

# Trees and Construction

## BS5837 Tree Survey Assessment

**Site:** Victoria Retail Park, South Ruislip, HA4 0AJ

**Ref:** 16303/A2\_AIA

**Client:** Scottish Widows Property Authorised  
Contractual Scheme 1



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Revision	Description	Date
/	First Release	20/10/2016
A2/AIA	Scheme Review	22/05/2018



## 1. INTRODUCTION

- 1.1 **Instruction:** This advice has been prepared for Scottish Widows Property Authorised Contractual Scheme 1 (hereafter client) and is in respect of the tree related planning considerations at Victoria Retail Park, South Ruislip, HA4 0AJ (hereafter site).

As the proposal relates to development works at site, the advice herein is produced in accordance with the British Standard 5837 : 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter BS5837).

- 1.2 **BS5837:** The scope of BS5837 is to provide guidance on how trees and other vegetation can be integrated into construction and development design schemes. The overall aim is to ensure the protection of amenity by trees which are appropriate for retention.

- 1.3 **Scope of this advice:** This assessment is produced in accordance with BS5837 and is secondary to arboricultural constraints advice as the '*Tree Survey*' ref: 16303/A1. The objective of this report is to systematically assess the proposed scheme and provide suitable recommendations regarding the potential impact on trees and vice versa with associated tree protection recommendations.

- 1.4 Following instruction the consultant surveyed the site on the 12th October 2016 where a site walkover and BS5837 tree survey were carried out. This was followed by a survey on the 1st March 2018 to update the tree survey data. All trees on site and around the application boundary were surveyed from ground level and plotted as either an individual or a tree group.

- 1.5 This advice is subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site assessment and associated arboricultural recommendations.

- 1.6 The survey data and site observations used the supplied topographical survey to illustrate the surveyed trees in plan format as a 'Tree Constraints Plan' (hereafter TCP) which was supplied with the initial tree survey advice.

The TCP now has an overlay of the proposed scheme to enable review, to inform this assessment and is used as a base layer for the 'Tree Protection Plan' (hereafter TPP). The TCP, tree survey data table and TPP are at Appendix III.



## 2. SITE INFORMATION & TREE ASSESSMENT

2.1 The site currently comprises an in-use retail park with associated access, parking and commercial units. The surveyed site section is a smaller section of the larger site which comprises a car park and tree growth along the site boundary and in car park planters.

2.2 **Proposal:** At the time of writing the initial advice, it was understood that two A3 drive thru scheme options were being explored by the client. This is now confirmed as per the client's proposed scheme (ref: A95837-1-SK1) which shows the finalised design.

Also, it is understood that the end occupier of the drive thru may require the removal of the majority of the trees along the front boundary to improve the visibility of the unit.

2.3 The site requires consideration from an arboricultural perspective due to the presence of trees on and around the site. These trees are deemed to be within impacting distance of the potential construction area.

### 2.4 The trees -

2.4.1 The tree survey and assessment resulted in the BS5837 quality/retention categories of 'B - moderate' and 'C - low' being attributed to trees/tree groups as well as those categorised as 'U' for those trees of curtailed life expectancy which should not constrain development.

2.4.2 The site's trees are situated around the boundary and within soft borders within the car park. The site's more noteworthy trees are those of 'B' category, thereafter, the remaining trees are of limited individual quality and contribution.

2.4.3 There are identified defects to the surveyed trees, this has resulted in the recommendation for tree removal, i.e. the category 'U' trees. Thereafter, general site inspections and tree works will be required for H&S tree risk management.



### 3. FINDINGS & RECOMMENDATIONS

3.1 The following information, as with the prior contents of this report, should be read with the appended tree data table and tree constraints plan (16303/TCP/01).

NOTE: This information is included as a summary overview of the tree survey advice, it is then supplemented with a scheme review as an Arboricultural Impact Assessment (AIA; section 4) and Arboricultural Method Statement (AMS - Application Stage; section 5).

#### 3.2 General Considerations for Tree Retention / Removal

3.2.1 Due to the poor condition and defects noted to the trees categorised as 'U' and in the context of a development with regular future site use. It is recommended that T3, T6, T7, T16 and T17 be removed as part of H&S tree risk management in conjunction with the scheme.

3.2.2 The low quality 'C' category trees are noted as such due to their limited current contribution and/or future potential. The majority of these are small scale and showing signs of stress, this is most likely due their locations growing within the soft borders of the car park. Hence, said trees should not constrain nor significantly guide the final proposed development scheme. Any tree removals may be mitigated by replacement tree planting as part of landscape scheme.

3.2.3 The more notable trees, those without significant defects, with a good future potential and/or good current amenity contribution, are categorised as 'B - moderate'. These should ideally be retained and protected where possible as part of the site's development. However, consideration will again depend on an individual tree / group, the current purpose and long term growth potential and contribution.

NOTE: It is understood that removal of many of the trees along the boundary may also be required to improve visibility of the A3 drive thru unit. Therefore a suitable landscape mitigation tree planting strategy should be proposed.

3.2.4 The removal of the above trees or vegetation may have an impact on the green cover in the first instance, however, a new landscape scheme could be provided along side the development. Said removals would have no impact on the long term amenity of the site and will allow for the selection of native species to enhance amenity and biodiversity.

#### 3.3 Tree Protection

3.3.1 The design and layout of the site is to incorporate the essential components of retained trees (crown and rooting area) and provide a suitable level of clearance to allow for



their long term safe retention, i.e. RPA protection and crown clearance as well as for any new tree(s) being planted.

- 3.3.2 Depending on the level of tree retention/removal, the protection methods for the retained trees is likely to vary. However, it is likely that a combination of construction restrictions be used with protective barrier fencing (to protect RPAs).

The process of site operations will be an important aspect to confirm by way of a construction layout plan, i.e. showing storage areas, parking, delivery area, access routes etc., all outside of RPAs or with a provision for ground protection. As a basis for tree protection the following points will need to be considered:

- Removal of all agreed trees and any agreed pruning works prior to works commencing by a suitably qualified arboricultural contractor;
- Induction of construction personnel regarding the exclusion of works (including access and storage) from the retained trees' RPAs;
- Secure temporary barrier fencing around the site to exclude the retained tree's crowns and RPAs from the working site;
- The storage of materials clear of all retained trees and conditions to ensure no contamination/run-off into soils in proximity to trees or on higher ground; and
- For the removal of existing structures and/or hard surfaces from RPAs the works to be undertaken separate to construction, manually and sensitively.

### 3.4 General Overview

- 3.4.1 The considerations for trees which are to be retained as part of the proposal need to be addressed in order to ensure their protection. This is to account for the potential impact on retained trees and their growing environment from the proposed development and vice versa (these follow).

#### Tree Works

The tree removals to facilitate the scheme are to be justifiable in the context of the site layout and can be mitigated by way of a landscape scheme. New tree planting will be required to replace and enhance the site's canopy cover with a general scheme of landscaping in acknowledgement for the removal of poor quality trees.

Any trees which are to be removed should be well indicated to ensure that the retained trees are suitably protected. Hence, all trees which are to be removed are to be marked by a suitably qualified person [spraying the stems with a cross] prior to tree works.

#### Tree Crowns

Consideration is required for both existing and any newly planted trees whereby the proposed construction should take account of trees reaching their full growth potential. It is always prudent to provide adequate clearance from a tree's current crown for



future growth, i.e. to allow a tree adequate space to reach maturity without conflicts with new structures.

#### Root Protection Areas (RPA)

As a minimum it would be suitable to consider the outer extents of retained trees' RPAs as construction exclusion zones and be protected.

As above, it is *sometimes* possible to undertake construction activities within the rooting areas of retained trees which requires greater attention to tree protection, foundation designs, phasing of works etc. If it is proposed to undertake works within these areas, more specific advice should be sought from a qualified arboriculturalist with a view to assessing the feasibility of said proposal and forming a suitable method statement.

#### Demolition/Excavation Works

Any removal of existing built structures (including stairways, small outbuildings, retaining walls etc.) or hard surfacing will need to be undertaken with great care where this occurs within or near to the anticipated rooting areas of retained trees.

Said works should adhere to the RPA restrictions, be undertaken manually with hand held non mechanical tools and ensure that existing ground levels are retained.

#### Hard Landscape Works

As with previously mentioned arboricultural restrictions to demolition/construction, the proposed works should avoid retained trees' RPAs. However, where ground works are proposed within RPAs, construction methods [for hard surfacing, walls etc.] should retain the existing ground levels, be undertaken sensitively and using a no dig design.

Conversion of soft surfaced areas within RPAs to hard surfaced walkways, parking areas etc., will need to utilise a no-dig product to ensure no negative impact on the tree roots and/or growing conditions.

- 3.4.2 For any proportion of tree removal, new tree planting should be integrated into a landscape scheme. The new trees should be of a suitable volume, species, scale, in suitably prepared planting locations with adequate space for future growth and development and enhance the site's long term amenity contribution.



#### **4. SCHEME / IMPLICATIONS ASSESSMENT**

- 4.1 For the purpose of this assessment, the proposed site plan is used as a basis for consideration. This takes account of anticipated tree removals, tree protection options and potential alterations to account for arboricultural features. As per s.1.6 and s.2.2 herein, the TCP shows the '*proposed site plan*' as an overlay for review.

NOTE: As per s.1.3, this report as an AIA / AMS is secondary to the initial advice.

- 4.2 The proposed scheme is clear of the 'U' category trees T3, T6, T7, T16 and T17. However, as per s.3.2.1, it is recommended that said trees be removed as part of H&S tree risk management. Therefore, T3, T6, T7, T16 and T17 should be removed in conjunction with the scheme.

NOTE: No replacement tree planting is considered necessary for the removal of 'U' category trees T6, T7, T16 and T17, as these trees are positioned outside the red line boundary. However, these trees could be replaced as part of the scheme.

- 4.3 The proposed scheme shows conflict with the 'C' category trees T4, T5, T10 - T14, T22, T23, T38, T39 and T47. However, as per s.3.2.2, many of these are small scale trees showing signs of stress, hence, these are low quality trees which should not significantly constrain nor guide the scheme. Therefore, T4, T5, T10 - T14, T22, T23, T38, T39 and T47 should be removed to facilitate the scheme.

NOTE: Replacement tree planting details to be included within a landscape scheme.

- 4.4 The proposed scheme conflicts with the 'B' category trees T29 - T34 and T40 - T42. Although retention is preferable, as per s.3.2.3, said trees can also be mitigated by new tree planting as part of a well delivered landscape scheme. Therefore, T29 - T34 and T40 - T42 would need to be removed to facilitate the scheme.

NOTE: Replacement tree planting details to be included within a landscape scheme. However, this will require a higher grade tree stock than to mitigate 'C' category trees.

- 4.5 Further to the above, drainage proposals for the scheme encroaches the RPA of the 'B' category tree T37. However, this incursion is minor and at the outer extents of the RPA. Therefore, construction of the dry drainage swale is not considered to affect the safe retention. Therefore, T37 can be retained and protected during the site's development.

- 4.6 Following the above considerations for trees and noted tree works, the trees are clear of the active construction area. However, the installation of temporary tree protection will be required to ensure no impact on trees from access, vehicles, material storage etc.

- 4.7 Further to the above, the following tree works are required prior to site works.





### TREE WORK SUMMARY

NUMBER	TREE REMOVALS / PRUNING WORKS	
T3, T6, T7, T16 and T17	Remove	Remove in conjunction with the proposed as part of H&S tree risk management.
T4, T5, T10 - T14, T22, T23, T29 - T34, T38 - T42, T47 & saplings and suppressed low quality trees	Remove	Remove in order to facilitate the scheme: - to be replaced with new tree planting as part of site landscaping and new tree planting proposals.
Retained trees		Protection by placement of fixed Heras panels around the crown/RPA extents of T26 - T28, T35 - T37 and T43 - T46, and site hoarding thereafter to exclude retained trees from the active construction area, to have no access during construction.

- 4.8 Further to the above review and in consideration for the tree removals and need to protect retained trees, the following section contains said details as an Arboricultural Method Statement 'Considerations'.



## 5. METHOD STATEMENT 'CONSIDERATIONS'

### 5.1 Arboricultural Construction Restrictions

5.1.1 The following restrictions are considered relevant for tree protection purposes which are illustrated on the appended Tree Protection Plan:

- a) Tree works are to be completed prior to any and all site works: tree works not specified within the associated arboricultural method statement (or leaning against or attaching of objects to a tree) are not permitted unless agreed in writing by the council.
- b) Protective Barrier Fencing/Site Hoarding (hereafter PBF) is to be installed around the retained trees immediately after the tree works and prior to the site works commencing.
- c) Following the installation of PBF the fenced off section is to act as a Construction Exclusion Zone (hereafter CEZ).
- d) No chemicals/materials are to be transported/stored/used/mixed within retained trees' RPA.
- e) No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of the tree's canopy or in a RPA.
- f) During construction processes the RPA may not be breached with exception of the minor RPA incursion of T37, i.e. no surfacing works, without the prior advice of the consultant and the consent of the council.
- g) Only following construction completion can the protective barrier fencing be removed and any remaining soft landscape works be undertaken (ground levels to be retained within RPAs and works undertaken manually with non-mechanical hand tools).

### 5.2 Arboricultural Site Monitoring / Supervision

5.2.1 The site should be checked by a qualified arboriculturist throughout the construction processes to ensure the tree protection measures are adhered to. This will be confirmed to the council as an inspection report, recommended thus -

- (a) pre-commencement to confirm tree removals;
- (b) after PBF installation;
- (c) during construction to ensure adherence to this AMS; and
- (d) prior to removal of site hoarding after construction completion to sign off the site for correct tree protection and planting.



### 5.3 Underground utilities

- 5.3.1 Underground utilities are to be installed as per the dedicated plan. Following the above noted tree removals, the underground utilities are clear of RPAs with the exception of the minor incursion of T37.

### 5.4 Ground Works within RPAs

- 5.4.1 No direct RPA incursion is anticipated, with exception of the minor incursion of T37 and soft and hard landscaping - retained levels detail to be demonstrated by the client in the form of a 'site levels plan'.
- 5.4.2 The excavations within a RPA of T37, and any excavations within a RPA or designated CEZ (the area enclosed by PBF) must use sensitive excavation techniques to protect the tree roots and their existing growing conditions.

### 5.5 Landscape Detail

- 5.5.1 The finer details of the tree planting proposals are to be illustrated on a tree planting landscape plan. This is to include the exact proposals for hard and soft landscaping together with the details for tree planting locations, species and stock selection, installation and maintenance. This is to be undertaken by the appointed landscape architect who will have the full support of the arboricultural consultant where required.

### 5.6 Additional Recommendations

- 5.6.1 This report is released to the client for them to distribute at their discretion. The consultant is available via telecom and/or email (via the methods on the title page) for any queries relating to this report and/or any other matter relating to arboriculture.
- 5.6.2 This AMS and the TPP may be approved by the council as a means of authorised tree protection measures. This would be subject to an arboricultural review of the approved scheme alongside details otherwise unavailable at the planning stages (construction site layout, contractor's site management plan etc.) whereby the AMS and TPP are to be available on site and inspected as per s.5.2 for '*Arboricultural Monitoring / Supervision*'.

**This concludes our advice.**



## **Caveat**

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This advice is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the advice being null and void in its entirety. | This advice in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this advice. | This advice is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this advice or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this advice does not form part of this agreement.



## Appendix II

### Terms and Definitions

*“Arboriculturist”* - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

*“Competent Person”* - person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

*“Topographical survey”* - an accurately measured land survey undertaken to show all relevant existing site features. *A method of carrying out topographical surveys is given in RICS specification* Surveys of land buildings and utility services at scales of 1:500 and larger.

*“BS5837 Tree survey”* - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

*“Tree categorisation method”* - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

*“Root protection area (RPA)”* - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m<sup>2</sup>. The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

*“Arboricultural implications assessment”* - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

*“Arboricultural method statement”* - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

*“Tree protection plan”* - a scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.



## Appendix III

<b>Data Table:</b>	As appended (BS5837 Tree Survey Key & Table)
<b>Tree Constraints Plan:</b> (TCP / Scheme Overlay)	As appended (16303/TCP/01)
<b>Tree Protection Plan:</b>	As appended (16303/TPP/01)

## TREE SURVEY 'KEY' - BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

### FIELD KEY:

<b>TPO/CA</b>	-	On client request: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
<b>TREE REF. #</b>	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
<b>SPECIES</b>	-	Genus, species and/or common name;
<b>AGE</b>	-	Age classification (NP - new planting, Y - young, SM - semi mature, EM - early mature, M - mature, LM - late mature, OM - over mature);
<b>HEIGHT (in m)</b>	-	Approximate height of tree in metres;
<b>CANOPY (in m) N - S - E - W</b>	-	Approximate branch spread in metres of the four principal compass points;
<b>STEM (in mm)</b>	-	Stem diameter in millimetres: measured in accordance with s.4.6 of BS5837;
<b>RPA (in m)</b>	-	Circle radius of the Root Protection Area: calculated using the stem diameter (single/multiple stem variant, as outlined within BS5837);
<b>CLEARANCE (in m)</b>	-	Crown clearance in metres above the adjacent ground level;
<b>1ST BRANCH (in m)</b>	-	Clearance in metres to first significant branch and direction of growth (where relevant);
<b>VITALITY</b>	-	Physiological condition typically gauged from canopy cover and annual extension growth (good, fair, poor, dead);
<b>ESTIMATED REMAINING CONTRIBUTION</b>	-	Approximate number of years the tree will continue to make a contribution without the need for oppressive arboricultural intervention, categorised in years as <10, 10-20, 20-40 and >40;
<b>NOTES</b>	-	Structural and physiological condition observations;
<b>BS CAT.</b>	-	BS5837 tree quality assessment category: resulting from structural/physiological condition and remaining contribution (approximate Standard retention category <b>U</b> : in such a condition that any existing value would be lost within 10 years;
	-	Standard retention category <b>A</b> : high quality and value, in such a condition as to be able to make substantial contribution of 40+ years;
	-	Standard retention category <b>B</b> : moderate quality and value, in such a condition as to make a significant contribution of 20+ years;
	-	Standard retention category <b>C</b> : low quality and value, currently in adequate condition to remain until new planting could be established
	-	Standard retention sub-category, mainly due to: <b>1</b> - Arboricultural values, <b>2</b> - Landscape values, <b>3</b> - Cultural values, including conservation;
<b>MANAGEMENT</b>	-	Preliminary management recommendations (as appropriate);
<b>* * *</b>	-	Within the survey schedule denotes an estimate

**TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'**

Scottish Widows Property  
**CLIENT:** Authorised Contractual  
 Scheme 1

**PROJECT REF:** 16303

**SITE:** Land at Victoria Retail Park, South Ruislip, HA4

**CONTACT:** Neill Richardson at WYG

**SURVEY DATE:** 12 October 2016

**ARB CONSULTANT:** Andrew Turnbull FDS ArborA

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.	MANAGEMENT
T1	Birch; Betula, Betulaceae	Y / SM	6.5	1.5	1	1.5	1.5	120	1.4	1.5	2m - North	Normal	20 - 40	In shrub border of car park, large raised base flare out likely from poor nursery stake.	C 2 / 3	
T2	Rowan; Sorbus, Rosaceae	SM	4	2	2	2	2	120	1.4	1	1.5m - union	Normal	20 - 40	In shrub border of car park, multi stemmed crown from 1.5m.	C 2 / 3	
T3	Pyrus, Rosaceae	SM / M	8	2	2	2	2	230	2.8	2.5	n / a	V.Poor	< 10	In shrub border of car park, almost completely dead.	U	Fell tree.
T4	Pyrus, Rosaceae	Y / SM	4.5	1	1	1	1	95	1.1	2	2m - union	Fair	20 - 40	In densely compacted car park boundary, stake in place, bare soils.	C 1 / 3	Remove to facilitate development.
T5	Ash; Fraxinus, Oleaceae	Y / SM	4	1.5	1	1.5	1.5	90	1.1	2	2m - union	Fair	20 - 40	In car park shrub border of car park, lost leader.	C 2 / 3	Remove to facilitate development.
T6	Ash; Fraxinus, Oleaceae	Y / SM	3	1	0.5	1	0	75	0.9	2	/	Poor	< 10	In car park shrub border, crown dieback and no leader.	U	Fell tree.
T7	Ash; Fraxinus, Oleaceae	Y / SM	3	1	0	1	0.5	80	1.0	1.5	/	Poor	< 10	Major dieback.	U	Fell tree.
T8	Pyrus, Rosaceae	SM	7.5	2	2	2	2	200	2.4	1.5	2m - union	Fair / Poor	10 - 20	In car park shrub border and some dieback and bare soils.	C 2 / 3	Monitor tree's condition and mulch/maintain.
T9	Pyrus, Rosaceae	SM	9	3	2.5	3	2.5	230	2.8	1.5	2m - union	Fair	20 - 40	In car park shrub border and some dieback and bare soils.	C 2	
T10	Pyrus, Rosaceae	SM	6	1	1.5	1.5	1.5	190	2.3	1.5	2m - union	Fair	20 - 40	In car park shrub border and some dieback and bare soils.	C 2	Remove to facilitate development.
T11	Pyrus, Rosaceae	SM	8	3	3	2.5	3	210	2.5	1.5	2m - union	Fair	20 - 40	In car park shrub border and some dieback and bare soils, multi stems upper crown.	C 2	Remove to facilitate development.
T12	Pyrus, Rosaceae	Y	5	0.5	0.5	0.5	0.5	75	0.9	1.5	2m - union	Normal	20 - 40	Established planting, compacted soils, tree stake in place.	C 1 / 3	Remove to facilitate development.
T13	Pyrus, Rosaceae	Y	5	0.5	0.5	0.5	0.5	75	0.9	1.5	2m - union	Fair	20 - 40	Established planting, compacted soils, tree stake in place.	C 1 / 3	Remove to facilitate development.
T14	Pyrus, Rosaceae	Y	5	0.5	0.5	0.5	0.5	75	0.9	1.5	2m - union	Normal	20 - 40	Established planting, compacted soils, tree stake in place.	C 1 / 3	Remove to facilitate development.
T15	Ash; Fraxinus, Oleaceae	Y / SM	5	2	1.5	1	1.5	90	1.1	1.5	2m - union	Normal	10 - 20	In shrub border of car park, multi stems at 2m.	C 2 / 3	
T16	Ash; Fraxinus, Oleaceae	Y / SM	3.5	1.5	1	1	1	80	1.0	1.5	2m - union	Fair / Poor	< 10	In shrub border of car park, lost leader and dieback.	U	Fell tree.
T17	Ash; Fraxinus, Oleaceae	Y / SM	3.5	1.5	1	1.5	0.5	90	1.1	1.5	2m - union	Fair	< 10	In shrub border of car park, lost leader and dieback.	U	Fell tree.
T18	Pyrus, Rosaceae	SM	9.5	2.5	2.5	2.5	2.5	240	2.9	1-1.5m	2m - all round	Normal	20 - 40	In car park shrub border.	B 2 / 3	
T19	Pyrus, Rosaceae	SM	11	2	2	2.5	2	210	2.5	1.5	2m - all round	Normal	20 - 40	In car park shrub border.	B 2 / 3	
T20	Pyrus, Rosaceae	SM	8	2	2	2	2	180	2.2	1.5	2m - all round	Normal	20 - 40	In car park shrub border.	B 2 / 3	
T21	Pyrus, Rosaceae	SM	11	2.5	3	2.5	2.5	240	2.9	1.5	2m - all round	Normal	20 - 40	In car park shrub border, multi stems at 3m.	B 2 / 3	



# **TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'**

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**SURVEY DATE:** 12 October 2016

**ARB CONSULTANT:** Andrew Turnbull FDS Sc ArborA

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.	MANAGEMENT
T22	Pyrus, Rosaceae	Y	5.5	0.5	0.5	0.5	0.5	90	1.1	2	2m - all round	Normal	20 - 40	In dense car park border, compacted and exposed soils.	C 1 / 3	Remove to facilitate development.
T23	Pyrus, Rosaceae	Y	6	0.5	0.5	0.5	0.5	85	1.0	2	2m - all round	Normal	20 - 40	In dense car park border, compacted and exposed soils and stake.	C 1 / 3	Remove to facilitate development.
T24	Cherry; Prunus, Rosaceae	SM	5	2	2	2.5	2	150	1.8	2	1.5m - East	Fair / Poor	10 - 20	In shrub border, multi stemmed crown and dieback.	C 3	Monitor tree's condition.
T25	Cherry; Prunus, Rosaceae	SM	6	2.5	2	1.5	2	160	1.9	1.5	1.5m - South	Normal	20 - 40	In shrub border, multi stemmed crown and dieback.	C 3	
T26	Ash; Fraxinus, Oleaceae	SM	9	3	4.5	3.5	4	340	4.1	1	1.5m - East	Normal	40 +	In border, multi stems from 2.5m union, ivy into structure.	B 2 / 3	Sever ivy at base.
T27	Ash; Fraxinus, Oleaceae	SM	14	4	3	3	4	340	4.1	1.5	2.5m - all round	Normal	40 +	In shrub border, included co-dominant at 2.5m.	B 2 / 3	Monitor tree's condition.
T28	Pyrus, Rosaceae	Y / SM	8	3	0	1.5	1	133	1.6	1	/	Fair	10 - 20	Established growth, Co-dominant base, growth North and shaded out. 2x stems (75mm and 110mm)	C 3	
T29	Tree of Heaven; Ailanthus, Sapindales	SM / M	10	5	6	5	4.5	310	3.7	0.5	1m - West	Normal	40 +	On ditch/shrub bank, ivy on structure.	B 2 / 3	Remove to facilitate development.
T30	Tree of Heaven; Ailanthus, Sapindales	SM	10	7	5	5	4	270	3.2	0	2m - West	Fair	20 - 40	On ditch/shrub bank, ivy on structure, suckering and saplings .	B 2 / 3	Remove to facilitate development.
T31	Alder; Carpinus, Betulaceae	SM / M	10	2	3	2.5	3	300	3.6	0.5	4m - South	Normal	20 - 40	In shrub, fair form.	B 2 / 3	Remove to facilitate development.
T32	Alder; Carpinus, Betulaceae	SM / M	11	3	2	3	3	330	4.0	0.5	4m - all round	Normal	20 - 40	In turf, fair form.	B 2 / 3	Remove to facilitate development.
T33	Alder; Carpinus, Betulaceae	SM	9	2.5	2	2	2	180	2.2	0	3m - all round	Normal	40 +	Single stem, fair form.	B 2 / 3	Remove to facilitate development.
T34	Tree of Heaven; Ailanthus, Sapindales	SM / M	9	4.5	5	4	4.5	320	3.8	0	2.5m - all round	Normal	40 +	Multi stem crown mass sapling growth around canopy.	B 2 / 3	Remove to facilitate development.
T35	Tree of Heaven; Ailanthus, Sapindales	SM / M	10	5	3	3	5	330	4.0	0	2.5m - all round	Normal	40 +	Multi stem crown mass sapling growth around canopy.	B 2 / 3	
T36	Aspen; Populus, Salicaceae	SM / M	14	6	5	3	3	430	5.2	2	3.5m - South	Fair	40 +	Growth leaning east, major deadwood throughout.	B 2 / 3	
T37	Aspen; Populus, Salicaceae	SM / M	14	5	4	6.5	3	440	5.3	1.5	3.5m - South	Fair	40 +	Growth leaning east, major deadwood throughout.	B 2 / 3	
T38	Tree of Heaven; Ailanthus, Sapindales	SM	8	3	4	4	2.5	250	3.0	0	2m - S.East	Normal	40 +	Multi stemmed crown.	C 3	Remove to facilitate development.
T39	Goat Willow; Salix, Salicaceae	SM	7	1	3.5	4	2	250	3.0	2	1m - union	Fair	20 - 40	Included multi stems 1-1.5m, crown asymmetry, 3x stems (110mm, 120mm and 190mm).	C 3	Remove to facilitate development.
T40	Aspen; Populus, Salicaceae	M	15	6	6	6	3	539	6.5	1.5	1m - union	Normal	40 +	3 x stem form union at 1m, 3x stems (280mm, 310mm and 340mm).	B 2 / 3	Remove to facilitate development.
T41	Aspen; Populus, Salicaceae	M	16	7	4.5	4	4	490	5.9	1.5	2m - South	Normal	40 +	Multi stemmed crown, large, attached at 2m.	B 2 / 3	Remove to facilitate development.
T42	Tree of Heaven; Ailanthus, Sapindales	SM / M	9	4	3	3.5	4	330	4.0	1.5	1.5m - union	Normal	40 +	Fair form.	B 2 / 3	Remove to facilitate development.

**TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'**

**CLIENT:** Scottish Widows Property  
Authorised Contractual  
Scheme 1

**PROJECT REF:** 16303

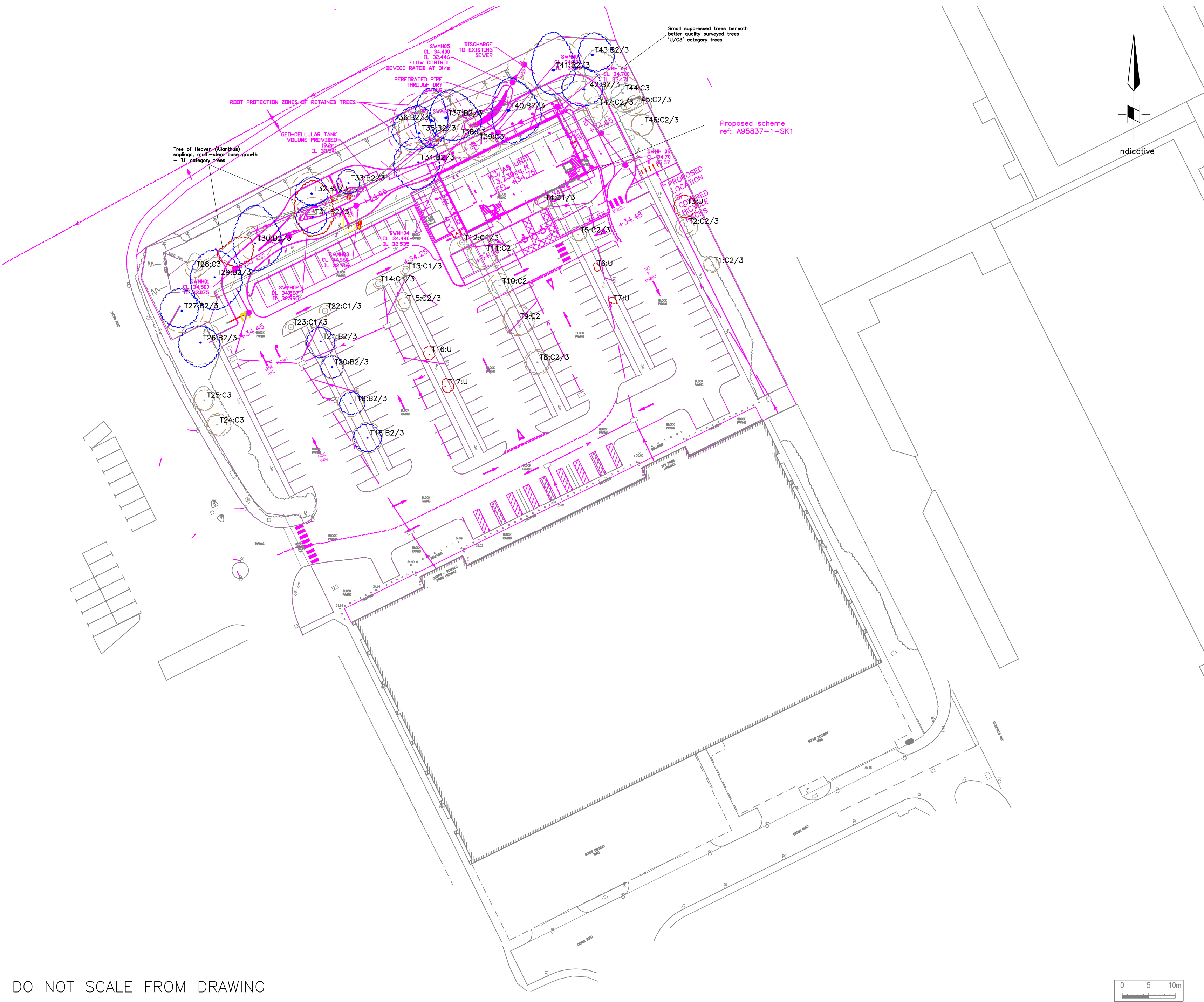
**SITE:** Land at Victoria Retail Park, South Ruislip, HA4

**CONTACT:** Neill Richardson at WYG

**SURVEY DATE:** 12 October 2016

**ARB CONSULTANT:** Andrew Turnbull FDS ArborA

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.	MANAGEMENT
T43	Tree of Heaven; Ailanthus, Sapindales	SM / M	9	4	3	4	2.5	350	4.2	1	1.5m - South	Normal	40 +	In shrubs, large attachments at 2-3m, multi stemmed crown.	B 2 / 3	
T44	Goat Willow; Salix, Salicaceae	SM	8	1.5	3.5	3.5	2	270	3.2	1.5	ms base	Fair	10 - 20	Multi stemmed base, in shrubs, 9x stems <90mm.	C 3	
T45	Ash; Fraxinus, Oleaceae	Y	7	1	2	3	2.5	140	1.7	1	2m - all round	Normal	40 +	At the edge of planted group, shrubs and car park, good future potential.	C 2 / 3	
T46	Ash; Fraxinus, Oleaceae	Y	7.5	2	2	2	2	170	2.0	1	1.5m - all round	Normal	40 +	At the edge of planted group, shrubs and car park.	C 2 / 3	
T47	Tree of Heaven; Ailanthus, Sapindales	Y	8	0.5	3	1	2.5	177	2.1	1	1m - S.West	Fair	20 - 40	Suppressed, limited form, 2x stems (120mm and 130mm).	C 2 / 3	Remove to facilitate development.



**KEY**

- Tree Crown Spread
- Root Protection Area (RPA)
- Tree Stem
- T1 Tree No.

**Tree Condition Category**

- A
- B
- C
- U

The surveyed trees are illustrated on this Constraints Plan which is prepared in accordance with British Standard BS5837: 2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'

/	Scheme overlay for review	TB	DM	21/05/18
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT

Scottish Widows Property  
Authorised Contractual Scheme 1

PROJECT

16303  
Land at Victoria Retail Park,  
South Ruislip, HA4

TITLE

Tree Constraints Plan  
(TCP/Scheme Overlay)

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RCK	20/10/2016	TB	20/10/2016			1:500

  
(Mail) Second Floor, 1 Hunter's Walk, Canal Street, Chester. CH1 4EB  
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Drawing Number

16303/TCP/01

A2  
REV.

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