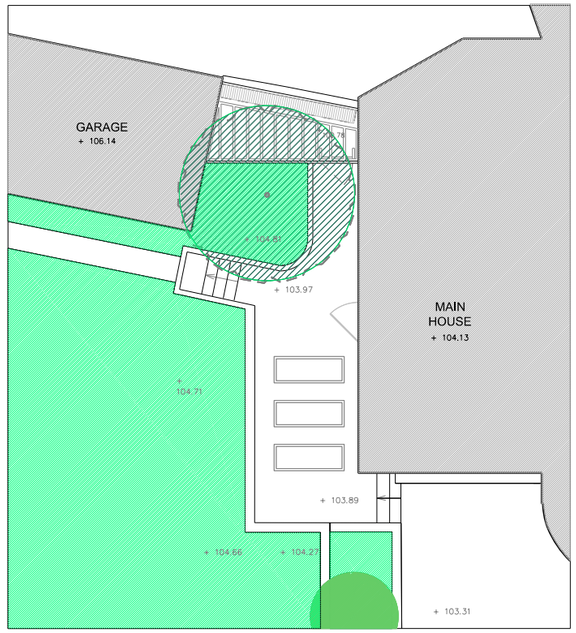
1 EXISTING LAYOUT



2 PRE-PLANNING APPLICATION (2014)



3 PRE-PLANNING APPLICATION (2016)



4 LISTED BUILDING CONSENT & PLANNING APPLICATION

REVISION

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A	24.10.2016	ISSUED FOR LISTED BUILDING CONSENT & PLANNING APPLICATION

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1m 5m

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PROJECT 26 CHRISTCHURCH HILL
LONDON NW3 1LG

TITLE EXTERNAL LANDSCAPE STUDIES:
EXISTING, PRE-APP 2014, 2016 & PROPOSED PLAN

DWG No 0036.P.00.008_A

SCALE 1:100 @ A1
1:200 @ A3

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View of Lime T6 and Sweet Chestnut T4 from existing patio area next to house. Sweet Chestnut T5 can be seen as moribund stem near base of T4

Lime T2 from existing patio next to house and showing lean towards the existing office building (proposed to become a garage)

View of Sweet Chestnut T4 and Lime T3 looking West from the house