BS5837:2021 Arboricultural Tree Survey and Impact Assessment Report

Client: The Park Property Group

For proposed development of

Land Rear of:
24 Hampton Road
Twickenham
TW2 5QB

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Figures:

Disclaimer: The trees have been surveyed in accordance with the criteria set in the BS:5837:2012 Trees in Relation to Design, Demolition and Construction 2012. A full hazard assessment of the trees (including assessment of decay or their defects and their implications) has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have been identified were relevant in the Tree Survey Schedule and appropriate relating works have been recommended. Where relevant, trees not located within the legal property of the owner have been included and any works would be subject (where relevant by law, Statue and Common) to the owner's permission.

Where appropriate further investigative works to be undertaken have been detailed and recommended. This may include climbing inspections, below ground exploratory investigations and the use of specialist decay detection equipment. Detailed ecological considerations are also beyond the scope of this report. UK and European Wildlife Legislation may affect the timing and even prohibit the enhancement of works and operations described in this report.

Most of the information regarding wildlife can be found in the Wildlife and Countryside Act 1981 & updated 1994. This includes information of wild birds, bats, badgers, and some insects. Bats in particular are afforded particular protection and a specialist is required to determine if bats are present or may be affected when carrying out tree works. Further information is available from Natural England. It is accepted that this document may need to be updated and more detailed information added throughout the planning and development process. However, this document will be the main documentation for reference in the event of disputes.

1 - Introduction

Fellgrove have been appointed to provide advice on the arboricultural constraints relating to the proposal at 24 Hampton Road, Twickenham, TW2 5QB

We undertook a Tree Condition Survey (***see Appendix 3***) during April/May 2202 to assess the condition of the tree resource and categorised the trees with Root Protection Area (RPA) information according to the BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".

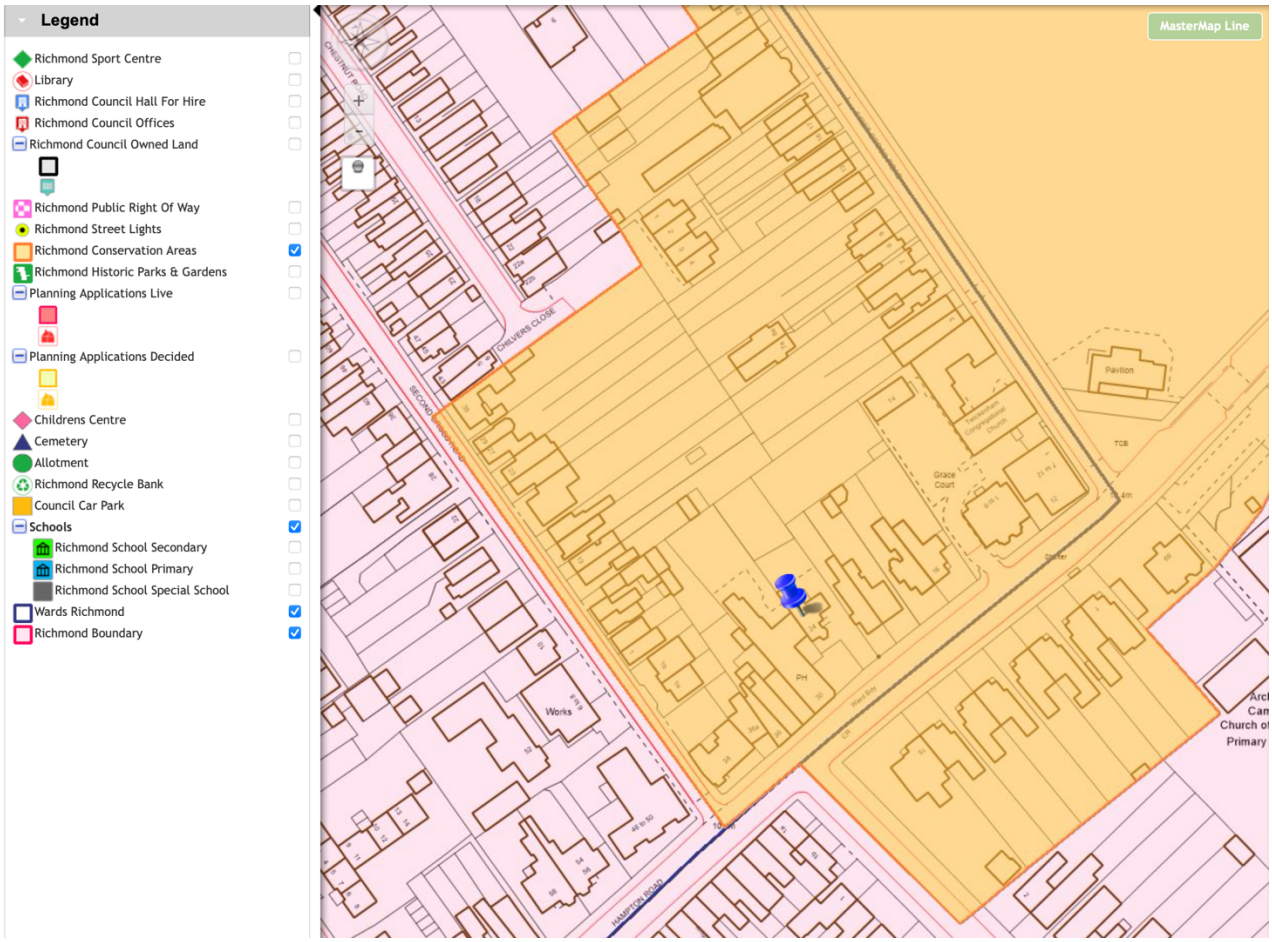
The tree numbers used in this report refer to the tree numbers used in our Tree Condition Survey. Following preparation of our Tree Condition Survey we received a copy of the following document(s):

- **SU2387_2D-1**
- **4257_P100e Proposed Site Plan - colour_compressed**

A detailed search with London Borough of Richmond Upon Thames has been carried out prior to the site survey. We can confirm that the site falls within the Twickenham Green Conservation area 9. T06 Eucalyptus is the only tree protected by TPO currently on site.

Information obtained from London Borough of Richmond Upon Thames interactive mapping and historic planning documents.

Figure 1 - Site Location Map (indicative).



2 - Executive Summary

The site is located on Hampton Road behind No24, running north from Hampton Road and turning east behind No22 – N016 Hampton Road. The site was left unmanaged for a long time before recent works to clear the area and remove trees under conservation area approval obtained 2021.

The area has existing hardstanding, concrete bases formally used as foundations to out buildings, walls and what look like foundations from historic structures.

The proposal put forward by the client is for the construction of a 3 residential units with associated access, parking, and landscaping.

The trees surveyed consist primarily of mature species with three groups and eight trees surveyed.

Tree Works schedule can be found in Appendix 3: Tree Survey Schedule

This report seeks to assess the tree stock in accordance with BS5837:2012 "trees in relation to design, demolition and construction – Recommendations". The survey and report will identify those trees most suitable to be retained and those that can be removed and replaced, as part of any future landscaping scheme for the site. This will provide information for the architect / developer to design a layout within the parameters of the development window with the retention of the best trees where possible.

3 – Scope of Tree Survey

The considerations for the purpose of this tree survey are as follows:

- To carry out a tree condition survey on the trees immediately effected by the proposal, making recommendations for those trees to be retained and low amenity value and hazardous trees to be replaced.
- To undertake the tree survey in accordance with the principles of BS5837: 2012 'Trees in relation to design, demolition, and construction – Recommendations'.
- To produce tree protection plan (TPP), showing the location of surveyed trees, their BS5837: 2012 categorisation, the theoretical Root Protection Areas (RPA). A tree protection plan showing the location of protection fencing / measures.

If the guidelines and principles outlined in this report are not adhered to, as with all development sites there is a risk that the construction activities will result in damage to and potentially the death of the retained trees. Damage to the trees will significantly increase the risk of their health declining and may increase the risk of their complete or partial failure.

4 - Site Description and Development Proposals

The site is currently fairly open after recent clearance works; a number of concrete structures remain which look to have been foundations of outbuilding in the past. As part of our site visits trial hole were excavated by hand to determine subsoil structures. Foundations from historic wall structures can be seen towards G03 with an old wall visible within trial hole number 4. The ground levels lift from the access towards the centre of site by around 500mm and drop again towards the eastern end of site. A wall runs adjacent to T06 with foundations west by around 1.2m from the main stem. The site features and surrounding area are consistent with pre 1900 construction, the materials used, and style of construction is a good indicator of this. The walls surrounding the site and adjacent to T06 look to have impacted on the RPA spread of the majority of trees surveyed as part of the proposal. Estimated RPA spreads can be seen in appendix 4. T06 Eucalyptus has the protection of a preservation order issued 2021.

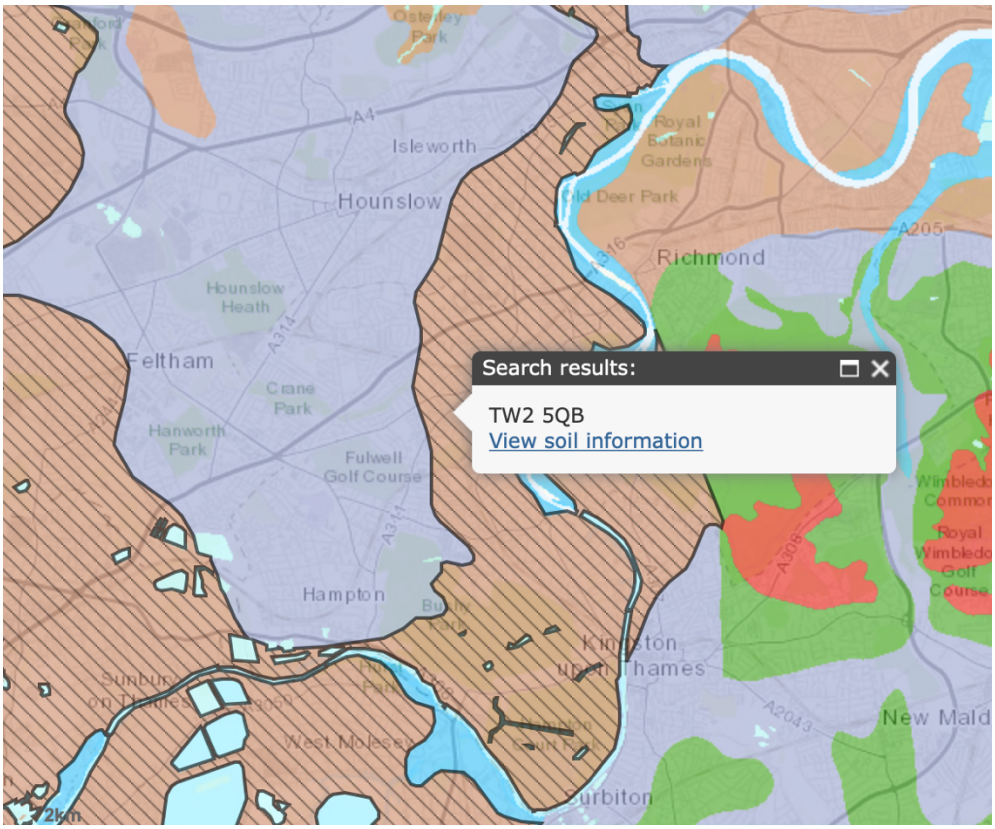
The development proposal:

Construction of three residential units with associated parking, access, landscaping, and surfacing. A single units is proposed to the west of the site adjacent to T02 with two units proposed on the eastern section of site beyond T06. Current access proposals will past over the RPA of T06. The current site access will be retained as part of the proposal, T01 lies to the east of the access from Hampton Road with root flare visible and impacts visible. Given the age and position, we can likely assume T01 is self-seeded and has grown within the raised area behind the boundary wall.

The local area of Twickenham is that of a mature treescape within gardens, surrounded by historic structures which could have impacted and influenced the RPA spread of the urban trees.

With this in mind the proposal will maintain the status que, keeping T06 as a prominent feature of the site.

Figure 2: Site Location - Soilscape 6.



LandIS.org.uk Soilcapes has identified the soil as Soilscapes 6 which are freely draining slightly acid loamy soils.

All comments regarding soils should be verified with onsite geotechnical investigations and laboratory testing with foundation depth and design undertaken by a structural engineer in accordance with the requirements of NHBC Chapter 4.2.

5 – Overview: The Trees

The information gathered during the tree survey is recorded within this report and can be found in Tree Survey (appendix 3) along with any recommendations. The trees surveyed have been broken down into categories set out in BS5837 2012, which are also explained in Cascade Chart for Quality Tree Assessment (***please refer to Appendix 2***).

The trees surveyed consist primarily of mature species with three groups and eight trees surveyed. Trees within and adjacent the site currently have a moderate amenity value within the wider tree scape and site itself. T06 was granted protection of a preservation order in 2021 and will become a component part of the proposal. Management works have been recommended within appendix 3 and should be discussed with the local authority tree officer. In general the trees surrounding the site have supressed RPA's due to walls and in ground structures. None of these category C trees are sufficiently worthy of influencing the design layout and found limited in terms of value when considered in planning context.

The survey of the trees has been carried out in accordance with the guidance provided in Annexe C of BS5837. In summary this requires that any tree on the site with a stem diameter of over 75mm at 1.5m above ground level is recorded. Stem diameter measurements were taken using Haglof diameter callipers and are recorded to the nearest full unit or in accordance with Annexe D of BS5837. Where access to the base of the tree was not possible for any reason, the diameter has been estimated. Height measurements are estimated and recorded to the nearest full metre. Crown spread dimensions have been paced and are recorded to the nearest full metre for all four cardinal points. The Survey Schedule of trees can be found in Appendix 3. The locations of the trees have been plotted on the attached Tree Location Plan (TLP).

The trees have been categorised in an order defined in table 1 of BS5837, a copy of which can be seen in Appendix 1, but which can be summarised as:

Category A	Category B	Category C	Category U
0	1	10	0

6 - Impact Assessment

The overall impact on the trees is low with the removal of 1 Holly and 1 palm recommended to facilitate the proposal. Tree protection fencing has been recommended to ensure short and long term retention is achieved – please see appendix 4 for details boundary features can be retained to act as protection fencing. Ground protection is recommended to mitigate part of the access falling within the RPA of T06.

Ground Constraints and Proximity of Trees to Structures (reference material)	
ABOVE GROUND	*Where the current and/or ultimate height of a Category A, B or C tree will cause an obstruction to the approved development, this must be considered as a constraint.*
	An amenity clearance zone (ACZ) is used to consider the impact of the proximity of retained trees to structures. The ACZ is defined as an area surrounding the tree that enables a satisfactory relationship to exist between the approved development and the tree. The ACZ is a combination of factors such as shading (of buildings and open space), direct damage to structures, future pressure for removal, seasonal nuisance (e.g., leaf fall blocking gutters, fruit fall creating slippery patches and honey dew dripping on vehicles and surfaces), consideration is also given to species characteristics such as deciduous or evergreen.
BELOW GROUND	*The RPA is defined as the minimum area (in m2) around the tree that is 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.*
	Section 4.6.2 & 4.6.3 of BS5837 allows for the shape of the RPA to be changed for the likely spread of the roots.

Onsite Impact Assessment from Proposal	
Root Protection Area (RPA)	During construction protection fencing and ground protection is recommended. *See Appendix 6 for details and Appendix 4 for locations.* *A prestart construction plan is recommended and can be included within a site specific method statement, ensuring potential impacts are mitigated.*
Foundations	None anticipated at the time.
Surfaces	New surfaces are required within the RPA of T06, as such ground protection in the form of a cellular confinement system is recommended, please see appendix 4 for details. *Section 7.4.1 and 7.4.2 provide details on new permanent hard surfacing within RPA's.* Providing the coverage is no greater than 20% of the RPA's the proposal is acceptable.
Services	Service routes will entre via the current Hampton road access and pass within the RPA of T06. Supervised excavations are recommended and will follow site specific methods. Section 7.7 provides details on underground utility apparatus.
Ground Levels	No impact anticipated with no changes to ground levels within an RPA
Shading	Shading will be encountered around the proposal, this is in-keeping with the local area and considered acceptable on this occasion.
Leaf Litter	We recommend using nonslip surfaces and guards fitted to the guttering and gullies to prevent leaf litter becoming a problem.

7 - Recommendations

The preliminary tree works recommendations are included in the tree survey schedule contained within this report (appendix 3). By liaison with the council tree officer, formal agreement should be sought regarding the proposed management works.

We are recommending a site specific method statement (SSMS) for the development, once final details have been confirmed we will be able to adapt the specific mitigation methods and provide detailed solution to ensure the long term safety of the retained trees as well as appropriate space and ground conditions for replanting locations if required. The SSMS could form part of planning conditions if the proposal is approved. Within the SSMS all impacts will be discussed with mitigation measures recommended.

8 - References

- BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'
- BS3998:2010 'Tree work – Recommendations'
- NJUG 4 – National Joint Utilities Group "Guidelines for The Planning, Installation and Maintenance of Utility Apparatus In Proximity to Trees. Volume 4, Issue 2. London: NJUG 2007"
- BGS Open-Source Soil Data - http://www.bgs.ac.uk/nercsoilportal/maps.html

9 - APPENDICES

Appendix 1: Key to Survey Sheets

BS5837 Category	Description
A	Those of high quality and value: in such a condition as to be able to make a substantial contribution (> 40 years)
B	Those trees of moderate quality and value: those in such a condition as to make a significant contribution (> 20 years)
C	Those trees of low quality and value: currently in adequate condition to remain until new planting could be established (> 10 years)
U	Those in such a condition that any existing value would be lost within 10 years, and which should, in the current context, be removed regardless of development

Note: Sub-categories are denoted in the tree survey data (A1, B1, C2 etc.). You are referred to the BS for further detail if required.

Tree No.	T (tree), G (group), H (hedge), W (woodland) + Ref No.
Species	Common and Botanical Name
Ht (m)	Measured height in metres
DBH (mm)	Diameter at 1.5m above ground level
Branch Spread	In m to all four cardinal points
Cr Ht Clearance (m)	Overall height of lowest branches from the ground level on side of proposed development
Life Stage	Young, Semi-Mature, Early-Mature, Mature, Over-Mature
General Observations	Observations on the condition of the tree(s)
Tree Work Specification	Proposed tree works in accordance with BS3998
BS Cat	See above
Life Exp	Estimated remaining contribution in years.
RPA Radius (m)	Radius of the tree Root Protection Area measured from the trunk to the edge of the RPA circle in metres
RPA (m2)	Overall Root Protection Area in m2
*	Indicates where tree data may have been estimated as tree was offsite / restricted access / dense vegetation hindering full inspection

Appendix 2: Cascade Chart for Quality Tree 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 U Category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • 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) e.g. Dutch elm disease), or very low-quality trees suppressing adjacent trees of better quality.	**DARK RED** RGB code 127-000-000

TREES 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 essential components of groups, or of 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-pastures)	**LIGHT GREEN** RGB code 000-255-000
Category B **Those of moderate quality**: with an estimated remaining life expectancy of at least 20years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable 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 area	Trees with clearly identifiable conservation or other cultural benefits	**MID BLUE** RGB code 000-000-255
Category C **Those 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 the higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with no material conservation or other cultural value	**GREY** RGB code 091-091-091

BS5837 Report Schedule - Appendix 3

Ref.	Species	Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Condition	Recommendations
G001	Ash x1, Prunus spp x3	Group	Height (m): 12 4 stems, avg.(mm): 210 Crown Clearance (m): 4 Lowest Branch (m): 3 Life Stage: Mature Rem. Contrib.: 10+ Years	N:4 E:4 S:4 W:4	Group located within the pub garden to the west of the site entrance. View of stem obstructed by fence, unable to see ground conditions.	C1	Radius: 2.5m. Area: 20 sq. m.	These trees do not form a constraint to the redevelopment of the site. Ground protection is recommended to ensure impacts from the proposal are mitigated.	Physiological Cond: Ave Structural Cond: Ave	Pre construction: NA During construction: Protect trees with protective barriers - as shown on plans.
T001	Ash	Tree	Height (m): 12 Stem Diam (mm): 250 Crown Clearance (m): 3 Lowest Branch (m): 3 Life Stage: Early Mature Rem. Contrib.: 10+ Years	N:3 E:2 S:2 W:2	Tree located east of the site entrance, single stem with included union at 0.5 meter. Small stem removed at 2m with scarring and dead wood. Roots flare present RPA look to be suppressed by adjacent wall and ground conditions.	C1	Radius: 3.0m. Area: 28.3 sq. m.	The surfacing and levels in the RPA should not be altered as long as the tree is being retained. This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Poor Structural Cond: Physical Defects	Pre construction: NA During construction: Protect trees with protective barriers - as shown on plans.
G002	Holly x1, Bay x1, Cypress x1, Palm x1, Walnut x1	Group	Height (m): 12 5 stems, avg.(mm): 170 Crown Clearance (m): 4 Lowest Branch (m): 3 Life Stage: Mature Rem. Contrib.: 20+ Years	N:6 E:6 S:6 W:6	Group located within the pub garden to the west of the site. View of stems obstructed by wall, unable to see ground conditions. Holly and Palm located within site.	C1	Radius: 2.0m. Area: 13.1 sq m.	These trees located inside up gardens do not form a constraint to the redevelopment of the site. Holly and palm located inside the site do not warrant retention due to size and species.	Physiological Cond: Ave Structural Cond: Ave	Pre construction: Remove Holly and palm During construction: No action required.
T002	Sycamore	Tree	Height (m): 14 Stem Diam (mm): 470 Crown Clearance (m): 4 Lowest Branch (m): 7 Life Stage: Mature Rem. Contrib.: 20+ Years	N:4 E:4 S:4 W:4	Tree located outside of site within pub gardens. Main stem view restricted by wall. Trail hole dug to inspect for root system, no roots observed with wall and foundations present impacts the RPA spread.	C1	Radius: 5.6m. Area: 99.9 sq. m.	This tree located outside of the site. This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Good Structural Cond: Good	Pre construction: No action required. During construction: No action required.
G003	Cypress x3	Group	Height (m): 14 3 stems, avg.(mm): 330 Crown Clearance (m): 3 Lowest Branch (m): 3 Life Stage: Mature Rem. Contrib.: 20+ Years	N:2 E:2 S:2 W:2	Group located outside of site to the west, concrete and brick structures observed within the ground to the east. Weak unions with limited value.	C1	Radius: 4.0m. Area: 49.3 sq. m.	These trees located outside of site do not form a constraint to the redevelopment of the site.	Physiological Cond: Poor Structural Cond: Poor	Pre construction: No action required During construction: No action required.
T003	Sycamore	Tree	Height (m): 16 Stem Diam (mm): 520 Crown Clearance (m): 4 Lowest Branch (m): 3 Life Stage: Mature Rem. Contrib.:20+ Years	N:1 E:4 S:4 W:4	Tree located outside of the site to the north. Growth suppressed to the north by T04. Multiple stem failure.	C1	Radius: 6.2m. Area: 122.3 sq. m.	This tree will not have to be removed to facilitate a proposed future development. This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Poor Structural Cond: Poor	Pre construction: No action required During construction: Protect trees with protective barriers - as shown on plans.
T004	Sycamore	Tree	Height (m): 16 Stem Diam (mm): 500 Crown Clearance (m): 3 Lowest Branch (m): 3 Life Stage: Mature Rem. Contrib:20+ Years	N:3 E:3 S:1 W:3	Tree located outside of the site to the north. Growth suppressed to the south by T03. Multiple stem failure with wear unions at 1.5m	C1	Radius: 6.0m. Area: 113.1 sq. m.	This tree will not have to be removed to facilitate a proposed future development. This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Poor Structural Cond: Poor	Pre construction: No action required. During construction: Protect trees with protective barriers - as shown on plans.
T005	Chestnut	Tree	Height (m): 14 Stem Diam (mm): 1000* Crown Clearance (m): 3 Lowest Branch (m): 4 Life Stage: Over Mature Rem. Contrib.: 10- Years	N:2 E:3 S:5 W:3	Tree located off site within rear garden of No16, heavy lean to the south, unable to see base and ground conditions. Wall, foundations and structure within the RPA to the north. RPA supressed by wall and foundations. Limited life span with good chance of failure.	C2	Radius: 12m. Area: 452.4 sq. m.	This tree does not form a constraint to the redevelopment of the site. Expected early failure due to poor condition	Physiological Cond: Poor Structural Cond: Poor	Pre construction: No action required. During construction: Protect trees with protective barriers - as shown on plans.
T006	Eucalyptus	Tree	Height (m): 18 Stems diam(mm): 820 Crown Clearance (m): 1 Lowest Branch (m): 3.5 Life Stage: Mature Rem. Contrib.: 20+ Years	N:5 E:5 S:5 W:5	Tree central to the site, previous ivy removal. TPO obtained in 2021. Wall and foundation located to the west by 1.2m. Trails holes found no indication of RPA spread beyond the wall to the west.	B1	Radius: 9.8.0m. Area: NA sq. m.	This tree will form a component part of the proposal. Allowing the local vernacular to be maintained. Ground conditions and levels have suppressed the RPA spread. Management works recommended to facilitate the proposal.	Physiological Cond: Good Structural Cond: Good	Pre construction: Lift crown to 4m only removing limbs 75mm and under. All major limbs will be retained allow light onto the RPA below the canopy. During construction: Protect trees with protective barriers - as shown on plans.
T007	Eucalyptus	Tree	Height (m): 14 Stem Diam (mm): * Crown Clearance (m): 3 Lowest Branch (m): 2.5 Life Stage: Mature Rem. Contrib.: 20+ Years	N:1 E:2 S:3 W:2	Tree located outside of site, southern lean. RPA supressed by wall and foundations to the north.	C1	Radius: NA. Area: NA sq. m.	This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Ave Structural Cond: Ave	Pre construction: No action required. During construction: No action required.
T008	Cherry	Tree	Height (m): 6 Stem Diam (mm): * Spread (m): 2N, 4E, 6S, 8W Crown Clearance (m): 12 Lowest Branch (m): 12 Life Stage: Mature Rem. Contrib.: 30+ Years	N:2 E:2 S:2 W:2	Tree located outside of site, southern lean. RPA supressed by wall and foundations to the north.	C1	Radius: NA. Area: NA sq. m.	This tree does not form a constraint to the redevelopment of the site.	Physiological Cond: Fair Structural Cond: Fair	Pre construction: No action required. During construction: No action required.

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Status
Planning

Project
24 Hampton Road

Drawing title
Tree location plan - Appendix 4

Rev	Description	Date
-	-	-
-	-	-
-	-	-

Scale	Date	Drawing Number	Rev
NTS	25/07/22	2120_01	V01

BS Category of Condition

- Site boundary
- Calculated Root Protection Area
- Category A - High quality and value - >40 years.
- Category B - Moderate quality and value - >20 years.
- Category C - Low quality and value >10 years.
- Category U - Poor quality and low value <10 years.
- (1) Target Notes

1:
2:
3:
4:
5:

Cited from Google Earth

24 hampton road, twickenham
proposed site plan

Tree root protection zones
Refer to Fellgrove Arboricultural Report for further details

number: 4257/P100e | date: may
scale: 1:200@A2 | drn: ral chkd: g

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Status
Planning

Project
24 Hampton Road

Drawing title
Trial hole plan - Appendix 4

Rev	Description	Date
-	-	-
-	-	-
-	-	-

Scale	Date	Drawing Number	Rev
NTS	25/07/22	2120_02	V01

BS Category of Condition

- Site boundary
- Calculated Root Protection Area
- Category A - High quality and value - >40 years.
- Category B - Moderate quality and value - >20 years.
- Category C - Low quality and value >10 years.
- Category U - Poor quality and low value <10 years.
- Tree recommended removal on Arboriculture grounds
- Tree recommended removal to accommodate the proposal
- (1) Trial holes

1: Inside the site to the east of the boundary wall
2: As above
3: As above
4: Just outside site boundary, underground pipe visible
5: West of the wall adjacent to T06
6: West of the wall adjacent to T06
7: North of the boundary wall and west of wall adjacent T06
8: North of boundary wall adjacent to T008
9: North of boundary wall adjacent to T007
10: North of the boundary wall on the edge of current concrete base

Cited from Google Earth

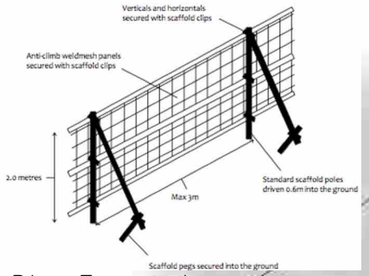
T004
T006 - TPO Tree
T005
T003
G003
T007
T008
T002
G002
G001
T001

0 5 10 20m

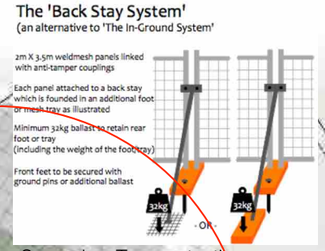
24 hampton road, twickenham
proposed site plan

Tree root protection zones
Refer to Fellgrove Arboricultural Report for further details

number: 4257/P100e | date: may
scale: 1:200@A2 | drn: ral chkd: g



Primary Tree protection



Secondary Tree protection

T004
T006 - TPO Tree
T003
G003
T005
T007
T008
T002
G002
G001
T001
1
2
3
HA

0 5 10 20m

24 hampton road, twickenham
proposed site plan

Tree root protection zones
Refer to Fellgrove Arboricultural Report for further details

number: 4257/P100e | date: may
scale: 1:200@A2 | drn: ral chkd: g

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Status
Planning

Project
24 Hampton Road

Drawing title
Protection plan - Appendix 4

Rev	Description	Date
-	-	-
-	-	-
-	-	-

Scale	Date	Drawing Number	Rev
NTS	25/07/22	2120_03	V01

BS Category of Condition

- Site boundary
- Calculated Root Protection Area
- Category A - High quality and value - >40 years.
- Category B - Moderate quality and value - >20 years.
- Category C - Low quality and value >10 years.
- Category U - Poor quality and low value <10 years.
- Tree protection barrier (primary Specifications)
- Tree protection barrier (secondary Specifications)
- Manual Excavations
- Ground protection
- (1) Target Notes

1: Site boundary used as protection fencing
2: Site boundary used as protection fencing
3: Manual excavations for any service routes
4:
5:

Cited from Google Earth

Appendix 5: Site Inspection and Monitoring Schedule

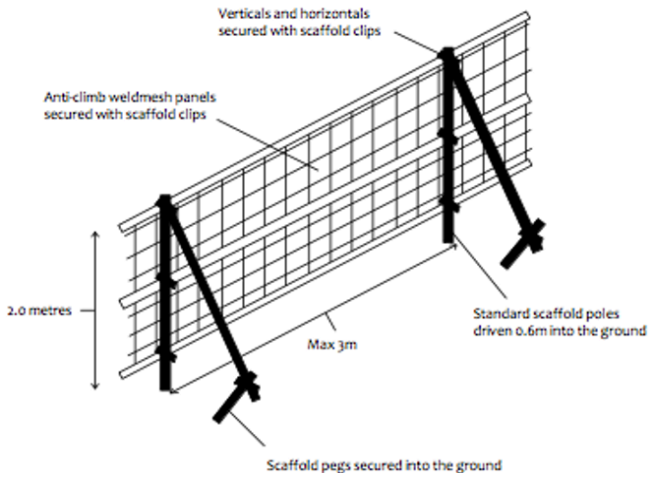
In order to ensure that the principals of tree protection are adhered to, it is important to set out communication details for key individuals and tasks that require supervision. Any on-going monitoring and site supervision shall be agreed with the local tree officer where required.

It should be noted that these visits will only be undertaken if a written instruction is received from the client prior to commencement of works on site.

Inspection	Attendees	Comments
Pre-start Occurring prior to any works taking place on site	Site manager, appointed arborist, architect, site owner	Site manager to study this method statement & contact the appointed arborist to agree all protection measures on site and install.
Tree and hedge removals	Site manager, appointed arborist, and appointed contractors	Work to take place before construction on site.
Pre-construction meeting After tree works completed & all protection measures installed. Prior to any other activity	Site manager, appointed arborist	Tree protection fencing locations & specifications checked. Additional ground protection measures checked. Further protection measures/restriction agreed
Pre-construction toolbox talk	Site manager, site staff working near / within RPA fencing	Any member of site staff working near or within the RPA will need to attend a toolbox talk delivered by the site arborist. All attendees will be provided with summary sheets and cautionary notes.
Ground protection install	The appointed arborist shall be invited to oversee the ground protection	At least one week's notice shall be given prior to commencing excavations
Intermediate reporting Throughout entire project, at least once per month	The site manager shall report back to the appointed arborist. Appointed arborist to complete site checks once a month if required.	Site manager to liaise with the appointed arborist regarding any issues which may affect trees. General site photos indicating tree protection measures to be provided monthly
Post-Construction meeting Post construction activity but prior to removal of fencing & Landscaping operations	Site manager, appointed arborist	Retained trees inspected, further landscape operation and restrictions to be agreed.

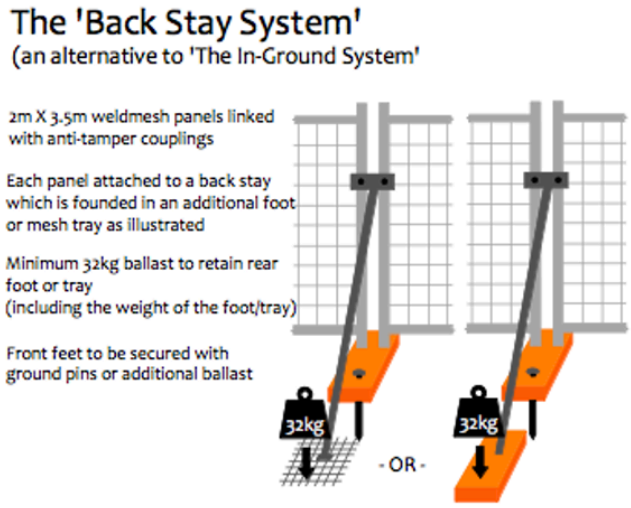
Appendix 6: Tree and Ground Protection Specification

Figure 3: The In-Ground System



This system may be installed where indicated by a solid purple line on the Tree Protection Plan. It should be robust enough to withstand occasional knocks by plant machinery and, once installed, shall remain in place throughout the entire construction phase. Vertical scaffold poles are driven into the ground, onto which are affixed horizontal scaffold poles and diagonal bracing struts. Weldmesh panels (or similar – e.g., Heras type fencing panels, or 18mm+ plywood boards) are secured to this scaffold framework using sturdy clips e.g., standard scaffold clips. The system is illustrated in the diagram to the right and is based on BS 5837 guidelines.

Figure 4: The Back-Stay System



This system may be installed where indicated by a solid or dashed purple line on the Tree Protection Plan. It is more practical over existing hard surfaces or where the fencing needs to be moved to enable permitted activities within the RPA. This system should be able to withstand occasional knocks by machinery and should not be relocated except with the consent of the site manager and the approval of the site arborist. Within this system, weldmesh fencing panels (minimum height 2m) are affixed into rubber or concrete feet and clipped together with anti-tamper couplers. Where topography permits, two couplers should be used, spaced at least 1m apart. Alternate panels should be attached to a diagonal back stay connected to an additional foot or baseplate secured with ground pins or additional ballast. Where ground pins are not used, the total weight of the foot/plate plus ballast should total not less than 32kg.

Appendix 7: Ground Protection Specifications

Ground Protection Measures

Where indicated on the Tree Protection Plan, ground protection measures shall need to be installed over any soft landscaping. The purpose of the ground protection is to prevent soil compaction and contamination where it is not practicable to fence off Root Protection Areas because access is required.

Where vehicles or machinery arerequired to operate within theRestricted Zone, a geotextile fabric shall be installed followedby a compression resistant layersuch as 150mm of compressiblematerial (e.g. Woodchip) or a 3Dcellular confinement system in-filled with 7 – 40mm angulargravel (e.g. Cellweb™).

Either system shall act to spread the load of any vehicles passing through the restricted zone. Above this load spreading layer, 25mm wooden boards or 12mm road plates shall be secured.

Figure 4: Example of Above Soil Surfacing

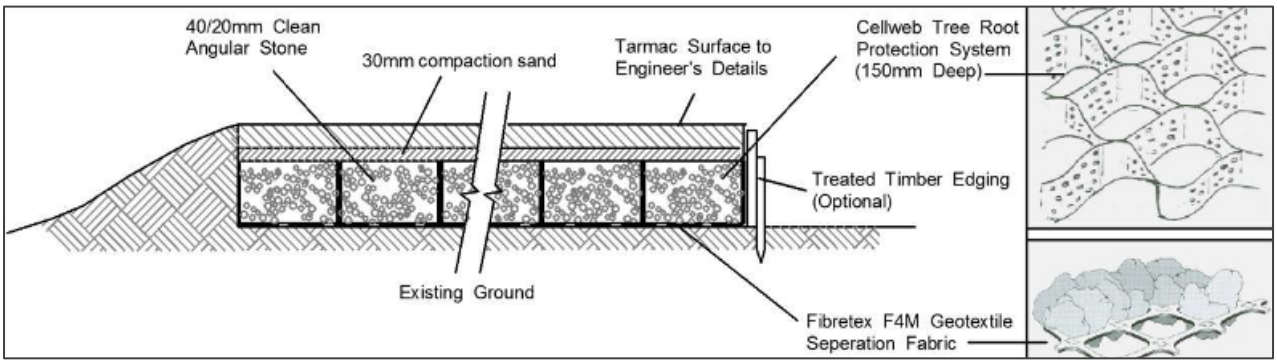
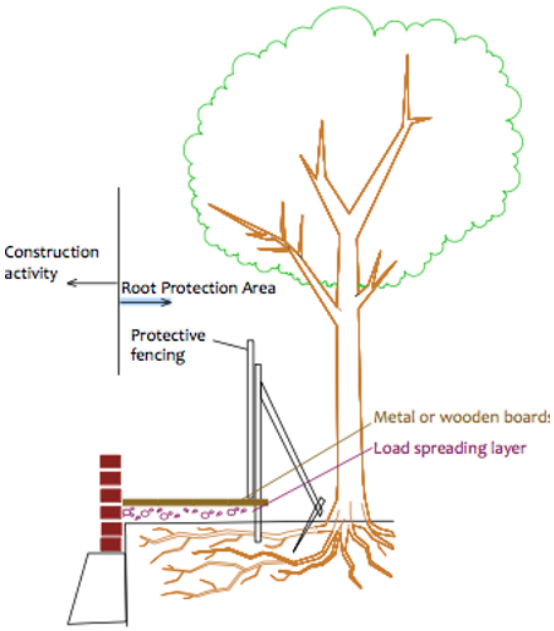


Figure 5: Ground Protection where root protection areas are outside Construction Exclusion Zone

If only pedestrian access is required, then 25mm wooden boards, e.g. scaffold boards firmly affixed together and laid directly onto the ground shall suffice. If the ground is uneven, then it shall first be made even using sand or soil to ensure the boards distribute loads over a large area of ground. Boards shall be appropriately weighted or pinned to prevent movement. Alternatively scaffold boards may be supported above ground on a scaffold framework. Where existing hard surfacing is to be retained throughout the entire project it shall not be necessary to install additional ground protection measures. However, the hard surfacing must be firm enough to spread the load of any traffic passing overhead. Paving slabs shall need to be reinforced with scaffold boards or similar if vehicles or machinery are to be used in this area.



The ground protection measures shall be installed and approved before commencement of demolition and construction activity and before the arrival of plant machinery or materials. They shall remain in place until all heavy construction activity is complete or until they are due to be replaced with a new hard surface.

Appendix 8: Site Photographs

		
T01	T01	T02
		
T03 – T04	T03 – T04	T05
		
T06	T06	T05 – T07

Appendix 8A: Trial Hole Photographs


TH1

TH2

TH2

TH2

TH6

TH6

TH6