

Arboricultural Impact Assessment



Beaulie House, Compton Avenue, Highgate

16th March 2023



**Tyler
Grange**

TG Report No. 13343_R01a_RA_LB

Report No:	Date	Revision	Author	Checked
13343_R01a	16 th March 2023	A	Rob Anderson Fdsc, Nd Arb, MArborA	Jack Jewell, BA(Hons), MLA CMLI

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Summary

- S.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Limited (TG) on behalf of BÜF Architecture Ltd to accompany a full planning application for the renovation and extension of Beaulieu House, Compton Avenue, Highgate.
- S.2. The site is currently vacant and includes a single detached house that was constructed c1920, with gardens surrounding it on all sides. To the east is an in-out driveway that curves around a small lawn that contains a large oak tree growing within it. The remaining trees on site consist predominantly of yew, hornbeam and sycamores that are growing along the site periphery.
- S.3. The proposed development consists of extensive renovation with a rebuild of the majority of the building and the addition of a basement level. The eastern facade of the building is to be retained and protected throughout the construction on the site.
- S.4. This report provides details of a tree survey and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.
- S.5. Prior to the tree survey being undertaken the design team held a pre-application meeting with Haringey Borough Council. Within this meeting comments were made regarding trees, noting they would not support the removal of high-quality specimens.
- S.6. The whole site is covered by an area Tree Preservation Order (TPO) reference Order No.1, 1954 and this protects all the trees that were growing when the order was made in 1954. The site is also within the Highgate conservation area.
- S.7. Although not surveyed as an A Category tree, tree T5 is a large oak growing within the front garden and is prominent within the street seen of Compton Avenue and is therefore identified as the principal tree on site.
- S.8. TG initially produced a tree constraints plan following the baseline BS5837 survey work, working alongside the project design team to steer the emerging layout. The tree survey data has been considered during the design of the proposed layout with respect to avoiding impacts to the principal tree stock where possible. Trees requiring removal to facilitate the development are therefore predominantly of lower categories (Category C & U trees) with the removal of three B category specimens also required. These trees will be replaced as part of the development's soft-landscaping scheme.
- S.9. This report assesses the impact of the proposed development from an arboricultural perspective with initial recommendations for the protection of the retained trees during the construction phase of the proposed development. Should planning consent be granted, further work is recommended to include the preparation of a full Arboricultural Method Statement (AMS) alongside full construction details. This work can be secured by a suitably worded planning condition.



Section 1: Introduction

Purpose

- 1.1 This Arboricultural Impact Assessment and Method Statement has been prepared by Tyler Grange Group Ltd (TG) on behalf of BÜF Architecture Ltd. It is accompanied by a Tree Retention and Removals Plan and forms part of a planning for the extensive renovation of Beaulieu House, Compton Avenue, Highgate (hereafter referred to as 'the site').
- 1.2 Full planning permission is sought for the renovation of this site, with the proposed layout being included at Appendix 1 to the rear of this report for reference.
- 1.3 This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).
- 1.4 The application is to be submitted to Haringey Borough Council (HBC). HBC local planning policy and national planning policy pertinent to trees is set out at Appendix 2.
- 1.5 This report represents a revision to the previously submitted report dated 11th May 2021. The proposed scheme has been revised following officer consultation comments from the planning application. This report has been updated to reflect the scheme updates.



Section 2: Tree Survey Findings

Site Description

- 2.1 The site is centred on grid reference TQ 27206 87652 and its approximate boundary is demarked in blue at Figure 1 below. The site is located within the private road of Compton Avenue and is bordered on three sides by mature neighbouring gardens.



Figure 1. Satellite image of the site (Imagery © 2020 Google Maps).

- 2.2 Trees that are present on site consist of mature sycamore along the northern boundary with an understory of laurel and smaller yew trees. Along the east is a large multi stemmed Oak tree growing within the front garden and several yew and hornbeams in the south eastern corner. The southern boundary only has three small low-quality trees that are predominantly willow. The whole length of the western boundary is a group of large mature laurel that were found to be growing on both sides of the boundary fence but more substantially within the neighbouring property.

Tree Survey Summary

- 2.3 A tree survey was completed in accordance with BS5837 and the methodology as detailed at Appendix 3. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.



- 2.4 The original survey was completed by a suitably qualified Arboricultural Consultant of Tyler Grange in March 2021. To inform the resubmission, a tree survey verification and update was completed in March 2023 to confirm the tree survey baseline. No material changes to the baseline were noted which includes the below:
- Tree T19 has been recorded which is a Category U Turkey oak
 - Tree T11 previously recorded as a Category U) has been removed from the site, likely due to its poor condition.
 - Tree T1 (sycamore) was considered for a Category downgrade to Category C from Category B. Category B has remain due the Tree Officer concurrence with the tree categorised on-site however it should be noted that this tree falls within the lower banding of Category B, and it could be argued that its restricted location / context limited its future life expectancy to below 40 years.
- 2.5 The distribution of the trees groups and hedgerows surveyed is illustrated on the Tree Constraints Plan (TCP), which includes plotted details of their constraints to new development in accordance with BS5837, including:
- Tree quality gradings¹;
 - Root Protection Areas (RPAs)²;
 - Tree canopy spreads³; and
 - Tree shading⁴.
- 2.6 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (See Appendix 5). This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.
- 2.7 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (See Appendix 4) recommended by the BS5837. The grading system allows informed decisions to be made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.
- 2.8 A breakdown of category gradings across the trees, groups and hedgerows surveyed is provided in Table 1 below.

¹ The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.

² a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. See further explanation at Appendix 3.

³ Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.

⁴ Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.



Table 1: Category Grading of Arboricultural Features

	Category U	Category A	Category B	Category C
Trees	T19	None	T1, T5, T7, T9, T10, T15, T17	T2, T3, T4, T6, T8, T12, T13, T14, T16, T18
Groups	G4	None	None	G1, G2, G3, G5
Hedgerows	None	None	None	H1
Woodlands	None	None	None	None

- 2.9 No veteran or ancient trees are present on/within influence of the site.
- 2.10 No trees on this site were found to be of high quality (Category A) at the time of the survey.
- 2.11 Trees of moderate arboricultural value (Category B) are denoted by a Blue tree canopy outline as illustrated on appended plans. Trees of low arboricultural value trees are denoted by a Grey tree canopy outline as illustrated on the appended plans. Trees were found in the survey to have a life expectancy of less than 10 years (U Category) are denoted with a red canopy.
- 2.12 Tree T5 is a large mature Oak tree growing within a small, grassed area within the driveway of the existing property. Although a prominent within the street seen of Compton Avenue and being one of the larger oaks in the area, it lacked the special quality necessary to merit the category A designation. The tree is twin stemmed from 1m forming two main stems, the upper crown has evidence of historical pruning, additionally the canopy appeared slightly sparse which warranted a 'fair' physiological condition rating. Overall, the tree was awarded a B categorisation.
- 2.13 Tree T17 is a large sycamore growing in the north western corner of the site. The tree is growing on a steep bank down to a retaining wall within the neighbouring property. The stem bifurcates at 0.5m forming a tight fork with included bark, the stems go on to form an upright, dense canopy with many rubbing branches. Overall, the tree is of moderate quality and was given a B categorisation.
- 2.14 Across the site are multiple features that will have acted as a barrier to root growth. These include the existing dwelling within the RPA's of T1 & T5. Retaining walls within the RPA's of T2-T4, T14 & T17. Additionally, the levels difference between the site and the neighbouring property to the north has resulted in a steep bank with a drop in levels of up to c3m and associated retaining structures. As can be seen on the TCP and TRRP the RPA's have been adjusted to account for these features in accordance with section 4.6.2 of BS5837:2012.

Tree-related Designations

- 2.15 Following a background check of with Harringay Borough Council on the 19th of March 2021, the presence or absence of tree-related designations was confirmed and have been detailed in Table 2 below.



Table 2: Tree-related Designations

Designation Type	Tree Reference Numbers
Tree Preservation Order ⁵	All trees growing in 1954 are protected by TPO reference TPO No1 1944 area A1
Conservation Area ⁶	The site is within the Highgate Conservation Area
Ancient Woodland ⁷	None
Woodland Habitat ⁸	None

⁵ A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁶ Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁷ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for ancient woodland on or adjacent to a site.

⁸ Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for woodland on or adjacent to a site.



Section 3: Arboricultural Impact Assessment

- 3.1. The baseline tree constraints have formed part of the overall design phase of the proposed development layout with respect to minimising the impact of arboricultural features of value. An arboricultural impact assessment has been completed based on a composite overlay of the proposed site plan and the TCP. The overlay is illustrated on the Tree Retention and Removal Plan (TRRP) located at the rear of this report.

Tree Retention and Removal

- 3.2. The TRRP identifies existing trees to be retained, removed, or pruned to facilitate the development. Further details are provided in Tables 3 and 4 below.

Table 3: Proposed Tree Removal

Category Grading	Tree Reference Numbers	Description of Tree Removal
Category A	None	None
Category B	T7	Removal of tree to allow for construction of driveway expansion.
	T14	Removal to allow the construction for the patio. The tree was found to be growing on lean to the south. Its location to the rear of the existing means it is unlikely to have significant detrimental visual impact on the wider area due to its limited visibility
	T17	Removed to allow for the construction of the proposed basement and above ground extension. This tree is growing within 2m of the neighbouring property and found to have a tight fork with included bark, these two factors mean its long-term retention is unlikely
Category C	T2 & T3	To be removed to allow for the widening of the driveway leading to garage.
	G2 & T8	Removal to allow for expansion of driveway.
	T16	Removal to of a low value and poorly managed trees to provide clearance within proposed garden space and terrace area.
	T18	Tree to be removed due to proximity to proposed dwelling.
Category U	T19	Removal of dead Turkey Oak to facilitate the main construction area.
	G4	Cluster of Hornbeams that have suffered from fire damage leading to decay within there lower stems.

- 3.3. Tree removals are predominantly limited to the sides and rear of the property and are partly or completely screened from view to users of Compton Avenue via buildings or other vegetation that is to be retained. The removal of the trees to the rear of the property will therefore not have a detrimental impact on the treed nature or overall context of the road from an arboricultural perspective.
- 3.4. Replacement trees will be proposed through landscape design and will help mitigate for the removals shown by providing robust long-term tree cover in keeping with the proposal and



surrounding properties. There is room within the layout for replacement planting along the northern and southern boundaries including in the area adjacent to T17.

Proposed Tree Pruning

Table 4: Proposed tree pruning works

Category Grading	Tree Reference Numbers	Description of Tree works required
Category A	None	None
Category B	T15	Prune back were shown on TRRP to provide clearance over terrace area and in the interest of tree canopy management in the garden space.
	G3	Prune back were shown on the TRRP to give a 1.75m clearance from the edge of the proposed patio.
	G1 & G5	Light pruning back of understory trees to allow room for proposed garage and boundary access.
Category U	None	None

- 3.5. It should be noted that group G3 was observed growing both on site and within a neighbouring garden and the portion of G3 that lies within the site was found to be of low quality and could be replaced with better specimens whilst not affecting the screening value of the group as a whole given the majority of the group was growing offsite.
- 3.6. It is recommended that a further post-development review of the tree condition is completed to identify any requirements for remedial tree pruning to ensure trees are retained in a safe condition.

Construction Mitigation

- 3.7. BS5837:2012 section 6.2.1. states: '*All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone.*
- 3.8. Preliminary locations for tree protection fencing have been shown on TRRP. Detailed fencing locations and specifications can be addressed via a fully detailed method statement (AMS) through a suitably worded planning condition should consent be granted.

Construction Working Room

- 3.9. The site is very confined with regards to working room so to be able to provide suitable access whilst protecting the trees the existing driveway within the RPA of T5 will be retained throughout the construction process up to the landscape stage in order to act as ground protection to the underlying roots. This will allow access and storage of materials within an area of existing hard surfacing.



- 3.10. Working room has been shown within the RPA of tree T1 to allow for the construction of the garage and side passage pathway. These areas will become part of the hard surfacing for the patio and pathway areas at a later date.

Building Construction Within RPAs

- 3.11. BS5837:2012 states at section 5.3.1: *'The default position should be that structures (see 3.10) are located outside the RPAs of trees to be retained. However, where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the tree(s) (see Clause 7). If operations within the RPA are proposed, the project arboriculturist should:*
- a) *demonstrate that the tree(s) can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA;*
 - b) *propose a series of mitigation measures to improve the soil environment that is used by the tree for growth.'*
- 3.12. The construction of the extensions both to the north and south of the existing building result in small incursion into the RPA of T5. These have been measured on AutoCAD at being 2.07m² which is the equivalent to 1.6% of the unsurfaced ground within the RPA. As such these small incursions will not have a significant detrimental effect on the tree and can be suitably mitigated via sensitive working with respect to tree roots in these areas. The proposed basement is design to be contained to the area of the existing building footprint. This is an intention design measure to ensure the RPA of T5 remain unaffected. There will therefore be no impact to the Tree T5 as a result on the basement design.
- 3.13. The construction of the proposed garage is shown within the RPA of T1 a category B sycamore. The resulting incursion is measured at 5% of the RPA which is a small but to reduce the impact the wall of the garage will be cantilevered. So that the garage floor meets in the finished floor levels of the whole site, a shallow excavation is needed within the upper 20cm of the soil to allow for the supporting structure to be installed. To ensure minimum disturbance this excavation will be undertaken by hand under the supervision of the project arboriculturist.
- 3.14. The proposed basement has been designed to be contained to the footprint of the existing building foundation the intentionally require no excavation impacts within the RPA of T1.
- 3.15. Construction of a sunken patio, proposed within the RPA of T15 will result in a loss of 5% of the RPA. There is however root-able soil contiguous to the RPA that will serve to compensate for the loss of available rooting volume determined by the RPA. To help compensate for the loss of the rooting environment the tree protection fence is proposed to cover a much greater area than the area lost. With sensitive working in this area and selected clean pruning of roots (if encountered) the retention of the tree is considered possible given its early mature age class and good physically condition.

Proposed Hard Surfacing within RPAs

- 3.16. The proposed expansion of the driveway is shown within the RPA of tree T5. This has been measured at 20% of the notional rooting area. As per section 7.4.2.3 of BS5837:2012 this incursion is at the recommended maximum area of new hard surfacing within existing unsurfaced ground.



For note the area proposed for the parking when assessed against the full RPA equates to an incursion of only 6%, which is small enough not to be significantly detrimental to the trees vitality. It should also be noted that the southern entrance into the driveway will be removed and returned to soft landscaping which will be a benefit to the tree.

- 3.17. The scheme has been revised to remove the proposed patio and footpath access area on the side of the garden next to tree T1. This is a positive change in relation to the protection of the tree.

Demolition works

- 3.18. It is confirmed that no demolition works are to take place within the RPA's of retained trees. The front facade of the building is to be retained and a steel framework constructed to support it through the rest of the building works. These supports will be located within the existing driveway area on existing hard surfaced ground, limiting impacts to the rooting environment of T5.
- 3.19. The southern driveway entrance will be removed and returned to soft landscaping within the RPA's of T5 and T6, this will be done with the use of hand tools to minimise the disturbance to the underlying ground. This work will take place at the landscaping stage of the project when the new driveway is laid.
- 3.20. To ensure damage does not occur to the retained trees on this site, the tree protection fencing, will be installed prior to any plant machinery entering the site.

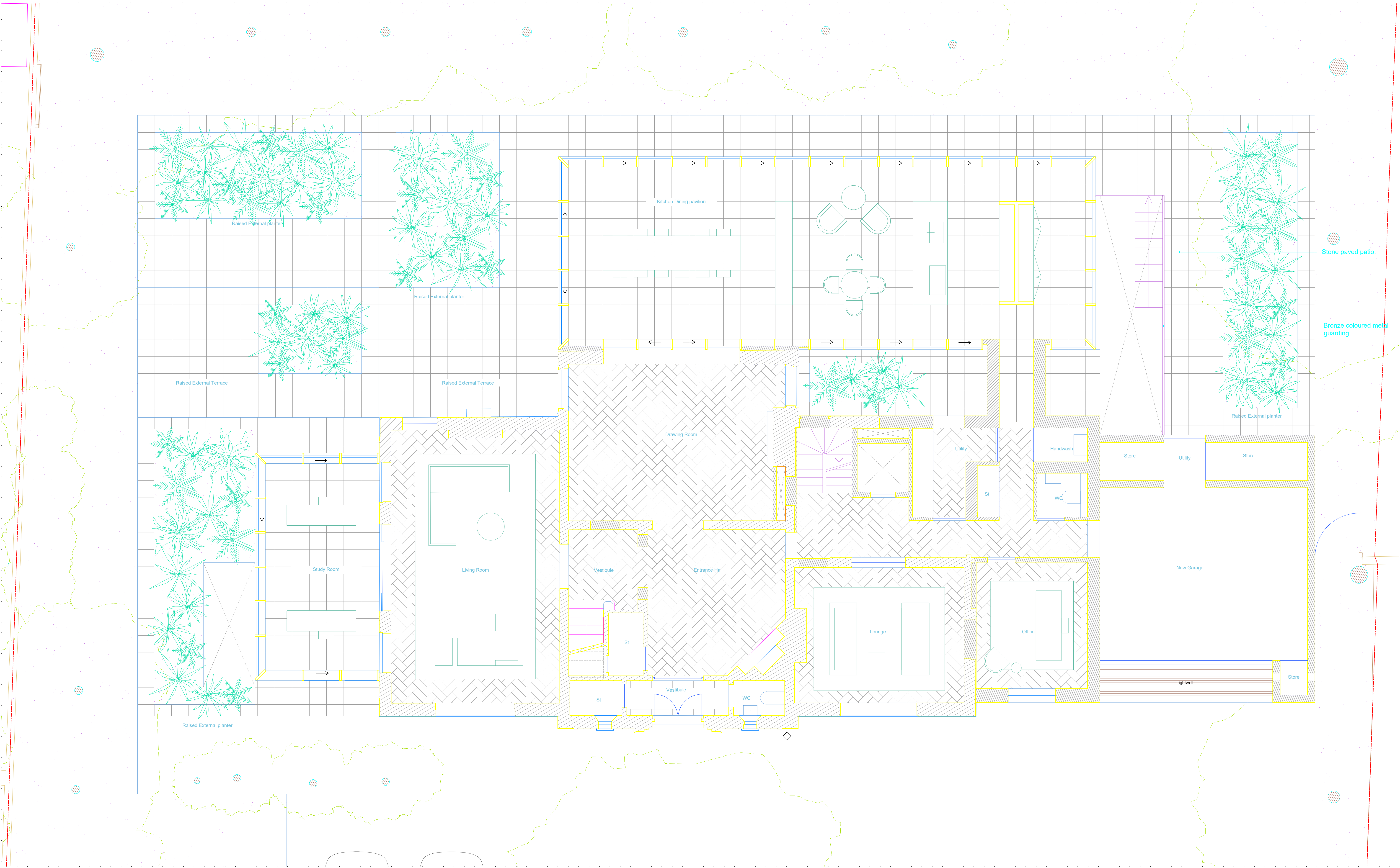
Conclusion

- 3.21. No category A (high value) trees within the site need to be removed. The three category B trees that need to be removed can be replaced with suitable mitigation planting along the northern and southern boundaries so to keep the green separation between neighbouring properties as requested within the pre-app comments.
- 3.22. The cantilevered garage will result in little impact on the neighbouring tree T1.
- 3.23. Trees can be protected as part of the construction stage of the development which will be addressed by way of a detailed Arboricultural Method Statement that builds on the initial strategy for tree protection as detailed within this report. Should consent be granted, a condition securing the preparation and adoption of an Arboricultural Method Statement is therefore recommended.



Appendix 1: Proposed Site Plan





General notes:

Do not scale from drawings.
Errors to be reported immediately to the Architect.
To be read in conjunction with all relevant Architects', Services and Structural Engineers' drawings.
All existing site, tree and building information has been compiled from different sources.
All dimensions to be checked on site.

Comments:

Key:

- Site Boundary
- Existing Wall
- New Wall

Rev.	Date	Description	Drawn	Check
A	11.01.23	Revised Planning Proposal	JS	GM

Rev.	Date	Description	Drawn	Check

Key Plan



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Status

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As Proposed
Ground Floor Plan

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A

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XX

Element

DR

Drawing no.

20-P111

Revision

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Appendix 2: Planning Policy Context

National and Local Planning Policy

- A2.1. The consideration for existing trees and woodlands in relation to planning and new is set out within Section 15 'Conservation and Enhancing the Natural Environment' within the NPPF.
- A2.2. Paragraph 175 states that "development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensatory strategy exists".
- A2.3. At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'. No veteran, ancient trees or ancient woodlands are present to be affected by the proposed development and therefore para 175 as it relates to these features is not considered applicable to the application.
- A2.4. Local planning policy relating to trees and new development is set-out at saved policy OS2 of the London Borough of Harringay Highgate Neighbourhood plan (2017) as set-out below.

Policy OS2: Protection of Trees and Mature Vegetation

- I. *Within the conservation areas or when protected by a TPO, specimen, veteran and mature trees and mature vegetation, which have townscape, ecological or amenity value should be retained where possible. If such loss is shown to be absolutely necessary, new development will be expected to submit proposals for suitable replacements, like for like replacement being supported where appropriate and feasible.*
- II. *Developments will be expected to preserve or enhance the character of Highgate's conservation areas, and the setting of the major open spaces. This should include, where necessary, the provision of new or replacement planting. There should be no net loss of trees of as a result of development; and pro rata replacement will be expected. The development should not harm the local network of ecological corridors and stepping stones, unless the need for, and benefits of, the development in that location clearly outweigh the loss.*
- III. *Within the conservation areas or when protected by a TPO, if a mature tree is found to be diseased and requires works significantly reducing its ecological or amenity value, appropriate replacement planting will be sought as close to the original site of the tree as possible. Veteran trees should be retained where possible.*

Note Policy OS2 seeks to build on the importance placed on the retention and protection of mature trees by national and local strategies and policies, including those published by Haringey and Camden. Too often, developers submit reports which conclude that ancient or mature trees at the site are diseased, and either need complete removal or such extensive works that their ecological and amenity value is substantially diminished. Haringey's "Validation Checklist" sets out the requirement for an arboricultural impact assessment to be submitted where tree works are involved.



Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations



Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations

Field Work

- A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).
- A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.
- A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

- A3.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land typography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

- A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.
- A3.7. The measured canopy shapes have been plotted on the Tree Constraints Plan at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will



use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.

- A3.8. The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

- A3.9. The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

- A3.10. An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

- A3.11. An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.

Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.



Tree Quality Gradings

A3.12. The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See Appendix 4). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.

Root Protection Areas

A3.13. The Tree Constraints Plan shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.14. Plotted RPAs serve as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

A3.15. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- b) topography and drainage;
- c) the soil type and structure;
- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.16. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

A3.17. The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at Appendix 5 to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

A3.18. The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight



and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.

- A3.19. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

- A3.20. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.
- A3.21. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

- A3.22. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A3.23. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.
- A3.24. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.



Appendix 4: Cascade Chart for Tree Quality Assessment



Appendix 4: Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	Criteria			Identification on Plan
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).			DARK RED
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.			
	Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Plan
	1.Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits.	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY



Appendix 5: Tree Survey Schedule



Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Sycamore	16m	644	4.00	4.00	4.50	5.00	4.00	Mature	Good	Fair	B2	Growing within restricted rooting area stems measured at 44 & 45cm. stem divides below 1.5 , stem divides again at 2m forming 3 main scaffolds, central scaffold has an area of necrotic bark at base.	7.7	188
T2	Hornbeam	9m	210	2.00	2.50	2.50	2.50	3.00	semi mature	Fair	Fair	C2	Distorted lower stem, pruning wounds and drawn up crown	2.5	20
T3	Yew	7m	330	0.50	2.50	3.00	2.00	2.00	Mature	Fair	fair	C.1	Growing atop of bank, onside crown to south, ivy in crown	4.0	49
T4	Yew	8m	410	3.50	3.00	2.50	3.00	3.00	Mature	Fair	fair	C2	Stem divides at 1.5m forming tight fork and upright branch architecture. canopy is sparce for spp	4.9	76
T5	Oak	21m	940	8.00	5.50	8.00	6.50	5.00	Mature	Fair	Good	B2	Stems of 66 & 67cm stems divide at 1m forming two main stems. bark wounds at ground level on SW and SE sides measuring up to 40cm across, wound wood forming on all sides. Evidence of historical crown reduction, scattered minor dead wood, multiple pruning wounds that are occluded on main stem	11.3	400
T6	Yew	5m	220	2.00	2.50	2.50	2.00	1.00	Early mature	Good	Fair	C2	Growing on boundary, prominent in street seen	2.6	22
T7	Yew	7m	432	4.00	4.00	4.00	4.00	2.00	Early mature	Good	Fair	B2	Minor pw on stem crown crown lifting	5.2	84
T8	Laural	4m	160	1.50	1.50	1.50	1.50	1.00	Mature	Fair	Poor	C2	Decay in lower stems	1.9	12

Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T9	Hornbeam	11m	290	3.00	4.00	3.00	4.00	2.00	Early Mature	Good	Fair	B2	Historically pruned now regrown with multiple leaders	3.5	38
T10	Hornbeam	12m	340	3.00	3.00	3.00	3.00	2.00	Mature	Good	Fair	B2	Historically pruned now regrown with multiple leaders. wisteria from neighbours growing into crown, slight sweep to stem	4.1	52
T11	Category U - removed														
T12	Variegated Holly	3m	80	3.00	1.00	0.00	1.00	0.00	Semi mature	Good	Poor	C2	Swept stem	1.0	3
T13	Goat willow	9m	200	3.00	3.00	0.50	2.00	2.00	Semi mature	Good	Poor	C2	Multi stemmed with tight falk	2.4	18
T14	Hornbeam	14m	530	5.00	5.00	4.00	8.00	4.00	Mature	Fair	Poor	C2	On all sides around the base of the tree are areas of exposed with areas of derogation visible. stem on lean to south	6.4	127
T15	Hornbeam	9m	250	4.00	4.00	4.00	4.00	2.00	Early mature	Good	Fair	B2	Slight kink in lower stem	3.0	28
T16	Hornbeam	14m	330	2.50	4.00	4.00	3.00	3.00	Mature	Good	Fair	C2	Stem divides at 1m forming competing leaders. tree has been topped and now regrown	4.0	49
T17	Sycamore	17m	870	3.00	5.00	5.00	5.00	3.00	Mature	Good	Fair	B2	Growing off site at top of bank down to neighbours path then house. tight fork from 0.5m with included bark. upright dense branch architecture	10.4	342

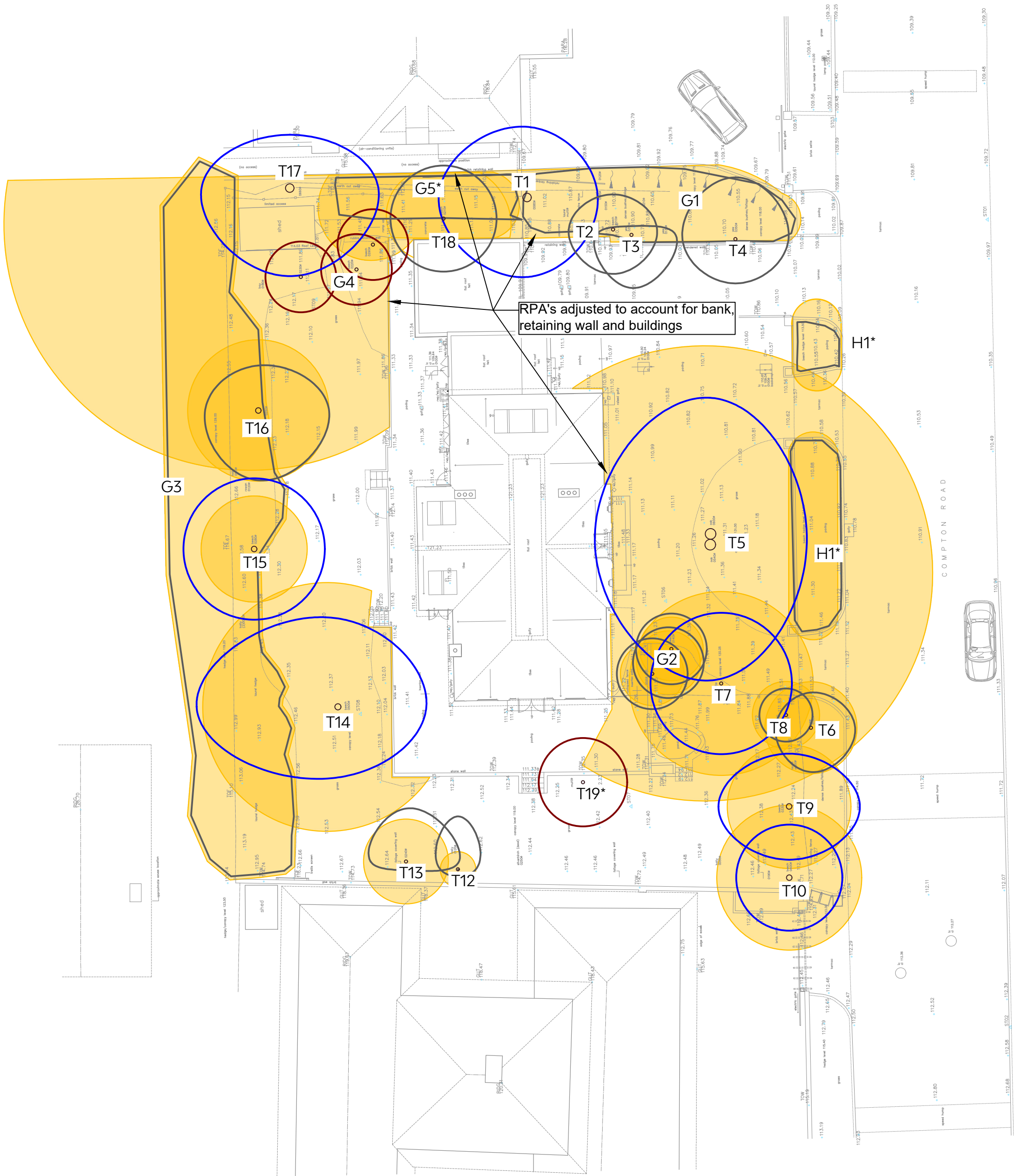
Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T18	Hornbeam	8m	210	3.00	3.00	3.00	3.00	3.00	Early mature	Fair	Fair	C2	Large pw on stem from crown lifting	2.5	20
T19	Turkey Oak	-	5x50	2.50	2.50	2.50	2.50	-	-	Poor	Poor	U		-	-
G1	rhododendron, laural	3m	120	As shown on plan				0.00	Mature	Fair	Fair	C2	Area of mature shrubs along boundry	1.4	7
G2	Beech, Hornbeam, Cherry Laurel	5m	150	2.00	2.00	2.00	2.00	1.00	Early mature	Fair	Fair	C2	Group of 3 trees with large pruning wound and distorted stems	1.8	10
G3	Laural, Holly	4m	130	2.00	2.00	2.00	2.00	0.00	Mature	Fair	Fair	C2	line of mature bushes growing on both sides of the fence, ones inside the site could be replaced with better specimens without losing screening due to taller mature plants off site	1.6	8
G4	Hornbeam	10m	230	2.00	2.00	2.00	2.00	2.00	Earlier mature	Poor	Fair	U	Fire damage on lower stems with decay precent	-	-
G5	Laural	2m	120	2.00	2.00	2.00	2.00	3.00	Early mature	Fair	Fair	C2	Boundry group of laural shrubs	1.4	7

Plan 1: Tree Constraints Plan



- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Root Protection Areas

*Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.



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B
A
Rev

Updated following site visit
Revised RPA to T17
Description

15.03.2023
18.03.2021
Date

Project title
Beaulieu House, Compton Avenue,
Highgate

Drawing title
Tree Constraints Plan

Scale
Date

1:200 @A2
15.03.2023

Drawn
Checked

RA
JP

Drawing number
13343_P01

Revision
B

Plan 2: Tree Retention and Removal Plan



Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Application Boundary

Proposed Tree Removals

Proposed Tree Pruning Works

Tree Protection Barrier Locations (indicative)

Basement outline

**Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.*

020m

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A	New layout received	15/03/2023
Rev	Description	Date

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Beaulieu House, Compton Avenue,
Highgate

Drawing title
Tree Retention and removal Plan

Scale Date	1:200 @A2 15.03.2023	Drawn Checked	RA JJ
Drawing number	13343_P02	Revision	A



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