BS 5837:2012 Arboricultural Report

21 The Green, Southgate, N14 7AB

Produced for:

Mick Higgins

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Document Amendment History

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1. Introduction

1.1 Terms of Reference

Maydencroft Limited was commissioned by Ardstone Interiors to produce a full BS 5837 Arboricultural Report in support of a proposed rear extension, basement, and garden house works to the private residence, 21 The Green, Southgate, N14 7AB.

The report has been produced in accordance with British Standard 5837:2012 *Trees in relation to Design, Demolition and Construction – Recommendations* and is intended to inform the planning stages of the proposed works. The report provides information on the location, quality and condition of trees on site in order to ensure that the proposed scheme complies with the requirements of BS 5837:2012 with regard to minimising or, where possible, avoiding impact on the above and below ground parts of any retained trees, in particular any with existing statutory protection. It is also the aim of the report to give pragmatic advice about the removal of trees, or particular surgery works that are deemed necessary to the successful delivery of the scheme.

The content of this report extends to the baseline Tree Survey, Tree Constraints Plan, Arboricultural Impact Assessment, Tree Protection Plan and Arboricultural Method Statement. The combination of the aforementioned documents constitutes a full BS 5837 Arboricultural Report.

1.2 Scope of Works

A survey of all trees within the grounds of 21 The Green, Southgate, including trees within adjoining properties which have the potential to be affected by the proposed works was carried out on Tuesday 3rd October 2023. The extent of the survey was established from plans provided by Ardstone Interiors, and was completed using industry best practice to the standards laid out in BS 5837:2012.

The survey was undertaken by the following consultant who is a permanent employee of Maydencroft Limited,

Name	Position	Qualifications
Nick Seller	Assistant Arboricultural Consultant	Lantra Professional Tree Inspection Level 3 Advanced Diploma in Arboriculture & Forestry Level 4 Diploma in Arboriculture

All trees within the survey were inspected using the Visual Tree Assessment (VTA) methodology, detailed in "The Body Language of Trees" (*Mattheck & Breloer*, HMSO, 1994). This level of inspection does not involve any climbing. Each individual tree was inspected separately and an assessment made of its condition. Where appropriate trees were assessed and recorded as groups.

All singular trees and tree groups have been plotted using a Samsung Galaxy Active Tab3 GPS device, plotted as precisely as possible with accuracy between 1-3m.

Details of all trees are listed in the attached *Tree Schedule* (Appendix B) with quantitative and qualitative information included as required by BS 5837:2012 sections 4.4 to 4.6. The information has been used to create a *Tree Survey Plan* (Appendix C) showing the location of the trees, their crown spread and their BS 5837 categorisation, and a *Tree Constraints Plan* (Appendix D) indicating the Root Protection Areas (RPAs) for each of the trees and other constraints which may impact the works.

1.3 Site Description

The property of 21 The Green is located immediately south of Southgate Green within a suburban community, surrounded by residential properties and gardens to the south, east and west. A small green space separates the property from the junction of Arnos Grove and Cannon Hill to the north. The site contains numerous well established semimature and mature trees covering an area approximately 0.21ha in size.



Figure 1: Property and grounds of 21 The Green (Source; Google Earth 2023)

1.4 Soils

The Soilscapes map of the United Kingdom (developed and hosted by Cranfield University) shows that the area is located within *Soilscape 17*, which is described as slowly permeable, seasonally wet, acid loamy and clayey soils. It should be noted that a site-based soil assessment was not carried out as a part of this survey.

2. Tree Survey

2.1 Designations

After reviewing the online interactive map for Enfield Council, it has been confirmed that the site is located within the Southgate Green conservation area, and that 7 trees inside the grounds of 21 The Green are protected under a statutory Tree Preservation Order which includes the following:

- TPO Schedule G022/TPO Order No 1: 2 x Cypress
- TPO Schedule T123/TPO Order No 1: 1 x Willow
- TPO Schedule T122/TPO Order No 1: 1 x Hornbeam
- TPO Schedule T120/TPO Order No 1: 1 x Yew
- TPO Schedule T124/TPO Order No 1: 1 x Yew
- TPO Schedule T125/TPO Order No 1: 1 x Cypress

It is essential that the local authority is notified and their permission granted before commencement of any tree works required to complete the proposed project. Failure to do so can potentially result in an unlimited monetary fine.



Figure 2: Purple line showing boundary of conservation area, with trees protected by TPO's highlighted in green (Source: Enfield Council Interactive Map)



2.2 Tree Categories

All trees on and in close proximity to the site have been assessed and categorised in accordance with the guidelines in BS 5837:2012. The following table includes a brief summary of the categories:

Trees to be considered for retention											
Category A	Trees of high quality with an estimated remaining life expectancy of at least 40 years.										
Category B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.										
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.										
Trees unsuitable for	retention										
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.										

2.3 Root Protection Areas (RPAs)

The RPAs for the trees recorded by the tree survey have been calculated in accordance with the guidance in chapter 4.6 of BS 5837:2012. For single stem trees, the RPA is equivalent to a circle with radius 12 times the stem diameter capped at a maximum of 15m.

For trees with between two to five stems, the combined stem diameter is calculated by finding the square root of the sum of the stem diameters². For trees with more than five stems, the combined stem diameter is calculated by finding the square root of the sum of the mean stem diameter² multiplied by the number of stems.

2.4 Measurements

Heights and radial spread measurements were wherever possible taken using a TruPulse Laser Measurement tool. Stem diameters were measured at 1.5m height with a diameter tape. Wound sizes and cavity depths were measured in millimetres (mm) with a ruler, tape measure or probe to allow for future monitoring.

2.5 Limitations

2.5.1 Timing of surveys

The survey was carried out during mid-autumn when deciduous trees are still in leaf, which can prevent accurate assessment of the structural condition within the crown. This can impact on the categorisation of trees resulting in a higher quality than is necessary being assigned. However, autumn is also a time of year when fungal fruiting bodies are emerging, highlighting any potential issues of the tree which may lower categorisations.

3. Proposed Construction/Demolition

3.1 Outline Construction/Demolition Proposal

The proposed plans involve the installation of a new basement to the northwest of the property, located underneath the existing double garage and plant room. A ground floor extension to the southwest of the house is included within the proposal, comprising of a gym and swimming pool with a patio to the east of the swimming pool. This application also covers a separate outbuilding to be constructed in the southeast corner of the rear garden to create a garden room.



Figure 3: Proposed rear extension, including gym and swimming pool, with separate garden room (Source: Studio Bau)

3.2 Access

The proposed works to the property will be accessible to construction traffic through the driveway in the northeast corner of the residence from Greenacre Walk that exits onto Arnos Grove. Access to the rear garden will be through the existing gateway east of the property.

4. Arboricultural Impact Assessment

4.1 Introduction

The following Arboricultural Impact Assessment (AIA) reviews the existing condition, quality and location of trees and groups, in context with the proposal for the construction and installation of a new basement and rear extension along the west boundary of the grounds to 21 The Green, and a separate outbuilding along the southeast edge of the rear garden. It identifies locations where it is felt highly likely that trees and tree groups will either need preparatory works, or removal, to facilitate the completion of the new extension and garden room, in particular where retained trees have the potential to be affected by the development proposal and how these are to be either avoided or protected.

The chapter should be read alongside drawings *MH8940-003* Arboricultural Impact Assessment Plan in *Appendix E*.

4.2 Trees to be Removed

T21 and **T23** have been identified as requiring removal to facilitate the installation of the garden room along the south edge of 21 The Green.

	Tree	Total
Category A	•	0
Category B		0
Category C	T21 & T23	2
Category U	•	0

4.3 Preparatory works

G4, **T13**, **T17** and **T19** have been identified as requiring remedial pruning works to facilitate access or construction activities. This work will consist of crown lifting low branches up to 3m above ground level to create sufficient space for construction traffic to enter the site, and for construction related activities to finalise the project.

4.4 Mitigation of tree losses

There is a requirement for mitigation due to the loss of a semi-mature sweet chestnut (T23), and a semi-mature Lawson cypress (T21). The mitigation required will ideally be achieved through replanting elsewhere onsite, with the species chosen for replanting being native, future proof and suitable to the area where they are planted.



4.5 Trees to be retained

The table below, identifies trees that are to be retained as part of the development and identifies whether they are at risk from activities related to demolition, construction, or eventual operational use of the site.

No.	Species	Location	Potential impact of works	Protection of Retained Trees
T2-T10, T33 & T3	Mixed Species	Located in the northwest corner of the front grounds to 21 The Green.	Above ground parts of the trees have the potential to be impacted by construction related activites. The below ground parts of the trees have the potential to be impacted by the storage of plant and materials.	Fencing to be installed to the south and east of the trees along the driveway edge, as per MH8940-004 Tree Protection Plan. Existing hard standing driveway will offer ground protection beyond the fencing.
T1, G1 & G2	Mixed Broadleaf	Locacted on the north boundary of the front grounds to 21 The Green.	Above ground parts of the trees have the potential to be impacted by construction related activites. The below ground parts of the trees have the potential to be impacted by the storage of plant and materials.	Fencing to be installed to the south of the trees along the driveway edge, as per MH8940-004 Tree Protection Plan. Existing hard standing driveway will offer ground protection beyond the fencing.
T11-17 & G3	Mixed Species	Located along the east boundary of the front grounds to 21 The Green.	Above ground parts of the trees have the potential to be impacted by construction related activites. The below ground parts of the trees have the potential to be impacted by the storage of plant and materials.	Fencing to be installed to the west of the trees along the driveway edge and down to the garden wall, as per MH8940-004 Tree Protection Plan. Existing hard standing driveway will offer ground protection beyond the fencing.
T18-20, T22, T24 T27-29, T30-32 & G4-8	Mixed Species	Located in the rear garden to the south of 21 The Green.	Above ground parts of the trees have the potential to be impacted by construction related activites. The below ground parts of the trees have the potential to be impacted by the storage of plant and materials.	Fencing to be installed to the east and west of opposite trees to form a corridor for construction related activities, as per MH8940-004 Tree Protection Plan. Fencing to be installed north of the trees within the rear garden to create a Construction Exclusion Zone, as per MH8904-004 Tree Protection Plan. Ground protection in the form of track matts to be installed as per MH8904-004 Tree Protection Plan.

4.6 Conclusions

The proposed works to 21 The Green will have minimal arboricultural impact given the overall scope of the works, with the removal of two Category C trees, and the requirement for preparatory lifting of two Category B trees, one Category C tree, and a Category C group recommended. This loss of trees can be mitigated through replanting, preferably within the grounds of 21 The Green.

There will be some encroachment into the RPA of 4 trees and 4 groups throughout all stages of the construction project. This intrusion can be managed through the use of hand dig methodology to excavate for the foundations under the supervision of the project Arboricultural Consultant, ensuring root damage is kept to a minimum or avoided completely. Tree and ground protection must be utilised throughout the phases of this project to ensure the impact to retained trees is kept to a minimum.

Due to the size of the site and the number of trees present, work should be halted immediately if any situation arises during the construction phase that has the potential to negatively impact any trees, and the project Arboricultural Consultant contacted as soon as practicable.

5. Arboricultural Method Statement

This chapter is supported by drawings **MH8940-004 Tree Protection Plans** included in *Appendix F* of this report.

5.1 Roles and Responsibilities

It is the responsibility of all contractors and sub-contractors involved in the project to be aware of this method statement and to use it when setting out the site and carrying out any operations in the vicinity of retained trees.

Prior to the commencement of works, all site personnel should be briefed by the Site Manager or appointed Arboricultural Consultant on the importance of the retained trees and the significance, rules and restrictions around protective measures implemented. All minutes from these 'Toolbox Talks' should be retained by the Site Manager for future reference.

5.2 Timing and Order of Operations

Operations on the development site related to trees should commence in the following order to ensure that retained trees receive an appropriate level of protection from potentially harmful activities. Monitoring will take place throughout these stages in accordance with paragraph 5.8 below.

- 1. Removal of **T21** and **T23**, crown lifting of **G4**, **T13**, **T17**, **T19** as per *Appendix E MH8940-003 Arboricultural Impact Assessment*;
- 2. Installation of ground protection and fencing to create a construction corridor and exclusion zone as per *Appendix F MH8940-004 Tree Protection Plan*;
- 3. Construction operations commence;
- 4. Hand-dig methodology to be used under Arboricultural Supervision during excavation within RPA's;
- 5. Construction operations completed; removal of all plant and materials from site;
- 6. Removal of ground protection and fencing;

5.3 Tree Works

Preparatory tree works identified in section 4.3 of this report must be carried out by qualified and experienced arborists in accordance with BS 3998:2010 and current industry guidelines.

Any tree works identified during project stages should first be discussed with the project Arboricultural Consultant. It should be noted that consent from the LPA must be obtained before any tree works commence as a number of trees are covered by statutory designations, with the site falling within a conservation area.

5.4 Ground Protection

Due to the access route into site and the proximity of the excavation, construction, and storage areas being close to or within the unsurfaced RPA of retained trees, it has created a necessity for ground protection, which will avoid the negative impacts caused by compaction from the movement and use of plant and machinery.



Track mats of dimensions 1.2m x 2.4m have been specified as suitable protection that will provide adequate space for the required excavations.

Once installed as detailed within Appendix F - Tree Protection Plan, the ground protection should be treated as sacrosanct and not altered or removed without prior recommendation from the project Arboricultural Consultant.

5.5 Construction

All plant and vehicles engaged in construction works must use existing hard surfacing for all access, storage and operations where possible. Where ground protection has been recommended this must be used.

Plant operators must be made fully aware of any protection that surrounds retained trees and take due care with their machinery not to cause any damage to their crowns or stems. Where plant is operating in proximity of retained trees banksman must be used to prevent accidental collision damage.

5.6 Tree Roots

If during any excavation works on site the tree roots of a retained tree are exposed, these should be immediately wrapped or covered in hessian to prevent desiccation and to protect them from temperature changes, with the project Arboricultural Consultant contacted at the earliest opportunity for advice. Roots smaller than 25mm diameter may be pruned back using a clean, sharp cutting tool. Roots occurring in clumps or of 25mm diameter and over should be severed only following consultation with the project Arboricultural Consultant.

Prior to backfilling, retained roots should be uncovered and surrounded with top soil or sharp builders' sand, free of contaminants and any foreign objects that may be injurious to tree roots.

5.7 Prohibited Activities

No plant, machinery, or materials should be stored within the Construction Exclusion Zones. This also applies to any ancillary facilities associated with the construction such as welfare units.

Materials or machinery with any potential to contaminate ground must be stored outside of RPA's, including when on existing hard surfacing, and use spill mats for refuelling.

Care must be taken when planning site operations to ensure that wide or tall loads, plant with booms, jibs and counterweights can operate without coming into contact with any of the retained trees. Where possible, plant and machinery with zero tail swing should be used when in close proximity to retained trees.

Any transit or transverse of plant in close proximity to the retained trees should be conducted under the supervision of a banksman to ensure that adequate clearance from the trees is maintained at all times.

The project Arboricultural Consultant should be consulted prior to any otherwise not approved operations within a Construction Exclusion Zone.

5.8 Monitoring

It is a requirement of BS 5837:2012 that activities related to, or in the vicinity of retained trees are monitored by the project Arboricultural Consultant. It is recommended that the following monitoring visitations take place:

- 1. Setting out and installation of Site Compounds and ground protection;
- 2. Regular monitoring throughout works, and ad hoc arboricultural supervisory visits as required;
- 3. Monitoring of excavation within the RPA's of **T4**, **T12**, **T24**, **T30**, **T31**, **G5**, **G6**, **G7** and **G8**:
- 3. Removal of ground protection;
- 4. Post-development monitoring visit (see 5.10 below).

It is recommended that on each monitoring visit a Works Recording Form is completed by the project Arboricultural Consultant to enable an auditable trail of visits, findings and recommendations.

5.9 Incident Procedure

In the instance of any problems discovered on site or incidences affecting and/or causing harm to retained trees, the project Arboricultural Consultant should be consulted at the earliest opportunity to provide advice about rectifying issues. Any such occurrences should be recorded in an auditable incident register.

5.10 Post-Development

It is recommended that following completion of the development, a monitoring visit is carried out by the project Arboricultural Consultant in order to carry out a thorough assessment of the newly planted and retained trees and any remedial works that may be required as a result of changes to the site and the potential indirect effects of construction.

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27th November 2023



Appendix A

TREE SCHEDULE TERMS

Tree Ref. Code used to identify each tree on the Tree Survey Plan

Species The common name for each tree.

Height The height of the tree in metres.

Age Class The age of the tree recorded as follows:

Young Recently planted or establishing tree;

Semi-mature Established tree which has yet to reach its full growing height;

Mature A tree which has reached its likely maximum size;

Over-mature A mature tree which has ceased to grow or is in decline;

Veteran An over-mature tree of high value due to age, size and other factors.

Stems Number of stems present (i.e. is the tree a multi-stemmed specimen).

Stem ø mm Diameter of tree stem in millimetres, recorded at 1.5m above ground

level; this figure is used to calculate the RPA.

RPA (m) The radius of the tree's Root Protection Area in metres.

Crown Spread The extent of the tree's crown to the north, south, east and west, in

metres.

Crown Height The height of the crown as measured from the ground to the north,

south, east and west, in metres.

Condition A general assessment of the tree's structural or physiological condition

as either good, fair, poor or dead.

BS Cat The BS 5837:2012 Category for the tree, in accordance with the table

in paragraph 2.3 of this report and Appendix D.

PAIA Preliminary Arboricultural Impact Assessment

AIA Arboricultural Impact Assessment

AMS Arboricultural Method Statement

TPP Tree Protection Plan

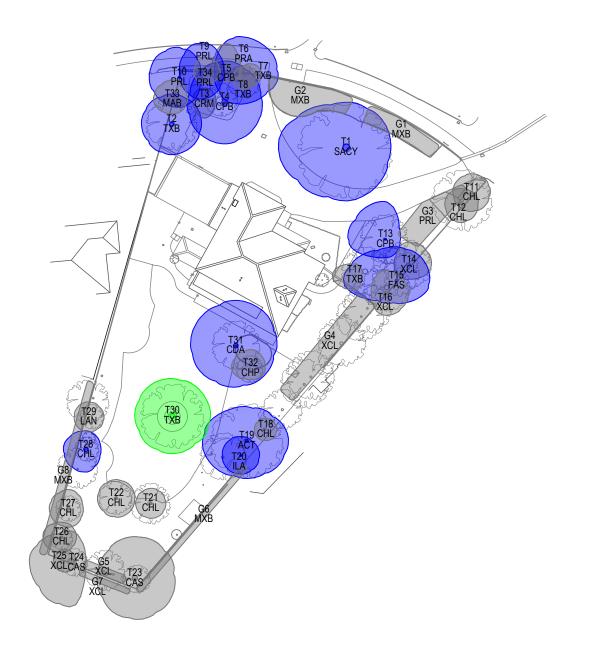
Tree					Number of	Stem ø			Crown	Spread			Crown	Height		Con	dition		
Number	Common Name	Botanical Name	Maturity	Height (m)	Stems	(mm)	RPA (m)	North (m)	East (m)	South (m)	West (m)	North (m)	East (m)	South (m)	West (m)	Structural	Physiological	Category	Comments
Т1	Weeping willow	Salix chrysocoma	Mature	16	1	900	10.8	6	6	7	9	4	2	2	2	Fair	Fair	В2	Located centrally in front garden of property; Slight exudation at 1m height on eastside of stem; Minor bark delamination at 0.3m height north; Major scaffold limb removed at 3m height east with stub remaining; Large tear-out wound at 4m height south; Large dead stub with signs of decay at 6m height south; Heavy phototropic lean west at 4.5m height towards house and over driveway, before straightening at 8m height; Multiple tear-out wounds in upper canopy; Cavity from branch removal at 5m height north.
Т2	Common yew	Taxus baccata	Mature	10	1	500	6	4	4	4	4	0.8	0.8	0.8	2.3	Fair	Fair	B2	Located on west boundary of front garden, 3.5m north of garage building; Multi-stemmed at 2.5m height with some tight unions; Poor historic pruning wounds on east of canopy with stubs remaining; Minor deadwood in crown; No significant visible defects at time of inspection.
Т3	Common hawthorn	Crataegus monogyna	Semi- mature	7.5	1	150	1.8	1.5	1.5	2.5	1.5	4	2.5	2	4	Fair	Poor	C2	Located on northwest corner of front garden; Multiple bark wounds along lower stem, all occluding and no visible signs of decay; Very low vitality with lower canopy dead and only some live foliage at the top of crown; Minor deadwood throughout lower crown.
Т4	Common hombeam	Carpinus betulus	Mature	16	1	780	9.36	5.5	5	5.5	5	2	0.8	1.2	1	Fair	Fair	B2	Located on northwest of front garden, 3.5m south of north boundary fence; Small <i>Ganoderma sp.</i> brackets at the base of stem west and southeast; Very heavy lean north before stem straightens at 4m height; Lapsed epicormic growth along lower stem; Large wound at 4m height north from pruning cut; Multiple smaller pruning wounds in upper canopy.
Т5	Common hornbeam	Carpinus betulus	Semi- mature	9	1	160	1.92	4	2	1	2	0.5	1	0.8	0.5	Fair	Fair	C2	Located on fence line of north boundary northwest of front garden; Asymmetrical crown spread due to neighbouring trees; Small amount of minor deadwood present; No significant visible defects at time of inspection.
Т6	Wild cherry	Prunus avium	Mature	11	1	270	3.24	5	5.5	4	3	2	2.5	5	5	Fair	Fair	В2	Located on fence line of north boundary on northwest of front garden; Slight photographic lean east; Cohesive crown formation with neighbouring large hornbeam; No significant visible defects at time of inspection.
Т7	Common yew	Taxus baccata	Semi- mature	6	1	150	1.8	1.5	1.5	1.5	1.5	0.25	0.25	0.25	0.25	Fair	Fair	C2	Located on north boundary, 2.5m west of front gate; Growing within canopy of adjacent wild cherry; Shrubs impeding basal inspection; No significant visible defects at time of inspection.
Т8	Common yew	Taxus baccata	Semi- mature	6	1	150	1.8	1.5	1.5	1.5	1.5	0.25	0.25	0.25	0.25	Fair	Fair	C2	Located on north boundary, 3m west of front gate; Growing within canopy of adjacent wild cherry; Shrubs impeding basal inspection; No significant visible defects at time of inspection.
Т9	Cherry laurel	Prunus laurocerasus	Mature	6	1	230	2.76	4	3	3.5	3	1	1	1	1	Fair	Fair	B2	Located on north fence line, 2.5m east of northwest boundary corner; Slight kink in stem at 1m height, with stem then leaning north over pavement; Cohesive crown formation with neighbouring off site cherry laurel; No significant visible defects at time of inspection.
T10	Cherry laurel	Prunus laurocerasus	Mature	7	1	260	3.12	4	3	4	4	0.5	1	0.25	0.5	Fair	Fair	B2	Located off-site in neighbouring front garden by the northwest boundary corner; Unable to access; Crown breaks into multiple stems at 2m height; Cohesive crown formation with neighbouring cherry laurel; Minor deadwood present with some major decaying stubs; Lower east canopy has been pruned over 21 The Green.

Tour	Number of Stance Crown Spread Crown Height Co											Con	dition						
Tree Number	Common Name	Botanical Name	Maturity	Height (m)	Number of Stems	Stem ø (mm)	RPA (m)	North (m)	East (m)	South (m)	West (m)	North (m)	East (m)	South (m)	West (m)	Structural	Physiological	Category	Comments
T11	Lawson cypress	Chamaecyparis lawsoniana	Mature	12	1	360	4.32	2.5	2.5	2.5	2.5	6	6	6	6	Fair	Fair	C2	Located on northeast boundary of site, 2m east of driveway; Resin exuding from north side of lower stem; Lower crown has died with minor to major deadwood remaining; No significant visible defects at time of inspection.
T12	Lawson cypress	Chamaecyparis Iawsoniana	Mature	12	1	320	3.84	2	2.5	2.5	2	7	7	7	7	Fair	Fair	C2	Located on northeast boundary of site, 4m east of driveway; Lower crown has died with major to minor deadwood remaining; Animal damage around stem up to 0.6m height; No significant visible defects at time of inspection.
T13	Common hornbeam	Carpinus betulus	Semi- mature	14	1	240	2.88	5	2	2.5	5	4	4	2	2	Fair	Fair	B2	Located 4.5m west of east boundary fence line and 2.5m east of path from driveway to rear garden gate; Slight phototropic lean north and asymmetrical crown spread due to neighbouring trees; Crown overhangs driveway and has cohesive form with neighbouring beech; No significant visible defects at time of inspection.
T14	Leyland cypress	X Cupressocyparis leylandii	Mature	13	1	400	4.8	3	3	2	2	4	4	5	4	lvy	Fair	C2	Located on east boundary fence line, 6m north of brick wall; Ivy has been severed and stripped to 2m height but remains in the upper stems impeding inspection; Quite sparse crown which overhangs neighbouring front garden; Minor to moderate deadwood throughout; Large wound on west of stem at 2.5m height, no visible signs of decay and starting to occlude.
T15	Common beech	Fagus sylvatica	Mature	15	1	380	4.56	4.5	4.5	3	7	4.5	4.5	5	4	Fair	Fair	B2	Located on east boundary fence line, 4m north of brick wall; Lower stem leans west before straightening at 1m height; Asymmetrical crown spread west due to neighbouring Leyland; Crown overhangs driveway and neighbouring garden east; Some moderate dead branches present; No further significant visible defects at time of inspection.
T16	Leyland cypress	X Cupressocyparis leylandii	Mature	15	1	530	6.36	3	3	3	2	3	3	2	3	Fair	Fair	C2	Located on east boundary fence line, 2m north of brick wall; Sparse upper crown with dead lower canopy; Minor to moderate deadwood throughout; Moderate wound on southwest of stem at 1m height, no visible signs of decay and starting to occlude; Multi-stemmed with some tight unions.
T17	Common yew	Taxus baccata	Young	5	3	160	1.92	1.5	1	2	3	2	1.5	1	2	Fair	Fair	C2	Located 2m east from path and 3m north from brick wall on southeast of front garden; Tri-stemmed with included union at base; Asymmetrical crown spread west due to neighbouring trees; No significant visible defects at time of inspection.
T18	Lawson cypress	Chamaecyparis Iawsoniana	Semi- mature	12	1	240	2.88	1.5	1.5	1.5	1.5	4	4	7	6	Fair	Fair	C2	Located on east boundary, 0.5m west of wall; Twin stemmed with union at 5m height; Stems crossing and rubbing; Minor deadwood along the middle of stems; Animal damage around stem up to 0.8m height; No further significant visible defects at time of inspection.
T19	Norway maple	Acer platanoides	Mature	16	1	420	5.04	4.5	5.5	5	6	4	4	4	3	Fair	Fair	B2	Located on east boundary, 1.5m west of brick wall; Exposed and damaged surface roots in all directions; Crown has balanced spread with mature holly growing into the lower south canopy; Crown overhangs neighbouring garden east; Some minor deadwood present; No significant visible defects at time of inspection.

Tree		Number of Stem ø Crown Spread Crown Height									Con	dition							
Number	Common Name	Botanical Name	Maturity	Height (m)	Stems	(mm)	RPA (m)	North (m)	East (m)	South (m)	West (m)	North (m)	East (m)	South (m)	West (m)	Structural	Physiological	Category	Comments
T20	Common holly	llex aquifolium	Mature	14	1	280	3.36	2.5	2.5	2.5	2.5	2	2	2	2	Fair	Fair	В2	Located on east boundary of rear garden, 2.5m west of brick wall; Multiple small bark wounds along lower stem, no visible signs of decay and occluding; Stem leans slightly east towards neighbouring garden and conservatory; Three stemmed with unions at 4.5m height; Growing under the south canopy of adjacent Norway maple; Small amount of minor deadwood present.
T21	Lawson cypress	Chamaecyparis Iawsoniana	Semi- mature	13	1	350	4.2	2	2	2	2	3.5	3.5	3	3	Poor	Fair	C2	Located towards south end of rear garden, 6m west of east boundary; Codominant stems with prominent reaction growth either side of main union at 2.5m height, indicative of internal crack; Healthy dense crown with well balanced spread; Animal damage around lower stem.
T22	Lawson cypress	Chamaecyparis Iawsoniana	Semi- mature	13	2	300	3.6	2.5	2.5	2.5	2.5	1.5	1.5	2	2	Fair	Fair	C2	Located towards south end of rear garden, 6m east of west boundary; Twin stemmed with union at 0.4m height; Healthy dense crown with well balanced spread; No significant visible defects at time of inspection.
Т23	Sweet chestnut	Castanea sativa	Mature	17	1	750	9	5.5	5.5	5.5	5	2	5	5	2	Poor	Fair	C2	Located on southeast corner of rear garden; Piled organic waste impeding basal inspection; Large wounding from base to 3m height on northeast side of stem, no visible signs of decay and occluding with delaminating bark either side of wound and visible signs of fire damage; Major to minor deadwood present in crown.
T24	Sweet chestnut	Castanea sativa	Mature	14	1	850	10.2	4	2	6	5.5	2	8	2	8	Fair	Fair	C2	Located on southwest boundary edge of rear garden, 3m east of west boundary fence; Epicormic growth and fence impeding inspection; Twin stemmed with main union at 2.5m height; Multiple moderate wounds from either pruning or branch failure, some with minimal signs of decay and all occluding; Crown overhangs neighbouring garden and shed south; Small dead stubs and moderate deadwood in crown; Cohesive nature with neighbouring trees.
T25	Leyland cypress	X Cupressocyparis leylandii	Semi- mature	7	1	90	1.08	1.5	1.5	1.5	1.5	2	2	2	2	Fair	Fair	C2	Located on southwest edge of rear garden by mature sweet chestnut; Growing into canopy of adjacent sweet chestnut; No significant visible defects at time of inspection.
T26	Lawson cypress	Chamaecyparis Iawsoniana	Semi- mature	14	1	280	3.36	2	2	2	2.5	1.5	2	3	3	Fair	Fair	C2	Located on southwest corner of rear garden, 2.5m north of south boundary and 0.5m east of west boundary; Twin stemmed with union at 5.5m height; Lower crown dead with moderate to minor deadwood remaining; Crown overhangs neighbouring garden west; Top of crown healthy and dense; Animal damage around lower stem.
Т27	Lawson cypress	Chamaecyparis Iawsoniana	Mature	17	1	450	5.4	2.5	2	2.5	2.5	6	4.5	5	6	Fair	Fair	C2	Located 0.5m east of west boundary fence in rear garden; Large area of dysfunction at base of south side of stem with minor signs of decay; Bulging around stem at 3m height with markings around the circumference as if previously bound with wire; Dead ivy along upper stem; Minor deadwood present.
T28	Lawson cypress	Chamaecyparis lawsoniana	Mature	18	1	570	6.84	2.5	2	3	3	4	4	4.5	3.5	Fair	Fair	В2	Located 0.5m east of west boundary fence in rear garden; Slight lean northeast; Dense and healthy crown; No significant visible defects at time of inspection.

Torre	ree Crown Spread Crown Height											Con	dition						
Tree Number	Common Name	Botanical Name	Maturity	Height (m)	Stems	(mm)	RPA (m)	North (m)	East (m)	South (m)	West (m)	North (m)	East (m)	South (m)	West (m)	Structural	Physiological	Category	Comments
T29	Bay	Laurus nobilis	Semi- mature	10	1	170	2.04	2	2	2	2	3	1.5	1.5	5	Fair	Fair	C2	Located 0.3m east of west boundary of rear garden, 4m south of north end of fence; Stem growing through canopy of adjacent off-site yew; Twin stemmed with main tension union at 3.5m height; No significant visible defects at time of inspection.
Т30	Common yew	Taxus baccata	Mature	13	1	720	8.64	5	5	5	5	2.5	2.5	2.5	2.5	Fair	Fair	A2	Located in the middle of the rear garden within raised brick bed surrounded by paving slabs; 0.3m long wounding on south side of stem at 1m height, no visible signs of decay and occluding; Multi-stemmed with tight and included unions; Multiple pruning wounds along lower stem; Crown has a well balanced and open spread; No significant visible defects at time of inspection.
T31	Atlas cedar	Cedrus atlantica	Semi- mature	17	2	620	7.44	6	5.5	5.5	6	6	5	8	8	lvy	Fair	B2	Located next to pond in rear garden; Codominant stems with included union at 1m height obscured by ivy; Poor pruning and tear-out wounds on west stem leaving stubs remaining; Canopy overhanging residential property south; No significant visible defects at time of inspection.
T32	Sawara cypress	Chamaecyparis pisifera	Semi- mature	3	1	160	1.92	2.5	2	1.5	2.5	1	1	1	1	Fair	Fair	C2	Located on south edge of pond in rear garden; Short twisted stem with dense spreading canopy overhanging pond; Dead branch at 1.3m height northeast; No further significant visible defects at time of inspection.
Т33	Chinese crab	Malus spectabilis	Mature	7	4	290	3.48	2.5	2	2	2.5	2	2	2	2	Fair	Fair	C2	Located off-site in neighbouring front garden, 0.5m west of west boundary; Multi-stemmed with crossing and rubbing branches; Unable to access; Growing into crown of neighbouring yew and cherry laurel; No significant visible defects at time of inspection.
T34	Cherry laurel	Prunus laurocerasus	Semi- mature	6.5	2	130	1.56	2	2	1.5	1.5	0.5	0.5	0.5	0.5	Fair	Fair	C2	Located on north boundary fence line on northwest of front garden; Codominant stems with union at base; Growing through, and cohesive with neighbouring laurel; Crown overhangs pavement north; No significant visible defects at time of inspection.
G1	Mixed broadleaf		Mature	8	1	250	3	3	3	4	3	2.5	2.5	2.5	2.5	Fair	Fair	C2	Located along north edge of the front garden; Group consists of one rowan, one New Zealand broadleaf, and five myrobalan plum; Twin and multi-stemmed within group with some included unions; Ivy covering some stems; Cohesive crown formation within group; Minor deadwood present; No significant visible defects at time of inspection.
G2	Mixed broadleaf	-	Mature	6	1	250	3	3	3	3	2.5	0.25	0.25	0.25	0.25	Fair	Fair	C2	Located on north edge of front garden; Group consists of two cherry laurel, one myrobalan plum, and one yew; Laurels are multi-stemmed with the plum breaking into three stems at 2m height; Cohesive crown formation within group; Plum has slight phototropic lean south; No significant visible defects at time of inspection.
G3	Cherry laurel	Prunus laurocerasus	Mature	5.5	4	200	2.4	3	2.5	2.5	2.5	0.25	0.25	0.25	0.25	Fair	Fair	C2	Located on northeast of front garden next to driveway; Group consists of four multi-stemmed cherry laurels; Historic pruning wounds throught group; Crossing and rubbing branches; Crown has been cut back along driveway edge; Cohesive nature within group; No significant visible defects at time of inspection.

Tree					Number of	Stem ø		Crown Spread Crown Height						Cond	dition				
Number	Common Name	Botanical Name	Maturity	Height (m)	Stems	(mm)	RPA (m)	North (m)	East (m)	South (m)	West (m)	North (m)	East (m)	South (m)	West (m)	Structural	Physiological	Category	Comments
G4	Leyland cypress	X Cupressocyparis leylandii	Semi- mature	8	1	250	3	3	3	3	3	2	2	2	2	Fair	Fair	C2	Located along east boundary of rear garden between properties; Group consists of six Leyland cypress and one multi-stemmed cherry laurel in middle of group; Crowns are cohesive and overhang neighbouring property; Sparse ivy covering some Leyland cypress stems; Leyland cypress have been topped to form a screen; Dense canopy impeding inspection; No significant visible defects at time of inspection.
G5	Leyland cypress	X Cupressocyparis leylandii	Semi- mature	15	1	250	3	4.5	2.5	3	2.5	2.5	2	3	2	Fair	Fair	C2	Located along south boundary of rear garden; Group consists of four semi-mature Leyland cypress in middle of group with two young Leyland cypress either end east and west; Cohesive nature within group; Multiple small pruning wounds along lower stems; No significant visible defects at time of inspection.
G6	Mixed broadleaf	-	Semi- mature	7	3	170	2.04	2.5	2.5	2.5	2.5	2	2	2	2	Fair	Fair	C2	Located off-site along boundary of neighbouring property to the east; Unable to access as behind 2.5m high wall; Group consists of multi-stemmed shrubs, one holly, one cherry laurel and one yew; Crowns overhanging rear garden of 21 The Green; No significant visible defects at time of inspection.
G7	Leyland cypress	X Cupressocyparis leylandii	Semi- mature	7	1	200	2.4	1.5	1.5	2	1.5	2	2	2	2	Fair	Fair	C2	Located off-site along boundary of neighbouring garden to the south; Unable to access; Group consists of three Leyland cypress; cohesive crown formation with neighbouring Leyland cypress at the south of rear garden of 21 The Green; Pruning wounds along lower stems; No significant visible defects at time of inspection.
G8	Mixed broadleaf	-	Semi- mature	10	1	210	2.52	2.5	2.5	2.5	2.5	2	2	2	2	Fair	Fair	C2	Located off-site along west boundary within neighbouring garden; Unable to access and 2m high fence impeding inspection; Group consists of one Leyland, four Lawsons cypress, four yew, and two cherry; Crowns overhanging rear garden of 21 The Green; No significant visible defects at time of inspection.





KEY

Tree categories based on BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations



Category A Tree

Trees of High Quality with an estimated remaining life expectancy of at least 40 years.



Category B Tree

Trees of Moderate Quality with an estimated remaining life expectancy of at least 20 years.



Category C Tree

Trees of Low Quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.



Category U Tree

Trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Tree Key

ACT	- Norway maple	LAN	- Bay
CAS	- Sweet chestnut	MAB	- Chinese crab app
CDA	- Atlas cedar	MXB	- Mixed broadleaf
CHL	- Lawson cypress	PRA	- Wild cherry
CHP	- Sawara cypress	PRL	- Cherry laurel
CPB	- Common hornbeam	SACY	- Weeping willow
CRM	- Hawthorn	TXB	- Common yew
FAS	- Common beech	XCL	- Leyland cypress

Client Mick Higgins

Project 21 The Green, London

Appendix C - Tree Survey

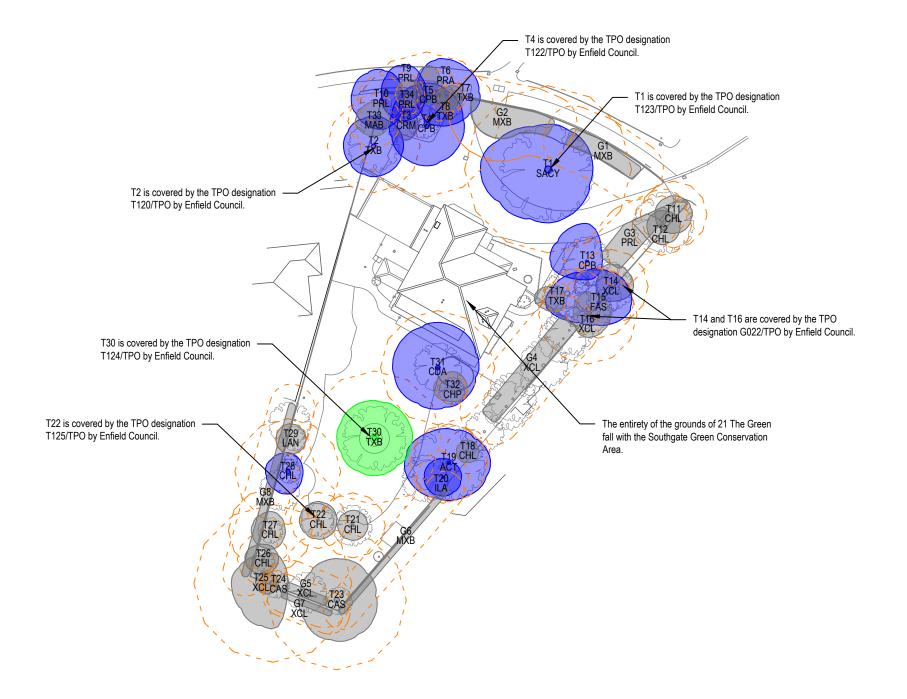
Scale	1:500 @ A3	Drawn	LA
Date	November 2023	Checked	NS
Drawing No.	MH8940-001	Rev	-



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Root Protection Area (RPA)

Tree Protection Fencing



Ground Protection



Tree Removals

Trees identified as requiring removal to facilitate the project.

Tree Key

ACT	- Norway maple	LAN	- Bay
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Mick Higgins

21 The Green, London

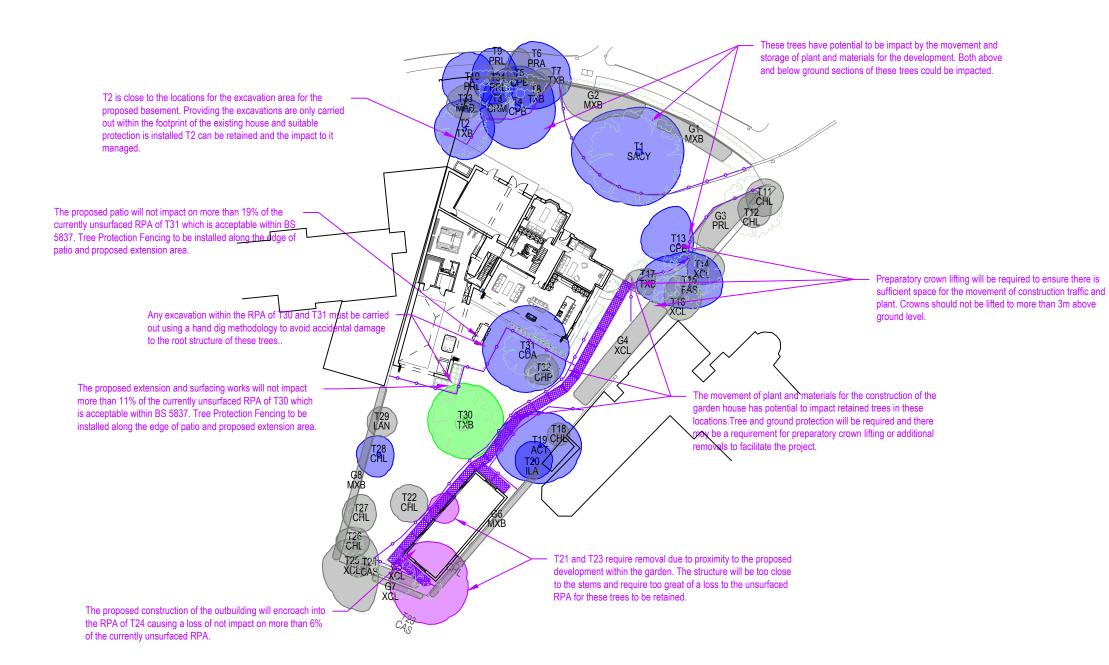
Appendix D - Constraints Plan

	Scale	1:500 @ A3	Drawn	LA
	Date	November 2023	Checked	NS
	Drawing No.	MH8940-002	Rev	-



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CPB	- Common hornbeam	SACY	- Weeping willow
CRM	- Hawthorn	TXB	- Common yew
FAS	- Common beech	XCL	- Leyland cypress
			, ,,

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Appendix E - Arboricultural Impact Assessment

Scale	1:500 @ A3	Drawn	LA
Date	November 2023	Checked	NS
Drawing No.	MH8940-003	Rev	-



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Root Protection Area (RPA)

Tree Protection Fencing



Ground Protection



Tree Removals

Trees identified as requiring removal to facilitate the project.

Tree Key

ACT CAS CDA CHL CHP CPB	Norway maple Sweet chestnut Atlas cedar Lawson cypress Sawara cypress Common hornbeam	PRL	- Bay - Chinese crab at - Mixed broadlea: - Wild cherry - Cherry laurel - Weeping willow

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Appendix F- Tree Protection Plan

	Scale	1:500 @ A3	Drawn	LA
	Date	November 2023	Checked	NS
Ī	Drawing No.	MH8940-004	Rev	-



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