

APPENDIX 5-2

TREE SURVEY & ARBORICULTURAL IMPACT ASSESSMENT

CUNNANE STRATTON REYNOLDS

TREE SURVEY

**River Poddle Flood Alleviation Scheme,
South County Dublin.**

November 2019

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SUMMARY

This report presents a record of those trees existing on or adjacent to the River Poddle, that may potentially be impacted by a proposed flood alleviation scheme. Trees have been surveyed as individuals or tree groups in accordance with BS 5837 (2012). The survey was undertaken in two separate stages over the summer of 2019, (survey dates 1st May & 14th August), by Cunnane Stratton Reynolds arborist;

Keith Mitchell Diploma Arboriculture (Level 4)
 Technician Member Arboricultural Association (UK)
 Tree Risk Assessment Qualification (International Society of Arboriculture)
 MA(Hons) Landscape Architecture
 Member of the Irish Landscape Institute
 Chartered Member of the Landscape Institute (UK)
 Diploma EIA Management

This survey and report are based on the Topographic Survey information provided in drawing;

- Murphy Surveys Topographic Survey MSL27824_T_ITM_Rev0_01

A full survey record is presented in Appendix 1, together with accompanying drawings Tree Survey Dwg No 19150-T-101, Constraints Dwg No 19150-T-102 and Tree Protection Plan Dwg No 19150-T-103. After introducing the terms of reference and the methodology of the survey, the report summarises the survey findings in an overview of the existing tree cover within the site.

A total of one hundred and thirteen trees and twenty-seven tree groups were recorded as part of the survey.

Where assessment takes the form of a Tree Group – trees of greatest arboricultural significance or relevance to proposed scheme within these groups may also be identified individually. Every effort has been made to access all trees for inspection, however in some instances where site conditions prevent full access, some measurements may be visually estimated.

The proposed development of the flood alleviation scheme will require the removal of a number of trees to facilitate both the scheme itself and the construction process. The majority of trees lost are of moderate value.

New semi mature tree planting is proposed as an integral part of the scheme, which will assist in mitigating the proposed tree removals.

The report concludes with recommendations for protection measures to ensure the conservation of those trees to be retained during the construction process.

1. INTRODUCTION

Terms of Reference

Cunnane Stratton Reynolds (CSR) were instructed by Nicholas O'Dwyer Consulting Engineers to conduct a tree survey, to inform the design team of the proposed flood alleviation scheme.

CSR considered those tree and tree groups that might potentially be impacted upon by such a proposed development and produced a subsequent tree survey report presenting our findings, (in accordance with BS 5837:2012), together with recommendations for their best practice management in relation to the proposed development.

This involved a survey of the principal trees / tree groups concerned in accordance with BS 5837 (2012).

Documents supplied to CSR for purposes of conducting a tree survey include:

- Murphy Surveys Topographic Survey MSL27824_T_ITM_Rev0_01
- Nicholas O'Dwyer Works Area Plans (Sheets 2, 3, 6, 7, 18, 19 & 21)

Site Inspection & Methodology

The site was surveyed on 1st May & 14th August 2019 by a qualified Arborist. A visual inspection from the ground was performed on all existing trees / tree groups on site. Where access allowed, principal individual trees were examined, and reference number tags attached before critical measurements were taken and observations made.

A description was recorded of each tagged tree / group of trees, their species, age class, all relevant measured dimensions (height, stem diameter, crown spread radii and crown clearance height) and an assessment of the tree health / vitality, structural form, life expectancy and quality categorisation. Any recommended remedial works required were outlined. Hedgerows and significant tree groups within/bounding the site are subject to group description and assessment, in accordance with BS 5837 (2012).

The findings of the survey are recorded and presented in this Tree Survey Report and Tree Schedule (Appendix 1).

This report is subject to the scope and limitations as given at the end of the report.

Accompanying Drawings

The tree survey report should be read in conjunction with;

- Tree Classification 19150-T-101
- Tree Constraints 19150-T-102
- Tree Protection & Removal 19150-T-103

A1 size colour coded drawings which accompany this report, (monochrome drawings should not be relied upon). These drawings and tree locations are based upon the topographical drawings supplied to CSR.

Where trees were surveyed on site but were not identified on the topographical survey provided, these positions have been visually estimated and plotted in the above drawings – (if applicable, these trees are identified with an asterisk next to their tree numbers on the drawings).

Site Location

The site areas are located at various points along the course of the River Poddle between Tymon Park and Kimmage, South Dublin.

The locality is typically dominated by residential development and associated public parks roads infrastructure through and alongside which the River Poddle runs.

2. DESCRIPTION OF EXISTING TREES

2.1 A number of separate locations (approximate locations highlighted red – Figures 1 to 6 below) were identified for survey following the River Poddle's course between Kimmage and Tymon Park. The existing trees are typically located adjacent to or in close proximity to the river.



Figure 1: Low resolution satellite image of approximate site area St Martins Drive (courtesy of Google Earth).



Figure 2: Low resolution satellite image of approximate site area Kimmage Road Lower (courtesy of Google Earth).



Figure 3: Low resolution satellite image of approximate site area Fortfield Road (courtesy of Google Earth).



Figure 4: Low resolution satellite image of approximate site area Wainsfort Manor Crescent (courtesy of Google Earth).



Figure 5: Low resolution satellite image of approximate site area Tymon Park (courtesy of Google Earth).



Figure 6: Low resolution satellite image of approximate site area Tymon Park (courtesy of Google Earth).



Figure 7: Low resolution satellite image of approximate site area Tymon Park (courtesy of Google Earth).

A total of one hundred and thirteen trees and twenty-seven tree groups were recorded as part of the survey.

Their location, size and quality category may be reviewed with reference to the accompanying Tree Classification Dwg No 19150-T-101 and the tree survey report (Appendix 1).

2.2 Photographic Summary of Trees Surveyed in each location.

St Martins Drive



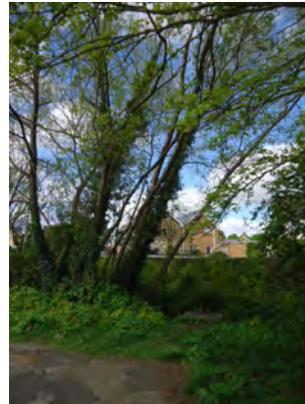
T775 / T776



T779 / T7780



T781-787



TG1



TG2



T788-792



T793 / T794

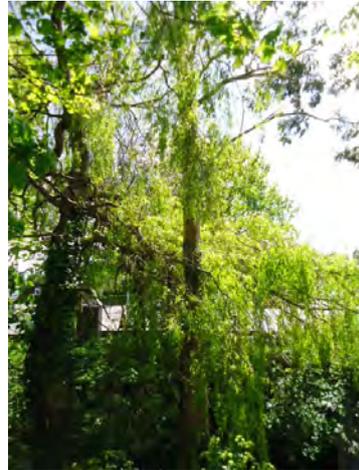


TG3

Kimmage Road



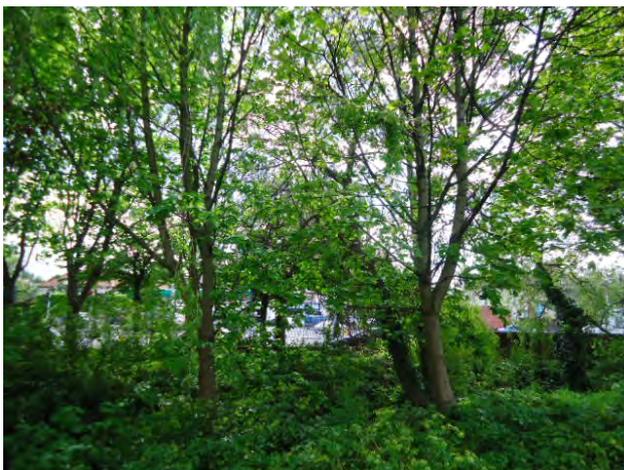
T795



T796



T797



T809-812



T813-815



T815-795 (left to right)



T825-822 (left) / TG5 (centre) / T850-51 (right)



T838 – 844



T846-850



TG6



TG7



TG8



TG 9



T858

Fortfield Road



T987



T985 / T986



T988



TG10



T989



T990



T991



T992 / T993

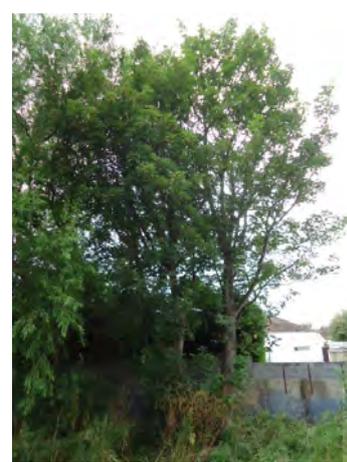
Wainsfort Manor Terrace



T972



T973



T974



T975



T976



T977



TG10



T978



T979



T980



T981



T982



T983



T984

Tymon Park



TG13



TG13 (continued)



(Signs of possible Elm Disease in group)



TG14 (Right side of photo)



TG15



TG16



TG17



TG18



TG19

TG20



T994

TG21



T995

TG22



TG23



T996



T997



T998



T999



TG24



TG24



TG24



TG25



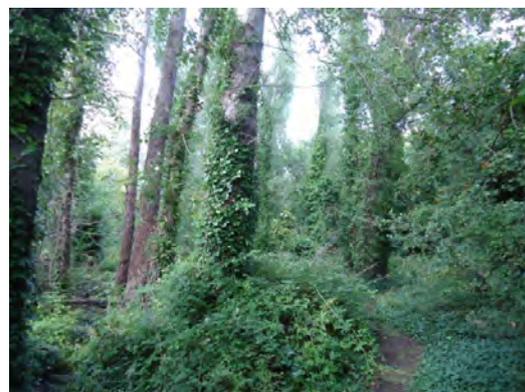
TG25



TG25



TG26



TG26



TG27



TG27

2.3 A mix of native and non-native predominantly deciduous species are present within the study areas. The age profile is generally young to middle age, with only a few trees of exceptional maturity or age present.

The trees generally fall into one of two categories; those positioned along the riverbanks and those located throughout adjacent public open spaces and parkland.

Those along the riverbanks appear to be a mix of planted and self-seeded trees, whilst those within the associated open spaces are planted parkland trees and tree groups.

The relative immaturity of most trees is a consideration in their classification however trees often become more valuable as collective groups, than they might be when considered solely as individuals in isolation - a grouping or woodland being generally of significantly greater visual and ecological value. As such it should be noted that the cumulative value of evaluated Tree Groups often reflects an increased categorised value than might be awarded to the constituent trees if they were assessed in isolation as individuals.

Existing tree cover within the study area currently offers valuable visual amenity and ecological benefit to the locality. It would be desirable to retain this as far as possible or where removals are necessary to facilitate the proposed works, undertake a landscape mitigation plan incorporating replacement tree planting with an emphasis on use of native riparian tree species.

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 This section discusses the potential impact of the proposed development on the existing tree cover on site and considers the need for mitigation measures, in accordance with BS 5837 (2012), for sustainable development.

The proposed development of the site will require the removal of a number of trees however the scheme has sought to minimise removals as far as practical whilst also incorporating a significant level of new semi mature mitigation tree planting.

3.2 Category 'U' trees are recommended for immediate removal (felling) on general management grounds, irrespective of site development – one was identified during this survey (T797).

Direct Loss of Trees

3.3 The following trees are in direct conflict with the proposed development and are therefore proposed for removal;

Tag No	Tree Species	Tree Class	Number of trees
St Martins Drive			
TG1	Salix alba	B2	5*
T775	Betula pendula	C1	1
T776	Fraxinus excelsior	B1	1
T777	Fraxinus excelsior	B1	1
T778	Fraxinus excelsior	B1	1
T779	Fraxinus excelsior	B1	1
T780	Fraxinus excelsior	B2	1
TG2	Salix alba	B2	5*
T781	Acer psuedoplatanus	B1	1
T782	Acer psuedoplatanus	B1	1
T783	Acer psuedoplatanus	B1	1
T784	Acer psuedoplatanus	B1	1
T785	Acer psuedoplatanus	B1	1
T786	Acer psuedoplatanus	B1	1
T787	Acer psuedoplatanus	B1	1
T788	Fraxinus excelsior	B1	1
T789	Acer campestre	B1	1
T790	Acer campestre	B1	1
T791	Acer campestre	B1	1
T792	Acer campestre	B1	1
T793	Salix alba	B1	1
T794	Fraxinus excelsior	B1	1
TG3	Acer psuedoplatanus Fraxinus excelsior Salix alba	B2	15*
Kimmage Road/Poddle Park			
T797	Salix alba	U	1
T844	Tilia cordata	B1	1
T850	Tilia cordata	A2	1
T851	Tilia cordata	A2	1
T852	Tilia cordata	A2	1

T853	Acer platanoides	B1	1
T855	Acer platanoides	A2	1
Wainsfort Manor Crescent			
T970	Acer psuedoplatanus	B1	1
T971	Ulmus sp.	B1	1
T972	Acer psuedoplatanus	B1	1
T973	Salix alba	B1	1
T974	Salix alba	B1	1
T975	Acer psuedoplatanus	B1	1
T976	Acer psuedoplatanus	B1	1
T977	Fagus sylvatica 'Purpurea'	B1	1
T978	Tilia cordata	C1	1
T979	Tilia cordata	B1	1
T980	Tilia cordata	B1	1
T981	Tilia cordata	B1	1
T982	Tilia cordata	B1	1
T983	Ulmus sp.	A1	1
T984	Acer platanoides Salix alba	B1	1
TG11b	Acer psuedoplatanus Fraxinus excelsior Salix alba	B2	15
TG12	Acer psuedoplatanus Ulmus sp.	B2	6
Fortfield Road			
T985	Acer psuedoplatanus	B1	1
T986	Acer psuedoplatanus	B1	1
T987	Acer psuedoplatanus	B1	1
T988	Acer psuedoplatanus	C1	1
T989	Ulmus sp.	B1	1
T990	Acer psuedoplatanus	C1	1
T991	Ulmus sp.	A1	1
T992	Fraxinus excelsior	B1	1
T993	Fraxinus excelsior	B1	1
TG10	Acer psuedoplatanus	C2	3
Tymon Park North of M50			
TG13	Acer platanoides Alnus glutinosa Betula pendula Fraxinus excelsior Pinus Sylvestris Quercus robur Salix caprea Ulmus sp	B2	15*
TG16	Juglans regia	B2	5
TG18	Aesculus hippocastanum Alnus glutinosa Betula pendula Corylus avellanea Pinus nigra Quercus robur Salix alba Salix caprea	B2	9*

TG19	Castanea sativa	B2	3
TG20	Quercus robur	B2	3
T994	Castanea sativa	B2	1
TG21	Quercus robur	B2	5
T995	Quercus robur	B1	1
TG22	Tilia cordata	B2	4
T996	Quercus robur	B1	1
T997	Quercus robur	B1	1
T998	Fraxinus excelsior	B1	1
T999	Salix alba x chyrsocoma	B1	1
TG27	Tilia cordata	B2	24
Tymon Park South of M50			
TG24	Cupressus leylandii	B2	14*
TG25	Acer pseudoplatanus Aesculus hippocastanum Populus nigra	B2	15*
TG26	Acer pseudoplatanus Crataegus monogyna Fraxinus excelsior Populus alba Salix alba Sambucus nigra	B2	25*

(* Numbers approximate only).

Indirect Impacts

3.4 Cognisance must also be given to indirect impacts - in particular care must be taken to ensure the proposed development and ancillary works do not represent an unacceptable conflict with the calculated 'Root Protection Area' of the existing trees - as illustrated in Constraints Dwg No. 19150_T_102.

Disturbance of 'Root Protection Area' may just as readily kill or destabilise a tree over time, by means of root damage/severance and or earth compaction/covering preventing essential transfer of water and air to roots.

Provided proper tree protection measures are adhered to, it is not anticipated that any further trees will require removal due to indirect impacts, however there are a number of areas within Ravensdale Park that will require particular care to minimise any disturbance of the roots of trees to be retained to a minimum / acceptable level that will allow seriously impair the trees ability to survive into the future;

- Temporary Ground Protection Measures – in the form of either specialist ground protection matting or 'Cellweb' cellular structure laid over suitable geotextile and backfilled with crushed stone – will be required both within the proposed site compound area and along the continuous grass verge to the back of the existing wall on Ravensdale Drive where a row of young street trees are planted.
- In addition, the street trees along Ravensdale Drive grass verge shall have their adequately trunks wrapped in protective material such as bamboo matting, to prevent accidental damage by machinery during works to new wall.

- Particular care shall be taken around Trees 837 & 839 where the junction of the existing and proposed paths converge. Excavations shall be carried out by hand or 'airspade' to minimise potential root loss to a minor / acceptable level.
- Particular care shall be taken around Trees 840 / 842 / 843 where the wavy wall is being constructed. Excavations shall be carried out by hand or 'airspade' to minimise potential root loss to a minor / acceptable level.
- Flood risk - it is understood that there will exist a 1% chance of flooding of the area enclosed by new walls and that the anticipated time for such flooding to subside would be nine hours – it is considered that such an infrequent and relatively short flooding event would not have a serious detrimental impact upon existing trees.

Additional Loss of Trees

3.5 A considerable number of riverbank trees are required to be removed to facilitate the construction process which will necessitate the use of heavy plant machinery along the rivers edge reaching across the river to the far bank.

Areas where this occurs include;

- Wainsfort Manor Crescent
- Fortfield Road (to rear of houses).
- Kimage Road Lower
-

Summary of Trees to be Removed

3.6 (As per section 3.3 above).

Tree Class	Quantity
A Class Trees	6
B Class Trees	214
C Class Trees	7
U Class Trees	1

Tree Protection

3.7 Adequate protection and so successful retention of those trees to be retained within the site area and immediately adjacent to the site will be achieved by rigidly excluding all construction activities from tree root protection areas by fit for purpose barriers/fencing and/or additional ground protection.

3.8 Tree Protection Areas (TPAs) are proposed, as indicated on accompanying tree protection plan 19150_T_103. Protective fence line locations and details for these areas are also indicated on the plan.

Services

3.9 Any services that are planned as part of this project must also avoid designated 'Root Protection Area' of tree / tree groups for retention.

4. RECOMMENDATIONS – Arboricultural Method Statement

Recommendations for the specific measures advised regarding management of the trees in relation to this development are detailed within Appendix 1. These recommendations should inform, and be referred to in, the method statements submitted for approval prior to commencement by the responsible building/engineering and landscape contractors whose works (subject to grant of permission) will affect retained trees and the Tree Protection Areas.

1. Tree Works.

Subject to the required permissions removal / felling works as specified on Dwg No No19150_T_103, should be performed prior to project commencement, by reputable contractors in accordance with BS 3998:2010 and current best practice. Removal of scrub vegetation and ivy clearance should preferably be performed in winter outside of the bird nesting season. Tree felling should be preceded by a competent assessment as to the presence of any protected wildlife species, where required specialist advice should be sought if necessary.

Many of the trees identified for removal are located within Tymon Park, a setting designed to provide a semi-natural environment of high ecological value promoted through a low intervention maintenance regime. In these areas it is suggested that the following methods of removing cut trees at the works locations are considered;

- Monolithing – reducing standing timber to a safe height (typically 3-5m) and leaving main trunk standing to decay slowly thereby offering a multitude of specialist habitats and ecological benefits.
- Reducing felled tree to large length timbers and leave lying on forest floor to decay naturally, (smaller material may be gathered in piles).
- Chipping – smaller girth trees and branches may be chipped and spread evenly across woodland / copse floor.

2. Protective Fencing.

Following above permitted, priority tree works, protective fencing (barriers) should be erected in the positions and alignments as indicated on the Tree Protection Plan (Dwg No No19150_T_103). Fencing should be in accordance with BS 5837:2012 unless otherwise agreed with the planning authority. Commencement of development should not be permitted without adequate protective fencing being in place. This fencing, enclosing the minimum tree protection areas indicated, must be installed prior to any plant, vehicle or machinery access on site. Fencing should be signed 'Tree Protection Area – No Construction Access'. Fencing is not to be taken down or re-positioned without written approval of the project Arborist. No excavation, plant or vehicle movement, materials handling or soil storage is to be permitted within the fenced tree protection areas indicated on plan.

3. Boundary Treatments

Landscape works and installation of / work to boundary treatments within the Root Protection Area should be undertaken to a specification and method statement in accordance with BS 5837: 2012 - submitted for approval prior to commencement of works, under the supervision of an Arborist and / or Landscape Architect.

4. Landscape Works

Proposed landscaping works including new planting, shall be performed in accordance with BS 5837:2012. During these works, the ground around retained trees must not be compacted by vehicles, nor be mechanically excavated for planting, nor be significantly altered in terms of ground levels.

5. Monitoring & Compliance

A number of potentially critical future works in proximity to retained trees are potentially to be undertaken in association with the development, these should be done in accordance with approved method statements and under direct supervision by a qualified consultant Arborist. Therefore, during the development, a professionally qualified Arborist is recommended to be retained as required by the principal contractor or developer to monitor and advise on any works within the RPA of retained trees to ensure successful tree retention and planning compliance.

It is advised that tree protection fencing, any required special engineering and supervision works etc must be included / itemised in the main contractor tender document, including responsibility for the installation, costs and maintenance of tree protection measures throughout all construction phases.

Copies of the Tree Survey and all accompanying drawings, a copy of BS 5837:2012 and NJUG 4 (2007) '*Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*' should all be kept available on site by the contractor during development. All works are to be in accordance with these documents.

It is advised that all retained trees be subject to expert re-inspection within 12 months and/or prior to completion of development and public occupancy/access of the site.

Limitations and Scope of this Survey Report

This report covers only those trees individually inspected, (shown on the 'Tree Survey Drawings' and described in the 'Schedule'), reflecting the condition of those trees at the time of inspection. Inspection is limited to visual examination of the subject trees from the ground without; test boring, use of tomographic equipment, dissection, probing, coring, ivy removal or excavation to establish structural integrity.

The trees were not climbed and dimensions are approximate, but considered a reasonable reflection of the trees measurements. A number of trees were visually obscured by ivy and growth, which could potentially hide from view existing faults or weaknesses, as such they would benefit from re-inspection upon removal of ivy growth. This survey can only therefore be regarded as a preliminary assessment.

There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future. The currency of this survey report and its recommendations is one year.

The accompanying drawings are illustrative and based on the land (topographical) survey supplied; CSR Ltd accept no legal liability or responsibility for any errors in the information contained in the supplied drawings.

CSR Ltd accept no responsibility for the performance of trees subject to pruning or other site works (including construction activities) not performed in strict accordance with recommendations as specified in this report and/or in accordance with BS 3998:2010 and BS 5837:2012

All retained trees mentioned in this report should be subject to expert re-inspection within 12 months and prior to completion of development works and public occupancy of the site.

This report was produced as a part of a planning application for the scheme; the author accepts no responsibility or liability for actions taken by reason of this report by the client or their agents unless subsequent contractual arrangements are agreed. Public disclosure or submission of any part of this report without title, or permission from the author, renders this report invalid and legally inadmissible.

References/Bibliography

BS 5837 (2012). *Trees in Relation to Design, Demolition and Construction - Recommendations*. British Standards Institution. TSO, London.

BS 3998 (2010) *Tree Work - Recommendations*. British Standards Institution. TSO, London.

NJUG 4 (2007) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2)*. National Joint Utilities Group.

APPENDIX 1

TREE SURVEY KEY

Information in the attached schedule is given under the following headings:

Tree No.

Individual trees have been numbered and tagged on site with corresponding survey tag or treated as a group where appropriate (e.g. Woodlands/hedgerows) and illustrated on accompanying tree survey drawing.

Species

Common & Latin names of species are provided

Height

Overall estimated height given in meters (measured using Truplus 200 Laser Rangefinder).

Stem Diameter

The diameter of the main trunk taken at a height of 1.5m on a single stem tree, or, on each branch of multi-stemmed (MS) trees.

Crown Spread

The largest radius of branch spread is provided in meters for North / East / South and West directions.

Height of lowest branch

The distance between ground level and first significant branch or canopy (and direction of growth) given in meters (m).

Any measurement or dimension that has been estimated (for offsite or otherwise inaccessible trees where accurate data cannot be recovered) is identified by the suffix #.

Life stage

The tree's age is defined as:

Y = Young, in first third of life (tree which has been planted in the last 10 years or is less than 1/3 the expected height of the species in question).

MA = Middle Age, in second third of life (tree, which is between a 1/3 and 2/3's the expected height of the species in question).

M = Mature, in final third of life (tree that has reached the expected height of the species in question, but still increasing in size).

OM = Over mature (tree at the end of its life cycle and the crown is starting to break up and decrease in size).

V = Veteran Tree (exceptionally old tree).

Physiological Condition

The tree's physiological condition is defined as:

Good - Good vitality: normal bud growth, leaf size, crown density and wound closure

Fair - Average to below average vitality: reduced bud growth, smaller leaf size, lower crown density and reduced wound closure

Poor - Low vitality: limited bud growth, small chlorotic leaves, sparse crown, poor wound closure

Dead - No longer living.

Structural Condition

The trees structural condition is defined as:

Good - No major structural defects observed (possibly some minor defects)

Fair - Minor defects present, (such as bark wounds, isolated decay pockets or structure affected due to overcrowding), that could be alleviated by tree surgery/management

Poor - Major structural defects present such as extensive deadwood, decay or defective to the point of being dangerous. (Significant defects are noted e.g. decay, collapsing etc).

Preliminary Management Recommendations & Timescale

Recommendations actions based on limitations of survey – (may include further investigation and or assessment of suspected defects by means and or methods not undertaken / within the remit of this survey).

Estimated Remaining contribution (Years)

Life of the tree is given as;

- 10 < less than 10 years remaining
- 10 + in excess of 10 years remaining
- 20 + in excess of 20 years remaining
- 40 + in excess of 40 years remaining

Tree Quality Assessment Category

U Those 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.

- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)
- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality

(NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve).

A High quality

Trees of high quality with an estimated remaining life expectancy of at least 40 years

A1 Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)

A2 Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features

A3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)

B Moderate quality

Those trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

B1 Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.

B2 Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.

B3 Trees with material conservation or other cultural value

C Low quality

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.

C1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.

C2 Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.

C3 Trees with no material conservation or other cultural value

APPENDIX 1 TABLE

Tag	Species	Height (m)	Crown Spread (m) N/S/E/W	Dia' (mm)@ 1.5m	RPA circle radius (m)	Ht of lowest branch (m) & direction of growth	Life Stage	Estimated remaining contribution (years)	Physiological Condition	Structural Condition	Preliminary management recommendations	Category of retention + sub-category	Notes
776	Fraxinus exclesior	11	4/4/4/4	310	3.72	3m all	MA	40+	Good	Good		B1	
777	Fraxinus exclesior	10	3/3/3/3	210	2.52	2m all	Y	40+	Fair	Fair		C1	under wires
778	Fraxinus exclesior	9	2/3/2/2	170	2.04	2m all	Y	40+	Fair	Fair		B1	
779	Fraxinus exclesior	9	4/4/4/4	310	3.72	3m all	Y	40+	Fair	Good		B1	
780	Fraxinus exclesior	9	2/4/4/4	230	2.76	3m all	Y	40+	Fair	Good		B1	
781	Acer pseudoplatanus	13	2/4/4/4	310	3.72	2m all	MA	40+	Good	Good		B1	variegated
782	Acer pseudoplatanus	13	2/4/4/4	370	4.44	2m all	MA	40+	Good	Good		B1	variegated
783	Acer pseudoplatanus	14	2/3/2/4	260	3.12	3m all	MA	40+	Good	Fair		B1	variegated
784	Acer pseudoplatanus	13	2/2/2/2	270	3.24	3m all	MA	40+	Good	Fair		B1	variegated
785	Acer pseudoplatanus	15	3/4/2/4	290	3.48	3m all	MA	40+	Good	Fair		B1	variegated
786	Acer pseudoplatanus	13	3/1/3/3	240	2.88	3m all	MA	40+	Good	Fair		B1	variegated
787	Acer pseudoplatanus	12	3/1/3/3	250	3.00	3m all	MA	40+	Good	Fair		B1	variegated
788	Fraxinus exclesior	11	1/3/0/4	250	3.00	2m w	MA	40+	Fair	Fair		B1	
789	Acer campestre	8	1/3/1/4	250	3.00	2m all	MA	40+	Fair	Fair		B1	
790	Acer campestre	8	1/3/1/4	260	3.12	2m all	MA	40+	Fair	Fair		B1	
791	Acer campestre	12	2/3/2/4	360	4.32	2m all	MA	40+	Good	Fair		B1	
792	Acer campestre	12	2/3/2/4	280	3.36	2m all	MA	40+	Good	Fair		B1	
793	Salix alba	10	2/5/3/3	320	3.84	2m all	MA	40+	Fair	Fair		B1	
794	Fraxinus exclesior	14	2/3/3/2	240	2.88	2m all	MA	40+	Fair	Fair		B1	
795	Salix alba chrysocoma	8	0/4/4/4	260	3.12	3m all	MA	40+	Fair	Fair		B1	tristis
796	Eucalyptus gunnii	15	3/3/3/3	375	4.50	6m all	MA	40+	Good	Good		B1	
797	Salix alba chrysocoma	13	2/5/5/2	370	4.44	5m all	MA	10+	Fair	Poor	Fell	U	tristis
798	Acer pseudoplatanus	10	4/4/4/4	280	3.36	2m all	MA	40+	Good	Good		B1	
799	Acer pseudoplatanus	11	4/4/4/4	270	3.24	3m all	MA	40+	Good	Good		B1	
800	Salix alba chrysocoma	14	6/6/6/6	310	3.72	3m all	MA	20+	Fair	Fair		B1	tristis
801	Salix alba chrysocoma	4	1/1/1/1	250	3.00	2m all	Y	10<	Poor	Poor		C1	tristis
802	Salix alba chrysocoma	13	2/8/5/5	440	5.28	3m all	MA	40+	Fair	Fair		B1	tristis
803	Salix alba chrysocoma	17	7/7/7/7	600/400	7.21	4m s	MA	20+	Fair	Fair	Remove lvy	B1	broken limb
804	Fraxinus exclesior	20	5/5/7/5	400/250	4.72	1m ns	MA	40+	Good	Fair	Remove lvy	B1	
805	Populus sp.	22	4/4/4/4	380	4.56	14m all	MA	40+	Good	Good	Remove lvy	B1	
806	Salix alba	14	2/4/7/2	400	4.80	3m all	MA	10+	Fair	Poor	Remove lvy	C1	
807	Salix alba	15	2/4/7/3	390	4.68	4m e	MA	20+	Fair	Fair	Remove lvy	B1	
808	Fraxinus exclesior	10	3/3/3/3	260	3.12	2m all	MA	40+	Good	Good		B1	
809	Fraxinus exclesior	8	2/2/2/2	250	3.00	3m all	Y	40+	Fair	Fair	Remove lvy	C1	
810	Acer pseudoplatanus	13	3.3/3/3	320	3.84	2m ew	MA	40+	Good	Good		B1	
811	Acer pseudoplatanus	12	4/4/4/4	320	3.84	3m all	MA	40+	Good	Good		B1	
812	Tilia cordata	14	4/1/4/4	290	3.48	1m all	MA	40+	Fair	Good		B1	
813	Acer pseudoplatanus	13	3/3/3/3	310	3.72	3m all	MA	40+	Good	Fair	Remove lvy	B1	
814	Acer pseudoplatanus	13	4/4/4/4	300	3.60	3m all	MA	40+	Good	Fair	Remove lvy	B1	

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815	Acer pseudoplatanus	16	5/5/5/5	350	4.20	2m all	MA	40+	Good	Fair	Remove Ivy	B1	
816	Salix alba chrysocoma	14	5/5/5/5	410	4.92	2m all	MA	40+	Good	Fair		A2	tristis
817	Betula pendula	15	3/3/3/3	200	2.40	2m all	MA	40+	Good	Good		B1	
818	Salix alba chrysocoma	14	6/6/6/6	500	6.00	3m all	MA	40+	Good	Good		A2	tristis
819	Salix alba chrysocoma		6/6/6/6	520	6.24	3m all	MA	40+	Good	Good		A2	tristis
820	Liriodendron tulipifera	12	4/4/4/4	250	3.00	2m all	MA	40+	Good	Fair		B1	
821	Salix alba chrysocoma	14	6/6/6/6	510	6.12	3m all	MA	40+	Good	Fair		A2	tristis
822	Salix alba chrysocoma	13	6/6/6/6	430	5.16	2m all	MA	40+	Good	Fair		A2	tristis
823	Betula pendula	14	2/2/2/2	160	1.92	3m ns	MA	40+	Good	Good		B1	
824	Salix alba chrysocoma	13	6/6/6/6	540	6.48	3m all	MA	40+	Good	Fair		A2	tristis
825	Betula pendula	12	2/2/2/2	180	2.16	3m all	MA	40+	Good	Good		B1	
826	Salix alba	14	6/6/6/6	550	6.60	4m all	MA	40+	Good	Fair		A2	tristis
827	Liriodendron tulipifera	12	4/4/4/4	300	3.60	4m all	MA	40+	Good	Good		B1	
828	Salix alba chrysocoma	13	6/6/6/6	560	6.72	5m all	MA	40+	Good	Fair		A2	tristis
829	Acer pseudoplatanus	13	5/5/5/5	400	4.80	2m ew	MA	40+	Good	Good		B1	
830	Acer pseudoplatanus	12	4/4/4/4	350	4.20	3m all	MA	40+	Good	Fair		B1	
831	Crataegus monogyna	9	2/2/2/2	150	1.80	4m all	Y	40+	Good	Good		B1	
832	Crataegus monogyna	9	2/2/2/2	150	1.80	4m all	Y	40+	Good	Good		B1	
833	Acer pseudoplatanus	12	3/3/3/3	280	3.36	3m all	MA	40+	Good	Fair		B1	
834	Acer platanoides	12	6/6/6/6	440	5.28	4m all	MA	40+	Good	Good		B1	
835	Acer platanoides	12	4/4/4/4	280	3.36	4m all	MA	40+	Good	Good		B1	
836	Acer platanoides	12	3/3/3/3	340	4.08	3m all	MA	40+	Good	Fair		B1	
837	Acer platanoides	12	3/3/3/3	420	5.04	2m all	MA	40+	Good	Good		B1	
838	Acer platanoides	12	3/3/3/3	300	3.60	3m all	MA	40+	Good	Good		B1	
839	Acer platanoides	12	3/3/3/3	280	3.36	4m all	MA	40+	Good	Good		B1	
840	Acer platanoides	12	2.2/2/2	260	3.12	2m all	MA	40+	Good	Good		B1	
841	Acer platanoides	12	3/3/3/3	300	3.60	3m all	MA	40+	Good	Good		B1	
842	Acer platanoides	12	3/3/3/3	320	3.84	3m all	MA	40+	Good	Fair		B1	
843	Acer platanoides	12	4/4/4/4	340	4.08	2m all	MA	40+	Good	Good		B1	
844	Tilia cordata	10	2/2/2/2	220	2.64	5m all	MA	40+	Good	Good		B1	
845	Tilia cordata	12	3/3/3/3	320	3.84	2m all	MA	40+	Good	Fair		B1	
846	Tilia cordata	12	4/4/4/4	390	4.68	2m all	MA	40+	Good	Fair		A2	avenue
847	Tilia cordata	12	4/4/4/4	420	5.04	3m all	MA	40+	Good	Fair		A2	avenue
848	Tilia cordata	12	4/4/4/4	420	5.04	3m all	MA	40+	Good	Fair		A2	avenue
849	Acer platanoides	11	3/3/3/3	330	3.96	3m ew	MA	40+	Good	Good		A2	avenue
850	Tilia cordata	12	4/4/4/4	360	4.32	3m all	MA	40+	Good	Good		A2	avenue
851	Tilia cordata	12	4/4/4/4	380	4.56	3m all	MA	40+	Good	Fair		A2	avenue
852	Tilia cordata	14	5/5/5/5	390	4.68	3m all	MA	40+	Good	Good		A2	avenue
853	Acer platanoides	8	2/2/2/2	150	1.80	3m all	MA	40+	Good	Good		B1	drumondii
854	Tilia cordata	10	2/2/2/2	310	3.72	2m all	MA	40+	Fair	Good		A2	avenue

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855	Acer platanoides	13	5/5/5/5	340	4.08	3m all	MA	40+	Good	Good		A2	avenue
856	Acer platanoides	13	5/5/5/5	320	3.84	3m all	MA	40+	Good	Good		A2	avenue
857	Carpinus betulus	8	2/2/2/2	250	3.00	2m all	MA	40+	Good	Good		B1	
858	Malus sp.												
970	Acer pseudoplatanus	7	2/2/2/2	200	2.40	2m all	Y	40+	Good	Fair		B1	
971	Ulmus sp.	8	3/3/3/3	180/260	3.79	1m e/w	MA	40+	Good	Fair		B1	
972	Acer pseudoplatanus	11	2/2/2/2	320	3.84	3m all	MA	40+	Good	Good		B1	
973	Salix alba	16	5/5/5/5	330/340	5.69	0m e/w	MA	40+	Good	Good	Remove Ivy	B1	
974	Salix alba	16	4/4/4/4	580	6.96	1m all	MA	40+	Good	Good	Remove Ivy	B1	
975	Acer pseudoplatanus	15	2/2/4/4	350/330	5.77	0m all	MA	40+	Good	Fair	Remove Ivy	B1	
976	Acer pseudoplatanus	14	2/2/3/3	310x3	6.43	0m all	MA	40+	Good	Fair	Remove Ivy	B1	
977	Fagus sylvatica 'Purpurea'	11	3/3/3/3	200x3	4.15	0m all	MA	40+	Good	Fair	Remove Ivy	B1	compression consider reducing to single bole
978	Tilia cordata	5	2/2/2/2	180	2.16	2m all	Y	40+	Fair	Poor		C1	early decay /disease
979	Tilia cordata	5	2/2/2/2	200	2.40	2m all	Y	40+	Good	Fair		B1	mechanical damage
980	Tilia cordata	5	2/2/2/2	200	2.40	2m all	Y	40+	Good	Good		B1	
981	Tilia cordata	5	2/2/2/2	200	2.40	2m all	Y	40+	Good	Good		B1	
982	Tilia cordata	22	5/5/5/5	1200	14.4	0m all	MA	40+	Good	Fair		A1	dense epicormic
983	Ulmus sp.	20	5/6/5/5	600/410	8.71	0m e/w	MA	40+	Good	Good	Remove ivy	A1	
984	Acer platanoides	16	4/4/4/4	360	4.32	2m all	MA	40+	Good	Fair	Crown Clean	B1	compression forks
985	Acer pseudoplatanus	10	4/4/4/4	300x2	5.01	1m all n/s	MA	40+	Good	Good	Remove ivy	B1	heavily obscured
986	Acer pseudoplatanus	12	5/5/5/5	300x2/250	5.90	0m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
987	Acer pseudoplatanus	12	5/5/5/5	300/370/200	6.20	0m all	MA	40+	Good	Fair	Remove Ivy & Crown Clean	B1	heavily obscured
988	Acer pseudoplatanus	9	2/2/2/2	180	2.16	2m all	Y	40+	Good	Good	Remove Ivy	C1	
989	Ulmus sp.	12	3/3/3/3	500	6.00	3m all	MA	40+	Fair	Fair	Remove Ivy	B1	heavily obscured / diseased
990	Acer pseudoplatanus	10	2/2/2/2	300x2	5.01	2m all	MA	40+	Fair	Fair	Remove Ivy & Crown Clean	C1	heavily obscured
991	Ulmus sp.	18	4/4/4/4	430	5.16	4m all	MA	40+	Fair	Good	Remove ivy	A1	heavily obscured
992	Fraxinus exclesior	14	6/0/6/0	410	4.92	5m ne	MA	20+	Good	Fair	Remove ivy	B1	heavy lean ne
993	Fraxinus exclesior	13	3/0/3/0	260	3.12	5m ne	Y	40+	Good	Fair	Remove ivy	B1	heavy lean ne
994	Castanea sativa	5	2/2/2/2	180	2.16	1m all	Y	40+	Good	Good		B1	
995	Quercus robur	5	2/2/2/2	210	2.52	1m all	Y	40+	Good	Good		B1	
996	Quercus robur	5	2/2/2/2	180	2.16	1m all	Y	40+	Good	Good		B1	
997	Quercus robur	5	2/2/2/2	180	2.16	1m all	Y	40+	Good	Good		B1	
998	Fraxinus excelsior	15	4/4/4/4	900	10.8	1m all	MA	40+	Good	Good		B1	
999	Salix alba x chrysocoma	5	2/2/2/2	250	3.00	2m all	Y	40+	Good	Good		B1	

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TG1	Salix alba	12		Average 200	2.40	1m all	Y	40+	Good	Fair		B2	
TG2	Salix alba	10		Average 180	2.16	1m all	Y	40+	Good	Fair		B2	
TG3	Salix alba	13		Average 250	3.00	1m all	Y	40+	Good	Fair		B2	
TG4	Fraxinus excelsior	13		Average 250	3.00	2m all	MA	40+	Good	Fair	Selective thinning	B2	
TG5	Carpinus betulus	8		Average 200	2.40	2m all	MA	20+	Good	Fair		B2	
TG6	Euonymous europaeus Prunus avium	8		Average 250	2.40	2m all	MA	20+	Good	Fair		B2	
TG7	Crataegus x lavalleei	5		Average 150	1.80	2m all	MA	20+	Good	Good		B2	
TG8	Crataegus laevigata	5		Average 180	2.16	2m all	MA	20+	Good	Good		B2	
TG9	Prunus avium	8		Average 200	2.40	2m all	MA	20+	Good	Fair		B2	
TG10	Acer psuedoplatanus	8		Average 180	2.16	1m all	Y	40+	Good	Fair		C2	
TG11	Fraxinus excelsior	4		Average 130	1.56	2m all	Y	40+	Good	Good		B2	
TG11b	Acer psuedoplatanus Fraxinus excelsior Salix alba	8		Average 220	2.64	2m all	MA	40+	Good	Fair		B2	
TG12	Acer psuedoplatanus Ulmus sp.	7		Average 220	2.64	2m all	MA	40+	Good	Fair		B2	
TG13	Acer platanoides Alnus glutinosa Betula pendula Fraxinus excelsior Pinus Sylvestris Quercus robur Salix caprea Ulmus sp	6		Average 180	2.16	1m all	Y	40+	Good	Fair	Selective thinning	B2	Possible emergence of Dutch Elm disease.
TG14	Aesculus hippocastanum Acer platanoides Alnus glutinosa Betula pendula Fraxinus excelsior Pinus Sylvestris	10		Average 200	2.40	1m all	Y	40+	Good	Fair	Selective thinning	B2	Evidence of Chestnut Leaf Miner disease (Cameraria ohridella)
TG15	Ulmus sp.	8		Average 300	3.60	2m all	MA	40+	Good	Good		B2	
TG16	Juglans regia	4		Average 180	2.16	2m all	Y	40+	Good	Good		B2	
TG17	Acer campestre Betula pendula Crataegus monogyna Euonymous europaeus	7		Average 200	2.40	1m all	Y	40+	Good	Good		B2	
TG18	Aesculus hippocastanum Alnus glutinosa Betula pendula Corylus avellanea Pinus nigra Quercus robur Salix alba Salix caprea	7		Average 200	2.40	1m all	Y	40+	Good	Good		B2	
TG19	Castanea sativa	5		Average 150	1.80	2m all	Y	40+	Good	Good		B2	

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TG20	Quercus robur	6		Average 200	2.40	2m all	Y	40+	Good	Good		B2	
TG21	Quercus robur	8		Average 200	2.40	2m all	Y	40+	Good	Good		B2	
TG22	Castanea sativa	5		Average 190	2.28	2m all	Y	40+	Good	Good		B2	
TG23	Quercus robur	4		Average 180	2.16	2m all	Y	40+	Good	Good		B2	
TG24	Cupressus leylandii	10		Average 900	10.8	1m all	OM	10+	Fair	Fair		B2	Screening ESB station
TG25	Acer pseudoplatanus Aesculus hippocastanum Populus nigra	18		Average 500	6.00	2m all	MA	20+	Good	Fair	Selective thinning	B2	
TG26	Acer pseudoplatanus Crataegus monogyna Fraxinus excelsior Populus alba Salix alba Sambucus nigra	13		Average 400	4.80	2m all	MA	40+	Fair	Fair	Selective thinning Ivy control	B2	
TG27	Tilia cordata	8		Average 280	3.36	2m all	MA	40+	Good	Good		B2	