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**ARBORICULTURAL IMPLICATIONS ASSESSMENT
FOR PROPOSED 3 HOUSE REDEVELOPMENT**

AT

**NO. 4 THE AVENUE
RADLEY
HERTFORDSHIRE
WD7 7DJ**

BY

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1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. received instructions from Mr. M. Mitzman to undertake an inspection of trees located on and immediately adjacent to the site referred to as No. 4 The Avenue, Radley, Hertfordshire, WD7 7DJ. The purpose of the inspection was to produce a base inventory of the tree stock and an Arboricultural Implications Assessment of redevelopment proposals.
- 1.2 The proposals are for the demolition of the existing house and the construction of three detached houses with garaging and gardens. Details of the proposals will have been submitted by Mohsin Cooper.
- 1.3 It is understood that a previous consent (Application No. 14/1622 FUL) was granted for the construction of two new homes on the site on similar footprints to the currently proposed houses Nos. 2 and 3. The current application comprises different designs for houses Nos. 2 and 3 and replacement of the existing house on a similar footprint.
- 1.4 The trees on the site were originally inspected in January 2014.
- 1.5 The update inspections were undertaken on the 30th August 2023 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.

2. GENERAL SITE DESCRIPTION

- 2.1 No. 4 The Avenue is a detached residential property located on the east side of The Avenue with further residential properties to the north and south, including a property to the northeast built since the previous site visit. To the east the grounds adjoin "The Warren", an access road for residential properties.
- 2.2 The property has an in/out drive, detached garage and outbuildings with extensive grounds to the east and south. These include areas of lawn and extensive tree cover mainly to the east and south. An infilled swimming pool is situated to the east with a pond to the south.

3. SCOPE OF TREE SURVEY

- 3.1 All trees previously inspected in 2014 were reassessed.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Only those trees within the site boundary could be basally inspected, with the structural integrity of the trees located outside the site unconfirmed. Each tree was inspected to the requirements of Section 4.4 "Tree Survey" of BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

4.2 The tree survey followed the numbered sequence from G1 to G131 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J48.05/01 Rev. A in Appendix 2. This drawing also includes crown spreads based on four compass points and BS calculated root protection areas.

4.3 The following categories of information were obtained for each tree. Separate detailed tree survey sheets are attached in Appendix 1, together with comprehensive explanatory sheets which cover the details of the categories listed below.

- (1) Tree reference number
- (2) Species
- (3) Height in metres
- (4) Stem count
- (5) Stem diameter or equivalent in millimetres
- (6) Branch spread in metres
- (7) Age class
- (8) Height of crown clearance in metres
- (9) Physiological condition
- (10) Estimated remaining contribution in years
- (11) Category grading
- (12) Structural condition
- (13) Preliminary management recommendations

4.4 Within the assessment of physiological condition and remaining contribution, a visual inspection of each tree was undertaken to assess the crown and stem for any weak structures, deadwood, hollows, forks or other defects that might affect its stability and safety. The base of each tree was also visually inspected, together with tapping and probing, to search for signs of root lifting, bark death or decay. Where stems were heavily ivy clad, no full assessment of structural integrity could be undertaken. Clearance of the ivy would be necessary for confirmation of tree condition.

5. RISK ASSESSMENT - INFORMATIVES

5.1 Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year round basis, such as footpaths, gardens and roadways. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could potentially cause physical damage to such structures.

5.2 Within the scope of any tree survey it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even healthy trees can suffer stem snap or windblow. There is also a well known propensity for mature trees to occasionally shed limbs for no discernible reason, even on calm days. Although relatively rare, limbs may occasionally be shed and this should be acknowledged as a risk that cannot entirely be mitigated.

6. RESULTS OF TREE INSPECTIONS

- 6.1 A total of 131 individual trees and groups were reassessed with all but the Oak (T120) believed to have been planted since the house was built. Planting in several phases has resulted in dense belts of trees to the east and around the pond to the south. A dense linear belt along the verge of The Avenue includes original plantings of Cedars and later infill planting of trees and shrubs.
- 6.2 Of the trees originally inspected 20 have been felled. These include trees in the adjoining grounds to the north (T4, T23 and T118) and a belt of trees along the southern boundary. This was presumably instigated by the property to the south to remove overhanging foliage and reduce shading/proximity concerns. Trees T70 and T74 appear to have died and subsequently collapsed.
- 6.3 A number of the trees have declined considerably in condition due to factors such as Honey Fungus (T22), Ash Dieback (numerous trees) and decline in Western Red Cedars of unconfirmed cause. Beetle presence on a number of Western Red Cedars is unusual and a query has been lodged with Forest Research to confirm whether they are a cause of concern. The results may affect retention of any of the Western Red Cedars.
- 6.4 Ash Dieback is an airborne pathogen that was relatively new in 2014 but is now widespread across the UK. It is always fatal and resistance in the Ash population is low. Any clearly infected will decline over only a few years. Those not showing clear signs of decline have been given the benefit of the doubt but if they do become infected could decline rapidly.
- 6.5 Within the original inspections T100 and T105 have been removed but the tree numbers have been repurposed to include trees immediately adjoining that were previously too small for inclusion.
- 6.6 In general most of the healthier trees have increased in overall dimensions since the previous inspections. Some have improved in condition and amenity value.
- 6.7 Of the trees inspected, the following is a breakdown of the various numbers of trees and groups in each BS Category.

BS Category	Tree No.	Sub Total
A	T125, T129	2
B	T2, T5, T13, G24, T25, T40, T44, T46, T81, T90, T104, T111, T116, T117, T120, T123, T124, T127, T128, T130	20
C	G1, T3, T6, T8, T9, T10, T14, T16, T17, T20, G21, T26, T27, G28, T29, G30, T33, T35, G36, T37, T38, T39, T41, T42, T43, G45, T49, T55, T56, T60, T62, T63, T64, T65, T72, T73, T75, T77, T78, T79, T80, T82, T83, T84, T85, T86, T87, T88, T91, T92, T93, T94, T95, T96, G100, T102, T105, T106, T107, T108, T110, G113, T114, T115, T119, G121, T122, T126, G131	69
C/U	G109	1
U	T7, T12, T18, T22, T31, T32, T34, T61, T66, T67, T68, T69, T71, T76, T89, T101, T112	17
Felled	T4, T11, T15, T19, T23, T47, T48, T50, T51, G52, T53, T54, T57, T58, G59, T97, G98, T99, T103, T118	20
Collapsed	T70, T74	2
	TOTAL	131

6.8 **Interpretation of table**

Category A	Retention most desirable. Of high quality and value and in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
Category B	Retention desirable. Of moderate quality and value and in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
Category C	Could be retained – of low quality and value. Poor crown form, heavily asymmetric, large numbers of similar species/size. Currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm.
Category C/U	Trees that would be included in category C but have structural faults, areas of decay, etc. that require more detailed investigations or climbing inspections to ascertain whether or not they can be safely retained. Groups that include dead/dying/dangerous individuals.
Category U	Trees for removal. Dead/dying/dangerous trees due to structural defects, fungal decay or root plate uplift. Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

7. **BS CALCULATED ROOT PROTECTION AREAS (RPAs)**

- 7.1 To provide an indication of the critical areas of root plate necessary for tree survival and longevity, BS 5837:2012 requires the calculation of RPAs for trees in the BS Categories A, B and C. Calculations are not made for Category U trees which will require removal on safety grounds within 10 years.
- 7.2 The table attached in Appendix 3 has been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS 5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs it is likely that the architecture of root systems will have been affected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations the indicated RPA circles should be used for guidance only within any redevelopment proposals.

ARBORICULTURAL IMPLICATIONS ASSESSMENT

8. REDEVELOPMENT PROPOSALS

- 8.1 The proposals are for the demolition of the existing house and the construction of three detached houses with garaging and gardens. Details of the proposals will have been submitted by Mohsin Cooper.
- 8.2 The supplied Mohsin Cooper proposed site layout plan has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Removal Plan, drawing no. J48.05/03 in Appendix 4 and the Tree Protection Plan, drawing no. J48.05/04 in Appendix 5. These indicate trees for removal and measures to protect retained trees in accordance with BS5837:2012 requirements.

9. TREES FOR REMOVAL – SAFETY

- 9.1 Based on the tree inspections the Norway Maple (T22) has been identified as having declined in condition significantly due to Honey Fungus. Its removal on safety grounds is recommended whether or not the redevelopment proposals go ahead. The stump of the tree should also be ground out and the arising removed to limit the potential spread of the Honey Fungus.
- 9.2 T22 is indicated for removal on safety ground with a red dashed crown outline on the Tree Removal Plan.

10. TREES FOR REMOVAL – REDEVELOPMENT

- 10.1 Based on the supplied layout proposal the following trees would require removal for the redevelopment to proceed and to provide appropriate clearances around proposed houses and garden areas.

Table: Trees for removal – redevelopment

BS Category	Tree No.	Sub Total
A	-	-
B	T111	1 tree
C	T33, T35, G45, T55, T56, T60, T62, T63, T64, T65, T84, T85, T86, T87, T91, T92, T93, T94, T95, T96, G100, T102, T105, T106, T107, T108, G109, T110, G113, T115, G121, T126	27 trees 5 groups
U	T7, T12, T18, T31, T32, T34, T61, T66, T67, T68, T69, T71, T76, T89, T101, T112	16 trees
	TOTAL	44 trees 5 groups

- 10.2 Of the above 16 individual trees are BS category U which should not represent a planning constraint, according to BS5837:2012. All but one (T111) of the remainder are low quality BS category C trees where either life spans are limited due to poor health or trees are heavily asymmetric and of low quality. The key boundary trees and higher quality trees are retained so that the visual setting of the tree scape along The Avenue and The Warren will not be adversely affected.

- 10.3 The majority of the BS category C trees indicated for removal would have required removal for the approved scheme. Consequently, the impact of the current proposals is not significantly different.
- 10.4 The trees for removal for the proposed redevelopment are indicated as such with blue dashed crown outlines on the Tree Removal Plan.

11. TREE SURGERY REQUIREMENTS

- 11.1 Based on the proposed layout the following tree surgery works would be required to provide appropriate clearances and separations from buildings.

Table: Tree Surgery Requirements

Tree No.	Species	Works required	Comments
T46	Lime	Lift crown base to 5m.	Provide clearance over drive.
T72	Yew	Lift crown base to 2m.	Provide garden clearance.
T82	Yew	Reduce back crown to W. to 3m radius and shape.	Balance crown form.
T83	Yew	Re-reduce crown all round to 3m radius and lift to 2m ground clearance.	Control dimensions and provide garden clearances.
T114	Cypress	Loose brace stems together at 14m. Re-reduce crown to N. back to 3m radius and shape.	Reduce risk of stem failure. Provide clearance from building.
T119	Robinia	Cut back crown to S. to 4m radius. Lift to 4m.	Heavily leaning over site with low crown.
T120	Common Oak	Deadwood crown. Lift fine branches to give 4m ground clearance.	Safety works. Provide vehicle access.

- 11.2 All of the above represent reasonable maintenance works to provide appropriate clearances and would not adversely affect public visual amenity.
- 11.3 All tree work will need to be carried out by a competent tree surgeon to comply with BS3998:2010 "Tree Work - Recommendations".
- 11.4 All trees recommended for felling or tree surgery works will need to be checked for the presence of bats or nesting birds prior to works commencing. Disturbance to bats or nesting birds could contravene the Wildlife and Countryside Act 1981 and result in prosecution.

12. POTENTIAL IMPACT OF PROPOSALS ON RETAINED TREES

- 12.1 The positioning of the three proposed houses has taken into account the retained trees whilst re-utilising the previously approved building footprints and that of the existing house. The principle of redevelopment of all three houses has been established and therefore it is a case of minimising potential impacts on retained trees through construction and design methodologies and best practice.
- 12.2 For house No. 1, which replaces the existing house, there will be no adverse impact on the RPAs of the two main trees (T114 and T120) that would have RPAs that overlap with the footprint.
- 12.3 For the BS category C Cypress (T114) the RPA indicated is theoretical, as the existing building covers much of the RPA to the north/north-east of the tree. The proposed replacement house re-utilises the existing building footprint. As such there will be no adverse impact on roots, provided the existing foundations are carefully removed. This would require a machine to be located within the building footprint and carefully picking the foundations out under the supervision of an Arboricultural Consultant with no excavation outside the footprint.
- 12.4 The existing drive adjacent to the Cypress (T114) is retained and provides a load spreading working surface during demolition and construction. At the landscaping phase the drive will be scraped to the existing sub base and re-laid.
- 12.5 For the Oak (T120) the situation is similar to that of the Cypress (T114) with minimal risk of any root disturbance.
- 12.6 With house No. 2 the existing access and drive nearest T114 is similarly retained as a working surface and then re-laid without disturbance to the root system. The new drive extent to the south is to be formed to a no dig porous design with only hand tool removal of the turf. The new section of drive will be installed to a working surface prior to any machinery accessing the site to start foundation works on house No. 2. The area of the new drive and garage will be dominated by the root systems of the large Cypress (T112) and the Eucalyptus (T111) listed for removal. Actual root presence in this area from T114 is therefore unlikely due to the intense competition.
- 12.6 The utilisation of a no dig porous drive system will accord with the recommendations in Section 7.4 "Permanent hard surfacing within the RPA" of BS5837:2012 and AA Guidance Note 12 "The use of cellular confinement systems near trees".
- 12.7 An example of a typical cross section and installation methodology are included in Appendix 6. The requirement for such a system can be referred to in a specifically worded condition.
- 12.8 The house No. 2 footprint has very minor overlaps with the outer RPA of the Western Red Cedars (T81 and T90) which are of no significance, with similar minor overlaps previously approved with the original proposed footprint. RPA overlaps with the proposed patio will be addressed through a no dig porous design with minimal potential for root damage. The area of the patio, particularly at shallow level, would be dominated by the root systems of the trees listed for removal. As such there is minimal risk of root disturbance to the retained trees.

- 12.9 For house No. 3 the current proposed footprint has much less of a potential impact on the RPA of the Lime (T46) than the previously approved scheme.
- 12.10 The proposed drive utilises an existing opening onto The Warren and the previously approved drive, with a no dig porous design proposed, as for house No. 2. Similarly, this will also be formed to a working surface on a rolling out basis from The Warren prior to any machinery accessing the site to commence foundation works.
- 12.11 Overall the potential impact of the three proposed houses on retained trees is minimal, provided the appropriate precautions and design methodologies are applied and the retained trees are appropriately protected during the works.

13. TREE PROTECTION MEASURES – FENCING

13.1 *Location of fencing*

- 13.1.1 The Tree Protection Plan indicates the proposed location of protective fencing based on the calculated tree protection areas and space available.

13.2 *Design of fencing*

- 13.2.1 The protective fencing is to be constructed of scaffold uprights driven into the ground to a minimum depth of 0.6m and at no greater than 3m spacing. Uprights to be braced with angled scaffold poles and anchors. On to the uprights weldmesh panels such as “Heras” or a similar product will be securely mounted with all weather notices attached to every 5th panel reading “Keep Out – Protected Area”. The fencing will form enclosed areas to which no access will be allowed. This design of fencing is considered appropriate to the site and scale of redevelopment proposed.

- 13.2.2 Examples of the fencing specification and signage required are included in Appendix 7.

13.3 *Timing of fencing*

- 13.3.1 Protective fencing is to be erected prior to commencement of demolition works and remain in place until completion of construction. The location and suitability of the fencing can be confirmed to the local authority by an arboricultural consultant prior to commencement of construction. Any tree felling will need to be undertaken prior to fence installation to minimise risks to operatives. All tree surgeons’ vehicles will be kept outside the indicated protection zones utilising existing areas of hard standing and drive.

13.4 *Additional precautions*

- 13.4.1 Potentially injurious materials such as fuels, oils, chemicals and cement will be stored at least 20m from any stem, or in a bunded storage vessel. No fires will be lit within 5m of the drip line of any retained tree. No level changes will occur, either raising or lowering within the protected areas. A list of these additional precautions are included on the Tree Protection Plan.

14. GROUND PROTECTION MEASURES

- 14.1 In areas within root protection zones where access around the new building footprints will be required during construction, specific ground protection measures will be necessary. For machinery access these should comprise interlocking, specifically designed load bearing temporary roadway plates, commonly made of steel or specialised plastics. They will minimise any risk of compaction whilst providing a running platform for machinery.
- 14.2 Where foot access only is required, ground protection measures should comprise a base layer of geotextile, over which 100mm of woodchip will be laid, topped by side butting scaffold boards or non-slip surfaced minimum 12mm thick OSB/plywood.
- 14.3 Installation of the ground protection measures should take place at the same time as the protective fencing, prior to demolition, and remain in place until completion of construction. The areas requiring ground protection measures are indicated by cross hatching on the Tree Protection Plan.

15. SITE OPERATIONS AND MATERIALS STORAGE

- 15.1 Details of site zoning cannot be specified by an Arboriculturalist as these are commonly determined by contractors on the basis of Health & Safety Assessments. However, the robust protective fencing will define the remaining site space available for storage and operations.

16. SERVICES/DRAINAGE/SOAKAWAYS

- 16.1 If it is necessary for services/drainage to be brought in within a tree RPA, the trench will need to be hand excavated or air spaded to avoid damaging tree roots. Any excavations within indicated tree RPAs will be undertaken to the requirements of NJUG Volume 4 "Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees" and supervised by an Arboricultural Consultant.

17. ARBORICULTURAL METHOD STATEMENT

- 17.1 Production of an Arboricultural Method Statement at this stage is considered inappropriate until the principles of the proposals and the measures to protect the trees have been accepted by the Council's Tree Officer. A detailed method statement could then be produced in response to a specific pre-commencement condition.
- 17.2 Alternatively reference could be made to the Tree Protection Plan in a specifically worded condition as the principal components for an Arboricultural Method Statement covering tree protection and construction methodologies are included on the Tree Protection Plan.

18. SUMMARY

- 18.1 The principle of two of these three new houses on the site has been established through the previously granted Application No. 14/1622/FUL. The current scheme represents revisions to the two previously approved new house footprints and replacement of the existing house.
- 18.2 The proposals would require the removal of 44 individual trees and five groups of trees. Of these 16 trees are BS category U and of no planning relevance and all but one of the remainder are BS category C. These represent excessive past planting resulting in most of the trees being of poor form, heavily asymmetric or stunted due to intense competition. Many of the trees are also in ailing health and of limited lifespan whether or not the proposals proceed.
- 18.3 The key boundary features are retained and impacts on public visual amenity will be limited. Robust measures, incorporating industry standard design and construction methodologies are proposed, together with BS5837:2012 specification protection measures.
- 18.4 Overall the potential impact of the proposals on retained trees will be minimal, provided the measures proposed on the Tree Protection Plan are implemented and arboricultural supervision of works within RPAs are undertaken. Reference to these can be made in a specifically worded condition attached to a Grant of Consent.
- 18.5 The Tree Protection Plan can be referred to as an approved drawing or in a specifically worded condition to ensure that the retained trees are appropriately protected during the demolition and construction works.

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APPENDIX 1

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Semi Mature - SM Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

CASCADE CHART FOR TREE QUALITY ASSESSMENT

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<p>Category 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 for reasons of sound arboricultural management</p>	<ul style="list-style-type: none"> • 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 R 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 <p>NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree.)</p>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
<p>Category A Those of high quality and value: in such a condition as to be able to make a substantial construction (a minimum of 40 years is suggested)</p>	<p>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)</p>	<p>Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	LIGHT GREEN
<p>Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)</p>	<p>Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)</p>	<p>Trees present in numbers, usually as groups or woodland, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality</p>	<p>Trees with clearly identifiable conservation or other cultural benefits</p>	MID BLUE
<p>Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.</p>	<p>Trees not qualifying in higher categories</p>	<p>Trees present in groups or woodland, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.</p>	<p>Trees with very limited conservation or other cultural benefits</p>	GREY
<p>NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</p>				

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
G1	1 no. Robinia, 3no. Leyland Cypress	<17	1	<370	<2	<3	<5	<7	Y	1.6+	Fair	20-40	C2	Robinia leaning out to W. Overgrown screen - one dominant to E. Heavily crowded.	
T2	Western Red Cedar	21	1	c750	c4	4	3.5	4	M	2+	Unconfirmed	20-40	B2	Thin upper crown. Located in adjoining garden therefore no basal inspection.	
T3	Pissard Plum	7	1	c250	c4	4	3.5	1	M	2+	Unconfirmed	20-40	C1	Located in adjoining garden therefore no basal inspection. Multi stemmed at 2m. Overtopped.	
T4	Unconfirmed	Felled.													
T5	Atlas Cedar	20	1	c750	c7	3.5	7	6	M	4+	Unconfirmed	20-40	B2	Cut back to E in past year. Located in adjoining garden therefore no basal inspection. Topped in past.	
T6	Cypress	18	1	c300	c2	2	2.5	2	SM	5+	Unconfirmed	20-40	C1	Located in adjoining garden therefore no basal inspection. Heavily crowded.	
T7	Himalayan Cotoneaster Tree	8	Multi	260	5.5	1.5	1.5	4	M	2.5+	Poor	<10	U	Multi stemmed at under 1m with weak unions. Part ivy clad. Past removal of stems and decay in remainder.	
T8	Crimson Norway Maple	16	1	360	3.5	1	6	5.5	SM	2+	Fair	20-40	C2	Lean to W. Crowded. Part ivy clad.	
T9	Leyland Cypress	14	1	350	2.5	1	2.5	3	SM	0+	Fair	20-40	C2	Crowded.	
T10	Leyland Cypress	15	1	290	2.5	2.5	2	2.5	SM	0+	Poor	10-20	C1	Part overtopped. Heavily crowded.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T11	Ornamental Cherry														Felled.
T12	Apple	4.5	1	160	1	4	1.5	0	M	4+	Dead	-	U	Leaning E. Main stem removed. One offshoot. Dead.	
T13	Beech	20	1	430	5	6.5	8	7	SM	3+	Good	40+	B2	Becoming ivy clad.	
T14	Box Elder	15	1	410	3	1	0	8	SM	3.5+	Poor	10-20	C1	Deadwood. Crowded. Decayed wound at 1.7m to E. Stem contorted to W.	
T15	Acer sp.														Felled.
T16	Leyland Cypress	13	1	600	1	2.5	4.5	4.5	M	1.8+	Poor	10-20	C1	Lean to S. Reduced in past five years. Upper crown dieback. Heavily crowded.	
T17	Leyland Cypress	12	1	580	4.5	2	0.5	6	M	1.3+	Poor	10-20	C1	Heavily reduced in past five years. Crowded. Crown dieback. Lean to N.	
T18	Prunus sp.	8	1	190	3	2.5	1	3.5	SM	3+	Poor	<10	U	Multi stemmed at 1.8m. Extensive deadwood. Dieback.	
T19	Prunus sp.														Felled.
T20	Leyland Cypress	15	1	590	4	4	2	0.5	M	1.1+	Poor	10-20	C1	Reduced in past five years. Lean to E. Crowded. Crown dieback.	
G21	Cherry Laurel	<7	Multi	<300	<4	<4	<6	<8	M	0+	Fair	40+	C2	Sprawling multi stemmed shrubs.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T22	Norway Maple	18	1	620	5	5.5	5	7.5	M	4+	Poor	<10	U	Extensive dead bark around circa 70% base. Possibly Honey Fungus. Twin stemmed at 3.5m. Deadwood.	Fell.
T23	Sycamore	Felled.													
G24	Sycamore	<23	1	<300	<6	<7	<5	<7	SM	2+	Variable	20-40	B2	Crowded linear group in adjoining road verge. Drawn up crowns. No basal inspection.	
T25	Horse Chestnut	20	1	500	6	3	5	6.5	M	0+	Good	40+	B2	Slight lean to W. Leaf miner. Twin stemmed at 5m-6m.	
T26	Deodar Cedar	22	1	500	1.5	2.5	6	7	SM	1.2+	Good	40+	C2	Crowded. Slight lean to SW.	
T27	Norway Maple	18	2	770	4.5	7	6	10	M	3+	Poor	10-20	C1	Bleeding on lower stems. Vertical strip dead bark to E from ground level to 1.2m. Possible internal fracture from stem joint. Secondary small stem to SW. Twin stemmed at 3.5m with potentially weak join. Deadwood. Gnarled base.	
G28	Cypress, Cedar	<10	1	<170	<2.5	<1.5	<2	<2.5	Y	0+	Poor	10-20	C2	Heavily crowded. Poorly formed group.	
T29	Holly	8	2	210	3	3	4	4	SM	0+	Fair	10-20	C1	Twin stemmed from ground level. Basal wounding. Crowded.	
G30	2no. Norway Maple	15	1	<150	3	0	4	5	Y	6+	Poor	10-20	C1	Drawn up. Leaning W. Heavily crowded.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T31	Atlas Cedar	5	1	140	1.5	1	4.5	3.5	Y	1.2+	Dead	-	U	Dead.	
T32	Ash	14	1	250	2	0	2.5	6.5	Y	3+	Poor	<10	U	Ash Dieback.	
T33	Goat Willow	12	Multi	410	1	0	6	7.5	SM	2+	Poor	10-20	C1	Deadwood. Thinning crown. Multi stemmed from under 1.2m. Leaning heavily W.	
T34	Cherry Plum	4	Multi	250	2	0	4	7	SM	2+	Poor	<10	U	Three stems from under 50cm with weak unions. Leaning heavily W. Part collapsed. Ivy clad.	
T35	Lawson Cypress	10	1	220	0.5	1	4	4.5	Y	2+	Fair	20-40	C2	Crowded. Becoming ivy clad.	
G36	Cherry Laurel	<8	Multi	<200	<3	<2	<4	<6	SM	0+	Fair	20-40	C2	Crowded overgrown shrubs. Mostly leaning W.	
T37	Norway Maple	15	2	290	2	0.5	4.5	4	SM	5+	Fair	20-40	C2	Twin stemmed from ground level. Leaning to W. Heavily crowded. Ivy clad.	
T38	Norway Maple	14	1	270	2.5	0	2	8	SM	5+	Fair	20-40	C2	Heavily crowded. Heavy lean W. Ivy clad.	
T39	Sycamore	20	1	c280	3.5	4	0	3	SM	3+	Unconfirmed	40+	C2	Drawn up. Crowded. Located in road verge.	
T40	Sycamore	<23	Multi	c800	4	7	4	6	M	3+	Unconfirmed	20-40	B2	Crown dieback and deadwood. Part ivy clad. Three stems from ground level. Located in road verge. Deadwood.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T41	Norway Maple	17	1	c300	0	2.5	4	8	SM	3+	Unconfirmed	20-40	C1	Becoming ivy clad. Heavily crowded. Located in road verge. Upper crown curved to W. Deadwood.	
T42	Ash	10	1	200	1	5	2.5	0	Y	4+	Unconfirmed	10-20	C1	Heavily crowded. Located in road verge. Pollarded at 5m in past.	
T43	Norway Maple	21	1	c350	3	5	4	1	M	8+	Unconfirmed	40+	C2	Crowded. Drawn up crown. Located in road verge. Becoming ivy clad.	
T44	Norway Maple	c24	2	430	2	6	4	5	M	8+	Unconfirmed	40+	B2	Twin stemmed near ground level. Ivy clad. Located in road verge. Deadwood.	
G45	Norway Maple, Ash, Holly	<10	Multi	<180	<3	<2	<2	<9	Y	0+	Poor	10-20	C1	Crowded. Leaning N/W. Several part collapsed. Ivy clad.	
T46	Lime	20	1	c900	7	7	4	9	M	1.5+	Fair	20-40	B2	Heavily ivy clad into canopy. Deadwood.	
T47	Lime	Felled.													
T48	Cherry	Felled.													
T49	Norway Maple	9	1	c250	4.5	5	4	3	Y	2+	Poor	10-20	C2	Twin stemmed at 2m. Located in road verge. Ivy clad.	
T50	Unconfirmed	Felled.													

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T51	Unconfirmed														Felled.
G52	Cherry Laurel														Felled.
T53	Hazel														Felled.
T54	Cherry														Felled.
T55	Hazel	4	Multi	250	3.5	2.5	3	3	M	0+	Fair	20-40	C2	Densely multi stemmed from ground level. Several dead stems. Ivy clad.	
T56	Hazel	7	Multi	310	4.5	4	4	4.5	M	1+	Fair	20-40	C2	Densely multi stemmed from ground level. Several dead stems. Part ivy clad.	
T57	Holly														Felled.
T58	Cherry Laurel														Felled.
G59	Hawthorn														Felled.
T60	Holly	11	Multi	220	6.5	4	3	2	SM	0+	Fair	10-20	C1	Multi stemmed near ground level. One stem leaning NW. Slight crown thinning.	
T61	Rowan	8	1	120	2	2.5	2	2	Y	3+	Dead	-	U	Heavily crowded. Dead.	
T62	Magnolia	8	Multi	320	4	5	5	4	M	1.2+	Fair	20-40	C2	Three stems from under 1m. Crowded.	
T63	Common Oak	20	1	c300	3	2	4	5.5	SM	8+	Good	40+	C2	Crowded. Ivy clad.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T64	Western Red Cedar	25	1	980	6	5.5	4.5	4.5	M	1.2+	Poor	10-20	C1	Dead lower crown. Extensive beetle boring in lower stem to S. Partially crowded.	
T65	Western Red Cedar	20	1	380	4.5	3.5	1.5	2	SM	2+	Poor	10-20	C1	Crowded. Thin crown.	
T66	Ash	20	1	270	4.5	6	1	3	SM	4+	Poor	<10	U	Minor dieback. Early Ash Dieback. Crowded. Ivy clad.	
T67	Apple	5	1	420	4	4	6	3.5	M	1.5+	Dead	-	U	Overtopped. Heavily pruned in past. Dead.	
T68	Cypress	10	3	260	2.5	1	1	2.5	SM	0+	Dead	-	U	Leaning W. Extensive crown death. Multi stemmed near ground level. Crowded.	
T69	Hawthorn	1	3	170	2	8	1	0	SM	1+	Poor	<10	U	Collapsed to E.	
T70	Elm	Collapsed.													
T71	Lawson Cypress	10	2	300	3	2	2	2	Y	1+	Dead	-	U	Twin stemmed at under 1m. Crowded. Dead.	
T72	Yew	7	1	180	3.5	4	3	1	Y	1+	Fair	20-40	C2	Heavily crowded.	
T73	Norway Maple	13	1	220	4	3	3	4	Y	3+	Fair	40+	C2	Leaning W. Heavily crowded.	
T74	Cherry Laurel	Collapsed.													
T75	Hawthorn	4	Multi	160	4.5	4	3	2	SM	1.3+	Fair	20-40	C2	Crowded. Multi stemmed near ground level.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T76	Ash	18	Multi	360	5	5	5	2	SM	4+	Poor	<10	U	Ash Dieback. Crowded. Three stems from under 1.1m. Drawn up crown.	
T77	Western Red Cedar	22	1	590	4.5	4	1	5	SM	1.5+	Poor	10-20	C1	Some beetle boring on lower stem. Crowded.	
T78	Western Red Cedar	16	1	260	0.5	4	4	0.5	SM	1+	Poor	10-20	C1	Some beetle boring in lower stem. Heavily crowded.	
T79	Western Red Cedar	22	1	510	1	4	5	3.5	SM	4+	Poor	10-20	C1	Some beetle boring in lower stem. Crowded.	
T80	Western Red Cedar	9	1	130	0.5	1	4	1	Y	1+	Poor	10-20	C1	Dead lower canopy. Heavily crowded.	
T81	Western Red Cedar	25	1	970	6	4	3.5	6	M	0+	Fair	20-40	B2	Some beetle activity on lower stem.	
T82	Yew	4.5	2	130	2	0	3	6	Y	0+	Poor	20-40	C2	Suppressed. Overtopped. Curved low to W. Twin stemmed at 1.2m.	
T83	Yew	8	Multi	230	3	5	4	6	Y	0+	Fair	40+	C2	Deadwood. Heavily crowded. Three stems from under 1m.	
T84	Common Oak	19	1	410	9	2.5	2	7.5	SM	3+	Good	40+	C2	Long slender limbs. Several snapped limbs. Deadwood. Crowded. Slight lean to W.	
T85	Cherry Laurel	5	Multi	200	4.5	0	5	6	M	0+	Poor	20-40	C1	Cut back to W. Collapsed to W.	
T86	Norway Maple	15	1	240	3.5	2	2	2	Y	8+	Fair	20-40	C2	Heavily crowded. High crown.	
T87	Norway Maple	20	1	440	3.5	1	5	8.5	SM	4+	Fair	40+	C2	Crowded. Leaning W. Deadwood.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T88	Snakebark Maple	7	Multi	290	4	7	2.5	0	SM	3+	Fair	40+	C2	Three stems from under 1.2m. Squat crown. Overtopped.	
T89	Western Red Cedar	25	1	1200	5	5	4.5	5	M	1+	Poor	<10	U	Decay in open union between stems and dead bark to S. Three stems from 2m-3m. Past upper stem snap out. Extensive dieback in crown.	
T90	Western Red Cedar	19	1	810	3.5	4	4	4	M	0+	Fair	20-40	B2		
T91	Norway Maple	14	1	280	5	6	1.5	0	Y	2+	Fair	40+	C2	Leaning S. Heavily crowded.	
T92	Hazel	12	Multi	270	1.5	2	5	7.5	M	1+	Good	40+	C2	Multi stemmed from ground level. Crowded.	
T93	Norway Maple	14	1	230	1.5	1.5	5	4.5	Y	3+	Good	40+	C2	Heavily crowded.	
T94	Azalea	6	2	190	1.5	2	4	3	M	1.5+	Fair	40+	C2	Two stems from ground level. Overtopped.	
T95	Rowan	11	2	150	1.5	2.5	3	3	Y	4+	Fair	10-20	C2	Heavily ivy clad. Twin stemmed near ground level. Crowded. Slight crown thinning.	
T96	Holly	10	1	c160	2.5	3	2.5	2.5	Y	1+	Fair	10-20	C2	Heavily ivy clad. Fine deadwood.	
T97	Cherry Laurel	Felled.													
G98	Holly, Rowan	Felled.													
T99	Yew	Felled.													
G100	Beech, Hazel	<10	Multi	<180	<5	<5	<1.5	<2.5	Y	0+	Good	20-40	C2	Crowded. Multi stemmed near ground level.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
T101	Silver Birch	15	1	560	5	4	1	2	M	3+	Poor	<10	U	Decayed at 3m to S. Gnarled base and dense epicormics. Deadwood. Contorted stem. Dieback. Second stem to S removed.	
T102	Norway Maple	14	1	240	6	3	3	4	Y	1.6+	Good	40+	C2	Crowded. Drawn up.	
T103	Norway Maple	Felled.													
T104	Norway Maple	17	1	520	4.5	3	7.5	4.5	M	4+	Good	40+	B2	Twin stemmed at 3.5m.	
T105	Common Oak	7	1	140	3	2.5	2.5	3	Y	3+	Good	40+	C2		
T106	Silver Birch	17	1	320	3.5	7	4.5	0	M	5+	Fair	10-20	C1	Crowded. Leaning heavily E. Minor dieback.	
T107	Silver Birch	21	1	310	4.5	4	3	0.5	M	7+	Fair	10-20	C1	Crowded. Leaning N/NE. High crown. Minor dieback.	
T108	Common Oak	12	1	250	6	6	3	4	Y	2+	Good	40+	C2	Deadwood. Crowded. Overtopped.	
G109	Birch, Rowan, Oak	<16	1	<280	<4	<8	<2	<4	Y/SM	1.6+	Variable	<10-40+	C/U1	Crowded group. Drawn up stems. Birch and Rowan dead.	
T110	Leyland Cypress var.	11	1	150	1	1.5	1.5	1	Y	4+	Poor	10-20	C1	Lean to E. Very crowded. High crown.	
T111	Eucalyptus	30	1	740	3	8.5	8	1	SM	7+	Good	40+	B2	Deadwood. Leaning E. Crowded.	
T112	Leyland Cypress	23	1	790	5	5	4.5	3	M	2+	Poor	<10	U	Twin stemmed at 2m with weak union. Part overtopped.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
G113	Shrubs	<4	Multi	100	<2.5	<3.5	<2	<2	M	1+	Fair	20-40	C2	Multi stemmed from ground level. Overtopped. Bowed out to E.	
T114	Leyland Cypress	25	1	980	6	5	4.5	4.5	M	3.5+	Poor	10-20	C1	Twin stemmed at 1.5m. With potentially weak union. Four stems at 3m with potentially weak union.	
T115	Cypress var.	9	Multi	390	2.5	3.5	3.5	3	SM	2	Fair	40+	C2	Surface root damage to S. Three stems from under 1.5m. Crown cut back from house.	
T116	Western Red Cedar	21	1	c450	c4	4	4.5	3	M	2+	Unconfirmed	40+	B2	Located in adjoining garden therefore no basal inspection.	
T117	Pine	20	1	c450	c4	3	5	4	M	5+	Unconfirmed	40+	B2	Located in adjoining garden therefore no basal inspection.	
T118	Cherry Laurel	Felled.													
T119	Robinia	12	1	c350	c2.5	5.5	9.5	3	SM	2+	Unconfirmed	20-40	C2	Clad in dead ivy. Leaning heavily S. Located in adjoining garden therefore no basal inspection. Twin stemmed at 4m. Deadwood.	
T120	Common Oak	19	1	1170	3	6.5	6.5	7	M	3+	Fair	20-40	B2	Deadwood. Fine dieback. Crowded. Dead ivy in canopy.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition	Preliminary management recommendations
					N	E	S	W							
G121	Cherry Laurel	<4	Multi	<200	<1	<5	<1.5	<3	M	0+	Good	40+	C2	Overgrown shrubs.	
T122	Blue Atlas Cedar	9	1	280	3	2.5	2.5	4.5	Y	1.2+	Good	40+	C2	Becoming crowded.	
T123	Lawson Cypress	16	1	660	3	4	2.5	3.5	M	2+	Good	40+	B2	Crowded.	
T124	Atlas Cedar	21	1	680	5	6	3.5	6	M	3+	Good	40+	B2	Deadwood. Fine dieback. Crown raised in past.	
T125	Atlas Cedar	25	1	c920	3.5	6.5	8	6	M	3+	Unconfirmed	40+	A2	Becoming ivy clad. Deadwood.	
T126	Holly	9	1	c250	4	5.5	2.5	1.5	SM	1+	Poor	10-20	C2	Leaning E. Twin stemmed at 2.5m. Crown thinning. Ivy clad.	
T127	Atlas Cedar	21	1	c620	4	6.5	2	4	M	4+	Unconfirmed	40+	B2	Fine dieback and deadwood. Crowded. Ivy clad.	
T128	Atlas Cedar	21	1	c640	4	9	2.5	4	M	5+	Unconfirmed	40+	B2	Fine dieback and deadwood. Crowded.	
T129	Atlas Cedar	24	1	820	5	9	3	6.5	M	4+	Good	40+	A2	Fine dieback and deadwood. Crowded.	
T130	Atlas Cedar	24	2	830	3	8	5	4	M	6+	Unconfirmed	40+	B2	Crowded. Smaller secondary stem from ground level to W. Located in adjoining garden therefore no basal inspection. Fine dieback and deadwood.	
G131	Cherry Laurel	<6	Multi	<200	<3	<5	<3	<4	M	0+	Good	40+	C2	Overgrown shrubs.	

APPENDIX 2

APPENDIX 3

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

NO. 4 THE AVENUE, RADLETT, HERTS, QD7 7DJ

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
G1	1 no. Robinia, 3no. Leyland Cypress	C2	<370	<4.4	<61
T2	Western Red Cedar	B2	c.750	c.9	c.255
T3	Pissard Plum	C1	c.250	c.3	c.28
T4	Unconfirmed	Felled.			
T5	Atlas Cedar	B2	c.750	c.9	c.255
T6	Cypress	C1	c.300	c.3.6	c.41
T7	Himalayan Cotoneaster Tree	U	-	-	-
T8	Crimson Norway Maple	C2	360	4.3	58
T9	Leyland Cypress	C2	350	4.2	55
T10	Leyland Cypress	C1	290	3.5	38
T11	Ornamental Cherry	Felled.			
T12	Apple	U	-	-	-
T13	Beech	B2	430	5.2	85
T14	Box Elder	C1	410	4.9	75
T15	Acer sp.	Felled.			
T16	Leyland Cypress	C1	600	7.2	163
T17	Leyland Cypress	C1	580	7	154
T18	Prunus sp.	U	-	-	-
T19	Prunus sp.	Felled.			
T20	Leyland Cypress	C1	590	7.1	158
G21	Cherry Laurel	C2	<300	<3.6	<41
T22	Norway Maple	U	-	-	-
T23	Sycamore	Felled.			
G24	Sycamore	B2	<300	<3.6	<41
T25	Horse Chestnut	B2	500	6	113
T26	Deodar Cedar	C2	500	6	113
T27	Norway Maple	C1	770	9.2	266
G28	Cypress, Cedar	C2	<170	<2	<13
T29	Holly	C1	210	2.5	20
G30	2no. Norway Maple	C1	<150	<1.8	<10
T31	Atlas Cedar	U	-	-	-
T32	Ash	U	-	-	-
T33	Goat Willow	C1	410	4.9	75
T34	Cherry Plum	U	-	-	-
T35	Lawson Cypress	C2	220	2.6	21
G36	Cherry Laurel	C2	<200	<2.4	<18
T37	Norway Maple	C2	290	3.5	38
T38	Norway Maple	C2	270	3.2	32
T39	Sycamore	C2	c.280	c.3.4	c.36
T40	Sycamore	B2	c.800	c.9.6	c.290
T41	Norway Maple	C1	c.300	c.3.6	c.41
T42	Ash	C1	200	2.4	18
T43	Norway Maple	C2	c.350	c.4.2	c.55
T44	Norway Maple	B2	430	5.2	85
G45	Norway Maple, Ash, Holly	C1	<180	<2.2	<15

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

NO. 4 THE AVENUE, RADLETT, HERTS, QD7 7DJ

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
T46	Lime	B2	c.900	c.10.8	c.366
T47	Lime			Felled.	
T48	Cherry			Felled.	
T49	Norway Maple	C2	c.250	c.3	c.28
T50	Unconfirmed			Felled.	
T51	Unconfirmed			Felled.	
G52	Cherry Laurel			Felled.	
T53	Hazel			Felled.	
T54	Cherry			Felled.	
T55	Hazel	C2	250	3	28
T56	Hazel	C2	310	3.7	43
T57	Holly			Felled.	
T58	Cherry Laurel			Felled.	
G59	Hawthorn			Felled.	
T60	Holly	C1	220	2.6	21
T61	Rowan	U	-	-	-
T62	Magnolia	C2	320	3.8	45
T63	Common Oak	C2	c.300	c.3.6	c.41
T64	Western Red Cedar	C1	980	11.8	437
T65	Western Red Cedar	C1	380	4.6	66
T66	Ash	U	-	-	-
T67	Apple	U	-	-	-
T68	Cypress	U	-	-	-
T69	Hawthorn	U	-	-	-
T70	Elm			Collapsed.	
T71	Lawson Cypress	U	-	-	-
T72	Yew	C2	180	2.2	15
T73	Norway Maple	C2	220	2.6	21
T74	Cherry Laurel			Collapsed.	
T75	Hawthorn	C2	160	1.9	11
T76	Ash	U	-	-	-
T77	Western Red Cedar	C1	590	7.1	158
T78	Western Red Cedar	C1	260	3.1	30
T79	Western Red Cedar	C1	510	6.1	117
T80	Western Red Cedar	C1	130	1.6	8
T81	Western Red Cedar	B2	970	11.6	423
T82	Yew	C2	130	1.6	8
T83	Yew	C2	230	2.8	25
T84	Common Oak	C2	410	4.9	75
T85	Cherry Laurel	C1	200	2.4	18
T86	Norway Maple	C2	240	2.9	26
T87	Norway Maple	C2	440	5.3	88
T88	Snakebark Maple	C2	290	3.5	38
T89	Western Red Cedar	U	-	-	-
T90	Western Red Cedar	B2	810	9.7	296
T91	Norway Maple	C2	280	3.4	36
T92	Hazel	C2	270	3.2	32
T93	Norway Maple	C2	230	2.8	25
T94	Azalea	C2	190	2.3	17
T95	Rowan	C2	150	1.8	10
T96	Holly	C2	c.160	c.1.9	c.11

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

NO. 4 THE AVENUE, RADLETT, HERTS, QD7 7DJ

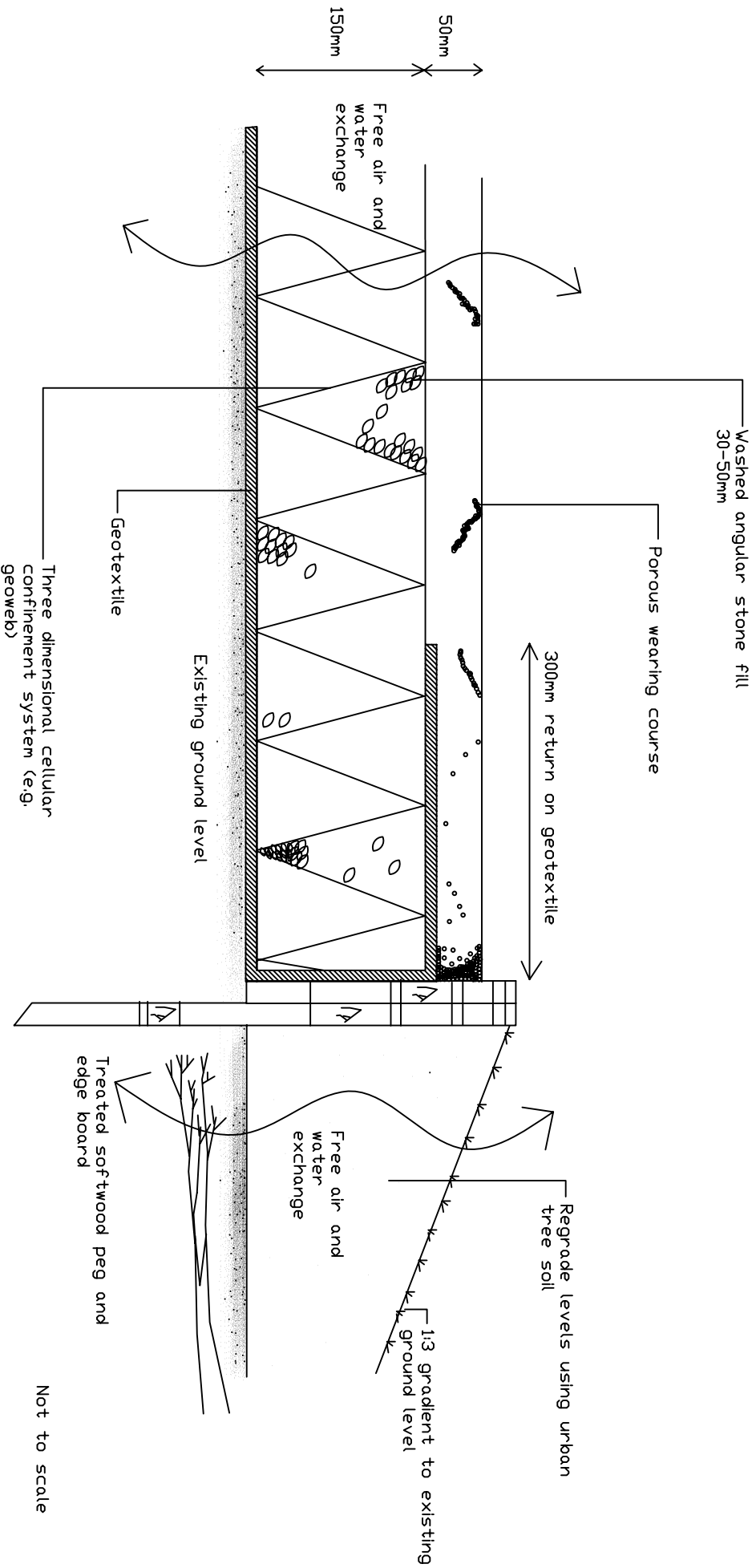
Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m ²)
T97	Cherry Laurel			Felled.	
G98	Holly, Rowan			Felled.	
T99	Yew			Felled.	
G100	Beech, Hazel	C2	<180	<2.2	<15
T101	Silver Birch	U	-	-	-
T102	Norway Maple	C2	240	2.9	26
T103	Norway Maple			Felled.	
T104	Norway Maple	B2	520	6.2	121
T105	Common Oak	C2	140	1.7	9
T106	Silver Birch	C1	320	3.8	45
T107	Silver Birch	C1	310	3.7	43
T108	Common Oak	C2	250	3	28
G109	Birch, Rowan, Oak	C/U1	<280	<3.4	<36
T110	Leyland Cypress var.	C1	150	1.8	10
T111	Eucalyptus	B2	740	8.9	249
T112	Leyland Cypress	U	-	-	-
G113	Shrubs	C2	100	1.2	5
T114	Leyland Cypress	C1	980	11.8	437
T115	Cypress var.	C2	390	4.7	69
T116	Western Red Cedar	B2	c.450	c.5.4	c.92
T117	Pine	B2	c.450	c.5.4	c.92
T118	Cherry Laurel			Felled.	
T119	Robinia	C2	c.350	c.4.2	c.55
T120	Common Oak	B2	1170	14	616
G121	Cherry Laurel	C2	<200	<2.4	<18
T122	Blue Atlas Cedar	C2	280	3.4	36
T123	Lawson Cypress	B2	660	7.9	196
T124	Atlas Cedar	B2	680	8.2	211
T125	Atlas Cedar	A2	c.920	c.11	c.380
T126	Holly	C2	c.250	c.3	c.28
T127	Atlas Cedar	B2	c.620	c.7.4	c.172
T128	Atlas Cedar	B2	c.640	c.7.7	c.186
T129	Atlas Cedar	A2	820	9.8	302
T130	Atlas Cedar	B2	830	10	314
G131	Cherry Laurel	C2	<200	<2.4	<18

APPENDIX 4

APPENDIX 5

APPENDIX 6

DESIGN FOR PERMEABLE LOAD BEARING AND DIG SURFACING FOR DRIVES AND PARKING BAYS





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ARBORICULTURAL METHOD STATEMENT FOR THE CONSTRUCTION OF “NO DIG” LOAD BEARING SURFACES WITHIN TREE ROOT PROTECTION AREAS

GENERAL

This document sets out the methodology for the construction of load bearing surfaces within tree root protection areas where excavation is not to occur, in order to minimise damage to underlying tree roots.

The following information is taken from manufacturers supplied information, relevant sections of BS5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations” and Arboricultural Practice Note 12 “Through the Trees to Development”.

SITE PREPARATION AND CONSTRUCTION

- Loose organic matter and/or turf to be removed using hand tools only.
- Lay directly onto existing ground level a geotextile layer, such as G4 Geotextile produced by Cooper Clarke Group Ltd., covering the area of ground within the calculated root protection area.
- Expand out and pin in place a 150mm depth three dimensional cellular confinement system, such as Geoweb or similar product.
- Infill expanded cells working outwards from existing surfacing. Infill materials to comprise washed angular stone of 30mm-50mm size.
- Peg and board edges of construction with appropriate dimension treated softwood or kerbing with haunching set on the existing ground level.
- Lay porous wearing layer onto infilled cells, working from the existing surfacing.
- Regrade from finished levels towards tree stems using urban tree soil or good quality top soil moved into position by wheelbarrow only on bare ground or to be tipped by dumper access across the finished surfacing only.
- No machinery is to pass over the unprotected ground. Machinery can only utilise the drive once the cells have been filled.

The attached drawing provides a visual reference to the proposed make up of the “no dig” construction.

APPENDIX 7

BS5837:2012: FENCING SPECIFICATIONS

Figure 2 Default specification for protective barrier

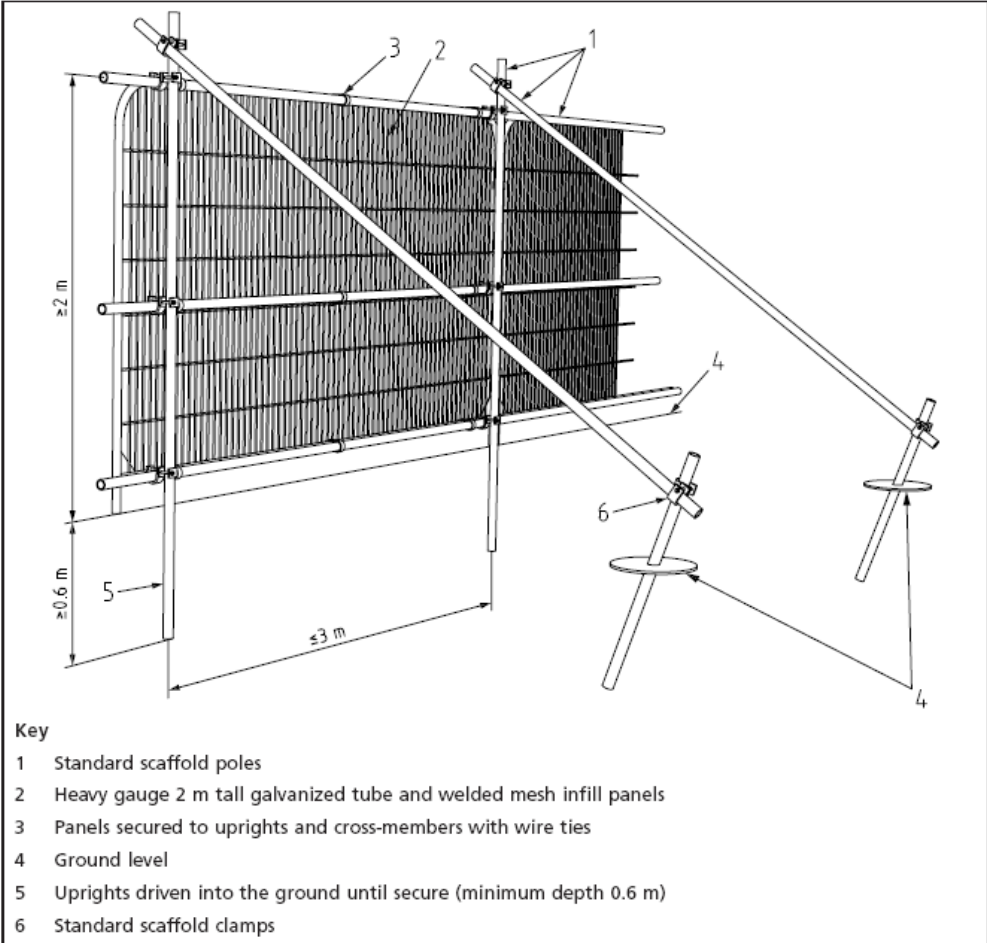
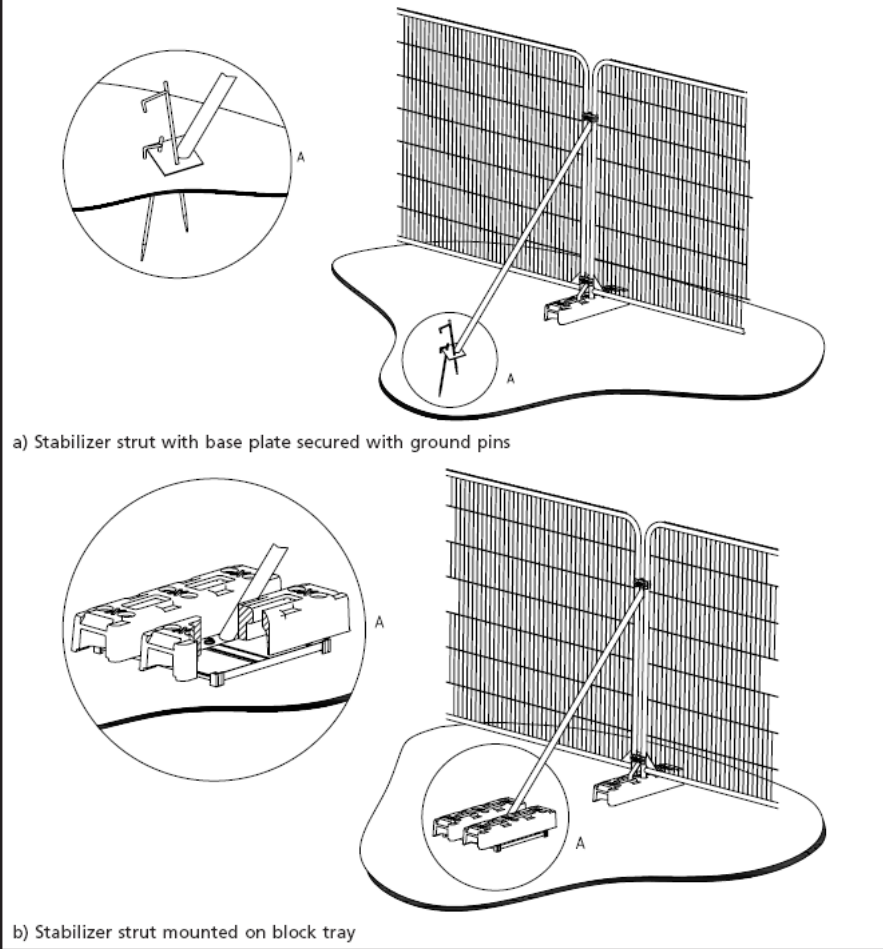


Figure 3 Examples of above-ground stabilizing systems



EXAMPLE OF FENCING SIGNAGE

