

# **Churchview Road SHD Application**

## **Tree Survey, Arboricultural Impact Assessment and Arboricultural Method Statement**

**Arborist Associates Ltd.**

**June 2019**

# **Arborist Associates Ltd.**

## **A Condition Assessment of the Tree Vegetation Located Within the Site Area on 'Church Road', Killiney, Co. Dublin.**

**Prepared for: Strand Court Limited**

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Arboriculture**

**Date: 14<sup>th</sup> March 2019**

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**Arborist Associates Ltd. Arboriculture Assessment- Tree Vegetation Located Within the Site Area on 'Church Road', Killiney, Co. Dublin. March 2019**

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### **Notes:**

Refer to Arborist Associates Ltd. Drawing CRK001: Tree Constraints Plan.

Refer to Brady Shipman Martin Drawing 6657-301: Tree Retention, Removal and Protection Plan.

The Arboricultural Impact Assessment was completed following a review of the final development and services layout drawings in June 2018.

## **PART 1: TREE SURVEY**

## 1.0 Instructions

- 1.1 I have been instructed by *Strand Court Limited* (planning applicant) to assess the condition of the tree vegetation located within and adjoining the site area on 'Church Road', Killiney, Co. Dublin.

## 2.0 Report Limitations

- 2.1 The inspection has been carried out from ground level only and is a preliminary report. It does not include climbing inspections or below ground investigations on any tree/s. Should a more detailed inspection be thought necessary on any tree/s, then this will be highlighted within my recommendations.
- 2.2 The assessment is based on what was visible at the time and recommendations made are subject to the knowledge and expertise of the qualified Arboriculturist that carried out the above inspections.
- 2.3 This survey is being carried out in support of the planning and design of a new development on these lands and only concerns those trees on and around the site that are considered relevant to the project. It is not a detailed health and condition survey of all of the trees on the property.
- 2.4 Trees should be inspected on a regular basis as their health and condition can change rapidly due to biotic and abiotic agents. The recommendations within this report are valid for a twelve month period only and this may be reduced in the case of any change in conditions to or in the proximity of the trees.
- 2.5 Before undertaking any work to these trees, it would be advisable to check whether any planning or tree preservation controls are in operation, if they are it will be necessary to obtain consent before undertaking any works (pruning or felling).

## 3.0 Survey Methodology

- 3.1 The Arboricultural data which is presented within the attached report (see *Appendix 1*) has been recorded in line with BS 5837:2012. The survey was carried out between January and early March 2019 and was conducted by collecting and assessing the following information within the vicinity of the proposed site area:

- Tree Number (metal tags attached to each tree).
- Tree species both common and botanical.
- Dimensions (Trunk diameter, height, crown spread and crown clearance).
- Age Class
- Physiological Condition

- Structural Condition
- Preliminary Recommendations
- Estimated remaining contribution within their present environment
- Retention category

3.2 The tree vegetation was assessed and given a retention category according to their quality and value within the existing context (BS-4.5), and not in conjunction with any proposed development plans. In making this assessment, particular consideration was given to the following:

- **Arboricultural Value** – including health, structural form, life expectancy, species and its physical contribution to or affects on other features located on site.
- **Landscape Value** – an assessment of their locality including their contributions to other features as well as to the site as a whole.
- **Cultural Value** – additional contributions made such as conservation, historical, commemorative value.

3.3 In order to assess their retention value, the trees have been divided into one of the following categories, in accordance with the cascade chart illustrated in table 1 of BS 5837:2012. The classification process begins by determining whether the tree falls within the (U) category, if not then the process will continue by assuming that all trees are considered according to the criteria for inclusion in the high category (A). Trees that do not meet these strict criteria will then be considered in light of the criteria for inclusion in the moderate category (B) and failing this, they will be allocated a low category (C).

The following summarises each of the categories:

**Category U** – Those trees in such a condition that any existing value would be lost within 10 years. Most of these will be recommended for removal for reasons of sound Arboricultural Practice/ Management.

Any category 'U' trees within this site area have been identified on our drawing (No.CRK001) with a 'Red' donut around their trunk positions. Due to the condition of these trees, they should not be considered a constraint on the design layout of the proposed development of this site area.

**Category A** - Trees of high quality/value with a minimum of 40 years life expectancy.

Any category 'A' trees within this site area have been identified on our drawing (No.CRK001) with a 'Green' donut around their trunk positions.

**Category B** – Trees of moderate quality/value with a minimum of 20 years life expectancy.

Any category 'B' trees within this site area have been identified on our drawing (No.CRK001) with a 'Blue' donut around their trunk positions. These trees would be seen as having the potential to contribute to the tree cover of these grounds for the medium-term.

**Category C** – Trees of low quality/value with a minimum of 10 years life expectancy

Any category 'C' trees within this site area have been identified on our drawing (No.CRK001) with a 'Grey' donut around their trunk positions. These trees would be seen as having the potential to provide tree cover for the short to medium term and they should not be seen as a considerable constraint on the development of these lands. Where viable, they should be retained.

- 3.4 The trees have been plotted onto the attached drawing (Dwg No.CRK001) by a land survey company. The tree reference numbers referred to in the condition tree report have been shown on this drawing along with their crown spreads and their retention category colour coded as detailed above and recommended by BS 5837 2012.

The constraints for each tree were worked out as per the formulas in BS5837 2012 and have been shown on this drawing using an 'Orange Circle' to aid the design team in their final development layout to ensure tree vegetation proposed for retention is retained successfully. The Root Protection Area (RPA) is the minimum area around individual trees to be protected from disturbance during construction works and is expressed as a radius in metres measured from the tree stem. Any deviation in the RPA from the original circular plot takes account of the following factors whilst still providing adequate protection for the root system:

- a) The morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures, open drainage ditches and underground apparatus);
- b) Topography and drainage;
- c) The soil type and structure;
- d) The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

#### 4.0 Findings

- 4.1 The site area is made up of three adjoining residential properties on the western side of the 'Graduate Roundabout' and 'Church Road'. The three properties combined give a total site area of 1.49 hectares.

- 4.2 It is adjoined to its northern, southern and part of the western sides by neighbouring residential properties with the remaining section of the western boundary adjoining a public open space. On its eastern side, it is cordoned off from 'Church Road' by a high boundary wall.
- 4.3 **Property No.1** is located at the northern end of the site area with an entrance off 'Rochestown Avenue'. This property has lain derelict for a considerable length of time and the house is now in ruins.

Within this property, the trees have been numbered (1301-1313 & 1424 & 1425). These include the remnants of once very well maintained formal gardens which have become overgrown and a large portion of the original trees have been cut down previously. Of most significance within this property is Tree No.1313 a large prominent mature Monterey Pine located in from the western boundary at the northern end which has been given a category 'A' rating with Tree No. 1304 an early-mature Blue Cedar and Tree No.1312 an early-mature Japanese Cedar being given a category 'B' grade.

- 4.4 **Property No.2** is the central property situated tightly between property Nos. 1 & 3 and it has a large population of trees within its grounds, in particular around the perimeter. Within this property, the trees have been numbered (1314-1405).

This property was once formally maintained but in more recent years, it has been allowed to grow more unmanaged with some areas of scrub such as Bramble and self-seeding trees such as Ash and Sycamore being allowed to establish. The once formal shrub borders have been allowed to become overgrown and the faster growing shrubs are outgrowing/suppressing the slower and smaller shrubs with scrub species also establishing.

Within this property, the most prominent trees are located within a linear tree belt that extends in a general east to west direction along the northern boundary of this property with property No.1 and of particular merit are tree Nos.1330-1333, 1339-1444 & 1346-1349 which have been categorised as 'B'. Also within these grounds of significance and of good quality are tree No. 1360 a mature Sycamore and No.1363 an early-mature Beech, both categorised as 'B' which are located within an overgrown shrub border between the front of the existing house and the boundary wall with 'Church Road'.

- 4.5 **Property No.3** is located south of property No.2 and is the smallest of the three properties. The trees within this property have been numbered (1406-1423) with Tree No.1423 an early-mature Blue Cedar being of the best quality and has been given a category grade of 'B' although some soil and root damage has been caused around its base during site investigation works and this may impact on its health.
- 4.6 Within the overall site area, 125No. Trees were tagged individually and 2No. Trees plus 6 No. Hedges and 1No. Tree Belt were identified numerically.

The following table gives a breakdown of the category grading allocation as per the cascade chart in BS5837 2012:

<b>Category Grade</b>	<b>No. of trees</b>
Category U <b>13 Trees</b>	<b>Tree Nos.</b> 1314, 1315, 1345, 1351, 1365, 1367, 1372, 1397, 1405, 1412, 1419, 1420 & 1422.
Category A <b>1 Tree</b>	<b>Tree Nos.</b> 1313
Category B <b>21 Trees</b>	<b>Tree Nos.</b> 1304, 1312, Tree No.1, 1330, 1331, 1332, 1333, 1339, 1340, 1341, 1342, 1343, 1344, 1346, 1347, 1348, 1349, 1360, 1363, 1370 & 1423.
<b>+ 1 Tree Belt</b>	Tree Belt No.1
Category C <b>92 Trees</b>	<b>Tree Nos.</b> 1301, 1302, 1303, 1424, 1425, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1334, 1335, 1336, 1337, 1338, 1350, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1361, 1362, 1364, 1366, 1368, 1369, 1371, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1398, 1399, 1400, 1401, 1402, 1403, 1404, Tree No.2, 1406, 1407, 1408, 1409, 1410, 1411, 1413, 1414, 1415, 1416, 1417, 1418 & 1421.
<b>+ 6 hedges</b>	Hedge Nos. 1, 2, 3, 4, 5 & 6.
<b>Total</b>	<b>127 Trees + 6 Hedges + 1 Tree Belt</b>

## 5.0 Tree Management/Recommendations

- 5.1 The remedial tree surgery works being recommended within this report are advisory and are recommended in the interests of promoting tree health and longevity. These have been listed within my condition assessment within 'Appendix 1' of this report. All tree works are to be carried out to the specifications of BS 3998:2010 by a competent tree surgery firm with adequate insurance and trained personnel.
- 5.2 Between the recommended inspection period as highlighted within the limitations of this report, a competent person should make a general inspection of the trees at least twice a year and any defects noted should be recorded, the necessary remedial action taken and if necessary advise should be sought. In addition to this, an inspection should also be made immediately after any exceptionally severe weather events that might have caused damage to trees such as wind or

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snow. It is important that all assessments whether detailed or not are documented and retained.

This report is for the sole use of the above named client and refers to only those trees identified within. Its use by any other person(s) in attempting to apply its contents for any other purpose renders the report invalid for that purpose.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Felim Sheridan,  
F. Arbor. A, RFS Dip, Nat. Dip & NCH in Arboriculture.

**Felim Sheridan's qualifications:**

Fellow of the Arboricultural Association (F. Arbor. A), Professional diploma Arboriculture (RFS), National diploma Arboriculture (ND) and National certificate Horticulture (NCH).

# **Appendix 1**

## **Condition Tree Assessment**

### **of the Trees on the Site Area at 'Church Road', Killiney, Co. Dublin.**

**Date: 14<sup>th</sup> March 2019**

**Arborist Associates Ltd. Arboriculture Assessment- Tree Vegetation Located Within the Site Area on Church Road, Killiney, Co. Dublin. March 2019**

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## Survey Notes

All codes referred to in this report are approximate and serve as a general guide only.

**Reference to Numbers:** The trees have metal tags attached and these correspond with the numbers in this report.

### ***Reference to age class is as follows:***

**Young:** A tree, which has been planted in the last 10 years.

**Semi Mature** A tree that is less than 1/3 the expected height of the species in question.

**Early Mature:** A tree, which is between a 1/3 and 2/3's the expected height of the species in question.

**Mature:** A tree that has reached the expected height of the species in question, but still increasing in size.

**Over Mature:** A tree at the end of its life cycle and the crown is starting to break up and decrease in size.

### ***Reference to Physiological, Structural Condition and other comments:***

#### ***Physiological Condition***

**Good:** A tree with no major defects, but possibly including some small defects.

**Fair:** A tree with some minor defects such as bark Wounds, isolated decay pockets or structure affected due to overcrowding.

**Poor:** A tree with more serious defects such as extensive deadwood, decay or defective to the point of being dangerous.

#### **Structural condition and other comments –**

This records noted visual defects and other information about the trees health and structure.

#### **Estimated Useful Life Expectancy (ULE) in years**

This is based on an Arboricultural assessment of the tree and is estimated based of the findings noted at time. Trees still need to be reviewed on a regular basis, preferably annually.

Less than (<) 10 years remaining contribution

10 + years remaining contribution

20 + years remaining contribution

40 + years remaining contribution.

Arborist Associates Ltd. Arboriculture Assessment- Tree Vegetation Located Within the Site Area on 'Church Road', Killiney, Co. Dublin. March 2019

## **Retention Categories**

The purpose of the tree categorization method is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained should development occur.

It is carried out in accordance with section 4.5 (Tree Categorization Method) of BS 5837 2012.

## **Summary**

Main categories.

**Category U** – Those trees in such a condition that any existing value would be lost within 10 Years. Most of these will be recommended for removal for reasons of sound Arboricultural practice.

**Category A** - Trees of high quality/value with a minimum of 40 years life expectancy.

**Category B** – Trees of moderate quality/value with a minimum of 20 year life expectancy.

**Category C** – Trees of low quality/value with a minimum of 10 years life expectancy

## **Sub categories**

1 – Mainly Arboricultural Values

2 – Mainly Landscape values

3- Mainly Cultural and conservation value

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.

If a layout design places Category 'U' trees in an inaccessible location such that concerns over public safety are reduced to an acceptable level, it may be preferable or possible to defer the recommendation to fell.

The terms 'Group, woodland or tree line' is intended to identify trees that form cohesive Arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally including for biodiversity (e.g. parkland or wood pasture), in respect to each of the three subcategories.

## ***Reference to Crown spread, Height and Trunk Diameter:***

This gives a guide to the area taken up by the tree.

**Trunk diameter** is the diameter of the main trunk taken at a height of 1.5m and is recorded in millimeters (mm).

**Height** records the overall height of the tree and is given in meters (m).

**Crown Spread** records the extent of the branches normally in a north, south, east and west direction from the base of the tree and is given in meters (m).

**Clear crown height** records the distance between the ground and the first branch from the base of the tree and is given in meters (m).

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
		<b>A condition assessment of the trees within the site area on 'Church Road' Killiney, Co. Dublin.</b>									
		The site area consists of three adjoining, private individual residential properties with large garden areas that would have initially been formally maintained in lawn with shrub areas along with tree planting added over the years as part of landscaping.									
Property No.1		It is located at the northern end of the site area and the assessment starts to the left of the main entrance. A lot of site clearance works have occurred in the past with many of the original mature trees removed during these works.  The following trees are located along the front boundary wall with the public road.									
1301	<b>Blue Cedar</b> <i>Cedrus atlantica</i> 'Glauca'	16	830/ 320	5N 7S 8E 6W	1.5	Early Mature	Fair	Poor It has been left isolated by the failure/ removal of neighbouring trees leaving it more open/ exposed to winds as a result. It has suffered storm damage with a number of scaffold limbs breaking out and due to structure; it is prone to further storm damage. Heavy lvy cover on the main trunk is extending up into its crown.	Remove dead/ unstable growth from within its crown and reduce its crown size by c. 1-2 meters (m) to address structural issues. Cut lvy at ground level	10-20	C1
1302 & 1303	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	A9	A400	A 1N 1S 1E 1W	A 0	Mature	Fair	Poor They are located inside the front boundary wall and have been left isolated and more open/ exposed by the removal of some neighbouring trees. They are both being heavily suppressed by lvy and are prone to storm damage due to structure.	Cut lvy at ground level in order to carry out a more detailed assessment of their bases and lower trunks.	10+	C1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade			
								N-north S-south E-east W- west Phys.-physiological.	A- average					
		<b>The following two trees are located within the south-eastern corner along the front boundary wall with the public road.</b>												
1424	<b>Western Red Cedar cv. (yellow)</b> <i>Thuja plicata</i> "zebrina"	5	260/ 110/ 110	3N 2S 2E 2W	1	Early Mature	Poor	Poor It has lost its top for one reason or another and has been left more open/ exposed by the removal or failure of neighbouring trees. It is being suppressed by Ivy and is of poor quality.	Tidy up dead branches and cut Ivy at ground level.	10+	C1			
1425	<b>Yew</b> <i>Taxus baccata</i>	5	360	3N 2S 4E 2W	0	Early Mature	Fair/ Good	Fair It is growing up underneath the canopy of larger neighbouring trees to the south within property No.2 with an asymmetrical crown as a result. It forms part of the lower bulking within this area. Ivy cover on the main trunk is beginning to extend up into its crown.	Tidy up the undergrowth and cut Ivy at ground level.	20-40	C1			
<b>Hedge No. 1</b>	<b>Beech</b> <i>Fagus sylvatica</i>	<b>It is located outside the boundary chain link fence and is bordering with the adjoining laneway.</b> It is of an early- mature age class in fair condition both physiologically structurally. It has been clipped and maintained as a low formal hedge and some of the vegetation on the site side has been impacted upon by past overcrowding/ competition from neighbouring trees.								Continue present maintenance.	C2			
		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">A2</td> <td style="width: 25%;">--</td> <td style="width: 25%;">A 0.3</td> <td style="width: 25%;">--</td> </tr> </table>							A2	--	A 0.3	--		
A2	--	A 0.3	--											
		<b>The following trees are located within the north-western corner of this property.</b>												
1304	<b>Blue Cedar</b> <i>Cedrus atlantica</i> 'Glauca'	16	780/ 380/ 260	6N 7S 8E	1.5	Early Mature	Fair/ Good	Fair There is a secondary limb developing from its base with an acute union formation between this	Remove large size dead/ unstable growth from within its crown and prune in other heavy poorly	20+	B1			

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
				7W				and the main trunk. Heavy Ivy cover on the main trunk is extending up into its crown. It has suffered minor branch breakage and storm damage in the past and has been left more open/ exposed by the failure or removal of the surrounding trees.	structured scaffold limbs/ branches to lessen the risk of further storm damage. Cut Ivy at ground level.		
1305	<b>Birch</b> <i>Betula pendula</i>	16	670	3N 6S 6E 4W	4	Mature	Fair	Fair It has been left more isolated by the removal of some neighbouring trees. It contains deadwood within its crown with evidence of stress/ decline throughout. Heavy Ivy cover on the main trunk is extending up into its crown.	Remove large size dead/ unstable growth and prune in heavy, exposed side limbs/ branches by c.1-2m. Cut Ivy at ground level.	10+	C1
1306	<b>Birch</b> <i>Betula pendula</i>	14	380/ 140	0N 1S 1E 2W	4	Mature	Fair / Poor	Poor It has been left isolated and more open/ exposed by the failure or removal of some neighbouring trees. Heavy Ivy cover on the main trunk is extending up into its crown and is increasing its windsail.	Cut Ivy at ground level at the present time.	10+	C1
1307 – 1309	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	A 9	A 300	A 3N 3S 3E 3W	A 0	Early Mature	Fair	Fair They form part of the bulking within this area with low crown formations. Ivy over on their main trunks is beginning to extend up into their crowns.	Cut Ivy at ground level and tidy up the undergrowth.	10-20	C1
1310	<b>Liquidambar styraciflua</b>	7	290	2N 2S 2E 2W	1	Early Mature	Fair	Fair It is beginning to be heavily suppressed by Ivy and is being slightly overcrowded by the surrounding vegetation.	Cut Ivy at ground level at the present time.	20+	C1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
1311	<b>Birch</b> cv. <i>Betula pendula</i>	10	480	2N 3S 3E 2W	3	Early Mature	Fair	Fair / Poor It initially formed part of a larger group; however some neighbouring trees have since been removed or have failed leaving it more open/ exposed as a result. Heavy lvy cover on the main trunk is extending up into its crown and is increasing its windsail.	Remove dead/ unstable growth from within its crown. Cut lvy at ground level.	10+	C1
1312	<b>Japanese Cedar</b> <i>Cryptomeria Japonica</i>	9	500	2N 3S 2E 3W	1.8	Early Mature	Fair/ Good	Fair Heavy lvy cover on the main trunk is extending up into its crown with scrub growing up around its base. The lower branches have been cut/ removed in the past in order to raise up its crown.	Cut lvy at ground level and tidy up the undergrowth.	20+	B1
1313	<b>Monterey Pine</b> <i>Pinus radiata</i>	23	1530	7N 10S 8E 11W	1.8	Mature	Fair/ Good	Fair It is a large, prominent visual tree located in from the boundary. It has a low branch formation on the south side and has suffered storm damage throughout its crown and contains a number of cracked/ broken branches as a result. The lower scaffold limbs/ branches on the boundary side, (western side) have been removed in the past leaving its crown slightly more asymmetrical and more open on this side. There is light lvy cover on the lower trunk.	Remove large size dead/ unstable growth from within its crown and reduce end loading on heavy exposed side branches, in particular those protruding out of shape of the main crown and prone to wind damage.	40+	A1
<b>Hedge No. 2</b>	<b>Beech</b> <i>Fagus sylvatica</i>	<b>It runs at ninety degrees to hedge No. 1 and extends along this part of the western boundary and is located on the adjoining property side of the boundary fence.</b> It is of an early-mature age class in fair / good condition both physiologically and structurally. It has been						Continue present maintenance.			C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade				
								N-north S-south E-east W- west Phys.-physiological.	A- average						
		clipped and maintained as a low formal hedge by regular trimming and is of good quality as a result.													
		<table border="1"> <tr> <td>A2</td> <td>--</td> <td>A0.5</td> <td>--</td> </tr> </table>						A2	--	A0.5	--				
A2	--	A0.5	--												
Tree No. 1	<b>Monterey Cypress</b> <i>Cupressus macrocarpa</i>	10	1000	9N 6S 9E 10W	2	Mature	Fair	Fair It is located on the adjoining property side of the boundary fence and the visual assessment has been limited to the site side only. It has an unusual habit giving it character. The lower branches have been removed in the past in order to raise up its crown and it has a crown overhang into the site area.	It is likely to require attention to address both physiological and structural issues and to promote safety.	20+	B1				
<b>Property No. 2</b>															
<b>Tree Line No. 1</b>	<b>Poplar</b> <i>Populus sp.</i> <b>Norway Maple</b> <i>Acer platanoides</i>  <b>Ornamental Shrubs</b>  <b>Holly</b> <i>ilex aquifolium</i> <b>Elder</b> <i>Sambucus nigra</i>	<b>It extends in an east-west direction along the boundary of this property and the first property in this site area and is located along the boundary wall.</b> It has an undergrowth of some ornamental shrubs along with Holly and scrub species such as Elder, Bramble and Dogrose along with some clumps of overgrown Cherry Laurel forming part of the lower bulking, in particular at the eastern end. It forms a linear tree belt and is prominent within the treescape of this area. A lot of the trees within this tree belt are growing up within a group environment where they provide support/ shelter to one another and this will need to be taken into consideration during their management as the individual trees within may not isolate well. There is heavy Ivy cover on some trees and this is increasing the windsail of their crowns. It is evident that trees were removed and others have suffered storm damage in the past creating openings in the canopy formation which has left some crown sections more open/ exposed.							Cut Ivy at ground level where it is heavy on the trees and tidy up the undergrowth.	--					

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade			
								N-north S-south E-east W- west Phys.-physiological.	A- average					
	<b>Bramble</b> <i>Rubus fruticosus</i> <b>Dogrose</b> <i>Rosa canina</i>	<table border="1"> <tr> <td>A12</td> <td>A300</td> <td>A3N/A4S/A3E/A3W</td> <td>A2</td> </tr> </table> <p>The following trees are located within this tree line.</p>						A12	A300	A3N/A4S/A3E/A3W	A2			
A12	A300	A3N/A4S/A3E/A3W	A2											
1314	<b>Poplar</b> <i>Populus sp.</i>	25	960	4N 8S 2E 6W	8	Mature	Fair/ Poor	Poor It is located on the boundary with the adjoining open space to the west and is a large size tree. It has been left more isolated and more open/ exposed due to storm damage within its own crown and the failure of neighbouring trees. Heavy Ivy cover on the main trunk is extending up into its crown. Basal decay is present with pathogenic fungi at its base and as a result, the stability of its tree is questionable.	I would recommend its <b>removal</b> as part of management.	<10	U			
1315	<b>Poplar</b> <i>Populus sp.</i>	25	720	5N 3S 8E 2W	12	Mature	Fair/ Poor	Poor It is a tall, poorly structured tree and it has been drawn up for the light due to past overcrowding / competition. It has been left more open/ exposed by the failure of neighbouring trees with a decaying stump at its base and its stability would give rise for concern as a result.	I would recommend its <b>removal</b> as part of management.	<10	U			
1316 - 1328	<b>Norway Maple</b> <i>Acer platanoides</i>	A 16	A 480	A 6N 4S 4E	A 6	Early Mature / Mature	Fair	Fair / Poor They are growing at close spacing to one another and form part of the one group/ canopy formation. Their group structure has become	They are best maintained / managed within their present group environment.	10-20	C2			

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
				5W				more open/ exposed due to storm damage within their crowns. Heavy Ivy cover on some trees is beginning to extend up into their crowns.  Tree No. 1320 & 1321 are very open / exposed and prone to further storm damage.	Remove large size dead/ unstable growth and prune in heavy side limbs/ branches by up to 2m in order to address exposure issues and to help create a more aerodynamic group canopy structure. Cut Ivy at ground level.		
1329	<b>Lime</b> <i>Tilia sp.</i>	8	140/ 100/ 190	6N 2S 3E 1W	4	Early Mature	Fair/ Poor	Poor It is being overcrowded within this area and had been cut back in the past to a stump and has developed multiple-stems from this point. It forms part of the lower bulking and its crown development has been impacted upon by competition and damage caused by failure to the neighbouring trees.	Retain as part of the bulking at the present time.	10-20	C2
1330 – 1333	<b>Lime</b> <i>Tilia sp.</i>	A 17	A 300	A 4N 4S 4E 4W	A 4	Mature	Fair/ Good	Fair It consists of a group of Lime trees growing up together forming part of the one group/ canopy formation and they have asymmetrical crowns due to their group growing environment. Ivy cover on some stems is heavy and is beginning to extend up into their crowns and is increasing their windsail. The bulk of them are multiple-stemmed from near ground level with an acute	They are best maintained and managed within their group environment.  Cut Ivy at ground level and remove dead/ unstable growth from within their crowns.  They may require some pruning to	20+	B2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								union formation between stems and this may create a structural weakness.	reduce in size, in particular height to address structural issues. Review within the development.		
1334	<b>Flowering Cherry</b> <i>Prunus avium</i>	10	290	0N 2S 3E 0W	6	Early Mature	Fair	Fair/ Poor Its crown development, structure has been impacted upon by overcrowding/ competition from Tree Nos. 1330-1333 with an asymmetrical crown weighed out to the north –east as a result. Heavy lvy cover on the main trunk is extending up into its crown and is increasing its windsail. It forms part of the bulking within the group canopy structure.	Retain as part of the bulking within this area.  Cut lvy at ground level.	10+	C2
1335	<b>Yew</b> <i>Taxus baccata</i>	6	190/ 200	1N 2S 1E 1W	2	Semi Mature	Fair	Fair / Poor It is being overcrowded and forms part of the lower bulking. It is located out from the boundary wall to the north. Heavy lvy cover on the main trunk is causing suppression.	Retain as part of the bulking within this area. Cut lvy at ground level and tidy up the undergrowth.	20+	C2
1336	<b>Kowhai Sophora</b> <b>'Tetraptera'</b>	10	210/ 320	0N 5S 0E 4W	2	Mature	Fair	Poor It is growing up from underneath the canopy of larger neighbouring trees (Nos. 1330-1333) and have been drawn up and out for the light as a result, impacting on its structure. Heavy lvy cover on the main trunk is extending up into its crown and is increasing its windsail. It forms part of the bulking within this tree belt and due to structure, it would not isolate well as an individual tree. I suspect that it has heaved at	Remove large size dead/ unstable growth from within its crown and cut lvy at ground level.  If retained, it will need to be monitored and reviewed.	10+	C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								the root plate in the t past and is now resting within Tree No. 1337.			
1337	<b>Yew</b> <i>Taxus baccata</i>	6	310	1N 4S 2E 4W	2	Early Mature	Fair	Fair It is growing up forming part of the lower bulking within this tree belt. Heavy Ivy cover on the main trunk is beginning to extend up into its crown.	Cut Ivy at ground level and tidy up the undergrowth.	20+	C2
1338	<b>Norway Maple</b> <i>Acer platanoides</i>	14	330	2N 4S 1E 3W	6	Semi Mature	Fair	Fair Multiple-stemmed from base and forms part of the group bulking within this area. Ivy cover on the main trunk is beginning to extend up into its crown.	Prune lower branches in order to raise its crown up over the adjoining buildings. Cut Ivy at ground level.	20+	C2
1339- 1444	<b>Horse Chestnut</b> <i>Aesculus hippocastanum</i>	A 16	A 500	A 6N 3S 3E 3W	A 4	Mature	Fair	Fair They are growing up together forming part of the one group canopy formation and they provide support/ shelter to one another and are a prominent line of trees within this area. There are some seedling Horse Chestnut trees also growing up through this group of trees. Some trees are showing signs of infection by 'Bleeding Canker' of Horse Chestnut, in particular Tree No. 1341 with strips of dead bark present. They contain heavy, exposed side branches within their crowns.	They would benefit from general tidying works. Remove dead/ unstable growth from within their crowns and trim in heavy, exposed side branches by c. 1-2m to address exposure and the risk of limb / branch failure. Cut Ivy at ground level.	20+	B2
1345	<b>Horse Chestnut</b> <i>Aesculus hippocastanum</i>	--	620	--	--	Mature	Dead	Poor It has become very decayed and has heaved at the root plate and is now lodged within the	I would recommend its <b>removal</b> as the most appropriate management option.	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								crown of Tree No. 1344 as a result.			
1346 – 1349	<b>Sycamore</b> <i>Acer pseudoplatanus</i> (3 in total) <b>Ash</b> <i>Fraxinus excelsior</i> (1 in total)	A 17	A 500	A 4N 4S 4E 4W	A 4	Mature	Fair	Fair It is a prominent group of trees growing up together forming part of the one group, canopy formation and they provide support/ shelter to one another. The Sycamores are suckering from their bases. Tree No.1346 is showing some signs of stress/ decline throughout with large pieces of deadwood throughout its crown. Tree No. 1348 (Ash) has been drawn up and out for the light with some deadwood and heavy side branches throughout its crown.	Remove dead/ unstable growth on all trees and trim in any heavy exposed side limbs/ branches by 1-2m to help reshape/ balance their crowns. Tidy up the undergrowth.	20+	B2
1350	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i> (2 in total)	5	150	1N 1S 1E 1W	1	Early Mature	Fair	Fair They form part of the lower bulking within this tree line	Retain as part of the bulking and tidy up the undergrowth.	20+	C2
1351	<b>Sycamore</b> <i>Acer pseudoplatanus</i>	17	370	3N 4S 5E 3W	4	Early Mature	Fair / Good	Fair It is growing tight to the boundary wall with the public road and the lower crown and trunk is rubbing off the wall and causing damage to both the wall and to the tree itself. It is suckering from base with an asymmetrical crown weighed out over the road.	Due to its proximity to the boundary wall, and to prevent further structural damage occurring to this wall, I would recommend its <b>removal</b> as the most appropriate management option.	<10	U
1352	<b>Sycamore</b> <i>Acer pseudoplatanus</i>	15	240	2N 3S 3E	5	Early Mature	Fair	Fair Self-seeded into this area and is growing up through a planted Cherry tree. It consists of two	Retain as part of the bulking at the present time.	10+	C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
				5W				stems growing up together.	They may be considered for removal as part of the future restoration/ management works.		
1353-1358	<b>Mixed Ornamental Trees</b>	A 7	A 110	A 2N 2S 2E 2W	A 3	Semi Mature	Fair	Fair/ Poor They are growing within a linear verge between the driveway kerb and the boundary wall. It consists of a mixed group made up of the following. Tree No. 1354 is a Magnolia Tree Nos. 1353 & 1357 are Sycamores Tree No. 1356 is a Weeping Birch Tree No. 1358 is a Goat Willow. The Sycamore have most likely self-seeded into this area. Some of them are growing close to the base of the boundary wall and may cause some structural damage in the long-term and this may restrict their growth and development. They provide some screening along this boundary.	Remove the stems rubbing off the boundary wall.  They will require further management in the future.	10+	C1
1359	<b>Variiegated Griselinia</b>	6	100	2N 2S 2E 2W	3	Mature	Fair	Fair It has been planted into the linear verge just inside the entrance to property No.2. Some branches are rubbing off the boundary wall and it has received cutting back of the lower branches in order to maintain clearance with the driveway and the boundary wall.	It will require further management.	10-20	C1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
<b>Scrub Area No.1</b>	<b>Cherry Laurel</b> <i>Prunus laurocerasus</i> <b>Mixed Ornamental Shrubs</b>	<b>The following trees are located within an area between the driveway and the front of the house</b> This area has a dense undergrowth of Cherry Laurel which has been allowed to grow up tall and has possibly been trimmed and cut into a low shrub border in the past.  <b>The following trees are located within this shrub border.</b>							Tidy up the undergrowth and bring back into a management regime.	--	
1360	<b>Sycamore</b> <i>Acer pseudoplatanus</i>	20	620/ 510	8N 6S 6E 6W	4	Mature	Fair / Good	Fair/ Good It forms a twin-stemmed tree from base with a broad union formation between stems. It contains deadwood within its crown and is a reasonably well structured tall tree.	Remove dead/ unstable growth from within its crown.	20-40	B1
1361	<b>Douglas Fir</b> <i>Pseudotsuga menziesii</i>	20	520	2N 4S 5E 5W	2	Mature	Fair	Fair It is growing up through the canopy of neighbouring trees and its structure has been affected as a result. It contains deadwood and minor storm damage throughout its crown. It is sheltered within its present group environment.	Remove dead/ unstable growth at the present time.	10-20	C1
1362	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	10	150	2N 1S 1E 1W	6	Early Mature	Fair	Poor It is being overcrowded / suppressed in this area and its structure and development have been affected as a result.	Retain as part of the bulking at the present time.	10+	C1
1363	<b>Beech</b> <i>Fagus sylvatica</i>	20	600	6N 4S 5E 6W	3	Early Mature	Fair/ Good	Fair/ Good It has a reasonably symmetrical crown formation; however it is growing up within a group environment. There is light Ivy cover on the main trunk and it contains deadwood	Remove dead/ unstable growth from within its crown.	20-40	B1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								throughout its crown. The lower branches have been pruned/ removed in the past in order to raise up its crown.			
1364	<b>Sycamore</b> <i>Acer pseudoplatanus</i>	18	360/ 560/ 450	2N 6S 5E 5W	2	Mature	Fair/ Good	Fair Multiple-stemmed from base with an acute union formation between some stems with included bark present creating a structural weakness. It is growing up within a group environment and is suckering from base. Heavy lvy cover on the main trunk is growing up within its crown and is increasing its windsail.	Tidy up the area around its base and cut lvy at ground level and remove basal suckers.  It may require some pruning to address structural issues in the future.	10-20	C1
1365	<b>Mimosa</b> <i>Acacia dealbata</i>	4	240	0N 0S 5E 0W	2	Mature	Poor	Poor The main stem has heaved at the root plate and is now lodged within Tree No. 1364. It is being suppressed by lvy and is suckering heavily in this area.	Remove dead stems at the present time.	<10	U
1366	<b>Montrey Cypress</b> <i>Cupressus macrocarpa</i>	13	830	2N 6S 5E 4W	2	Mature	Fair	Poor It leans heavily out to the south towards the neighbouring property with a slightly raised root plate indicating towards past root movement. There is an acute union formation between some scaffold limbs/ branches with included bark present and some of these have split apart. The future health and stability of this tree would give rise for concern.	Remove/ make safe large size dead/ unstable growth. Monitor its condition on a twelve monthly basis.	10+	C1
1367	<b>Mimosa</b> <i>Acacia dealbata</i>	9	160	2N 2S	2	Early Mature	Fair	Poor It consists of two stems leaning out for the light	I would consider their <b>removal</b> as part of management within this	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
				0E 5W				due to overcrowding/ competition. The lower branches have been removed in the past in order to raise up their crowns and they are beginning to overcrowd the gable end of the house. Due to their structure, their stability may give rise to concern.	area.		
<b>The following trees are located within a raised shrub border to the rear of this property.</b>											
1368	<b>Cordyline</b> <i>Cordyline australis</i>	5	220	1N 0.5S 1E 1W	3	Mature	Fair	Fair Single-stemmed and its structure has been affected due to overcrowding from Tree No. 1367.	Remove broken branch from within its crown.	10-20	C1
1369	<b>Golden Irish Yew</b> <i>Taxus Baccata Fastigiata 'Aureomarginata'</i> ( 2 in total)	7	A130 x 7 Stems	2N 2S 2E 2W	1	Early Mature	Fair / Good	Fair It consists of two trees, one located within the raised shrub border and the other is located to the west of this tree. They are growing up together forming part of the one group canopy formation. One is an Irish Golden Yew and the other is a multiple-stemmed Yew.	They require no work at the present time.	20+	C1
1370	<b>Magnolia</b> <i>Magnolia grandiflora</i>	9	220/ 270/ 340/ 250	4N 4S 2E 4W	1.8	Mature	Fair / Good	Fair It is located against a low retaining wall around the patio steps. The lower branches have been trimmed to maintain clearance with the building and the surrounding surfaces.	It will require repeat pruning to maintain clearance.	20+	B1
1371	<b>Ash</b> <i>Fraxinus excelsior</i>	8	220	3N 4S 2E 4W	2	Semi Mature	Fair/ Good	Fair Self-seeded and is growing up through the shrub border at the gable end of the patio area. It may overcrowd and outgrow this space.	Requires no work at the present time.	20+	C1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								Pruning has been carried out on the lower branches in the past in order to raise up its crown.			
1372	<b>Ash</b> <i>Fraxinus excelsior</i>	8	150	1N 2S 2E 2W	2.5	Semi Mature	Fair	Fair / Poor It is most likely self-seeded into this area and is growing on the edge of the patio and is causing some structural damage as a result. It was initially twin-stemmed and one stem has been cut back in order to take back from the house in the past. It will overcrowd this space in the short-term.	I would recommend its <b>removal</b> as part of management.	< 10	U
1373	<b>Golden Irish Yew</b> <i>Taxus Baccata Fastigiata 'Aureomarginata'</i>	6	A90 X10 stems	1N 2S 2E 2W	0	Early Mature	Fair/ Good	Fair It is a small size tree.	Trim in branches that have fallen out of shape and cut back all competing vegetation.	20-40	C1
1374 - 1378	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	A 18	A 200	A 2N 2S 3E 1W	A 3	Semi Mature	Fair/ Good	Fair / Poor They have been planted in a line and they all lean slightly due to the prevailing winds and are likely to outgrow this space in the long-term.	They require no work at the present time.	10-20	C1
<b>Hedge No. 3</b>	<b>Griselinia</b> <i>Griselinia littoralis</i>	<b>It consists of a short section of Griselinia hedge cordoning off the waste ground to the back.</b> It is of an early mature age class in fair condition both physiologically and structurally. It was initially clipped into a formal shape but has been allowed to grow more unmanaged in recent times.						It would benefit from further general tidying/trimming to contain a more formal hedge structure.		C2	
		A3.5	--	A3	--						

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
1379	<b>Flowering Cherry</b> <i>Prunus avium</i>	14	220/ 160/ 170	2N 3S 5E 2W	3	Early Mature	Fair/ Good	Fair Three-stemmed from base with an acute union formation between stems. It forms part of the outer canopy of the group formation. The lower branches have been cut back to stubs in order to raise up its crown. Bramble is growing up through its lower crown.	It would benefit from general tidying works around its base. Prune branch stubs back to proper target pruning points.	10-20	C1
1380	<b>Elm</b> <i>Ulmus glabra</i>	10	310/ 230	2N 2S 2E 2W	2	Early Mature	Fair	Fair/ Poor Multiple-stemmed from base with Bramble growing up through its crown. It forms part of the bulking within this area. Ivy cover on the main trunk is beginning to extend up into its crown. It contains some hanging storm damage within its crown.	Remove storm damage and tidy up the area around its base.	10-20	C1
1381- 1390	<b>Norway Maple</b> <i>Acer platanoides</i> <b>Poplar</b> <i>Populus sp.</i> <b>Laburnum</b> <i>Laburnum anagyroides</i> <b>Cherry</b> <i>Prunus kanzan</i> <b>Whitebeam</b> <i>Sorbus aria</i>	A 17	A 420	A 3N 4S 6E 4W	A 3	Early Mature	Fair	Fair/ Poor It consist of predominately Norway Maple with some Poplar, Laburnum, Cherry and Whitebeam. They are growing up together at close spacing's and are forming part of the one group canopy formation. Some of them are depending on one another for support / shelter and others have structural issues such as basal decay and have suffered due to fire damage within this area in the past.	They are best maintained and managed within their present group environment.  Remove dead/ unstable growth from within their crowns. Tidy up the undergrowth.	10-20	C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade			
								N-north S-south E-east W- west Phys.-physiological.	A- average					
<b>Hedge No. 4 A</b>	<b>Beech</b> <i>Fagus sylvatica</i> <b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i> <b>Hawthorn</b> <i>Crataegus monogyna</i> <b>Griselinia</b> <i>Griselinia littoralis</i> <b>Cherry Laurel</b> <i>Prunus laurocerasus</i> <b>Elder</b> <i>Sambucus nigra</i>	<p><b>It runs in a north –south direction along the western boundary of the site area with the adjoining public open space and extends along the boundary of Properties Nos. 2 &amp; 3.</b></p> <p>It is of a mature age class in fair condition physiologically and in fair/ poor condition structurally. It is the remnants of an old hedge line and consists of Hawthorn, Elder, Cherry Laurel and Griselinia with trees such as Beech and Lawson Cypress forming part of the upper canopy formation. The bulk of this hedge is being suppressed by Ivy and fencing wire runs through it. The lower branches and the hedge vegetation has been cut back on either side of the hedge , further impacting on its hedge structure and screening between properties.</p> <table border="1" data-bbox="398 762 1003 798"> <tr> <td>A3</td> <td>--</td> <td>A3</td> <td>--</td> </tr> </table> <p><b>The following are the more prominent trees either within or located along this hedge.</b></p>						A3	--	A3	--	<p>It would benefit from general tidying works. Cut Ivy where it is suppressing sections of the hedge.</p>		C2
A3	--	A3	--											
1391 & 1392	<b>Monterey Cypress</b> <i>Cupressus macrocarpa</i>	A 12	A 500	A 3N 1S 1E 5W	A2	Mature	Fair	Poor They are growing up within a group environment and their structure has been affected due to overcrowding. They have suffered storm damage in the past. The Ivy has been cut in recent time, but is beginning to re-establish.	Make safe large size dead/ unstable growth. Trim in heavy, over extended side branches extending out to the west over the adjoining open space. Cut Ivy at ground level.	10-20	C2			
1393	<b>Beech</b> <i>Fagus sylvatica</i>	15	460	2N 2S 2E 5W	2	Early Mature	Fair	Fair/ Poor Its structure has been affected due to overcrowding/ competition from trees within the site area and it has an asymmetrical crown weighed towards the adjoining open space as a result. The Ivy has been cut in recent time.	Requires no work at the present time.	10-20	C2			

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								Bark wounding has been caused and it has also been damaged by the fencing wire.			
1394	<b>Beech</b> <i>Fagus sylvatica</i>	17	550	4N 5S 1E 6W	2	Early Mature	Fair	Fair It has been drawn up and out for the light due to overcrowding / competition from the trees within the site area and is a tall tree as a result. It has an asymmetrical crown weighed heavily towards the open space to the west. There is Ivy cover on the main trunk.	Remove dead/ unstable growth from within its crown.  The Ivy will require management in the future.	10-20	C2
1395	<b>Beech</b> <i>Fagus sylvatica</i>	18	580	3N 4S 2E 6W	2	Early Mature	Fair	Fair It has been drawn up and out for the light due to overcrowding / competition from trees within the site area. It has an asymmetrical crown with a heavy overhang onto the adjoining public open space to the west. Heavy Ivy cover on the main trunk is beginning to extend up into its crown; however some of this has been cut in the past.	Remove dead/ unstable growth from within its crown. Cut Ivy at ground level.	20+	C2
1396	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	14	450	2N 3S 2E 2W	2	Early Mature	Fair/ Good	Fair It has a good conical habit and is establishing over the surrounding vegetation. The Ivy cover on the main trunk has been cut at ground level and the lower branches have also been removed.	Requires no work at the present time.	20+	C2
1397	<b>Laburnum</b> <i>Laburnum anagyroides</i>	15	340/ 340/ 240	4N 0S 0E 6W	2	Mature	Poor	Poor It has heaved at the base and leans into the hedge vegetation onto the fence as a result and is weighed towards the open space and is prone	I would recommend its <b>removal</b> as part of management.	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								to complete failure. It forms a multiple-stemmed tree from base.			
1398	<b>Norway Maple</b> <i>Acer platanoides</i>	16	300	3N 4S 4E 2W	3	Early Mature	Fair	Fair / Poor It is located out from the boundary hedge line and has suffered a longitudinal bark wound on the lower trunk, possibly due to fire damage. It is growing up within the canopy of a neighbouring tree and its crown structure has been affected to some degree as a result.	Requires no work at the present time.	10-20	C2
1399	<b>Beech</b> <i>Fagus sylvatica</i>	22	670	8N 5S 9E 7W	1.5	Early Mature	Fair/ Good	Fair / Poor It is a tall tree with a reasonably symmetrical crown. It subdivides at a height of c. 4.5m into twin-stems with an acute union formation between stems with included bark present creating a structural weakness and it may be prone to failure from this point.	Reduce crown size by c.2m in order to reduce pressure on the weak union formation.  It will require further management in the future.	10-20	C2
1400	<b>Whitebeam</b> <i>Sorbus aria</i>	14	320	3N 4S 7E 1W	1.8	Mature	Fair	Fair / Poor It was initially growing up within a close knit group and some neighbouring trees have been removed leaving it isolated and more open as a result.	Requires no work at the present time.	10+	C1
1401 & 1402	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	A 10	A 310	A 1.5N 1.5S 2E 1W	A 1	Early Mature	Fair/ Good	Fair They are located out from hedge No.4A and form part of the bulking and are growing up within a group environment.	They require no work at the present time. Retain as part of the bulking within this area.	20+	C2

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
1403	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	23	350	3N 2S 3E 1W	10	Early Mature	Fair	Fair It is located between Tree Nos. 1401 & 1402 and out from hedge No.4A. It is a tall tree forming part of an open group of Eucalyptus trees in this area.	Requires no work at the present time.	10-20	C2
1404	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	23	680	5N 6S 4E 9W	10	Mature	Fair	Fair It is a large, tall prominent tree within this area located on the line of hedge No. 4A. Ivy cover on the lower trunk is beginning to extend up into its crown. It forms part of the open group canopy formation with an asymmetrical crown weighed towards the public open space to the west.	Make safe large size dead/ unstable growth and reduce end loading on heavy, overextended side limbs/ branches extending out over the open space.	10-20	C2
Tree No.2	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	23	640	5N 4S 3E 5W	5	Mature	Fair	Fair It is located on the public open space side of hedge No. 4A and forms part of the open group environment. The visual assessment has been limited to the site side only.	Requires no work at the present time.	20+	C2
1405	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	22	380	3N 5S 6E 2W	3	Mature	Fair	Poor It forms part of the open group canopy formation and is located on the site side of hedge No.4. It has been drawn up and out for the light due to competition and overcrowding and is of poor structure as a result. There is a decaying stump at its base and I suspect that there are other stability issues. It is not integral to the overall group canopy structure.	Due to structure, I would recommend its <b>removal</b> as part of management.	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade				
								N-north S-south E-east W- west Phys.-physiological.	A- average						
<b>Property No. 3</b>															
<b>Hedge No. 4B</b>	<b>Griselinia</b> <i>Griselinia littoralis</i>	<p><b>It extends on from Hedge No. 4A and runs in a north –south direction along the western boundary of the site area adjoining the public open space extending along the boundary of Property No. 3.</b> It is of a mature age class in fair condition both physiologically and structurally. It consists of Griselinia that has been clipped and maintained as a high hedge and it provides screening with the public open space.</p> <table border="1" data-bbox="398 762 1003 799"> <tr> <td>A2</td> <td>--</td> <td>A2</td> <td>--</td> </tr> </table>							A2	--	A2	--	Continue present maintenance.		C2
A2	--	A2	--												
		<p><b>The following trees are located up along the boundary between Properties Nos. 2 &amp; 3 and a chain link fence forms the boundary.</b> The main vegetation consist of a broken line of Lawson Cypress with an under planting of Laburnum with scrub Elder and Bramble developing throughout.</p> <p><b>The following gives details of the trees within this area working from west to east.</b></p>							Tidy up the undergrowth, in particular the scrub vegetation.		--				
1406	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	10	230/ 170	2N 2S 2E 1W	2	Mature	Fair	Fair / Poor It is being overcrowded within this area and its structure has been affected as a result. It forms a twin-stemmed tree from base and the lower vegetation is being suppressed by the surrounding scrub vegetation. Heavy Ivy cover on the main trunk is beginning to extend up into its crown.	Cut Ivy at ground level and tidy up the area around its base.	10+	C1				

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
1407	<b>Eucalyptus</b> <i>Eucalyptus gunnii</i>	24	680	5N 7S 6E 1W	2	Mature	Fair	Fair It is a tall tree forming part of the overall group of Eucalyptus trees within this area. Ivy cover and a dense undergrowth of scrub has limited the visual assessment of its base and lower trunk to some degree.	Tidy up the undergrowth at the present time.	20+	C2
1408 – 1409	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	A 12	A 350	A 3N 2S 2E 2W	A 1	Mature	Fair	Fair/ Poor It consists of two trees growing up together and providing support/ shelter to one another. They have dense undergrowth with heavy Ivy cover on their main trunks.	Cut Ivy at ground level and tidy up the undergrowth. They are best maintained as part of the one group/ canopy formation.	10-20	C1
1410	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	12	350	2N 2S 2E 2W	1	Mature	Fair	Fair/ Poor It is located in isolation with an independent crown formation. There is a slight lean on the main trunk, possibly an indication of root movement. It is becoming heavily suppressed by Ivy.	Cut Ivy at ground level in order to improve the windsail of its crown. Monitor its condition on a twelve monthly basis.	10+	C1
1411	<b>Flowering Cherry</b> <i>Prunus sp.</i>	11	320	2N 2S 2E 1W	1	Mature	Fair / Poor	Fair/ Poor There is some decline / dieback evident throughout its crown with deadwood and broken branches throughout. It is being overcrowded by the surrounding Lawson Cypress trees.	Remove large size dead/ unstable growth. Cut Ivy at ground level and tidy up the undergrowth.	10+	C1
1412	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	11	350	3N 2S 2E 1W	1	Mature	Fair / Poor	Poor It is structurally weak and leans from its base with a raised root plate and moves in the wind. Its crown is in decline with a structural weakness	I would recommend its <b>removal</b> as part of management.	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
								at a height of c. 3m up on the main trunk with decay present at this point.			
1413 & 1414	<b>Lawson Cypress</b> <i>Chamaecyparis lawsoniana</i>	A 12	A 350	A 3N 2S 2E 2W	A 1	Mature	Fair	Fair They are growing up together forming part of the one group/ canopy formation with an undergrowth of Bramble and scrub. Ivy cover on some stems is beginning to extend up into its crown and is increasing its windsail.	Tidy up the undergrowth and cut Ivy at ground level.	10-20	C1
<b>The following trees are located on property No. 3 side of this line of trees.</b>											
1415	<b>Laburnum</b> <i>Laburnum anagyroides</i>	10	A 170 x 9 stems	4N 5S 5E 4W	1.8	Mature	Fair	Poor Multiple-stemmed from low down and some stems would appear to have split out due to a weak union formations and are resting within the neighbouring trees and will be prone to failure if left in isolation. Bramble and heavy Ivy cover is growing up through its lower crown.	Make safe large size dead unstable growth. Tidy up the undergrowth.	10+	C1
1416	<b>Apple</b> <i>Malus domestica</i>	5	90/ 120/ 130/ 90	1N 3S 3E 2W	1	Early Mature	Fair	Fair/ Poor It is being overcrowded by the vegetation on the north side. Pruning had been carried out in the past, but it has been allowed to grow more unmanaged in recent times and this has affected its fruiting potential. It forms a multiple-stemmed tree from low down.	Prune stubs back to proper pruning points. Cut back all competing vegetation.	10+	C1
1417- 1418	<b>Laburnum</b> <i>Laburnum anagyroides</i>	A 8	A 150	A 0N 4S 3E	A 1.8	Mature	Fair	Fair/ Poor They are growing from underneath the canopy of some Lawson Cypress trees and have been forced out for the light due to overcrowding/	Cut Ivy at ground level and tidy up the area around their bases.	10+	C1

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
				3W				competition and this has impacted on their structure. The bulk of them are multiple-stemmed from base and are beginning to be suppressed by Ivy. Their lower branches extending out to the south have been cut back in the past to prevent encroachment.			
<b>The following trees are located to the front of Property No. 3.</b>											
1419	<b>Ash</b> <i>Fraxinus excelsior</i>	9	130	2N 3S 3E 2W	2	Young	Fair	Poor Self-seeded into this area and is growing up through the shrub border and has been allowed to establish within this area.	It will need to be removed as part of the restoration/ management works.	<10	U
1420	<b>Bay Laurel</b> <i>Laurus nobilis</i>	10	A150 X 7 stems	4N 2S 3E 4W	1.8	Mature	Fair/ Poor	Poor Multiple-stemmed from base and some stems have broken out due to weak union formations and decay at its base and some stems are now resting within the surrounding trees. It is being suppressed by Ivy and this is increasing the windsail of its crown.	Remove all tall stems and retain the remaining section as part of the shrub bulking within this area.	<10	U
1421	<b>Laburnum</b> <i>Laburnum anagyroides</i>	10	A200 X 10 stems	4N 4S 5E 3W	2	Mature	Fair	Fair / Poor It is a large multiple-stemmed tree from base and the area around its base has been surfaced in tarmac. It contains large size deadwood throughout its crown.	Make safe large size dead/ unstable growth. Monitor its condition on a twelve monthly basis.	10+	C1
1422	<b>Laburnum</b>	4	230/	3N	1.5	Mature	Fair/	Poor	I would recommend its <b>removal</b>	<10	U

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
	<i>Laburnum anagyroides</i>		200/ 220/ 210	4S 3E 5W			Poor	Multiple-stemmed from base with extensive basal decay present. This tree is in danger of falling apart due to the presence of decay and a weak union formation. It contains broken branches within its crown. The area around its base has been surfaced in tarmacadam.	as the most appropriate management option.		
1423	<b>Blue Cedar</b> <i>Cedrus atlantica</i> 'Glauca'	13	610	5N 7S 6E 7W	1	Early Mature	Fair/ Good	Fair/ Good It is a prominent, visual tree within the front garden. The lower branches have been cut off in recent times in order to raise up its crown and this has impacted on the symmetry of its crown leaving it unbalanced. Excavation works have occurred between this tree and the front boundary wall with the road and this has resulted in root damage that may have a knock-on effect on its health. The extent of excavations carried out within this area will need to be clarified.	It will require further pruning on lower branches in order to improve clearance over the existing driveway.  <b>Note:</b> Its category grade may be downgraded based on more information on the extent of excavation works/ root damage that have occurred.	20+	B1
<b>Hedge No. 5</b>	<b>Portuguese Laurel</b> <i>Prunus lusitanica</i>	<b>It is a short section of hedge located on the left-hand side of the entrance driveway into property No. 3.</b> It is of a semi-mature age class in fair condition both physiologically and structurally. It has been clipped and maintained as a low formal hedge.						Continue present maintenance.		C2	
		A1.2	--	A0.75	--						
<b>Hedge No. 6</b>	<b>Bamboo</b> <i>Arundinaria</i> sp.	<b>It is a short section of hedge located along the southern boundary with the adjoining properties to the rear of property No.3.</b> It has been planted into a linear strip of ground between the patio area and the boundary fence with the						It would benefit from maintenance.		C2	

Tree No.	Tree Species	Ht. (m)	Stem Dia. (mm)	Branch Spread (m)	C-Ht. (m)	Age Class	Phys. Con.	Structural Condition Other Comments	Preliminary Recommendation	Remain Contribute in years	Cat. Grade
								N-north S-south E-east W- west Phys.-physiological.	A- average		
		neighbouring properties. It provides low screening within this area.									
		A2	--	A2			--				
Tree Belt No.1	Norway Maple Acer platanus	<p><b>It is a short line of trees which run in a westerly direction outside the main site area at the northern end of the northern boundary of the open space.</b></p> <p>These trees are of an early mature age class in fair/good condition physiologically and fair condition structurally. The area underneath these trees is maintained in grass and the sites boundary line runs through this belt of trees with some trees located outside the sites boundary. They are growing up at close spacing to one another and some crowns are beginning to grow into one another to form part of the one continuous canopy and provide support/shelter to one another.</p>							It would benefit from maintenance.	20+	B2
		A12	A380	A4N 4S 4E 4W	A2.5						
Notes:											



## PART 2: PRELIMINARY ARBORICULTURAL IMPACT ASSESSMENT

### Notes:

Refer to Arborist Associates Ltd. Drawing CRK001: Tree Constraints Plan.

Refer to Brady Shipman Martin Drawing 6657-301: Tree Retention, Removal and Protection Plan.

The Arboricultural Impact Assessment was completed following a review of the final development and services layout drawings in May & June 2019.

### 1.0 Existing Tree and Hedgerow Population

There are c. 127 trees, 1 tree belt, and 6 hedges on site. Only one tree, a mature Monterey Pine, is classified as a Category A tree.

### 2.0 Tree and Hedgerow Removal

The proposed development will result in the removal of approximately 99 trees, 4 hedges and part of the tree belt.

The Category A tree will to be retained as a feature specimen tree.

Of the trees to be removed, only six (1304, 1344, 1360, 1363, 1370 and 1423) are of Category B (moderate quality).

Thirteen of the trees to be removed are recommended for removal either now or in the short-term due to their poor condition (Category U).

The remaining 80 trees to be removed are Category C (poor quality).

The 4 hedges to be removed are also of lesser Category C quality.

### Trees, Hedges, Borders to be removed.

Category Grade	No. of trees
Category U <b>13 trees</b>	<b>Tree Nos.</b> 1314, 1315, 1345, 1372, 1351, 1365, 1367 (2 no.), 1397, 1412, 1419, 1420, 1422
Category A <b>0 tree</b>	<b>No Tree</b>
Category B <b>6 trees</b>	<b>Tree Nos.</b> 1304, 1344, 1360, 1363, 1370, 1423
Category C <b>80 trees</b> + 4 hedges + part of tree belt	<b>Tree Nos.</b> 1302, 1303, 1305-1311, 1316-1328, 1335-1338, 1344, 1346, 1352-1359, 1361, 1362, 1364, 1366, 1368, 1369, 1371, 1373, 1374-1390, 1396, 1398-1403, 1406-1411, 1413-1418, 1421, 1424 <b>Hedge Nos.</b> 2, 3, 5, 6
<b>Total</b>	<b>99 Trees + 4 Hedges + part of 1 tree belt</b>

### **3.0 Assessment of Tree & Hedgerow Loss**

The loss of these trees and hedges will not constitute a significant impact on the tree population.

The proposed development allows for the retention of the mature specimen Monterey Pine tree (1313) – the only Category A tree on site. Some lower branches and storm damaged branches on this tree will require to be removed, appropriately cut back.

It is also proposed to retain a significant number of the trees within the central tree belt along the townland boundary wall. This includes the majority of Category B trees in this area. The strength of this planting is the grouped nature of the belt. However, some of the trees are close to both the proposed development and to the townland boundary wall. Some of the trees will in time impact on the structure of the wall. As such this tree belt will require site specific management in advance of construction works, during construction works and post-construction works.

These works will involve:

- removal of particular trees both to facilitate the development and to avoid future damage to the wall;
- selective thinning of retained trees to encourage good growth and structure,
- some crown management works,
- erection of protective fencing during construction works
- monitoring of the trees during construction works
- under planting with a wider variety of appropriate trees, woodland shrubs and herbaceous plants
- post-construction monitoring of the trees for 24 months

Other impacts on trees can be readily offset by appropriate new tree planting.

### **4.0 Works in vicinity of Retained Trees**

In advance of construction works, any trees to be removed because of poor condition or to facilitate the proposed development (as above) will be removed by a qualified tree surgeon operating under the supervision of the Project Arborist.

Likewise the lower branches of some trees to be retained may also need to be removed to facilitate construction.

A tree protection fence shall be erected along trees to be retained works prior to commencement of works other than tree removal/surgery. The fence shall be erected and maintained in accordance with BS 5839:2012, generally as proposed on the Tree Retention, Protection and Removal Plan (No. 6657-301) or as otherwise agreed on site with the Project Arborist.

No works shall take place inside of the tree protection fence without an appropriate method statement and the approval of the Project Arborist. This will also apply to the provision of the surface water outfall to the former stream valley to the north of the site.

No materials or vehicles shall be stored or parked inside of the tree protection fence.

## **PART 3: PRELIMINARY ARBORICULTURAL METHOD STATEMENT**

### **1.0 Introduction**

The Arboricultural Method Statement aims to provide guidance on the range of processes that are involved during the proposed development of the site, and seeks to ensure that appropriate methods of implementation are carried out. It aims to provide a holistic view, and seeks to address any potential issues and conflicts that may arise, providing solutions that resolve all arboricultural constraints in accordance with current arboricultural good practice guidance.

The Arboricultural Method Statement will introduce the arboricultural conflicts, areas of concern and constraints to be addressed.

Work methodologies will make reference to good working practice guidance and specifications.

Site preparation works will be conducted and completed before development equipment and personnel move onto site.

It is considered that given the proposed design and tree protection measures, the proposed development poses low risk to the trees noted for retention. Nevertheless, the aim of this method statement is to ensure that all trees to be retained on site are protected from the potentially adverse effects of the future development work. This relates to all parts of the tree including branches, stem and roots. The adverse effects of the development work include direct physical damage and future health implications.

The areas of particular note are the protection of significant mature trees, including the lime walk avenue, throughout the site.

All work undertaken in this phase must be completed using qualified arborists, or under close supervision of the named arboricultural consultant.

### **2.0 Working Methodology**

Installation of protective fencing around trees to be retained as illustrated on Brady Shipman Martin drawing 6657-301 Tree Retention, Removal and Protection Plan, with fencing specification.

Site inspection to be made in addition to other pre-arranged site and supervisory visits.

Supervisory report, summarising work undertaken, detailing findings and proposed remedial work are to be recorded.

Site Preparation – all works necessary before the proposed development can begin within the RPA, to be completed and in place before plant or development personnel arrive on site.

### 3.0 Method Statement

Site preparation works and tree protection works will be conducted and completed before development equipment and personnel move to work on area within RPA.

All work to tree protection and within the RPA to be undertaken using qualified arborists, or under close supervision of the named arboricultural consultant.

### 4.0 Arboricultural Site Considerations:

The following considerations must be observed at all times during the development process, from preparation through construction to landscaping:

- Protective fencing must be regarded as sacrosanct, and must not be removed or altered without prior consultation with arborists/landscape architects.
- Damage caused to protective fencing or ground protection must be reported to the site supervisor to ensure efficient repair.
- No materials, chemicals, machinery or vehicles must be stored within the Tree Root Protection Area (RPA) as defined on the Tree Constraints Plan (TCP) and identified on site by fencing and above ground root protection.
- No materials must be rested against the tree's trunk or machinery chained to it.
- No pruning of trees may be undertaken by anyone other than an Arborist and all work must be approved by the supervising arboricultural consultant.
- Any physical damage caused to a tree retained on site must be reported to the site manager so remedial work can be undertaken without delay.
- Builder's sand, which contains salt, must not be used to back fill excavation within or in close proximity to tree roots, as this can have a toxic affect. Sharp sand can be used instead.
- Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, must not be discharged within 10m of a tree stem.
- Notice boards, telephone cables or other services must not be attached to any part of the tree.

### 5.0 Protective Fencing Specification

This specification has been produced in line with the guidance provided within the British Standard 5837 (2012) 'Trees in relation to construction'.

All trees, which are being retained on site, must be protected by stout fencing enclosing an area as recommended within the Tree Schedule and illustrated on the Tree Retention, Removal and Protection Plan (BSM Dwg. No. 6657-301).

Protective fencing must be erected before any materials or machinery are brought onto the site and before any demolition or construction work, including the erection of site huts begins.

The area around the tree, enclosed by the protective fencing, must be treated as a construction exclusion zone. No access must be allowed to this area, and there must be no storage of site materials, without the authority or supervision of the supervising arboricultural consultant.

The location of the protective fencing, around the trees to be retained on site, has been calculated using the guidance within BS 5837. This information is recorded in the Tree Schedule (Part 1 of this report) and illustrated on the Tree Retention, Removal and Protection Plan (BSM Dwg. No. 6657-301).

To ensure that the protective fencing is installed in the correct location the site must be marked out by the site foreman under the supervision of the arboricultural consultant. This must be done using either an appropriate high visibility ground marking spray, or wooden pegs to denote the line of the fence.

## **6.0 Work Specification – Removal of Hard Surfaces in close proximity to Trees**

The following specification has been prepared with reference to the UK Department of Transport document 'Roots and Routes' and BS5837:2012

The following procedure for the removal of hard surfacing within the RPA of trees to be retained must be closely supervised by an arboricultural consultant.

Where an existing Tarmac surface is scheduled for removal, care must be taken not to disturb or damage tree roots that may be present beneath. The top tarmac surface must be broken up using a small digger no more than 3.5 tonnes for the main access road. The operator of the digger will be restricted to only using a grading bucket i.e. a bucket without teeth. This is to reduce the risk of snagging on any roots which may be present just below the surface.

When the work to remove the hard surface is complete, the protective fencing must be relocated for the construction phase.

Where roots are left exposed for any reason they must be covered in mulch to prevent desiccation and damage from changes in temperature.

A cellular confinement system such as Cell Web must be installed, to protect the ground during the development process and also to form a suitable foundation for a hard surface.

## **7.0 Work Specification – Installation of Hard-surfacing in close proximity to Trees**

The construction of all hard surfaces can have considerable impact on the surface roots of trees. It is essential that the design of such areas take into consideration the requirements of nearby trees. The following information has been provided as guidance, using the Arboricultural Practice Note 1 (APN-1) 'Driveways Close to Trees' and BS 5837: 2012 as reference.

For the roots to be retained undamaged there must be no excavation, soil stripping or grading within the RPA or in close proximity to the tree. This will therefore require the adoption of a no dig method of installation.

It is not sufficient just to adopt a no dig construction technique, because the compacted sub-base and hard surface must be porous allowing water and oxygen to diffuse through it. Damage to trees can only be avoided if the construction embraces the three basic principles listed below, and is restricted to a maximum width of 3M and situated tangentially to one side of a tree only or confined to an area no greater than 20% of the root protection area, whichever is smaller:

- Roots must not be severed;
- Soil must not be compacted;
- Oxygen must be able to diffuse into the soil beneath the engineering surface.

Construction will incorporate two main components: a cellular confinement system such as Cell Web and an aggregate sub-base. Cellular confinement systems are high tensile strength synthetic grids designed to support roads on soft ground. When placed in the cellular confinement system, appropriate (no fines) granular sub-base material penetrates the mesh, but is unable to pass through it, forming a 'positive interlock'.

The interlock between aggregate and the cellular confinement system provides a reinforced platform and efficient load spread into the underlying ground. A suitable geo-grid/aggregate combination will prevent rutting of the ground beneath the construction. The granular infill material must be clean, angular stone with no fines graded between 20mm and 40mm in size with a single size being the most appropriate. The stone must be land derived as marine derived gravel contains a high proportion of rounded materials which do not interlock with the 'Cell Web'.

Temporary hard surfaces will be installed if there is a delay in installing permanent hard surfaces and for vehicular and pedestrian traffic over regions of RPA outside the construction exclusion zone. Portable roadways installed on an appropriate layer of wood mulch will be used as the temporary hard surface.