Tree Survey Report

Bishop Lucey Park
Cork

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Brady Shipman Martin
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Survey
Assessment
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Brady Shipman Martin www.bradyshipmanmartin.com
DUBLIN
Canal House
Canal Road
Dublin 6
+ 353 1 208 1900
CORK
Penrose Wharf Business Centre
Penrose Wharf
Cork
+353 21 242 5620
LIMERICK
11 The Crescent
Limerick
+353 61 315 127

mail@bradyshipmanmartin.com

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1 INTRODUCTION

There are plans to redevelop Bishop Lucey Park in Cork City. The park was originally developed in 1985 and is a small city park with a high coverage of ornamental trees.
This report has been commissioned to provide an Arboricultural assessment of these trees to assist with the plans for the development of the site. The survey data was collected and collated in accordance with BS5837: (2012) *Trees in relation to design, demolition and construction – Recommendations*.

The accompanying drawing 6844-101 shows the locations of the individual trees and tree groups identified on the site during the survey.

2 REPORT LIMITATIONS

The inspection has been carried out from ground level using visual observation methods only.

Trees are living organisms whose health and condition can change rapidly. Trees should be checked on a regular basis, preferably once a year. The conclusions and recommendations of this report are valid for one year.

The fruiting bodies of some important species of decay fungi only emerge at certain times of the year and may not have been visible during this inspection.

There is no such thing as a 100% safe tree in all conditions, since even perfectly healthy trees may fall or suffer branch break.

Climbing plants such as Ivy can obscure structural defects and some symptoms of disease, where such plants prevent a thorough examination it is recommended that the climber be cut at ground level and the tree re-inspected when it has died back.

3 METHODOLOGY

Using a topographical survey provided by Cork City Council, the trees were accessed on foot and assessed using Visual Tree Assessment (VTA) techniques only. Groups of trees were assessed collectively in accordance with BS5837: (2012) *Trees in relation to design, demolition and construction – Recommendations*.

4 SURVEY KEY

4.1 Tree, Tree Group and Hedge Number

Individual trees (prefix T) and tree groups (prefix G) were allotted reference numbers to allow for identification and cross reference with the survey schedule and site drawings.

4.2 Species

Refers to the specific tree species with both common and botanical names for individual trees and those present within each hedgerow or tree group.

4.3 Age Class

Y:	Young tree – yet to reach biological maturity
SM:	Semi-mature - tree now well established and developing
EM:	Early-Mature - tree not yet fully grown
M:	Mature – Tree fully grown and in full maturity
LM:	Late Mature – in the later stages of maturity
OM:	Over mature - tree now declining from natural causes
Vet:	Veteran - tree of value due to old age and ecological/cultural significance

4.4 Stem Diameter, Tree Height and Crown Size Measurements

Ht:	Total Tree Height in metres
Dbh:	Diameter (in mm) at breast height measured at 1.5m from ground level
NSEW:	Crown spread (in metres) for all 4 cardinal points

4.5 Condition

Condition refers to both physiological condition (good, fair, poor, dead.) and structural condition.

Good:	No obvious defects visible, vigour and form of tree good.
Fair:	Tree in average condition for its age and the environment.
Poor:	Tree shows signs of ill health/structural defect
Bad:	Tree in seriously bad health/major structural problem
Dead:	Tree now completely dead

4.6 Comments

Additional description/commentary on individual trees where appropriate.

4.7 Recommendations

Preliminary management recommendations are noted, these pertain to current site conditions unless otherwise stated.

4.8 Tree Retention Category (Cat) (BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations)

The tree retention category system grades a tree's suitability for retention within a development:

- **A** Indicates a tree of high quality and value. These are trees that are particularly good examples of their species, which also provide landscape value. These trees are in such a condition as to be able to make a substantial contribution. (A minimum of 40 years is suggested)
- **B** Indicates a tree of moderate quality and value. Trees that might be included in the high category, but are downgraded because of impaired condition. These trees are in such a condition as to make a significant contribution. (A minimum of 20 years is suggested)
- **C** Indicates a tree of low quality and value - trees with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter of below 150mm.
- **U** Trees that are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Sub Categories
Tree categories may be further categorised using the following sub-categories (e.g. C1, C2 or C3) - 1 mainly Arboricultural qualities, 2 mainly landscape qualities, 3 mainly cultural values.

4.9 Root Protection Area

The Root Protection Area (RPA) is the minimum area around individual trees to be protected from disturbance during construction works; RPA is recorded as a radius (rad) in metres measured from the tree stem and is shown on tree survey drawings as a circle with the tree stem in the centre. For single stem trees, the root protection area (RPA) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

For trees with more than one stem, one of the two calculation methods below should be used.

a) For trees with two to five stems, the combined stem diameter should be calculated as follows:

$\sqrt{((\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2)}$

b) For trees with more than five stems, the combined stem diameter should be calculated as follows:

$\sqrt{((\text{mean stem diameter})^2 \times \text{number of stems})}$

5 FINDINGS

The trees and tree groups were assessed during a site visit in November 2020. The field survey findings are recorded in the survey schedule appended to the report and include the data for individual trees and groups of trees within the park.

Of the trees assessed, all were in B or C class categories, with no A class trees.

The majority of trees are graded "B" and are good quality, semi-mature to early mature trees that will provide long term tree cover and enhance the character of the park for many years. Some remedial works will be required to these trees to reduce the crown, remove dead wood, prune overhanging branches, shape the trees and generally improve the appearance and life expectancy of the trees.

Grade "C" trees have been assessed in terms of their life span and the potential for them to fall naturally. Where possible Grade "C" trees will be retained with the appropriate monitoring for disease and tree surgery works to make them safe.

6 COMMENTS & PRELIMINARY RECOMMENDATIONS

Preliminary management recommendations for the trees and tree groups under present site conditions are listed in the survey schedule.

7 ARBORICULTURAL IMPACT OF NEW DEVELOPMENT

The existing trees in Bishop Lucey Park are a defining landscape features of the park and are an important green block within the urban grain of Cork City Centre. However, the distribution and density of tree covering within certain areas of the park is having a detrimental impact on the life of the park. They are blocking light and screening views, creating at certain times of the year a dark and uninviting experience. Also a number of the trees are suffering from disease/poor health and have a limited life span as a consequence.

During the design process of the park improvement plan, the design team worked very closely in protection and retention of trees, however a number of trees will require removal. A detailed tree strategy report accompanies the application and documents the design rationale.

The impact of the new layout on the existing trees is shown on the Tree Protection Plan drawing 6844-101. The proposed improvement works in the Park will require the removal of 7no. trees as listed below,

Tree Number	Species	Condition	Quantity
T182	Aesculus carnea (Red Horse Chestnut)	Poor	1
T185	Parrotia persica (Persion Ironwood)	Good	1
T191	Tilia spp. (Lime)	Fair	1
T193	Tilia spp. (Lime)	Poor	1
T196	Betula utilis (Himalayan Birch)	Fair/Poor	1
T198	Alnus spp. (Alder)	Poor	1
T204	Acer platanoides (Norway Maple)	Good	1
		Total to be Removed:	**7**

Within the revised park layout replacement semi-mature tree will be planted in accordance with *BS 8545:2014, Trees: from nursery to independence in the landscape.* These proposed tree species have been selected for the particular site and spatial constraints of this urban environment as well as tree aesthetics, hardiness, tolerance and appropriateness of urban environments and their ecosystem services.

Size (diameter/height)	Species	Common Name	Quantity
30-40 cm; 6m	Liquidambar styraciflua 'Worplesdon', semi-mature, standard	Sweet Gum	2
4-5m high	Amelanchier lamarckii, semi-mature, multistem with raised stem	Snowy Mespilus	3
40-45 cm; 7-8m	Quercus palustris, standard, semi-mature	Pin Oak	1
30-35 cm; 5m	Magnolia Kobus, standard, semi-mature	Magnolia	1
		Total Trees Proposed to be Replaced:	**7**

Trees will be rootballed and secured with underground guys in prepared tree pits.

8 ARBORICULTURAL METHOD STATEMENT

8.1 Tree Surgery Works

The trees earmarked for removal will be felled and the stumps removed.

All woody material arising from the clearance works should be disposed of at an appropriate green waste facility or recycled for use on the project (woodchip mulch for example).

These works should be undertaken by professional tree surgeons working to *BS3998 (2010) Tree Work – Recommendations*.

8.2 Tree Protection Measures

Prior to any construction or demolition works on this site all trees destined for retention need to be protected by the use of protective barriers and or ground protection, fit for the purpose of ensuring the successful long-term preservation of the trees. In order for the retained trees to be adequately protected on the site a construction exclusion zone needs to be identified. This zone is calculated based on the root protection area (RPA), which is the minimum area in m2 which should be left undisturbed around each retained tree.

All trees that are destined for removal shall be removed prior to any construction or demolition works on this site. Any tree remedial works that are required shall also be undertaken prior to any construction or demolition activity on the site. All the above shall be carried out by qualified and insured tree surgeons.

Trees that to be retained must be protected by barriers and or ground protection prior to any materials or machinery being brought on site and prior to any development, demolition or soil stripping takes place. Sturdy tree protection fencing will be erected along the lines shown on the Tree Protection Plan Drawing 6844-101 to prevent demolition and construction work encroaching into the root protection areas (RPAs) of the trees to be retained.

Areas that are designated for new plantings should be similarly protected. Barriers should be fit for the purpose of excluding construction activity.

In most cases the temporary protective fencing should consist of a fixed scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts. To ensure the protective barriers are respected, clear concise signage must be affixed to the barrier in an unrestricted easily viewed location. The signage must state the following;

- No construction activity is to take place within the R.P.A. (unless pre-agreed the arborist)
- No materials of any kind are to be stored within the R.P.A.
- No “Spilling out” of materials shall take place within the R.P.A.

Given the high number of trees in the Park, there will be a requirement to encroach with the RPAs, which will be only be carried out by approval of the project arborist/landscape architect. Suitable ground protection will be put in place to prevent any significant soil compaction or root damage near the trees; this should take the form of suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight as outlined below:-

- Pedestrian/construction access - the installation of ground protection in the form of a raised single thickness of scaffold/OSB boards on top of a compressible layer laid onto a geotextile may be acceptable (see reference image immediately below)

- For wheeled/ tracked movements and construction of new or widened paths within the RPA, the ground protection should be designed by an engineer to accommodate the likely loading, and will include geotextiles and cellular confinement systems, with permeable surface to allow for water and air exchange to tree roots, without damage to tree roots and compaction (see reference image immediately below). Separation membranes will be used for concrete/cement works to avoid tree root damage,. Any works within the RPA must be undertaken with prior consultation with the arborist(

All site offices, materials storage, staff parking etc. will located outside of the RPAs of the trees.

Any new underground services such as electricity cables, water pipes etc. will be routed away from the root protection areas of the trees to be retained; where this is not possible for reasons unforeseen, the services will be installed using specialist methodology (such as Airspade excavation or directional/mole drilling) allowing services be 'sleeved' under tree root plates and ensuring minimal impact on any tree roots.

The tree protection measures and specialist work methods will be undertaken by competent contractors, who will provide detailed resource and method statements (RAMs), reviewed, approved and monitored by a qualified arborist/landscape architect; the arborist/landscape architect should also make regular visits to the site during the construction process to ensure compliance and be available to provide advice and guidance where necessary.

The retained trees should be assessed by a qualified arborist following the completion of the construction works, prior to re-opening to the public. Ongoing yearly monitoring of tree conditions should be undertaken and recorded.

9 SITE PHOTOGRAPHS

Figure 1- View at fountain to Triskel Christchurch

Figure 2- View towards Grand Parade with Norway Maple (T-192) on left

Figure 3- View towards Tuckey Street with Liriodendron (T-202) and Birch (G-5) in view

Figure 4- View from Tuckey Street entrance with London Plane (T-202) and Tree of Heaven (T-203) on left

Figure 5- View at Grand Parade entrance with Limes (G2) on right

Figure 5- View at Grand Parade entrance with Limes (G2) on left, Birch (G1) centre and Birch (G3) on right

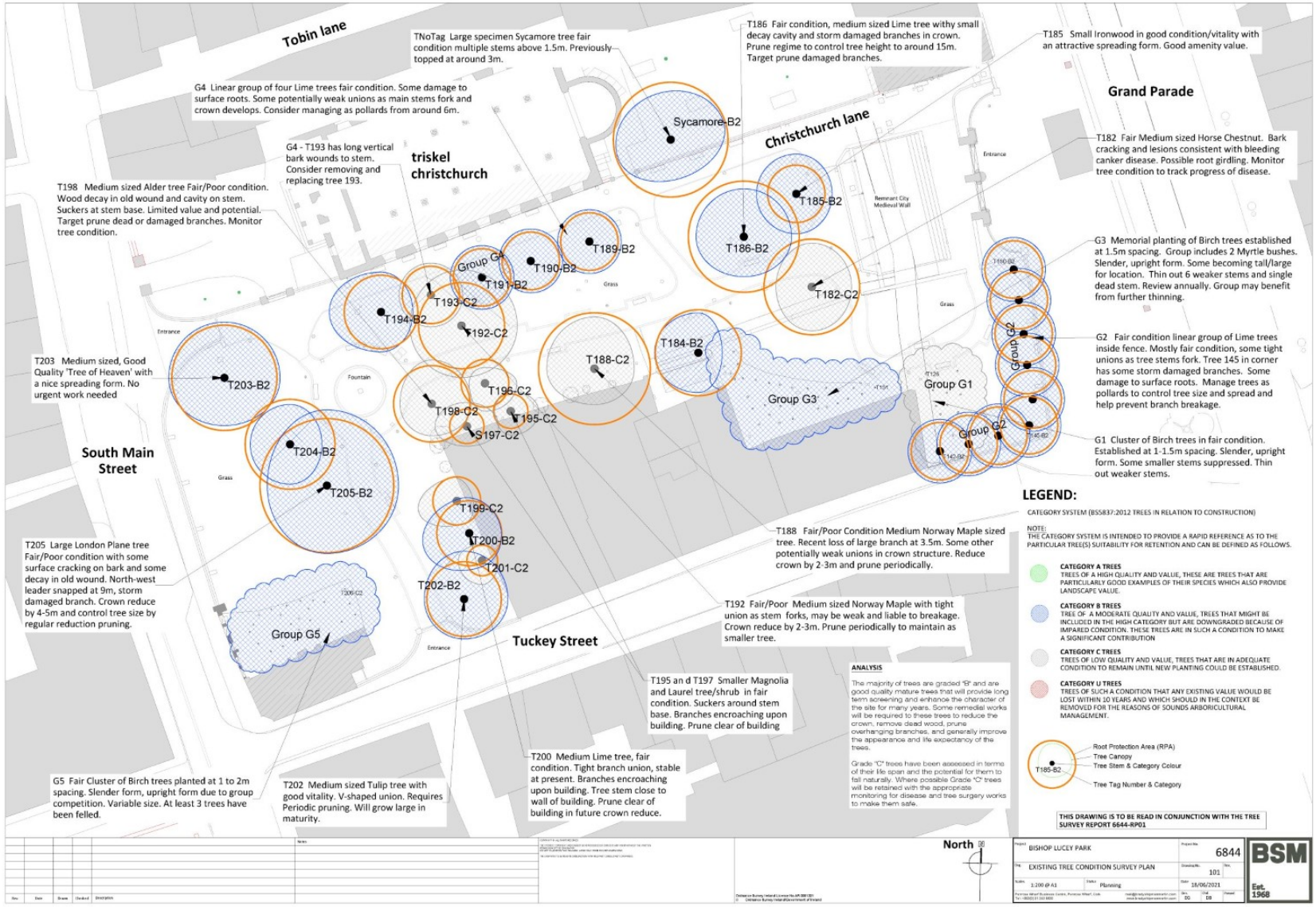
10 SCHEDULE OF TREES INCLUDED IN THE SURVEY

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
G	1 Trees 126-141	Betula pendula (Silver Birch)	EM	14	80 to 220	1	3	3	3	3	3	10+	Fair	Fair. Cluster of Birch trees established at 1-1.5m spacing. Slender, upright form. Some smaller stems suppressed.	Thin out weaker stems.	2.64	C2
G	2 Trees 142-150	Tilia spp. (Lime)	EM	10 to 13	270 to 350	1	3	4	4	4	4	20+	Fair	Fair. Linear group of Lime trees inside fence at approx. 4m spacing. Mostly fair condition, however some tight unions as tree stems fork. Tree 145 in corner has some storm damaged branches. Lighting wires on stems and branches. Some damage to surface roots.	Manage trees as pollards to control tree size and spread and help prevent branch breakage.	3.6	B2
G	3 Trees 151-181	Betula pendula (Silver Birch)	EM	12 to 18	100 to 250	1	3	3	3	3	3	10+	Fair	Fair. Slender, upright form. Memorial planting of Birch trees established at 1.5m spacing. Group include thinner stems 100mm dbh and less, however, most are 150 to 250mm dbh. Group includes 2 Myrtle bushes. Some of the trees are becoming tall/large for planting location.	Thin out 6 weaker stems and single dead stem. Review annually. Group may benefit from further thinning in coming years.	2.4	B2
T	182	Aesculus carnea (Red Horse Chestnut)	EM	12	500	1	3	5.5	5	5.5	4.5	10	Poor	Fair. Medium sized tree. Main stem forks at 2m, above possible graft. Bark cracking and lesions condistent with bleeding canker disease. Tree crown density and leaf size average for age and species. Possible root girdling.	Monitor tree condition to track progress of disease.	6	C2
T	185	Parrotia persica (Persion Ironwood)	M	5.5	300	1	2	5	4.5	5	5	20+	Good	Good. Good vitality. Smaller sized tree with an attractive spreading form. Good amenity value.	No urgent works needed.	3.6	B2
T	186	Tilia spp. (Lime)	M	17	580	1	4	6	6	5	6	20+	Good	Fair. Good vitality. Medium sized Lime tree with some tight fork/unions (not untypical of species) as main stem forks at 2.5 to 3m. Small decay cavity on stem below fork. Storm damaged branches in crown.	Consider pruning regime to control tree height to around 15m. Target prune damaged branches.	6.96	B2
T	184	Prunus spp (Cherry)	M	16	450	1	4	5	3	5	5.5	20+	Fair	Fair. Fair vitality. Medium sized Cherry tree. Asymetric crown. Scattered minor deadwood.	No urgent works needed.	5.4	B2
T	188	Acer platanoides (Norway Maple)	M	17	585	1	5	6.5	5	4.5	6	10+	Fair	Fair/Poor. Medium sized tree with fair vitality. Recent loss of large branch following failureof co-dominant union at 3.5m. Some other potentially weak unions in crown structure.	Crown reduce by 2-3m. Prune periodically to maintain as smaller tree.	7.02	C2

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
G	4 Tree 189-191 & 193	Tilia spp. (Lime)	EM	11 to 13.5	300	1	3	4	4	4	4	20+	Fair	Fair. Linear group of four trees. Some damage to surface roots. Some potentially weak unions as main stems fork and crown develops. Tree 193 has long vertical bark wounds to stem on south and north sides.	Consider managing as pollards from around 6m. Consider removing and replacing tree 193.	3.6	B2
T	192	Acer platanoides (Norway Maple)	M	17	450	1	5	7	7	6.5	6.5	10+	Fair	Fair/Poor. Medium sized tree with tight union as stem forks at 3 to 4m. Fork maybe weak and liable to breakage as tree grows larger.	Crown reduce by 2-3m. Prune periodically to maintain as smaller tree.	5.4	C2
T	194	Acer pseudoplatanus (Sycamore)	EM	14	385	1	3	5	4	5	6.5	20+	Good	Fair/Poor. Good vitality. Medium sized tree with tight union as stems fork at 5 to 6m. Fork appears stable at present.	No urgent works needed.	4.62	B2
T	195	Magnolia (Magnolia spp.)	EM	8	180	2	2	2.5	3.5	3	2	10+	Good	Fair. Smaller sized tree. Twin stem from ground level. Branches encroaching upon building.	Prune clear of building.	2.16	C2
T	196	Betula utilis (Himalayan Birch)	M	13	250	1	4	2	4	3.5	2	10+	Fair	Fair/Poor. Medium sized tree with large bark wound to south side of lower stem, some wood decay evident and limited wound occlusion. Minor deadwood in crown.	Monitor tree condition.	3	C2
S	197	Photinia × fraseri	EM	7	180	1	0	3	4	2.5	4	10+	Fair	Fair. Smaller sized tree/shrub. Suckers around stem base. Branches encroaching upon building. Tight union as stem forks at 2.5m.	Prune clear of building.	2.16	C2
T	198	Alnus spp. (Alder)	M	12	400	1	5	5.5	5	4	4	10	Poor	Fair/Poor. Medium sized tree with slight lean to stem. Wood decay in old wound to lower stem. Small decay cavity on stem. Dieback and some minor deadwood in crown. Suckers at stem base. Limited value and potential.	Target prune dead or damaged branches. Monitor tree condition.	4.8	C2
T	199	Magnolia grandiflora (Evergreen Magnolia)	EM	9	250	1	3	3	2	3	5	10+	Good	Fair. Smaller sized tree. Branches encroaching upon building. Single upright main stem to 3.5m.	No urgent works needed.	3	C2
T	200	Tilia spp. (Lime)	EM	14	340	1	3	4.5	4	4.5	6	20+	Good	Fair. Medium sized tree. Tight branch union at 4.5m as main stem forks into two scaffolds, union appears stable at present. Branches encroaching upon building. Tree stem is close to wall of building.	Prune clear of building.in future crown reduce.	4.08	B2
T	201	Magnolia grandiflora (Evergreen Magnolia)	SM	8	160	1	3	2	2	3	3	10+	Good	Fair. Smaller sized tree.	No urgent works needed.	1.92	C2

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
T	202	Liriodendron tulipifera (Tulip Tree)	EM	14	390	1	2	6	5.5	5	5	20+	Good	Fair. Good vitality. Medium sized tree. V-shaped union as main stem forks at 4.5m. Species liable to grow large in full maturity.	No urgent works needed. Tree may need to be pruned periodically to control tree size.	4.68	B2
T	203	Ailanthus altissima (Tree of Heaven)	M	13	550	1	4	7	7	6	7	20+	Good	Fair. Fair vitality. Medium sized tree with a spreading form. Scattered minor deadwood.	No urgent works needed.	6.6	B2
T	204	Acer platanoides (Norway Maple)	EM	14	470	1	4	5	4	5	5	20+	Good	Fair. Good vitality. Medium sized tree with a somewhat tight union as stem forks at 2.5m, union appears stable at present.	No urgent works needed.	5.64	B2
T	205	Platanus X hispanica (London Plane)	M	17	700	1	4	9.5	9	8.5	7.5	20+	Good	Fair/Poor. Larger tree with some surface cracking on bark as main stem forks at 2m. Some decay in old wound to south stem at 2m, adjacent to fork. Large crown previously cut at 4 to 5m in past. North-west leader snapped at 9m, storm damaged branch at 9m on east side.	Crown reduce by 4-5m and control tree size by regular reduction pruning.	8.4	B2
G	5 Trees 206-	Betula pendula (Silver Birch)	M	8 to 18.5	<100 to 350	1	3	3	3	3	3	10+	Fair	Fair. Slender form, upright form due to group competition. Cluster of Birch trees planted at 1 to 2m spacing. Variable size. At least 3 trees have been felled.	No urgent works needed.	4.2	C2
T	No Tag	Acer pseudoplatanus (Sycamore)	M	18	600	1	3	6	7	5	7	20+	Good	Fair. Large specimen tree in adjacent cemetery. Multiple stems above 1.5m. Previously topped at around 3m.	No urgent works needed.	7.2	B2

11 EXISTING TREE SURVEY PLAN



12 PROPOSED TREE PROTECTION, REMOVAL AND REPLANTING PLAN