



**6 Firs Walk
Northwood
HA6 2BZ**

**Arboricultural Impact Assessment
Arboricultural Method Statement (AMS)**

**(Ref. 101 914)
Date: 26/03/2024**

Prepared by:
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1.0 INSTRUCTIONS

Arbol Euro Consulting Ltd. is instructed to produce an Arboricultural Method Statement (AMS) in regard to the development (residential plots 1 and 2) at the subject site. See plots as plotted on the appended Tree Protection Plan.

This AMS is to be read in conjunction with the appended Tree Survey, Tree Constraint and Protection Plans.

2.0 OBSERVATIONS, CONCLUSIONS AND RECOMMENDATIONS

2.1 Trees and Site Visit. We last visited the site in yr. 2017. In our opinion there is no need to revisit the site as there are no on site trees. There would be Root Protection Area (RPA) incursion into the site from the off-site Wellingtonia T2 but in yr. 2017 (with an estimated *Diameter at Breast Height* of 1250mm) this was plotted with a BS:5837 maximum radius of 12.5m. Importantly this would not have changed in yr. 2024. For the off-site holly T1 and cypress T4 we have apportioned a large fenced off Construction Exclusion Zone in regards to their RPA incursion into site.

2.2 Wellingtonia T2 and RPA incursion. With Plot 1, there would be 2 x RPA build edge* incursions of 2.4%* (plotted blue areas on the appended TPP). However, for a tree with normal vitality, and with the loss of only a small percentage of *ephemeral* fine feeder roots**, we regard this incursion as acceptable in terms of tree health and stability.

* T2 RPA of 706.8m² with build incursions of 3.2m² and 13.8m² (total = 17m²) = 2.4%.

** As opposed to the large structural woody roots that spread-out for a short distance from the trunk base and importantly can persist for the life of a tree, the more distal fine non-woody feeder roots (function: to absorb water & essential nutrients) are much shorter lived: from a year to only 10 days. As such there is a continual annual turn-over of these feeder roots that are produced, where ground/soil conditions are favourable and as needed by the tree, to capture water and essential nutrients from unexploited areas of the surrounding soil. Therefore, the initial loss of **edge feeder roots** in this RPA incursion would not adversely impact on the physiological health and/or stability of this tree. Lastly, in this sense the generic BS:5837 calculated RPA radial/m² dimension does not necessarily correlate to the actual year-on tree root (plate) morphology.

Ref:

- (1) Dept. for Communities and Local Government. London TSO *Tree Roots in the Built Environment* (2006). (page 50)
- (2) International Society of Arboriculture and ISA Europe Ltd *Arborists' Certification Study Guide (UKI edition)* (1999). Edited by JH Kenyon and Russell Ball (pages 4-5)

2.3 Underground Utilities: For **Plot 1** these would come off the utilities of the existing property and for **Plot 2** these would come in from Fox Dell where there are no tree constraints.

2.4 Site Access: This would be off Firs Walk where there are no trees.

3.0 REFERENCES

- *BS 5837; 2012 'Trees in relation to design, demolition and construction - Recommendations'* British Standards Institute, London
- *BS 3998; 2010 'Tree Work Recommendations'* British Standards Institute, London
- *NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' 2007* National Joint Utilities Group (NJUG) Volume No. 4: No. 1.
- Arboricultural Practice Note 12; 2007 – AAIS
- 'Availability of Sunshine' BRE - CP 75/75
- 'Tree Roots in the Built Environment' 2006 - Dept. for Communities & Local Government (DCLG).
- 'Up by Roots: healthy soils & trees in the built environment' 2008 James Urban, International Society of Arboriculture.
- 'Arboriculture'; 1999 3rd edition R. Harris, J. Clarke & N. Matheny. Prentice Hall.
- 'Soil Management for Urban Trees' 2014 International Society of Arboriculture, Best Management Practice series.

AMS APPENDICES

1. Tree Survey Schedules & Table 1 - Category Grading (Quality Assessment)
2. Tree Protection Plan
3. Arboricultural Method Statement
4. Tree Protection Barrier Specification

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APPENDIX 1
TREE SURVEY SCHEDULE
(see appended at end of report)
2 pages

APPENDIX 2

TREE CONSTRAINT AND PROTECTION PLANS

(see appended to the report)

NB The original of this plan was produced in colour – a monochrome copy should not be relied upon.

APPENDIX 3
ARBORICULTURAL METHOD STATEMENT
3pages

ARBORICULTURAL METHOD STATEMENT (AMS)

Site: No. 6 Firs Walk, Northwood, HA6 2BZ

To be read in conjunction with the appended Tree Protection Plan

NB The original of this plan was produced in colour – a monochrome copy should not be relied upon.

This AMS lays down the methodology for any demolition and/or construction works that may have an effect upon trees on and adjacent to this site. It is essential within the scope of any contracts - related to this development - that this AMS is observed and adhered to. It is recommended that this document forms part of the work schedule and that specifications are issued to the building contractor(s) and these must be used to form part of their contract.

Consulting Arborist contact details: Russell Ball – mob. No. 078844 26671

SEQUENCE OF WORKS

From commencement of the subject development, the following methodology will be implemented in the manner and sequence described:

1. Pre-commencement site meeting.
2. Arboricultural works
3. Erect *temporary staked* Tree Protection Barriers (TPBs) to establish the fenced-off Construction Exclusion Zones (CEZ): **before** any demolition and/or construction works begin on-site.
4. Route underground services: not within the RPAs of any retention trees.
5. Main construction works.
6. Install *temporary* scaffolding incorporating planked ground protection (TSGP).
7. Site Supervision Responsibilities
8. Remove TPBs and TSGP.

1. PRE- COMMENCEMENT SITE MEETING

To outline on-site working methods in relation to trees prior to any demolition and/or construction activity, a site meeting of the following shall take place:

- Client
- Architect/Planning Consultant
- Structural Engineer
- Main Contractor
- LPA Arboricultural Officer (*optional*)
- Consulting Arborist
- Site Agent

2. ARBORICULTURAL WORKS

1. None required.

3. ERECT **TEMPORARY STAKED** AND BRACED TREE PROTECTION BARRIERS (TPBs)

1. Prior to demolition and/or construction, the main contractor will erect the staked and braced TPBs as per the appended Tree Protection Plan (TPP) and as detailed in the 'Tree Protection Barrier Specification' at Appendix 4 of this report. See also Appendix MS(i) below. This will establish the 3 x fenced-off **Construction Exclusion Zones**: CEZs (marked up on the TPP).
2. If required a TPB panel (*locked with padlock and key with the site owner*) could be left unclamped for grass cutting.
3. Prior to commencement of any site demolition, construction, preparation, excavation or material deliveries, the Consulting Arborist will inspect installation of the TPBs and the CEZs. Any damage occurring to the TPBs during the demolition or construction phase will be made good by the main contractor.

4. ROUTE UNDERGROUND SERVICES

1. For **Plot 1** these will come off the utilities of the existing property and for **Plot 2** these will come in from Fox Dell where there are no tree constraints.

5. MAIN CONSTRUCTION WORKS

1. **Site Office:** There will be adequate space on this large site.
2. **Temporary Storage of Construction Material/Equipment:** See areas plotted on the appended TPP.
3. **Construction Exclusion Zone (CEZ):** There must be no (a) storage of construction material/equipment or (b) preparation of noxious substances (e.g. cement) in any area designated as the CEZ and enclosed by the TPB.

4. Before commencing work on site, all operatives must be briefed by the **Site Agent/Contract Manager** on the importance of protecting both on and off-site trees. The basis of this briefing will be the protection measures as set out on the Tree Protection Plan (TPP) including the position of staked and braced **Tree Protection Barriers, Scaffold Ground Protection and Construction Exclusion Zones**. As such the TPP shall be clearly displayed on the wall of the site hut/office. **NB** During the demolition and/or construction the **Site Agent/Contract Manager** will be responsible for all tree protection measures. See also *Site Supervision Responsibilities* below.

6. INSTALL TEMPORARY SCAFFOLD INCORPORATING PLANKED GROUND PROTECTION (TSGP)

1. Prior to construction, the TSGP shall be installed over and protect the RPA incursion into the 'build site' from the Wellingtonia T2: see the BS:5837 (2012) drawing specification below (with platform options).

NB I On no account - referring to leakage - shall there be any mixing/preparation of noxious substances (e.g. wet mortar or concrete notably with a cement mixer) on this ground protection planking; unless prepared on top of thick heavy-duty polythene sheeting. **NB II** Likewise, any diesel shall be carried in a portable bunded bowser and petrol shall be stored in a ventilated tool box.

The TSGP is plotted (brown-hatched) on the appended TPP.

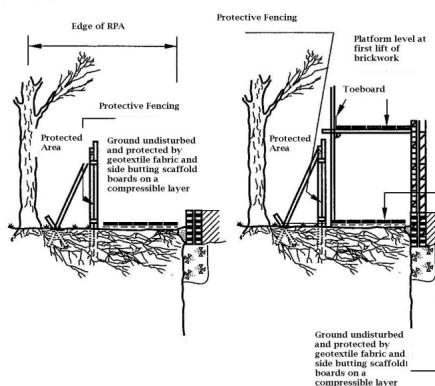


Figure 3 - Scaffolding within the RPA

7. SITE SUPERVISION RESPONSIBILITIES

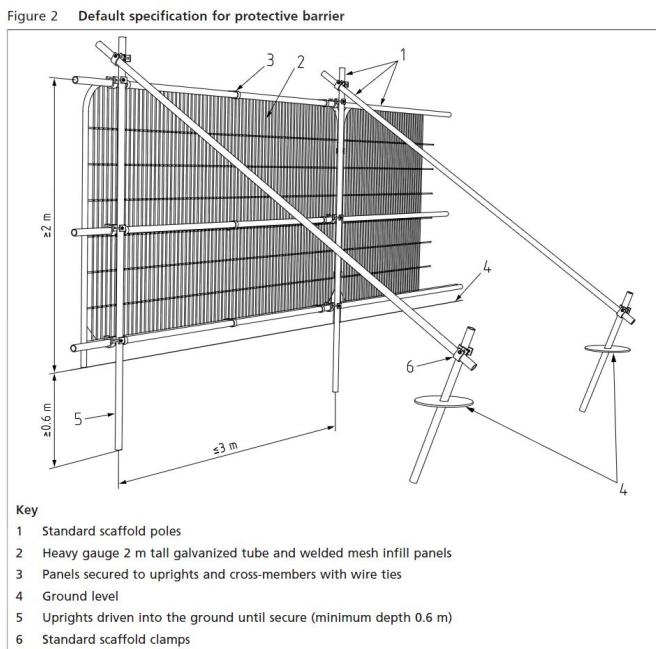
1. It will be the responsibility of the main contractor to ensure that any tree protection planning conditions attached to planning consent are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site.
2. The main contractor must assign tree protection monitoring duties to one or more individuals working at the site, who will be responsible for all tree protection monitoring and supervision (see the *Site Personnel Induction Form* at Appendix MS ii).
3. The individual(s) assigned tree protection monitoring duties must:
 - Be present on site for the majority of the time;
 - Be aware of (a) the Tree Protection Plan and (b) the tree protection measures to be installed and maintained throughout all phases of the development;
 - Be responsible for ensuring all tree protection measures are adhered to as detailed in the Arboricultural Impact Assessment (AIA) report and Arboricultural Method Statement (AMS);
 - Ensure all site operatives without exception read and understand the tree protection and control measures detailed in the AMS;
 - Keep on file all individual Site Personnel Induction Forms which must be signed by all site operatives (including sub contractors) indicating they have read and understood the control measures detailed within the AIA report and AMS;
 - Maintain a written record of Tree Protection / Construction Exclusion Zone inspections, to be kept up to date by the person(s) who have been designated the inspection and monitoring duties;
 - Have the authority to stop any work that is causing, or has the potential to cause, harm to any retention trees;
 - Be responsible for ensuring that all site operatives including sub contractors are aware of their responsibilities toward on/off site trees and the consequences of the failure to observe these responsibilities;
 - Make immediate contact with the Consulting Arboriculturist in the event of any tree related problems occurring, whether actual or potential. (Contact details including telephone number and email address are listed on the Title Page).
4. The Construction Exclusion Zone fencing, ground protection and all signs must be maintained in position at all times and checked on a regular basis by the on-site person(s) who have been designated that responsibility.

5. The main contractor will be responsible for contacting the Local Planning Authority and the Consulting Arboriculturist at any time issues are raised relating to the trees on site.
6. If at any time pruning works are required, permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998:2010 Tree Work – Recommendations (As updated).
7. The main contractor will ensure the build sequence and phasing is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position and undisturbed until completion of ALL construction works on the site.
8. The main contractor will be responsible for ensuring all site operatives including sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site.

8. REMOVAL OF TEMPORARY GROUND PROTECTION (TGP) AND TREE PROTECTION BARRIERS (TPBs)

1. The TGP & TPBs will be removed only upon completion of the construction.

APPENDIX MS(i)



APPENDIX MS(ii)

Site Personnel Induction Form

Name:

Site Address:

Date:

Declaration	Tick to Confirm
I have read and understand the Arboricultural Method Statement and the requirements to be employed / actioned at the site regarding tree protection.	
I understand that all tree protection measures (fencing and ground protection) must not be moved or disturbed throughout the development project without prior agreement with the Consulting Arboriculturist.	
I understand that certain operations must only be undertaken under supervision of the Consulting Arboriculturist or a suitably qualified Arborist and/or must not be undertaken without their approval.	
I acknowledge that any concerns I have regarding the protection of trees at and adjacent to the development site will be brought to the attention of the Site Manager/Supervisor.	
I acknowledge that I must not cause direct or indirect damage to any on site or neighbouring tree, either above or below ground level during the course of my daily operational duties.	

Signed:.....

APPENDIX 4

TREE PROTECTION BARRIER
SPECIFICATION

1 page only

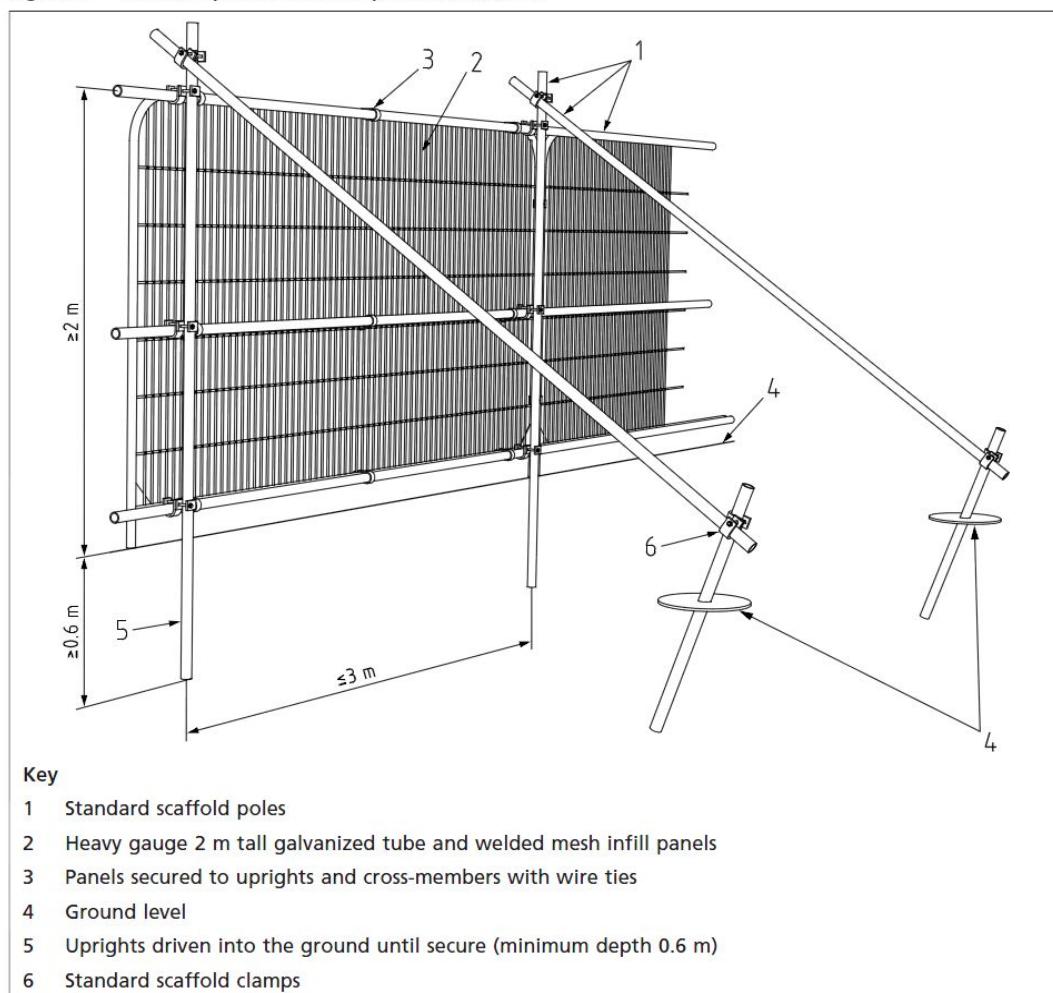
TREE PROTECTION BARRIER SPECIFICATION

The Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) enclosed by temporary protective fencing must:

1. Be erected prior to any site works, demolition or construction works, delivery of site accommodation or materials and must remain for the duration of the demolition/construction works. All-weather notices should be attached to the barriers with the following wording: **“CONSTRUCTION EXCLUSION ZONE – NO ACCESS”**
2. Be protected by temporary protective fencing and other measures as specified and as defined by area (m^2) on the drawings (Tree Protection Plan - TPP).
3. Preclude the storage or tipping of all materials and substances, in addition, toxic substances such as fuels, oils, additives, cement, or other deleterious substances within 5.0 metres of an exclusion zone.
4. Any incursion into the Root Protection Area (RPA) and Construction Exclusion Zone (CEZ) as indicated on the Tree Protection Plan (TPP) must be by prior arrangement, following consultation with the Local Planning Authority.

Temporary Tree Protection Barrier (Specification taken from BS:5837 -2012)

Figure 2 Default specification for protective barrier



HEADINGS & ABBREVIATIONS**TREE NO.****SPECIES:****AGE RANGE/LIFE STAGE:****HEIGHT:****CROWN SPREAD:****CROWN CLEARANCE & DIRECTION OF GROWTH:****STEM DIA/MULTI-STEM DIA:****VITALITY:****ESTIMATED REMAINING CONTRIBUTION:****BS 5837 CATEGORY & SUB-CATEGORY GRADING:****BS 5837 RPA:****BS 5837 RADIUS:**

REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE

COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)

Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE

ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES

MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)

HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)

STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES

A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD

RELATIVE USEFUL LIFE EXPECTANCY (YEARS)

A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION: SUB-CATEGORY REFERS TO ARBORICULTURAL (1), LANDSCAPE (2) & CULTURAL/CONSERVATION VALUES (3).

ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 M²)

PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER

SITE:	NO. 5 & 6 FIRS WALK , NORTHWOOD, HA6 2BZ
CLIENT:	Gavacan Homes Ltd.
BRIEF:	CARRY OUT A PHASE I ARBORICULTURAL IMPACT ASSESSMENT ON THE PROPOSED DEVELOPMENT AT THE ABOVE SITE.

SURVEYOR:	R. BALL
ASSESSMENT DATE:	08/12/2017
VIEWING CONDITIONS:	SUNNY - CLEAR
JOB REFERENCE:	101 165

PAGE: 1 of 2

TREE HEDGE GROUP NO.	SPECIES (COMMON NAME)	AGE RANGE/ LIFE STAGE	HEIGHT (m)	RADIAL CROWN SPREAD (m)				CROWN CLEARANCE & DIRECTION OF GROWTH (m)	STEM/ MULTI- STEM* DIA. (mm)	VITALITY	COMMENTS/STRUCTURAL MORPHOLOGY	PRELIMINARY MANAGEMENT	CATEGORY & SUB- CATEGORY GRADING BS 5837	BS 5837 RPA RADIUS (m)	BS 5837 RPA (m ²)	
				N	E	S	W									
T1	Holly <i>Third-party tree with no access to fully survey</i>	SM	3.5	1.5	1.5	2.0	1.5	?	See access	Est. 60	G	• Topped in past likely due to close building proximity now with poor crown form	?	C2(?) See access	0.72	1.63
T2	Wellingtonia <i>Third-party tree with no access to fully survey</i>	EM	20+	7	7	7	7	1.5	Est 1250 (max)	G	• Good crown form	?	B2(?) See access	15.00 (max)	706.8 (max)	
T3	Ash <i>Third-party tree with no access to fully survey</i>	EM	11	4.0	4.0	4.0	4.0	2.0	Est. * 300 x 3	G	• Topped in past now with poor crown form	?	C2(?) See access	6.2	122.1	
T4	Monterey Cypress <i>Third-party tree with no access to fully survey</i>	EM	8.0	3.5	3.5	3.5	2.5	2.0	Est. 240	G	• Suppressed by T3 – average crown form	?	C2(?) See access	2.8	26.1	
T5	Yew <i>Third-party tree with no access to fully survey</i>	SM	4.0	3.5	1.8	1.8	1.8	1.8	Est. * 180; 180; 60; 60	G	• Heavily lopped and topped – poor crown form	?	C2(?) See access	3.2	32.5	

SITE:	NO. 5 & 6 FIRS WALK , NORTHWOOD, HA6 2BZ
CLIENT:	Gavacan Homes Ltd.
BRIEF:	CARRY OUT A PHASE I ARBORICULTURAL IMPACT ASSESSMENT ON THE PROPOSED DEVELOPMENT AT THE ABOVE SITE.

SURVEYOR:	R. BALL
ASSESSMENT DATE:	08/12/2017
VIEWING CONDITIONS:	SUNNY - CLEAR
JOB REFERENCE:	101 165

PAGE: 2 of 2

TREE HEDGE GROUP NO.	SPECIES (COMMON NAME)	AGE RANGE/ LIFE STAGE	HEIGHT (m)	RADIAL CROWN SPREAD (m)				CROWN CLEARANCE & DIRECTION OF GROWTH (m)	STEM/ MULTI-STEM* DIA. (mm)	VITALITY	COMMENTS/STRUCTURAL MORPHOLOGY	PRELIMINARY MANAGEMENT	CATEGORY & SUB-CATEGORY GRADING BS 5837	BS 5837 RPA RADIUS (m)	BS 5837 RPA (m ²)	
				N	E	S	W									
T6	Ash <i>Third-party tree with no access to fully survey</i>	EM	20+	4.0	4.0	4.0	4.0	?	See access	Est. 700	G	• Topped in past – average crown form	?	C2(?) See access	8.4	221.6
T7	Sycamore <i>Third-party tree with no access to fully survey</i>	M	18	3	3	3	3	8.0	680 (340)	G	• Recently heavily lopped & topped (see photo below). Correspondingly, the RPA has been reduced by 50% (see supporting text at the end of the survey)	NATS	C2	8.1 (4.05)	209.1 (104.5)	
G1	Sycamore x2 Holly x 1 Ash x 1 <i>Third-party trees with no access to fully survey</i>	Y	4-7	1.2	1.2	1.2	1.2	1.5	Est. Av. 60	G	• Average (competing) group containing trees will limited potential to develop significant crown form	?	C2(?) See access	0.72	1.63	
H1	Mix of Yew, Cypress and Ash <i>Third-party hedge with no access to fully survey</i>	SM	5.0	1.2	1.2	1.2	1.2	1.5	Est. Av. 120	G	• Heavily lopped in past to provide an informal screening hedge with average form	?	C2(?) See access	1.1	3.2	

Photo to show heavily lopped & topped crown form of T7



When a tree has been lopped and/or topped by heavily 'pruning' back the primary scaffold limbs within the crown framework that is subsequently replaced by secondary epicormic re-growth, the former crown size will unlikely be replaced when compared to a maiden tree that not been lopped and/or topped. *In this way the former crown structure of the affected tree has been permanently disrupted.* See corresponding text below that relates to the RPA reduction of affected trees.

This can also occur when a tree is in decline where the outer crown - and sometimes the mid crown- begins to dieback. As above secondary epicormic re-growth will often be produced lower in the crown of the affected tree. See also below the corresponding text that relates to RPA reduction.

(1) Growing plants maintain a balance between the size of the shoot and the root system. This ensures a functional equilibrium between the demand for resources by above and below-ground plant organs and the capacity for supply (Brouwer, 1983). Balance between the shoot and root systems ensure that resources supplied by each can meet demand by the other (Kramer and Kozlowski, 1979).

Ref: J. Roberts, N. Jackson & M. Smith. (2006) "Trees Roots in the Built Environment", Research for Amenity Trees No. 8. Dept. for Communities and Local Government. London, TSO.

(2) The overall size of the root system depends on the shoots and vice versa (root to shoot ratio). Although the ratio varies through the life of a tree and can be influenced by a change in conditions, for any individual it is a very fundamental value which is under tight control in the allocation of carbon resources. If the ratio is upset for any reason, for instance by damage or pruning either the root or shoots, the tree will seek to readjust back to the original relationship, either by enhanced growth if this can be achieved, or the dieback of tissue which is in surplus.

Ref: P.G. Biddle (1998) "Tree Root Damage to Buildings: Vol. 1 causes, diagnosis and remedy" Willowmead Publishing Ltd.

KEY

 Root Protection Area (RPA)
Crown Spread
BS: 5837 Retention Grade

Arbol EuroConsulting Ltd

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5 & 6 FIRS WALK , NORTHWOOD, HA6 2BZ
Tree Constraints Plan

SCALE : 1 : 500 DATE : 6/8/2021

MAP FILENAME : 101 620

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Maps based on Ordnance Survey MasterMap or 1:25000 Mid-scale data
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NOTES
1. The existing property is gray-shaded

Map File Name: 101 914

THIS TREE PROTECTION PLAN MUST BE
READ IN CONJUNCTION WITH THE
ARBORICULTURAL METHOD STATEMENT
THAT ACCOMPANIES THE TREE REPORT
(IN APPENDIX 3)

Arbol EuroConsulting Ltd.

1 Landford Close Rickmansworth WD3 1NG
Mobile: 07884426671

6 FIRS WALK, NORTHWOOD, HA6 2BZ
Tree Protection Plan

SCALE : DATE :
1:500 @ A3 26/03/2024
MAP FILENAME :



Pear Technology Services Ltd. Email info@peartechology.co.uk
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