Appendix 5. Biodiversity

5.1 Tree Survey Report

5.2 Bat Survey

5.1 Tree Survey Report

Independent Tree Surveys Ltd

Tree Survey Report

River Quarter Phase 2
Bray
Co. Wicklow

February 2024

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Contents

1.0 Introduction

It is planned to develop land in Bray, Co. Wicklow as part of the second phase of the River Quarter project. The site contains a number of trees and so this report has been prepared to provide an arboricultural assessment of the trees to input into the design and layout of the project.

2.0 Instruction

To carry out a Tree Survey and prepare a tree constraints plan in broad accordance with BS5837: *Trees in relation to design, demolition and construction (2012)* of the significant trees on the River Quarter development lands in Bray, Co. Wicklow.

3.0 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.
- Where trees were inaccessible due to undergrowth, topography etc. assessment of tree condition and tree stem/crown dimensions were made based on what parts of the trees were visible to the surveyor and should be regarded as preliminary.
- Some of the trees on the site were not plotted by topographic survey methods; where necessary, the additional trees are plotted in their *approximate* locations based upon measurements made during the site visit by GPS and laser and should be regarded as indicative.

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19/02/2024

4.0 Survey Methodology

The significant individual trees inside the site were assessed from ground level using Visual Tree Assessment (VTA) techniques and relevant observations and findings were recorded in compliance with the industry standard document BS5837: *Trees in relation to design, demolition and construction (2012)*. Groups of trees and wooded areas were assessed and described collectively where appropriate.

4.1 Survey Key

Tree Numbers
Individual trees were tagged with numbered tree tags as appropriate; contiguous groups of trees were allocated numbers. These numbers identify the trees and tree groups in the survey schedule and on the supporting survey drawings.

Tree Species
Common and botanical names of the tree species were recorded.

Tree Crown Dimensions
Tree height (Ht), crown clearance (Cl) and crown-spread (NESW cardinal points) measurements are in metres and are estimated.

Stem Diameter (Dbh)
Measurements are in millimetres and taken at 1.5m from ground level, multiple stems (St) are recorded as a function of the BS:5837 RPA formulae described below. Where tree stems could not be directly accessed; the stem diameters were estimated.

Tree age classes
Age classes were recorded as:

Y	Young	Recently planted (with 5 years or so)
SM	Semi-Mature	Well established young tree
EM	Early Mature	Established tree not yet fully grown
M	Mature	Full or near full grown tree
LM	Late Mature	Older specimen in full maturity
OM	Over Mature	Reached full maturity now declining through natural causes
Vet	Veteran	Notable due to large size, old age, ecological importance

Tree Physiological and Structural condition
Tree condition was graded as

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

Work Recommendations
Preliminary management recommendations are made where necessary and pertain to current site conditions unless otherwise stated.

Estimated Remaining Contribution (ERC)
The approximate number of years that a tree should continue to live and contribute amenity, conservation or landscape value to the site under current site conditions.

4.2 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 younger trees with a stem diameter of below 150mm and/or <10m in height.

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.

4.3 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 in metres measured from the tree stem and is shown on the tree survey/constraints drawing 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.
The calculated RPA for each tree should be capped to 707 m2.

a) For trees with two to five stems, the combined stem diameter should be calculated as follows:
√ ((stem diameter 1)2 + (stem diameter 2)2 ... + (stem diameter 5)2)
b) For trees with more than five stems, the combined stem diameter should be calculated as follows:
√ ((mean stem diameter)2 × number of stems)

5.0 Findings

The trees were assessed during site visits in February 2024; the field data for the trees is contained in the accompanying Tree Survey Schedule. Approximate tree location, BS5837 category, RPA and approximate crown shape are shown on the Tree Survey Drawing 24005_TS. A total of 231 individual trees were inspected, of these 0 were graded category A (high value), 58 were graded category B (moderate value), 134 were category C (low value) and 39 were graded category U (poor condition). 6 tree Groups were recorded; many of the trees within the groups were not accessed or assessed individually due to poor ground conditions and incomplete topographic survey data.

The majority of the survey site covers lands previously used as a golf course between the DART line to the east and Bray town to the west, with elements of the grounds of Ravenswell School and adjacent rough ground also included. The tree cover across most of the site is remnant landscape planting associated with the old golf course, with some trees also being located within the grounds of Ravenswell School and the derelict land between the school and western part of the old golf course.

The site includes a large number of trees that were planted as linear groups as the golf course was laid out, and also includes several older trees that pre-date the course. A mix of species were planted, including Populus, Acer, Betula, Sorbus, Alnus, Tilia, Fraxinus and Salix, with most of those planted being of relatively low quality and value as individual specimens. A lack of management, disease (especially Ash dieback disease), site works, and widespread storm damage has diminished the quality and value of the tree stock over past years.

A significant number of the Hybrid Poplar trees on the site have become substantial specimens (20m+ height) as they have matured and are quite prominent in the local landscape. Many of these trees are now suffering storm damage.

The parts of the grounds of the Ravenswell School grounds included contained a number of trees, some of which are of moderate value and worthy of retention, however, many of the Ash and Elm trees present are now in very poor condition. Much of the land between the school and old golf course to the south has been left unmanaged for many years and has become heavily overgrown with self-sown Elder and Sycamore bushes/saplings of little arboricultural value. This area was subject to limited topographic surveying and tree location should be regarded as approximate.

6.0 Preliminary Management Recommendations

Preliminary management recommendations for the trees assessed are listed in the tree survey schedule in the appendices; these pertain to *current* site conditions unless otherwise stated.

All tree work should be carried out by qualified and experienced tree surgeons working in accordance with *BS3998 (2010) Tree Work – Recommendations.*

The larger Poplar trees are becoming increasingly liable to storm damage and would be unsuited to retention within a new layout with greatly increased occupancy by people, roads and buildings etc.

The trees planted across the old golf course have mostly grown up in close association with other trees within the groups and are not recommended for selective retention or isolation. It is recommended that groups or clusters of trees be retained rather than individuals, because the form and structure of the trees will be far more suited to the mutual sheltering that groups provide.

The project design team should seek to retain the better-quality trees on the site and incorporate them into the new layout where possible. Poorer quality trees and unsuitable species should be replaced with new planting. The final layout of the development should be overlain with the existing tree population and an Arboricultural Impact Assessment, Method Statement and Tree Protection Plan should be prepared for the project for inclusion with the planning application.

7.0 Site Photographs

1. Mixed species trees of low quality planted across old golf course towards the eastern end of site

2. Poor quality trees that were planted along the south eastern part of the site as the golf course was developed – note storm damaged Willow

3. Mix of trees (including numerous mature Poplars) that were planted into the old golf course

4. Larger mature Oaks 682 and 683 viewed from the north

5. Mature trees (mostly Ash and Sycamore) in group G1 to west of the site compound

6. Linear group of trees to east of the site offices, including storm damaged Poplar

7. Large Poplar trees in group G2 along the southwestern boundary of the site

8. Mature trees(T2-T5) on either side of the driveway into Ravenswell School

8.0 Appendices

Tree Protection on Construction Sites – General Recommendations

Tree Survey Schedule

Tree Survey Drawing 24005_TS (Tree Constraints Plan)

Tree Protection on Construction Sites – General Recommendations

Trees being retained should be protected from unnecessary damage during the construction process by effective construction-proof barriers that will define the limits for machinery drivers and other construction staff. Ground protected by the fencing will be known as the Construction Exclusion Zone (CEZ). Sturdy protective fencing will be erected along the points identified in the Tree Protection Plan **prior** to any soil disturbance and excavation work starting; this is essential to prevent any root or branch damage to the retained trees. The British Standard BS5837: *Trees in relation to design, demolition and construction (2012)* specifies appropriate fencing; see figure 1 below.

Figure 1. Protective fence specification

For light access works within the CEZ the installation of suitable ground protection in the form of scaffold boards, woodchip mulch or specialist ground protection mats/plates may be acceptable.
All weather notices will be erected on the fence with words such as: "Tree Protection Fence — Keep Out". When the fencing has been erected, the construction work can commence. The fencing will be inspected on a regular basis during the duration of the construction process and shall remain in place until heavy building and landscaping work has finished and its removal is authorised by a qualified arborist.

Trench digging or other excavation works for services etc. will not be permitted in the CEZ unless approved and supervised by a qualified arborist using methods outlined in BS5837: *Trees in relation to design, demolition and construction (2012)*.

Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.

Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, will not be discharged within 10 m of a tree stem.

Fires will not be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

Notice boards, wires and such like will not be attached to any trees. Site offices, materials storage and contractor parking will all be outside the CEZ.

Tree Survey Schedule
Ballymore Development Lands
Bray, Co. Wicklow
February 2024

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	501	Populus X canadensis (Hybrid Black Poplar)	EM	10	350	1	0	2	2	2.5	2	<10	Poor	Poor. Upright form. Significant dieback in crown. Major groundworks within root zone of tree.	Fell tree.	4.2	55.42	U
T	502	Populus X canadensis (Hybrid Black Poplar)	M	20	636	2	0.5	6	6	5	5	<10	Fair	Poor. Medium sized tree. Storm damaged branches in crown. Suckers around stem base. Stem divides below 1.5m. Major groundworks within root zone of tree. Spoil built up close to tree.	Consider removal. Clear spoil if retained.	7.63	182.92	U
T	503	Populus X canadensis (Hybrid Black Poplar)	M	17	500	1	0	3	3	2.5	4	<10	Poor	Poor. Medium sized tree. Upright form. Epicormic growth on stem. Significant basal decay. Dieback in crown.	Consider removal as part of good management.	6	113.11	U
T	504	Acer pseudoplatanus (Sycamore)	EM	7.5	300	1	2	3	3	3	3.5	10+	Fair	Fair. Smaller sized tree. Good shape/form. Soil levels built up in root zone to north and northeast.	Restore soil levels.	3.6	40.72	C2
T	505	Populus alba (White Poplar)	EM	11	400	1	2.5	3	3	3	3	<10	Poor	Poor. Smaller sized tree. Wood decay in old wound at stem base. Recent tear out wound on main stem. Sparse crown. Soil levels built up inside root zone to north.	Consider removal as part of good management.	4.8	72.39	U
T	506	Acer pseudoplatanus (Sycamore)	EM	8.5	320	1	2	3	3	4	3	10+	Fair	Good. Smaller sized tree. Good shape/form.	No urgent works needed.	3.84	46.33	C2
T	507	Pinus contorta (Shore Pine)	EM	9	350	1	2	4	1	0.5	5	10	Fair	Fair/Poor. Smaller sized tree of poor form. Wood decay in old wound at stem base. Initial lean to stem but self corrects to vertical. Limited potential.	No urgent works needed. Consider removal as part of good management.	4.2	55.42	C2
T	508	Populus alba (White Poplar)	EM	9.5	350	1	0.5	3	5	4	3	<10	Poor	Poor. Smaller sized tree. Poor shape & form. Epicormic growth on stem. Wood decay in old wound to lower stem. Broken branches in crown.	Consider removal as part of good management.	4.2	55.42	U
T	509	Populus alba (White Poplar)	M	10	400	1	4	2	4	2	5	10	Poor	Fair/Poor. Stem divides above 1.5m. Asymmetric crown. Dieback in crown. Bacterial canker present on branches. North stem cut at 4m.	No urgent works needed. Consider removal as part of good management.	4.8	72.39	C2
T	510	Sorbus aria (Whitebeam)	M	6	300	1	2	3	3.5	3	3	10+	Fair	Fair. Smaller sized tree. Soil compaction to east.	No urgent works needed.	3.6	40.72	C2
T	511	Acer pseudoplatanus (Sycamore)	SM	5	200	1	3	3	2	3	2	10+	Fair	Fair. Smaller sized tree. Stem from fallen Poplar tree leaning into crown.	Remove fallen stem.	2.4	18.1	C2

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Ballymore Development Lands
Bray, Co. Wicklow
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Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	512	Populus alba (White Poplar)	EM	12	461	2	3	5	6	5	4	<10	Poor	Fair/Poor. Stem divides below 1.5m. Storm damaged branches in crown. Minor dieback and deadwood in crown. Bacterial canker present on branches. East stem snapped off at 2m.	Crown reduce by 3-4m if retained. Consider removal.	5.53	96.09	U
T	513	Populus alba (White Poplar)	M	12	500	2	4	7	4	8	4	<10	Poor	Poor. Medium sized tree. Poor shape & form. Wood decay in old wound to lower stem. Significant storm damage in crown. Dieback in crown. Bacterial canker present on branches.	Consider removal as part of good management.	6	113.11	U
T	514	Populus alba (White Poplar)	EM	10	320	1	2	4	3	6	4	<10	Poor	Poor. Epicormic growth on stem. Suckers around stem base. Badly storm damaged branches in crown. Minor deadwood in crown. Some long extended limbs. Weak and failed unions in crown.	Fell tree.	3.84	46.33	U
T	515	Sorbus aria (Whitebeam)	EM	6	220	1	2	3	2.5	4	3	10+	Fair	Fair. Smaller sized tree. Average shape/form.	No urgent works needed.	2.64	21.9	C2
T	516	Populus alba (White Poplar)	M	12	450	1	1	6	4	5	5.5	<10	Poor	Poor. Poor shape & form. Suckers around stem base. Badly storm damaged branches in crown.	Consider removal as part of good management. Crown reduce 3-4m if retained.	5.4	91.62	U
T	517	Acer pseudoplatanus (Sycamore)	SM	5	150	1	2	3	1	2	2	10	Fair/Poor	Fair. Stunted smaller sized tree. Suckers around stem base. Asymmetric form due to group competition. Decay in stem base. Limited potential.	No urgent works needed.	1.8	10.18	C2
T	518	Acer pseudoplatanus (Sycamore)	EM	8.5	391	2	2	3	3.5	3.5	3	10+	Fair	Fair. Smaller sized tree. Average shape/form. Stem divides below 1.5m.	No urgent works needed.	4.69	69.11	C2
T	519	Acer pseudoplatanus (Sycamore)	SM	6	150	1	2	2.5	1	1.5	2	10+	Fair	Poor. Smaller sized tree. Decay in wound to stem base. Suppressed by neighbouring trees. Asymmetric form due to group competition.	Consider coppicing to allow regeneration of fresh growth.	1.8	10.18	C2
T	520	Sorbus aria (Whitebeam)	M	7.5	250	1	2.5	3	3	3	2	10+	Fair	Fair. Smaller sized tree.	No urgent works needed.	3	28.28	C2
T	521	Sorbus aria (Whitebeam)	M	7.5	300	1	2.5	3	2	3	3	10+	Fair	Fair. Smaller sized tree. Initial lean but self corrects to vertical.	Monitor tree condition.	3.6	40.72	C2
T	522	Sorbus aria (Whitebeam)	EM	7	200	1	2	2	2	1	3	10+	Fair	Fair. Smaller sized tree. Upright form.	No urgent works needed.	2.4	18.1	C2

Tree Survey Schedule
Ballymore Development Lands
Bray, Co. Wicklow
February 2024

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	523	Acer pseudoplatanus (Sycamore)	EM	6.5	354	3	2	4.5	4	4	4.5	10+	Fair	Fair. Smaller sized tree. Multiple stems below 1.5m.	No urgent works needed.	4.25	56.75	C2
T	524	Acer pseudoplatanus (Sycamore)	SM	4	141	2	0	2	1	2	2	10+	Fair	Poor. Smaller sized tree. Decay in wound to stem base. Suckers around stem base.	Coppice.	1.69	8.97	C2
T	525	Acer pseudoplatanus (Sycamore)	EM	6	320	2	2	3	3	2	3	10+	Fair	Fair. Stunted smaller sized tree. Stem divides below 1.5m.	No urgent works needed.	3.84	46.33	C2
T	526	Acer pseudoplatanus (Sycamore)	SM	6	141	2	0	2	1.5	2	1	10+	Fair	Fair. Smaller sized tree of slender form. Stem divides below 1.5m. Wood decay in old wound at stem base.	No urgent works needed.	1.69	8.97	C2
T	527	Fraxinus excelsior (Ash)	EM	7	300	1	2	4	3	3	4	10	Poor	Fair. Smaller sized tree. Average shape/form. Epicormic growth indicating Ash dieback disease.	Monitor condition to track impact of Ash dieback disease.	3.6	40.72	C2
T	528	Acer pseudoplatanus (Sycamore)	EM	8	300	1	1	4	5	5	5	10+	Fair	Fair. Smaller sized tree. Average shape/form.	No urgent works needed.	3.6	40.72	C2
T	529	Acer pseudoplatanus (Sycamore)	EM	11	350	1	2	5	2	4	5	10+	Fair	Fair. Smaller sized tree. Average shape/form.	No urgent works needed.	4.2	55.42	B2
T	530	Acer pseudoplatanus (Sycamore)	EM	9	400	1	2	4	3.5	3	4	10+	Fair	Fair. Smaller sized tree. Average shape/form. Some broken branches.	Target prune damaged branches.	4.8	72.39	C2
T	531	Populus alba (White Poplar)	M	12.5	500	1	3	5	6	5	5	10+	Fair	Poor. Medium sized tree. Suckers around stem base. Wood decay in old wound at stem base. Numerous storm damaged branches in crown.	Target prune broken/damaged branches. Crown reduce by 1-2m.	6	113.11	C2
T	532	Populus alba (White Poplar)	M	11.5	500	1	2.5	6	5	6.5	5	10	Fair/Poor	Fair. Medium sized tree. Thick Ivy growth on tree stem restricts view of main branch unions. Bacterial canker present on branches. Some broken branches.	Crown clean to remover weak deadwood and damaged or diseased branches. Cut Ivy around stem base. Crown reduce by 1-3m.	6	113.11	C2
T	533	Betula pendula (Silver Birch)	EM	9	250	1	2	0.5	4	2	2	10+	Fair	Fair. Smaller sized tree. Asymmetric form due to group competition. Stem base adjoined to Poplar.	No urgent works needed.	3	28.28	C2
T	534	Betula pendula (Silver Birch)	EM	8	311	2	1	2	2	3	2.5	10	Fair/Poor	Fair. Smaller sized tree. Stem divides below 1.5m. Wood decay in old wound to lower stem. Limited potential.	No urgent works needed.	3.73	43.71	C2
T	535	Sorbus aria (Whitebeam)	M	8	384	4	1.5	3	3.5	4	3.5			Tree has fallen/become uprooted.	Clear up fallen tree.	4.61	66.77	U

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Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	536	Aesculus hippocastanum (Horse Chestnut)	EM	7.5	450	3	2	4	5	5	4	10	Poor	Fair. Stunted smaller sized tree. Multiple stems below 1.5m. Wood decay in old wound at stem base. Bleeding canker lesions on stem-branches.	Monitor tree condition.	5.4	91.62	C2
T	537	Sorbus aucuparia (Rowan)	EM	5	200	1	0	1.5	2.5	1.5	2	<10	Poor	Fair/Poor. Smaller sized tree. Suppressed by neighbouring trees. Epicormic growth on stem and suckers around stem base. Wood decay in old wound to lower stem. Minor deadwood in crown.	Consider removal as part of good management.	2.4	18.1	U
T	538	Salix caprea (Goat Willow)	M	9.5	702	5	0	6	7	7	4			Tree has fallen/become uprooted.	Clear up fallen tree.	8.42	222.76	U
T	539	Sorbus aria (Whitebeam)	M	11	450	1	3	4	4.5	3	4	<10	Dead	Bad. Tree now standing dead.	Fell tree.	5.4	91.62	U
T	540	Betula pendula (Silver Birch)	M	12	350	1	2	3	3	3	3	10+	Fair	Fair. Suckers around stem base. Stem divides above 1.5m.	No urgent works needed.	4.2	55.42	C2
T	541	Populus alba (White Poplar)	M	15	600	1	1	8	5	9	6	<10	Fair	Poor. Tree has split apart as union has failed at 4m.	Fell tree.	7.2	162.88	U
T	542	Betula pendula (Silver Birch)	M	15	350	1	2	2	4	3	6	10	Fair/Poor	Fair/Poor. Wood decay in old wound at stem base. Unbalanced crown shape. Soil stripped to west of tree.	Monitor tree condition.	4.2	55.42	C2
T	543	Betula pendula (Silver Birch)	M	9	350	1	1	3	4	3	2	<10	Fair	Poor. Smaller sized tree. Suppressed by neighbouring trees. Poor shape & form. Epicormic growth on stem. Badly damaged branches in crown. Soil stripped in root zone. Decay in stem base.	Fell tree.	4.2	55.42	U
T	544	Populus alba (White Poplar)	M	15	500	1	2	6	5	9	5	10	Fair	Poor. Larger tree with badly damaged branches in crown. Some long extended limbs.	Target prune broken/damaged branches. Crown reduce by 4m if retained.	6	113.11	C2
T	545	Acer platanoides (Norway Maple)	SM	6	250	1	2	1.5	3	2.5	3	10	Fair	Fair. Smaller sized tree. Decay in old wound to stem base. Limited potential.	No urgent works needed.	3	28.28	C2
T	546	Populus alba (White Poplar)	M	15	500	1	3	6	8	10	5	<10	Fair	Poor. Larger tree with storm damaged branches in crown. Recent and older storm damage present. Some long extended limbs.	Target prune broken/damaged branches and crown reduce by 4m if retained. Consider removal as part of good management.	6	113.11	U
T	546	Betula pendula (Silver Birch)	M	13	350	1	2.5	3	3	2	3	20+	Fair	Fair. Medium sized tree. Upright form after initial lean. Conjoined base with Poplar.	No urgent works needed.	4.2	55.42	B2
T	547	Betula pendula (Silver Birch)	EM	9	200	1	2	3	1	2	3	10+	Fair	Fair. Smaller sized tree. Upright form. Soil disturbance in root zone to north.	No urgent works needed.	2.4	18.1	C2

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T	548	Acer platanoides (Norway Maple)	EM	9.5	300	1	2.5	3	2	2	4	10+	Fair	Fair. Smaller sized tree. Average shape/form. Conjoined base with Cypress.	No urgent works needed.	3.6	40.72	C2
T	549	Cupressus macrocarpa (Monterey Cypress)	SM	5	350	1	1.5	7	3.5	3	6	10	Fair	Fair. Smaller sized tree. Suppressed by neighbouring trees. Poor shape & form. Limited value and potential.	No urgent works needed.	4.2	55.42	C2
T	550	Betula pendula (Silver Birch)	M	11	500	1	2	4	5	5	5	10+	Fair	Fair. Medium sized tree. Some damage to surface roots. Stem divides above 1.5m.	No urgent works needed.	6	113.11	C2
T	551	Betula pendula (Silver Birch)	M	15	350	1	1	4	5	3	4	10	Fair	Fair/Poor. Medium sized tree. Decay in dead leader of eastern stem. Slight lean to stem. Wood decay in old wound at stem base. Asymmetric form due to group competition.	No urgent works needed.	4.2	55.42	C2
T	552	Betula pendula (Silver Birch)	EM	12	280	1	3	3	1	1	3	10+	Fair	Fair. Slender form. Thick Ivy growth on tree stem. Conjoined base with Acer.	No urgent works needed.	3.36	35.47	C2
T	553	Acer platanoides (Norway Maple)	EM	8.5	250	1	2	4	3	1	4	10	Fair	Fair. Smaller sized tree. Poor shape & form. Asymmetric form due to group competition. Limited value and potential.	No urgent works needed.	3	28.28	C2
T	554	Populus alba (White Poplar)	M	14	500	1	4	4	7	4	3	<10	Fair	Poor. Medium sized tree. Epicormic growth on stem. Previously topped. Major storm damage to crown. Decay in stem.	Fell tree.	6	113.11	U
T	555	Acer pseudoplatanus (Sycamore)	EM	10	400	1	2	2.5	3	5	4.5	10+	Fair	Fair. Suppressed by neighbouring trees. Squirrel damage to branching.	No urgent works needed.	4.8	72.39	C2
T	556	Sorbus aria (Whitebeam)	M	9	350	1	2.5	2	4	5	3	10+	Fair	Fair. Smaller sized tree. Suckers around stem base.	No urgent works needed.	4.2	55.42	C2
T	557	Acer pseudoplatanus (Sycamore)	SM	10	250	1	2	2	4	1	3	10+	Fair	Fair. Smaller sized tree. Suckers around stem base. Some old wounds on stem.	No urgent works needed.	3	28.28	C2
T	558	Eucalyptus gunnii (Cider Gum)	EM	18	500	1	7	4.5	2	2	4	20+	Fair	Fair. Medium sized tree. Upright form.	No urgent works needed.	6	113.11	B2
T	559	Fraxinus excelsior (Ash)	EM	17	300	1	6	2	4	2	4	<10	Poor	Fair. Medium sized tree. Upright form. Epicormic growth indicating ADB disease. Scattered minor deadwood.	Monitor tree condition to track progress of ADB disease.	3.6	40.72	U
T	560	Fraxinus excelsior (Ash)	EM	16	400	1	1	2	5	5	6	10	Poor	Medium sized tree. Some old wounds on stem. Epicormic growth indicating ADB disease. Asymmetric form due to group competition. Minor deadwood in crown. Storm damaged branches in crown.	Monitor tree condition to track progress of ADB disease.	4.8	72.39	C2

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Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	561	Betula pendula (Silver Birch)	M	12	700	1	2	4	5.5	5	5.5	20+	Fair	Fair. Medium sized tree. Spreading form. Some bark wounds to stem base. Compression fork on main stem; union appears stable at present.	No urgent works needed.	8.4	221.7	B2
T	562	Fraxinus excelsior (Ash)	SM	10	250	1	1.5	2	4	1	6	<10	Poor	Poor. Asymmetric form due to group competition. Bacterial canker present on branches. Dieback of crown.	Consider removal as part of good management.	3	28.28	U
T	563	Populus alba (White Poplar)	M	14	450	1	2	5	7	5	3.5	<10	Fair	Poor. Medium sized tree. Poor shape & form. Decay cavity on stem. Suckers around stem base. Badly damaged branches in crown.	Consider removal as part of good management. Crown reduce significantly if retained.	5.4	91.62	U
T	564	Malus domestica (Apple)	M	6	300	1	2	3.5	3	3.5	3	10+	Fair	Fair. Smaller sized tree. Thick Ivy growth on tree stem. Unable to inspect stem due to Ivy. Suckers around stem base.	Cut Ivy and brambles etc. around stem base. Remove broken Poplar branch.	3.6	40.72	C2
T	565	Fraxinus excelsior (Ash)	EM	11	370	1	1.5	4.5	4	4.5	5	10	Poor	Fair. Average shape/form. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	4.44	61.94	C2
T	566	Acer platanoides (Norway Maple)	EM	12	650	1	2.5	4	5	5	5	20+	Fair	Fair. Medium sized tree. Average shape/form.	No urgent works needed.	7.8	191.16	B2
T	567	Acer platanoides (Norway Maple)	SM	7	150	1	2	2	2	2	1	10+	Fair	Fair. Smaller sized tree. Upright form.	No urgent works needed.	1.8	10.18	C2
T	568	Pinus contorta (Shore Pine)	M	17	550	1	1	5	5.5	6	5	20+	Fair	Fair. Medium sized tree. Scattered minor deadwood.	No urgent works needed.	6.6	136.87	B2
T	569	Betula pendula (Silver Birch)	M	12	320	1	2	5	5.5	6	3	10+	Fair	Fair. Medium sized tree. Asymmetric form due to group competition. Small broken branches.	No urgent works needed.	3.84	46.33	C2
T	570	Sorbus aria (Whitebeam)	EM	13	300	1	1.5	2	5	3	3	10+	Fair	Fair. Suckers around stem base. Asymmetric form due to group competition.	No urgent works needed.	3.6	40.72	C2
T	571	Betula pendula (Silver Birch)	M	14	300	1	3	5	2	3	3	20+	Fair	Fair. Medium sized tree. Thick Ivy growth on tree stem restricts view of main branch unions.	Cut Ivy around stem base and review.	3.6	40.72	B2
T	572	Betula pendula (Silver Birch)	EM	14	280	1	0	1.5	4	1.5	4	20+	Fair	Medium sized tree. Asymmetric form due to group competition.	No urgent works needed.	3.36	35.47	B2
T	573	Betula pendula (Silver Birch)	M	14	350	1	2	3	2	2	7	20+	Fair	Fair. Thick Ivy growth on tree stem. Unbalanced crown shape. Asymmetric form due to group competition. Some long extended limbs. Soil compaction to north. Broken branch to west.	Cut Ivy around stem base.	4.2	55.42	B2
T	574	Betula pendula (Silver Birch)	EM	14	350	1	2	1	4	2	6	20+	Fair	Fair. Medium sized tree. Thick Ivy growth on tree stem. Asymmetric form due to group competition.	Cut Ivy around stem base and review.	4.2	55.42	B2

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T	574.1 no tag	X Cupressocyparis leylandii (Leyland Cypress)	EM	9	400	1	0	4	4	4	4	10	Fair	Fair. 2x Cypress trees close to old club house. Becoming overgrown for site. Some broken branches. Limited value and potential.	Remove broken branches.	4.8		C2
T	575	Fraxinus excelsior (Ash)	SM	10	354	2	2.5	3	5	7	5	<10	Poor	Fair. Poor shape & form. Twin stem from ground level. Scattered minor deadwood. Decay cavity in scaffold branch. Epicormic growth indicating ADB disease. Broken branch in crown.	Remove broken branch. Monitor tree condition to track progress of ADB disease.	4.25	56.75	U
T	576	Fraxinus excelsior (Ash)	EM	15	350	1	4	5	6	6	3	10	Fair	Fair. Medium sized tree. Thick Ivy growth on tree stem restricts view of main branch unions. Some broken branches.	Cut Ivy around stem base and review. Remove broken branches. Monitor tree condition to track progress of ADB disease.	4.2	55.42	C2
T	577	Fraxinus excelsior (Ash)	EM	13	300	1	2	4	5	2	6	10	Poor	Fair. Medium sized tree. Asymmetric form due to group competition. Bacterial canker present on branches. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	3.6	40.72	C2
T	578	Fraxinus excelsior (Ash)	EM	13	280	1	2	4	5	5.5	2	10	Poor	Fair. Medium sized tree. Asymmetric form due to group competition. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	3.36	35.47	C2
T	579	Fraxinus excelsior (Ash)	EM	13	280	1	3	5	3	4	4	10	Poor	Fair. Medium sized tree. Upright form. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	3.36	35.47	C2
T	580	Fraxinus excelsior (Ash)	EM	12	300	1	2	4	5	4	6	10	Poor	Fair. Medium sized tree. Asymmetric form due to group competition. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	3.6	40.72	C2
T	581	Fraxinus excelsior (Ash)	EM	10	220	1	2	4	2.5	5	2	10	Poor	Fair. Smaller sized tree. Asymmetric form due to group competition. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	2.64	21.9	C2
T	582	Fraxinus excelsior (Ash)	EM	15	410	2	2.5	6	2	4	7	10	Poor	Fair. Twin stem from ground level with compression fork at tree base; union appears stable at present. Asymmetric form due to group competition. Crown dieback and epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	4.92	76.06	C2
T	583	Fraxinus excelsior (Ash)	EM	14.5	400	1	2.5	2	5	5.5	5	10	Poor	Fair. Good vitality. Medium sized tree. Asymmetric form due to group competition. Epicormic growth indicating ADB disease.	Monitor tree condition to track progress of ADB disease.	4.8	72.39	C2
T	584	Sorbus aria (Whitebeam)	EM	8	400	1	1	5	4	4.5	3.5	10+	Fair	Fair. Smaller sized tree. Average shape/form.	No urgent works needed.	4.8	72.39	C2
T	585	Malus sylvestris (Crab Apple)	EM	4	200	1	1.5	2	2.5	2	2.5	10+	Fair	Fair. Smaller sized tree. Average shape/form.	Monitor tree condition.	2.4	18.1	C2

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T	586	Prunus spp (Flowering Cherry)	M	10	581	4	0	6	6	6.5	5.5	20+	Fair	Fair. Good vitality. Spreading form. Multiple stems below 1.5m. Some soil compaction in rootzone.	No urgent works needed.	6.97	152.64	B2
T	587	Alnus cordata (Italian Alder)	M	19	650	1	2	5	6	6	6.5	20+	Fair	Fair. Large specimen tree. Upright form. Minor deadwood in crown. Some soil compaction in rootzone.	No urgent works needed.	7.8	191.16	B2
T	588	Alnus cordata (Italian Alder)	M	18	550	1	3	5	5	5	4	10+	Fair	Fair/Poor. Large specimen tree. Compression fork on main stem at 2.5m. Some soil compaction in rootzone.	Crown reduce by 2-3m.	6.6	136.87	C2
T	589	Alnus cordata (Italian Alder)	M	19	650	1	2.5	5	3	6	5	20+	Fair	Fair. Large specimen tree. Stem divides above 1.5m. Some soil compaction in rootzone.	No urgent works needed.	7.8	191.16	B2
T	590	Acer pseudoplatanus (Sycamore)	EM	9	400	1	2	7	5	4	4	10+	Fair	Fair. Poor form as suppressed by neighbouring trees. Suckers around stem base. Stem divides above 1.5m. Some soil compaction in rootzone.	No urgent works needed.	4.8	72.39	C2
T	591	Alnus cordata (Italian Alder)	M	18	700	1	3	4	5	6.5	4	20+	Fair	Fair. Large specimen tree. Thick Ivy growth on tree stem restricts view of main branch unions. Minor deadwood. Some soil compaction in rootzone.	Cut Ivy around stem base.	8.4	221.7	B2
T	592	Alnus cordata (Italian Alder)	M	18	500	1	1	5	3	5	4	20+	Fair	Fair. Large specimen tree. Upright form. Scattered minor deadwood. Some soil compaction in rootzone.	No urgent works needed.	6	113.11	B2
T	593	Acer pseudoplatanus (Sycamore)	EM	15	500	1	3	7	6	5	4	20+	Good	Fair. Medium sized tree. Small decay cavity on stem. Scattered minor deadwood. Some soil compaction in rootzone.	No urgent works needed.	6	113.11	B2
T	594	Alnus cordata (Italian Alder)	M	18	650	1	2	5	5	5	3	20+	Fair	Fair. Large specimen tree with slight lean to stem. Stem divides above 1.5m. Initial lean but self corrects to vertical. Ivy obscures stem fork/union.	Cut Ivy and review union at 2m.	7.8	191.16	B2
T	595	Alnus cordata (Italian Alder)	M	18	750	1	3	4	6	5	3.5	10+	Poor/Fair	Fair. Large specimen tree. Stem divides above 1.5m. Slightly sparse upper crown.	Monitor tree condition.	9	254.5	C2
T	596	Eucalyptus gunnii (Cider Gum)	EM	15	250	1	3	3	1	2	2	10+	Fair/Poor	Fair/Poor. Medium sized tree of slender, upright form. Major deadwood in crown.	Crown clean to remover weak deadwood and damaged or diseased branches.	3	28.28	C2
T	597	Acer pseudoplatanus (Sycamore)	EM	12	450	1	1.5	8	3	5	5	20+	Fair	Fair. Medium sized tree. Poor form/shape. Some old wounds on stem. Asymmetric form due to group competition.	No urgent works needed.	5.4	91.62	B2
T	598	Alnus cordata (Italian Alder)	M	16	600	1	0	4	3	5.5	3	20+	Fair	Fair. Medium sized tree. Epicormic growth on stem. Initial lean to stem but self corrects to vertical.	Cut Ivy.	7.2	162.88	B2

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S	599	Cotoneaster frigidus (Cotoneaster)	M	5.5	200	4	2	3	3	3	3	10+	Fair	Fair. 3x multi-stemmed bushes. Dead tree branch has fallen onto northern bush.	Remove broken branch.	2.4	18.1	C2
T	600	Salix spp. (Willow)	M	11	652	2	2	5	6	5	6	10+	Fair	Poor. Tree with spreading form. Wood decay in old wound at stem base. Compression fork at tree base. Scattered deadwood.	Pollard.	7.82	192.14	C2
T	601	Betula pendula (Silver Birch)	EM	11	292	2	0	4	2	4	3	10+	Fair	Fair. Smaller sized tree. Stem divides below 1.5m. Some bark wounds to stem base. Wood decay in old wound to lower stem.	No urgent works needed.	3.5	38.49	C2
T	602	Acer pseudoplatanus (Sycamore)	EM	11	400	1	0	4	4	5	5	20+	Good	Fair. Medium sized tree. Suckers around stem base.	No urgent works needed.	4.8	72.39	B2
T	603	Populus X canadensis (Hybrid Black Poplar)	M	23	700	1	2	5	5	6	5	20+	Fair	Fair. Large specimen tree. Upright form. Suckers and thick brambles around stem base.	Clear brambles and review stem base.	8.4	221.7	C2
T	604	Acer pseudoplatanus (Sycamore)	EM	14	500	1	3	6	5	4	6	20+	Fair	Fair. Medium sized tree. Soil compaction to north of tree.	No urgent works needed.	6	113.11	B2
T	605	Acer pseudoplatanus (Sycamore)	EM	12	400	1	3	5	3.5	5.5	4	20+	Fair	Fair. Average shape/form. Some pruning wounds on stem. Soil compaction to north of tree.	No urgent works needed.	4.8	72.39	B2
T	606	Sorbus aucuparia (Rowan)	EM	6	200	1	2	2	3	2.5	3	10	Poor	Fair. Smaller sized tree. Suppressed by neighbouring trees.	Monitor tree condition.	2.4	18.1	C2
T	607	Acer pseudoplatanus (Sycamore)	M	12	500	1	3	5	5.5	5	6	10+	Fair	Fair. Medium sized tree. Stem divides above 1.5m with tight union in fork. Some pruning wounds on stem.	Monitor for signs of weakness.	6	113.11	C2
T	608	Acer pseudoplatanus (Sycamore)	EM	12	500	1	3	5.5	6	5.5	4	20+	Fair	Fair. Scattered minor deadwood.	Crown clean to remover weak deadwood and damaged or diseased branches.	6	113.11	B2
T	609	Sorbus intermedia (Swedish Whitebeam)	M	12	350	1	2	3	3	2.5	4	10	Fair	Poor. Medium sized tree. Average shape/form. Small emergent fungal fruiting body at stem base.	No urgent works needed.	4.2	55.42	C2
T	610	Sorbus intermedia (Swedish Whitebeam)	M	12	500	1	2	5	2	3	4	10+	Fair	Fair. Medium sized tree. Average shape/form. Soil compaction to north of tree.	No urgent works needed.	6	113.11	B2

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T	611	Sorbus intermedia (Swedish Whitebeam)	M	12	350	1	1.5	2	3	3	3	10	Fair/Poor	Poor. Some lesions/bark necrosis on lower stem. Fungal fruiting bodies at stem base.	Consider removal.	4.2	55.42	U
T	612	Sorbus intermedia (Swedish Whitebeam)	M	10	400	1	2	5	3	3	3	10+	Fair	Fair. Average shape/form.	No urgent works needed.	4.8	72.39	C2
T	613	Alnus glutinosa (Common Alder)	M	15	370	1	0	5	3	3	4	20+	Fair	Fair. Medium sized tree. Suckers around swollen stem base.	No urgent works needed.	4.44	61.94	B2
T	614	Acer pseudoplatanus (Sycamore)	M	10	550	1	2	7	5.5	5.5	5	20+	Fair	Fair. Good vitality. Medium sized tree. Brambles around tree base.	Clear brambles and review stem base.	6.6	136.87	B2
T	615	Pinus contorta (Shore Pine)	SM	4	283	2	1	4	3	4.5	4	<10	Poor	Fair/Poor. Smaller sized tree. Suppressed by neighbouring trees. Poor shape & form. North stem mostly dead.	Consider removal as part of good management.	3.4	36.32	U
T	616	Pinus contorta (Shore Pine)	EM	5	300	1	1.5	1	6.5	5	2	10	Fair	Fair/Poor. Smaller sized tree leaning South-East. Poor shape & form. Heavily leaning form. Limited value and potential.	No urgent works needed. Consider removal as part of good management.	3.6	40.72	C2
T	617	Populus X canadensis (Hybrid Black Poplar)	M	20	700	1	4	7	5	3	5	<10	Poor	Poor. Large tree of poor shape & form. Storm damaged branches in crown. Sparse crown. Bacterial canker present on branches. Tree liable to future storm damage. Epicormic growth on stem. Suckers around stem base.	Consider removal as part of good management.	8.4	221.7	U
T	618	Populus X canadensis (Hybrid Black Poplar)	M	18	650	1	2.5	4	7	5	6	<10	Poor/Fair	Poor. Large specimen tree. Sparse crown. Recent and historic storm damaged branches in crown. Soil compaction to east. Tree vulnerable to future storm damage.	Consider removal as part of good management.	7.8	191.16	U
T	619	Alnus cordata (Italian Alder)	M	14	400	1	2	4.5	4	4	5	20+	Fair	Fair. Medium sized tree. Upright form. Vehicles tracking to west and east of tree within rootzone.	No urgent works needed.	4.8	72.39	B2
T	620	Alnus cordata (Italian Alder)	SM	5	200	1	0.5	1.5	2	2	2	<10	Fair	Poor. Smaller sized tree. Suppressed by neighbouring trees. Damaged by vehicles.	Coppice.	2.4	18.1	U
T	621	Alnus cordata (Italian Alder)	M	13	472	2	0	2	5	4	5	10+	Fair	Fair. Medium sized tree. Epicormic growth on stem. Suckers around stem base. Stem divides below 1.5m. Asymmetric form due to group competition. Soil compaction in root zone.	No urgent works needed.	5.66	100.66	C2
T	622	Alnus cordata (Italian Alder)	M	13	532	2	0	5	5	6.5	5	10+	Poor	Fair. Medium sized tree. Stem divides below 1.5m. Some sparseness of upper crown. Wound to north stem at 7m.	Monitor tree condition.	6.38	127.89	C2

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T	623	Alnus cordata (Italian Alder)	M	13	350	1	3.5	2	5	4	2	<10	Poor	Poor. Declining. Significant dieback in crown. Slender form. Slight lean to stem.	Coppice.	4.2	55.42	U
T	624	Alnus cordata (Italian Alder)	M	14	400	1	2	5	3	4	3	<10	Poor	Poor. Medium sized tree. Upright form. Significant dieback in crown. Decay in stem base.	Coppice.	4.8	72.39	U
T	625	Alnus cordata (Italian Alder)	M	12	350	1	4	3	3	4.5	1	<10	Dead	Bad.	Fell tree.	4.2	55.42	U
T	626	Acer pseudoplatanus (Sycamore)	SM	8	280	1	3	3.5	2.5	3	2.5	10+	Fair	Good. Smaller sized tree. Average shape/form. Soil compaction and excavation in root zone.	Monitor tree condition.	3.36	35.47	C2
T	627	Acer pseudoplatanus (Sycamore)	EM	10	400	1	2	4.5	4.5	3.5	4.5	10+	Fair	Fair. Good shape/form. Leaf size small for species. Soil compaction in root zone.	No urgent works needed.	4.8	72.39	C2
T	628	Acer pseudoplatanus (Sycamore)	EM	11	350	1	3	6	5	4	1	10+	Fair	Fair. Fair vitality. Thick Ivy growth on tree stem. Soil compaction in root zone.	No urgent works needed.	4.2	55.42	C2
T	629	Acer pseudoplatanus (Sycamore)	M	8	350	1	3	5	4	4	4	10	Fair/Poor	Fair. Minor dieback in crown. Some sparseness of upper crown. Major compaction in rootzone.	Monitor tree condition.	4.2	55.42	C2
T	630	Tilia cordata (Small-leaved Lime)	EM	13	500	1	1.5	5	5	4	4	20+	Fair	Fair. Medium sized tree. Average shape/form. Suckers around stem base. Soil compaction in root zone. Some tight unions in crown.	Monitor tree condition.	6	113.11	B2
T	631	Tilia cordata (Small-leaved Lime)	EM	13	500	1	1	5	6	4	5	20+	Fair	Fair. Medium sized tree. Average shape/form. Suckers around stem base. Soil compaction in root zone. Some tight unions in crown.	Monitor tree condition.	6	113.11	B2
T	632	Acer pseudoplatanus (Sycamore)	EM	12	300	1	2.5	4	4	4	4	10+	Fair	Fair. Medium sized tree. Upright form. Tree has large Poplar branch in crown. Brambles around stem base.	Remove Poplar branch. Clear brambles and review base.	3.6	40.72	C2
T	633	Acer pseudoplatanus (Sycamore)	EM	8	300	1	1.5	3	4	2	3	10	Poor	Fair. Smaller sized tree. Upright form. Epicormic growth on stem. Suckers around stem base. Minor dieback in crown. Some sparseness of upper crown. Leaf size small for species. Soil compaction in root zone.	Monitor tree condition.	3.6	40.72	C2
T	634	Acer pseudoplatanus (Sycamore)	EM	11	396	2	0.5	3	3.5	4	4	10+	Fair	Fair. Thick Ivy and bramble growth on tree stem. Epicormic growth on stem. Twin stem from ground level. Spoil in rootzone.	Clear Ivy and brambles and review base.	4.75	70.89	C2

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T	635	Acer pseudoplatanus (Sycamore)	EM	13	350	1	2.5	2	3.5	3	4	10+	Fair	Fair. Smaller sized tree. Upright form. Some previous root damage. Asymmetric crown. Ivy on stem.	No urgent works needed.	4.2	55.42	C2
T	636	Acer pseudoplatanus (Sycamore)	EM	13	380	1	3	5	4	5	5	10+	Fair	Fair. Medium sized tree. Average shape/form. Soil compaction and excavation in root zone.	No urgent works needed.	4.56	65.33	C2
T	637	Acer pseudoplatanus (Sycamore)	EM	15	400	1	3	5	4	5	6	10+	Fair	Fair. Medium sized tree. Some sparseness of upper crown.	No urgent works needed.	4.8	72.39	C2
T	638	Populus X canadensis (Hybrid Black Poplar)	M	27	650	1	0	6	4	4	6	10+	Poor	Fair/Poor. Large specimen tree. Upright form. Epicormic growth on stem. Suckers around stem base. Tree appears to be under some stress. Spoil built up in rootzone.	Crown reduce and remove spoil if retained.	7.8	191.16	C2
T	639	Acer pseudoplatanus (Sycamore)	M	15	500	1	2	6	5	4	5	10+	Fair	Fair. Fair vitality. Medium sized tree. Spoil built up in rootzone.	Remove spoil if retained.	6	113.11	C2
T	640	Acer pseudoplatanus (Sycamore)	EM	14	300	1	2.5	4	2	2	4	10	Poor	Fair. Slender form. Suckers around stem base. Sparse crown. Spoil built up in rootzone.	Consider coppicing to allow regeneration of fresh growth.	3.6	40.72	U
T	641	Populus alba (White Poplar)	M	17	500	1	4	7	2	5	6	10	Poor	Fair/Poor. Storm damaged branches in crown. Unbalanced crown shape. Dieback in crown. Major deadwood in crown. Spoil built up in rootzone. Poor form/shape.	Target prune broken/damaged branches and crown reduce by 4m.	6	113.11	C2
T	642	Populus X canadensis (Hybrid Black Poplar)	M	26	650	1	0	8	4	7	8	10+	Fair	Fair. Large specimen tree. Upright form. Epicormic growth on stem. Some pruning wounds on stem. Asymmetric crown. Vulnerable to storm damage. Spoil built up in rootzone.	Crown reduce. Remove spoil.	7.8	191.16	C2
T	643	Fraxinus excelsior (Ash)	SM	15	200	1	4	5	2	2	2	10	Poor	Fair. Slender form. Upright form. Minor deadwood in crown. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	2.4	18.1	C2
T	644	Fraxinus excelsior (Ash)	SM	15	250	1	1.5	5	3	2	3	10	Poor	Fair. Smaller sized tree. Asymmetric form due to group competition. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	3	28.28	C2
T	645	Fraxinus excelsior (Ash)	SM	15	300	1	2	6	3	3	3	10	Poor	Fair. Medium sized tree. Asymmetric form due to group competition. Scattered minor deadwood. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	3.6	40.72	C2

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Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	646	Fraxinus excelsior (Ash)	SM	15	450	1	0.5	4	3	2	5	10	Poor	Fair. Asymmetric form due to group competition. Scattered minor deadwood. Previously topped. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	5.4	91.62	C2
T	647	Populus X canadensis (Hybrid Black Poplar)	M	27	700	1	0	5	4	6	7.5	10+	Fair	Fair. Large specimen tree. Some pruning wounds on stem. Asymmetric crown. Spoil built up in rootzone. Becoming vulnerable to storm damage.	Consider crown reduction to reduce liability to storm damage.	8.4	221.7	C2
T	648	Fraxinus excelsior (Ash)	EM	15	300	1	2	4	5	3	2	10	Poor	Fair. Medium sized tree. Upright form. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	3.6	40.72	C2
T	649	Fraxinus excelsior (Ash)	EM	15	320	1	3	6	7	5	3.5	<10	Poor	Fair. Medium sized tree. Dieback and deadwood in crown. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	3.84	46.33	U
T	650	Populus X canadensis (Hybrid Black Poplar)	M	29	650	1	9	6	6	6	4	20+	Fair	Fair. Large specimen tree. Upright form. Epicormic growth on stem. Thick brambles around base.	Clear brambles and review stem base.	7.8	191.16	B2
T	651	Fraxinus excelsior (Ash)	EM	15	350	1	2	6	5	2	3	10	Poor	Fair. Suppressed by neighbouring trees. Thick Ivy growth on tree stem. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	4.2	55.42	C2
T	652	Populus X canadensis (Hybrid Black Poplar)	M	23	700	1	2	7	8	7	4	10+	Fair	Fair. Large specimen tree. Thick Ivy growth on tree stem. Some long extended limbs.	Cut Ivy around stem base. Crown reduce. Prune to reduce weight of extended branches.	8.4	221.7	C2
T	653	Populus alba (White Poplar)	M	18	700	1	0	5	4	11	5	<10	Poor	Poor. Large tree of poor shape & form. Epicormic growth on stem. Storm damaged branches in crown with hazard beam crack on large scaffold limb. Asymmetric crown with some long extended limbs.	Fell tree.	8.4	221.7	U
T	654	Salix caprea (Goat Willow)	SM	3	220	1	0	3	2	2	3	10	Fair	Poor. Smaller sized tree. Suckers around stem base. Snapped off at 1m.	Coppice to allow regeneration of fresh growth.	2.64	21.9	U
T	655	Populus X canadensis (Hybrid Black Poplar)	M	27	650	1	3	7	7	7	5	10+	Fair	Fair. Large specimen tree. Upright form. Suckers around stem base. Compacted soil and spoil built up in root zone.	Restore soil levels. Crown reduce.	7.8	191.16	C2

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T	656	Populus X canadensis (Hybrid Black Poplar)	M	27	650	1	0	4	8	6	5	10+	Fair	Fair. Fair vitality. Large specimen tree. Upright form. Epicormic growth on stem. Suckers around stem base. Spoil very close to tree stem. Some storm damage.	Restore soil levels. Crown reduce.	7.8	191.16	C2
T	657	Populus X canadensis (Hybrid Black Poplar)	M	27	700	1	1.5	4	9	6	7	10+	Fair	Fair. Large specimen tree. Thick Ivy growth on tree stem restricts view of main branch unions. Suckers around stem base. Compacted soil and spoil built up in root zone.	Restore soil levels. Crown reduce.	8.4	221.7	C2
T	658	Fraxinus excelsior (Ash)	EM	15	350	1	3.5	2	6.5	6.5	6	10	Poor	Fair. Medium sized tree. Stem divides above 1.5m. Unbalanced crown shape. Asymmetric form due to group competition. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	4.2	55.42	C2
T	659	Populus X canadensis (Hybrid Black Poplar)	M	11	700	1	1.5	6	3	5	2	<10	Fair	Fair. Good vitality. Suckers around stem base. Recent storm damage with tree recently snapped off at 8m, only high stump or natural pollard remains. Compacted soil and spoil built up in root zone.	Coppice to allow regeneration of fresh growth.	8.4	221.7	U
T	660	Populus X canadensis (Hybrid Black Poplar)	M	17	600	1	0	5	5	4	7	10+	Fair	Fair. Medium sized tree. Some sparseness of upper crown. Unbalanced crown shape due to previous suppression. Thick Ivy growth on tree stem. Epicormic growth on stem. Suckers around stem base. Compacted soil and spoil built up in root zone.	Cut Ivy. Restore soil level.	7.2	162.88	C2
T	661	Fraxinus excelsior (Ash)	EM	10	350	1	1.5	3	3	2	4	10	Poor	Fair. Smaller sized tree. Some bark wounds to stem base. Storm damaged branches in crown. Asymmetric form due to group competition. Previously topped. Epicormic growth on branches indicating ADB disease.	Target prune broken/damaged branches. Monitor condition to track progress of ADB disease.	4.2	55.42	C2
T	662	Fraxinus excelsior (Ash)	EM	15	400	1	2	4	3	4	3	10	Poor	Fair. Stem divides above 1.5m. Scattered minor deadwood. Previously topped. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	4.8	72.39	C2
T	663	Fraxinus excelsior (Ash)	EM	15	424	2	0.5	6	4	4	4	10	Poor	Fair. Medium sized tree. Thick Ivy growth on tree stem restricts view of main branch unions. Stem divides below 1.5m. Previously topped. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	5.09	81.4	C2

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T	664	Pinus contorta (Shore Pine)	EM	12	461	2	3	3	2.5	3	3	10+	Fair	Fair. Medium sized tree. Upright form. Ground levels built up within rootzone. Stem divides below 1.5m. Tree leader snapped off at 12m in storms.	Monitor tree condition.	5.53	96.09	C2
T	665	Fraxinus excelsior (Ash)	EM	15	350	1	2	6	5	4.5	3	10	Poor	Fair. Scattered minor deadwood. Epicormic growth on branches indicating ADB disease.	Monitor condition to track progress of ADB disease.	4.2	55.42	C2
T	666	Fraxinus excelsior (Ash)	OM	14	1200	1	4	2	8	4	6	<10	Poor	Poor. Old tree that has been heavily reduced in the past. Significant basal decay. Unable to fully inspect stem due to Ivy. Suckers around stem base. Epicormic growth on branches indicating ADB disease.	Monitor tree condition. Prune periodically to restrict tree size and retain for biodiversity if practicable.	14.4	651.53	U
T	667	Acer pseudoplatanus (Sycamore)	EM	15	400	1	2	6	3.5	3.5	4	20+	Fair	Fair. Medium sized tree. Average shape/form.	No urgent works needed.	4.8	72.39	B2
T	668	Acer pseudoplatanus (Sycamore)	EM	15	350	1	3	3.5	2	3	2	10+	Fair	Fair. Good vitality. Upright form. Suppressed by neighbouring trees. Spoil built up in root zone.	No urgent works needed.	4.2	55.42	C2
T	669	Populus X canadensis (Hybrid Black Poplar)	M	28	700	1	3.5	8	9	10	7	<10	Fair	Poor. Large tree. Recent loss of northern stem at 9m. Thick Ivy growth on tree stem restricts view of main branch unions. Multiple stems above 1.5m. Unbalanced crown shape. Some long extended limbs. Spoil built up in root zone.	Crown reduce significantly if retained. Consider removal as part of good management.	8.4	221.7	U
T	670	Acer pseudoplatanus (Sycamore)	EM	13	450	1	2.5	5	5.5	5	5	10+	Fair	Poor. Good vitality. Medium sized tree. Recent tear out wound from co-dominant stem failure on main stem at 3m. Asymmetric crown. Spoil built up in root zone.	Consider coppicing to allow regeneration of fresh growth.	5.4	91.62	C2
T	671	Acer platanoides (Norway Maple)	EM	18	400	1	2.5	5	5	4	5	10+	Fair	Fair/Poor. Medium sized tree. Squirrel damage to branches in crown. Compacted soil in rootzone.	Target prune branch stubs.	4.8	72.39	C2
T	672	Acer platanoides (Norway Maple)	EM	15	250	1	2	5	2	3	3	10+	Fair	Fair. Asymmetric form due to group competition. Scattered minor deadwood.	No urgent works needed.	3	28.28	C2
T	673	Alnus glutinosa (Common Alder)	EM	17	350	1	0	6	5	8	3	10+	Fair	Fair. Slight lean to stem. Unable to inspect stem due to Ivy. Epicormic growth on stem. Suckers around stem base. Asymmetric form due to group competition.	Remove epicormic growth from around stem base.	4.2	55.42	C2

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T	674	Alnus glutinosa (Common Alder)	EM	17	350	1	0	3	4	6	2	10+	Fair	Fair. Medium sized tree. Suckers around stem base. Asymmetric form due to group competition. Some decay in old wounds to stem base.	No urgent works needed.	4.2	55.42	C2
T	675	Alnus glutinosa (Common Alder)	EM	17	350	1	0	2	6	3	2	10+	Fair	Fair. Medium sized tree. Slight lean to stem. Wood decay in old wound at stem base. Asymmetric form due to group competition.	No urgent works needed.	4.2	55.42	C2
T	676	Alnus glutinosa (Common Alder)	M	17	500	1	0	3	5	5	3	20+	Fair	Fair. Medium sized tree. Slight lean to stem. Suckers around stem base. Asymmetric form due to group competition. Some broken branches.	Crown clean, cut Ivy and review union at 3-4m.	6	113.11	B2
T	677	Acer pseudoplatanus (Sycamore)	EM	16	500	1	2.5	6	6	4.5	5	20+	Good	Fair. Good vitality. Medium sized tree.	No urgent works needed.	6	113.11	B2
T	678	Populus alba (White Poplar)	M	22	450	1	6	6	5	8	5	10+	Fair	Fair. Leaning East. Crooked lower stem and unbalanced crown shape. Minor deadwood in crown.	Crown clean to remover weak deadwood and damaged or diseased branches. Consider crown reduction.	5.4	91.62	C2
T	679	Alnus glutinosa (Common Alder)	M	15	400	1	0	4	2	4	2	10	Poor	Fair. Slender form. Slight lean to stem. Suppressed by neighbouring trees. Ivy restricts view of main branch unions. Epicormic growth on stem.	Cut Ivy around stem base. Reinspect tree when Ivy has died back. Remove epicormic growth from around stem base and review.	4.8	72.39	C2
T	680	Alnus cordata (Italian Alder)	M	18	400	1	2	5	2	4	4	<10	Poor	Fair. Slender form. Slight lean to stem. Some dieback and sparseness of upper crown. Bark wound to stem base.	Crown reduce or coppice.	4.8	72.39	U
T	681	Acer pseudoplatanus (Sycamore)	M	15	450	1	2	5	4	6	6	20+	Fair	Fair. Suppressed by neighbouring trees. Minor deadwood in crown.	No urgent works needed.	5.4	91.62	B2
T	682	Quercus robur (Common Oak)	M	26	900	1	3	9	8	12	8	20+	Fair	Fair. Fair vitality. Large specimen tree of high amenity value. Some deadwood and some epicormic shoots on branching in crown. Tree is borderline category A, however it is possible that some root damage may have been inflicted during adjacent groundworks in relatively recent past.	Monitor tree condition in full leaf.	10.8	366.48	B2
T	683	Quercus robur (Common Oak)	M	19	700	1	3	3	8	4	6	20+	Fair	Fair. Some previous root damage likely as ground levels built up within rootzone. Deadwood in crown. Some previous storm damage.	Monitor tree condition in full leaf.	8.4	221.7	B2

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T	684	Acer pseudoplatanus (Sycamore)	SM	8	300	1	0	3	4	4	3	10+	Fair	Fair. Smaller sized tree. Poor shape & form. Some previous root damage likely. Thick Ivy growth on tree stem. Limited value and potential.	No urgent works needed.	3.6	40.72	C2
T	685	Acer pseudoplatanus (Sycamore)	EM	15	400	1	2	5.5	4	5	4	<10	Fair/Poor	Poor. Low vitality. Medium sized tree. Compacted root-zone. Significant wood decay in old wound at stem base. Some sparseness of upper crown.	Consider coppicing to allow regeneration of fresh growth.	4.8	72.39	U
T	686	Acer pseudoplatanus (Sycamore)	M	20	700	1	3	6.5	5	8	6	20+	Fair	Fair. Large specimen tree. Stem divides above 1.5m. Some sparseness of upper crown.	Monitor tree condition in full leaf.	8.4	221.7	B2
T	687	Acer pseudoplatanus (Sycamore)	EM	18	450	1	2	3	4	4	3	10+	Fair	Fair. Medium sized tree with slight lean to stem. Compacted root-zone. Suckers around stem base. Some pruning wounds on stem. Unbalanced crown shape due to previous suppression. Bark wound to stem base.	No urgent works needed.	5.4	91.62	C2
T	695	Acer pseudoplatanus (Sycamore)	EM	11	450	1	2	4	4	4.5	4	20+	Fair	Fair. Medium sized tree. Average shape/form. Suckers around stem base. Spoil built up in root zone.	No urgent works needed.	5.4	91.62	B2
T	696	Acer pseudoplatanus (Sycamore)	EM	11	450	1	2.5	5	4.5	5	5	20+	Fair	Fair. Good vitality. Medium sized tree. Average shape/form.	No urgent works needed.	5.4	91.62	B2
T	697	Acer pseudoplatanus (Sycamore)	EM	10	300	1	2	4	3	3	4	10+	Fair	Fair. Smaller sized tree. Some pruning wounds on stem.	No urgent works needed.	3.6	40.72	C2
T	698	Acer pseudoplatanus (Sycamore)	SM	9	300	1	2	3.5	3	4	4	10+	Fair	Fair. Smaller sized tree. Small decay cavity on stem.	No urgent works needed.	3.6	40.72	C2
T	699	Acer pseudoplatanus (Sycamore)	SM	6	200	1	2.5	3	2.5	3	3	10+	Fair	Fair. Smaller sized tree.	No urgent works needed.	2.4	18.1	C2
T	700	Acer pseudoplatanus (Sycamore)	EM	14	550	1	3	6.5	7	6	7	20+	Fair	Fair. Medium sized tree. Some previous root damage. Multiple stems above 1.5m.	No urgent works needed.	6.6	136.87	B2
T	701	Fagus sylvatica (Beech)	EM	16	550	1	2	5	6	6	7	20+	Fair	Fair. Some old wounds on stem. Minor deadwood in crown.	No urgent works needed.	6.6	136.87	B2
T	702	Fagus sylvatica (Beech)	EM	16	600	1	2	6	5	3.5	6	20+	Fair	Fair. Medium sized tree. Minor deadwood in crown.	No urgent works needed.	7.2	162.88	B2
T	703	Fagus sylvatica (Beech)	EM	16	600	1	0.5	8	5	5.5	5	20+	Fair	Fair. Medium sized tree. Some pruning wounds on stem. Some old wounds on stem.	No urgent works needed.	7.2	162.88	B2

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T	704	Acer pseudoplatanus (Sycamore)	EM	13	350	1	2.5	3	3	3	5	10+	Fair	Fair. Smaller sized tree. Average shape/form. Some bark wounds to stem base. Small decay pocket at stem base.	No urgent works needed.	4.2	55.42	C2
T	705	Acer pseudoplatanus (Sycamore)	EM	14	450	1	2	5	3.5	5	5	20+	Fair	Fair. Good vitality. Fair vitality. Average shape/form. Some pruning wounds on stem.	No urgent works needed.	5.4	91.62	B2
T	706	Acer pseudoplatanus (Sycamore)	EM	15	350	1	3	3	4.5	5.5	6	20+	Fair	Fair. Average shape/form. Stem divides above 1.5m.	No urgent works needed.	4.2	55.42	B2
T	707	Acer pseudoplatanus (Sycamore)	EM	12	400	1	3	4.5	6.5	4.5	6	20+	Fair	Fair. Medium sized tree. Suckers around stem base. Some bark wounds to stem base. Small decay pocket at stem base. Asymmetric form due to group competition.	No urgent works needed.	4.8	72.39	B2
T	708	Acer pseudoplatanus (Sycamore)	EM	16	500	1	4	7	5	6.5	5	20+	Fair	Fair. Medium sized tree. Dieback in crown. Some sparseness of upper crown. Leaf size small for species. Minor deadwood in crown. Spoil built up in root zone.	Monitor tree condition.	6	113.11	B2
T	709	Acer pseudoplatanus (Sycamore)	EM	15	450	1	2.5	5	4.5	5	5	20+	Good	Fair. Good vitality. Medium sized tree. Asymmetric form due to group competition.	No urgent works needed.	5.4	91.62	B2
T	710	Acer pseudoplatanus (Sycamore)	M	17	500	1	2.5	5	7	7	6	10+	Fair	Fair/Poor. Medium sized tree. Some old wounds on stem. Compression fork on main stem. Scattered minor deadwood. Spoil built up in root zone.	Crown reduce by 2-3m.	6	113.11	C2
T	711	Fagus sylvatica (Beech)	EM	19	500	1	0	6	4.5	8	5	20+	Fair	Fair. Medium sized tree. Some pruning wounds on stem. Some old wounds on stem. Scattered minor deadwood. Spoil built up in root zone.	No urgent works needed.	6	113.11	B2
T	712	Fagus sylvatica (Beech)	M	20	600	1	1	5	6	5	7	20+	Fair	Fair. Medium sized tree.	No urgent works needed.	7.2	162.88	B2
T	713	Fagus sylvatica (Beech)	M	20	650	1	0.5	8	5	9	6	20+	Fair	Fair. Large specimen tree. Some sparseness of upper crown.	Monitor tree condition.	7.8	191.16	B2
T	714	Chamaecyparis lawsoniana (Lawson Cypress)	EM	11	400	1	0.5	2	3	2.5	3	10+	Fair	Fair. Smaller sized tree.	No urgent works needed.	4.8	72.39	C2
T	716	Acer pseudoplatanus (Sycamore)	M	17	700	1	0	6	6	5.5	6	20+	Good	Fair. Good vitality. Mature tree with spreading form close to boundary wall. Ivy restricts view of main branch unions.	Cut Ivy around stem base. Reinspect tree when Ivy has died back.	8.4	221.7	B2

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T	717	Populus X canadensis (Hybrid Black Poplar)	M	21	650	1	1	5	6	6	4.5	10+	Fair	Poor. Larger tree. Previously topped, with regrowth now becoming storm damaged. Thick Ivy growth restricts view of main branch unions.	Recut or pollard if retained. Borderline category U.	7.8	191.16	C2
T	718	Acer pseudoplatanus (Sycamore)	EM	16	450	1	1	3	3.5	4	3	10+	Fair	Fair. Medium sized tree of upright form. Ivy restricts view of main branch unions. Unable to inspect stem due to Ivy. Squirrel damage to branches in crown. Minor dieback in crown. Fallen stem against tree.	Cut Ivy around stem base. Inspect stem/basal area. Remove fallen stem.	5.4	91.62	C2
T	719	Acer pseudoplatanus (Sycamore)	EM	14	350	1	1	3.5	2	3	3.5	10+	Poor	Fair. Smaller sized tree. Suppressed by neighbouring trees. Ivy restricts view of main branch unions. Squirrel damage to branches in crown. Minor dieback in crown. Excessive Ivy growth in crown.	Cut Ivy around stem base.	4.2	55.42	C2
T	720	Acer pseudoplatanus (Sycamore)	EM	15	350	1	1.5	5	6	4	4	10+	Fair	Fair. Medium sized tree. Thick Ivy growth on tree stem. Squirrel damage to branches in crown. Minor dieback in crown.	Cut Ivy around stem base.	4.2	55.42	C2
T	721	Acer pseudoplatanus (Sycamore)	EM	15	400	1	1.5	2.5	5	3.5	4	10+	Fair	Fair. Medium sized tree. Thick Ivy growth on tree stem. Asymmetric form due to group competition. Squirrel damage to branches in crown.	Cut Ivy around stem base.	4.8	72.39	C2
T	722	Tilia X europaea (Common Lime)	M	20	900 est	1	0	5.5	6	7	6	20+	Fair	Fair. Large specimen tree. Unable to inspect stem due to dense epicormic growth around lower stem. Minor dieback in crown with some sparseness of upper crown. Scattered minor deadwood. Spoil built up in root zone.	Crown clean to remover weak deadwood and damaged or diseased branches. Inspect stem/basal area. Remove spoil.	10.8	366.48	B2
T	723.1 no tag	Alnus glutinosa (Common Alder)	EM	18	450	1	4	5	4	5.5	5	10+	Fair	Fair. Slender form. Upright form. Thick Ivy growth on tree stem. Excessive Ivy growth in crown.	Cut Ivy around stem base.	5.4	91.62	C2
T	1 no tag	Cupressus macrocarpa (Monterey Cypress)	OM	16	1000	1	2	7	6	6	6	<10	Dead	Bad. Large specimen tree. Spreading form. Virtually dead.	Fell tree.	12	452.45	U
T	2	Acer pseudoplatanus (Sycamore)	M	16.5	750 est	1	3	6.5	9	7	6.5	20+	Fair	Fair. Fair vitality. Large specimen tree in grassed area. Thick Ivy growth on tree stem restricts view of main branch unions.	Cut Ivy around stem base. Reinspect tree to check stem base and main union/fork when Ivy has died back.	9	254.5	B2

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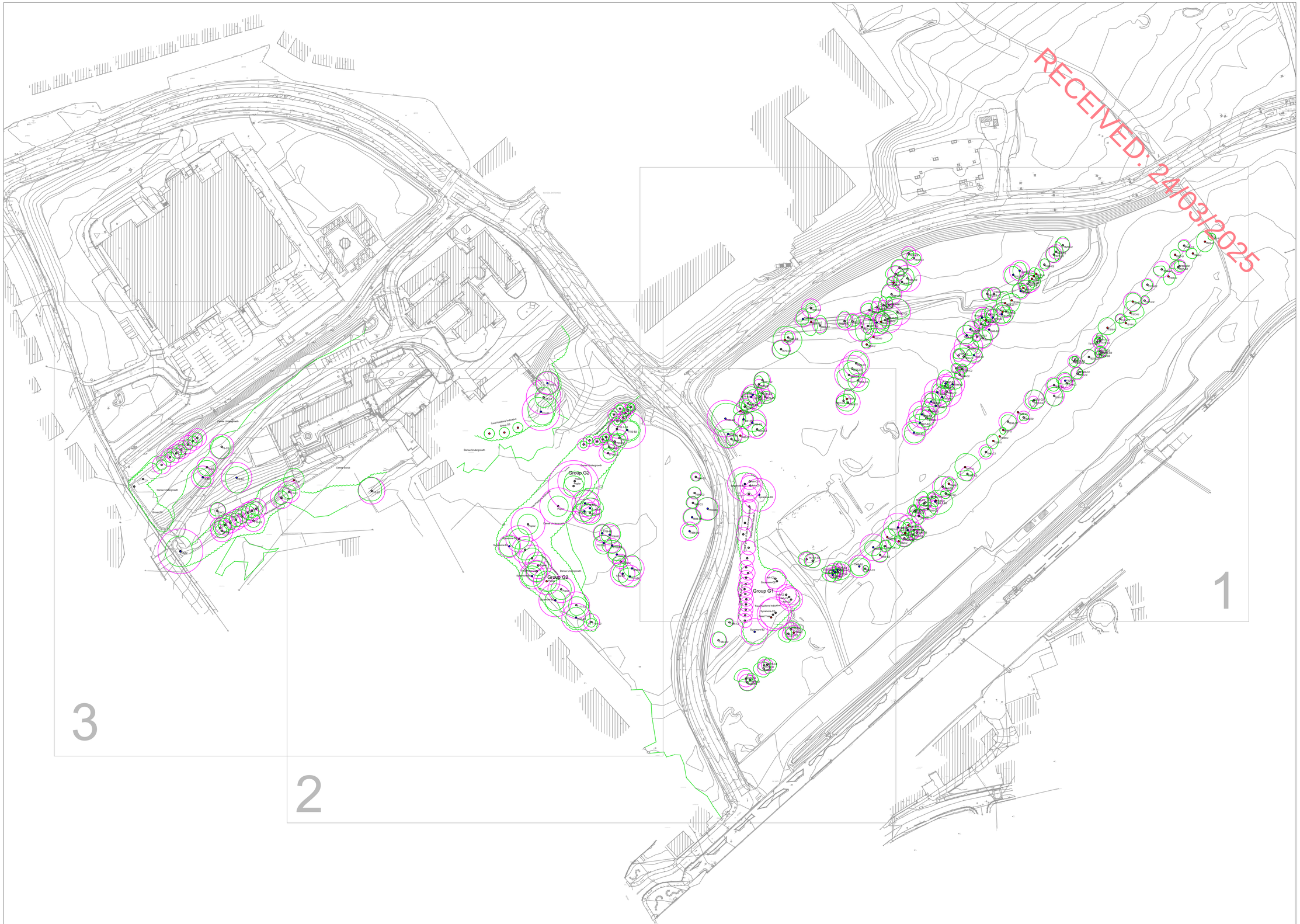
T	3	Aesculus hippocastanum (Horse Chestnut)	M	16	600	1	2	6	7	5	6.5	10+	Fair/Poor	Fair. Medium sized tree. Good shape/form. Thick Ivy growth on tree stem. Wood decay in old wound at stem base. Bleeding canker lesions on stem-branches. Linear bark cracking on stem.	Monitor tree condition.	7.2	162.88	C2
T	4	Fraxinus excelsior (Ash)	M	15	500	1	1	4	5	5	5	10	Poor	Fair. Low vitality. Thick Ivy growth on tree stem. Some sparseness of upper crown. Previously topped. Epicormic growth indicating ADB.	Monitor tree condition. Cut Ivy around stem base.	6	113.11	C2
T	5	Quercus robur (Common Oak)	M	11	550	1	1	6	6	4	5	20+	Fair	Fair. Good vitality. Storm damaged branches in crown. Deadwood in crown.	Crown clean to remover weak deadwood and damaged or diseased branches.	6.6	136.87	B2
T	7	Pinus pinea (Stone Pine)	M	11	1100	3	2	9	9	7	9	20+	Fair	Fair. Mature specimen tree with spreading form typical of species. High profile location by boundary wall and busy public road. Surrounded by rubbish.	Clear rubbish and inspect stem base for possible defects.	13.2	547.46	B2
T	8	Salix caprea (Goat Willow)	EM	4	394	5	0	5	3	5	4	10+	Fair	Fair. Smaller sized tree that has been recently cut back severely. Multiple stems below 1.5m.	No urgent works needed.	4.73	70.3	C2
T	9	Acer pseudoplatanus (Sycamore)	EM	12	532	4	0	4	4	4	4	10+	Fair	Fair. Growing on edge of ditch. Self-sown young tree. Multiple stems below 1.5m.	No urgent works needed.	6.38	127.89	C2
T	10	Acer pseudoplatanus (Sycamore)	EM	12	532	4	0	4	4	4	4	10+	Fair	Fair. Growing on edge of ditch. Self-sown young tree. Multiple stems below 1.5m.	No urgent works needed.	6.38	127.89	C2
T	11	Acer pseudoplatanus (Sycamore)	EM	12	532	4	0	4	4	4	4	10+	Fair	Fair. 2x Sycamore stools growing on edge of ditch. Multiple stems below 1.5m.	No urgent works needed.	6.38	127.89	C2
T	12	Acer pseudoplatanus (Sycamore)	M	16	650	1	2	8	6	6	8	10+	Fair	Fair. Fair vitality. Medium sized tree in scrubland. Thick Ivy growth on tree stem.	No urgent works needed.	7.8	191.16	C2
T	13	Fagus sylvatica (Beech)	M	17	550	1	1	7	7	7	7	20+	Fair	Fair. Large specimen tree at edge of wooded area. Compacted root-zone to east, with some previous root damage possible. Minor dieback in crown. Some sparseness of upper crown.	Monitor tree condition.	6.6	136.87	B2
T	14	Thuja plicata (Western Red Cedar)	M	16.5	850	1	0	6	6	6	5	10+	Poor	Fair/Poor. Low vitality. Large specimen tree with major bark wounds to lower stem and some storm damaged branches in crown.	Crown clean to remover weak deadwood and damaged or diseased branches.	10.2	326.89	C2

Tree Survey Schedule
Ballymore Development Lands
Bray, Co. Wicklow
February 2024

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
T	15	Acer pseudoplatanus (Sycamore)	M	16	923	6	1	9	8	7	7	20+	Good	Fair. Good vitality. Large mature tree at woodland edge. Multiple stems below 1.5m.	No urgent works needed.	11.1	385.73	B2
G	1	Acer pseudoplatanus (Sycamore) Fraxinus excelsior (Ash) Pinus contorta (Shore Pine) Sorbus aucuparia (Rowan) Larix (Larch) Eucalyptus spp. Betula Pendula (Silver Birch) Prunus spp. (Cherry)	M EM SM	14 to 18	200 to 750							20+	Fair/Poor	Fair. Wooded area to the west of the site offices. Group includes a cluster of larger mature Ash and Sycamore trees at norther end and around the southern edges of the wood. A closely spaced much younger plantation of mixed species (mostly Ash and Pine) runs along the western side of the wood, parallel to the road. Most of the Sycamore and Pine trees seem to be in fair condition, All of the Ash trees are showing signs of infection by Ash dieback disease (ADB), but the actual extent of crown dieback is relatively low at present. Some dead trees, including a small Cherry and a larger tree at the southern end of the group. Very dense undergrowth and thick Ivy around the older trees making full inspection impractical. Most trees not picked out individually by topographic survey and so stem positions on survey drawing are indicative only.	Clear undergrowth to allow full inspection and assessment of the larger trees. Fell dead stems as necessary. Monitor Ash trees for impact of ADB disease.			C2 B2 U
G	2	Acer pseudoplatanus (Sycamore) Populus X canadensis (Hybrid Black Poplar) Pinus sylvestris (Scots Pine) X Cupressocyparis leylandii (Leyland Cypress) Alnus glutinosa (Alder)	M	10 to 24	200 to 1200	1	1	6	6	6	6	10+	Fair	Fair/Poor. Mixed group of trees and dense undergrowth along the western edge of the site area west of the link road. Includes several Sycamore trees close to the western boundary but is dominated by a series of large mature Poplar trees. Most of the Poplar trees were previously topped and are now suffering from storm damage. Tree group also includes a mix of younger Pine and Sycamore running east west. The area has seen extensive groundworks which may have impacted some trees; including the better quality mature Lime tree (722) at edge of group. Trees not picked out individually by topographic survey, and heavily overgrown with brambles etc. Stem positions on the survey drawing are indicative only.	Clear undergrowth to allow proper view of tree bases and review. Clear spoil from root zones. The large Poplar trees are unsuited to retention within built up or populated areas should the area be developed. The Poplars should be reduced in height significantly if they are retained.	6.6	136.87	B2 C2 U

Tree Survey Schedule
Ballymore Development Lands
Bray, Co. Wicklow
February 2024

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Area m2	Cat
G	3	Chamaecyparis lawsoniana (Lawson Cypress)	M	9	424	2	0	3	3	3	3	10+	Poor	Fair/Poor. Small group of 3 Cypress trees in derelict ornamental garden area. Multiple stems below 1.5m. Tree at western end of group has a broken stem, the central tree has been badly burned at the base of the stem. Surrounded by dense undergrowth.	Consider removal as part of good management.	5.09	81.4	U
G	4	Cupressus macrocarpa (Monterey Cypress)	EM	14	500	1	1.5	4	4	4	4	10+	Fair	Fair. Linear group probably established as hedge along fence line. Trees in reasonable health but are starting to outgrow site.	No urgent works needed.	6	113.11	C2
G	5	Ulmus glabra (Wych Elm)	EM	6	300	1	0	3	3	3	3	<10	Dead	Bad. Area of self-sown Elm suckering inside the boundary wall. Many dead stems, with Dutch Elm disease widespread.	Coppice dead and dying Elm stems.	3.6	40.72	U
G	6	Ulmus glabra (Wych Elm) X Cupressocyparis leylandii (Leyland Cypress)	EM	14	200 to 450	1	1	3	3	3	3	10+	Fair/Poor	Fair. Linear group along edge of bank. Area heavily overgrown and littered with waste. Some dieback of Elm.	Coppice dying Elm trees. Clear undergrowth from around Cypresses.	5.4	91.62	C2 U



LEGEND

Root Protection Area
Tree Canopy
Tree Stem & Category Colour
T2021-B2
Tree Tag Number & Category
Canopy Extent
G3
Tree Group Number

- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (Poor Condition)

N

W E

S

N O T E S:
Please see Tree Survey Report for further detail.
All drawings to be read in conjunction with the consulting architects and engineers drawings.

Independent Tree Surveys Ltd

Our Lady's Cottage
Drummond
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Co. Laois
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jmorgan@independenttreesurveys.ie
www.independenttreesurveys.ie

Project Name: River Quarter Phase 2, Bray, Co. Wicklow

Drawing Title: Tree Survey/Constraints Plan

Drawing Number: 24005_TS Overview Sheet

Client: Ballymore

Agent:

Date: 19/02/2024

Scale: 1:1000@A1

RECEIVED: 24/03/2025

LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Canopy Extent
- Tree Group Number

T2021-B2

G3

- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (Poor Condition)

1 2 3

N

W E S

N O T E S:
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Project Name: River Quarter Phase 2, Bray, Co. Wicklow

Drawing Title: Tree Survey/Constraints Plan

Drawing Number: 24005_TS Sheet 1

Client: Ballymore

Agent:

Date: 19/02/2024

Scale: 1:500@A1

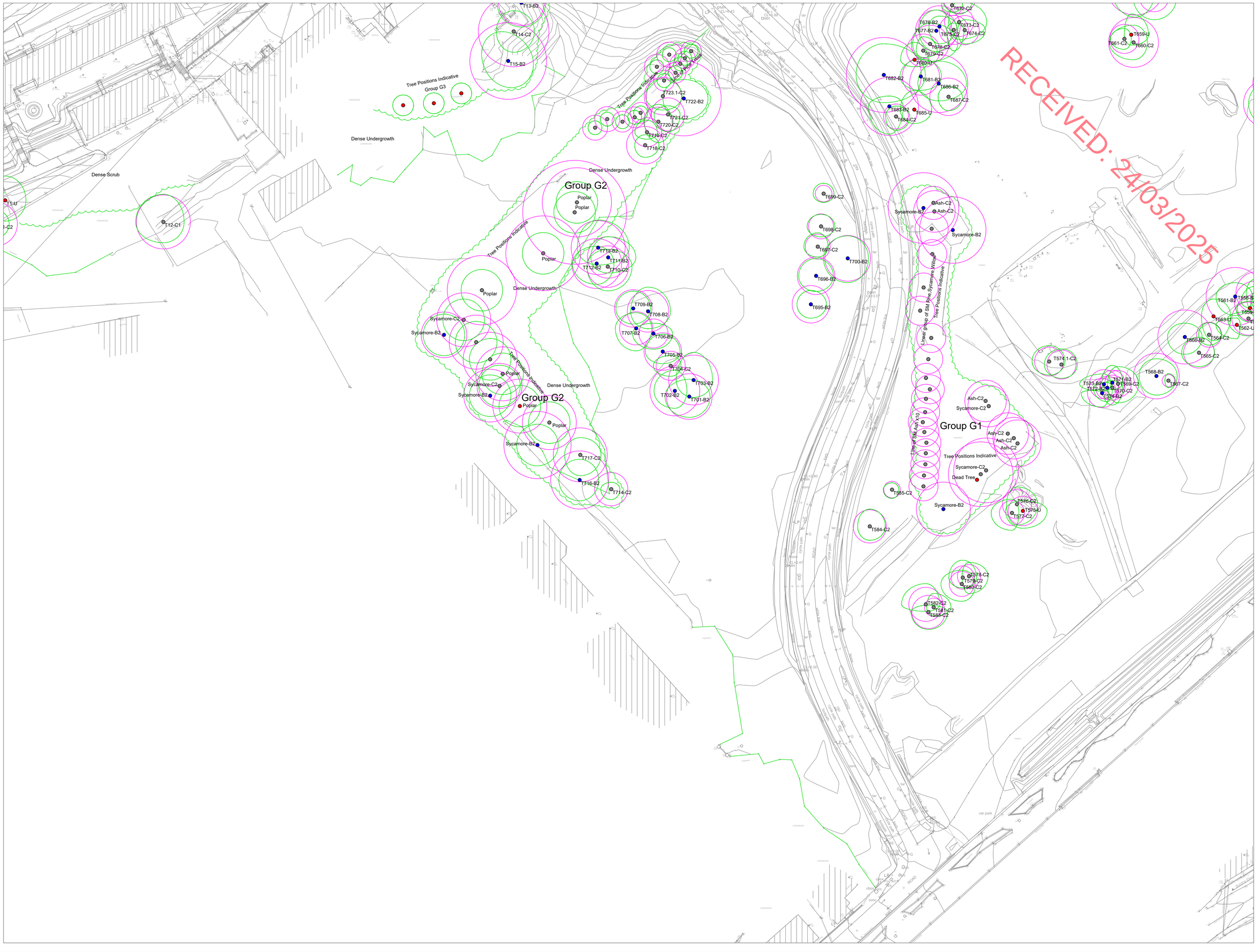
Group G1

Tree Positions Indicative

Lower group of SM Pine, Sycamore, Willow

Line of SM Ash x10

Tree Positions Indicative



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Canopy Extent
- Tree Group Number

T2021-B2

G3

- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (Poor Condition)

N

W E

S

N O T E S:
Please see Tree Survey Report for further detail.
All drawings to be read in conjunction with the consulting architects and engineers drawings.

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Project Name: River Quarter Phase 2, Bray, Co. Wicklow

Drawing Title: Tree Survey/Constraints Plan

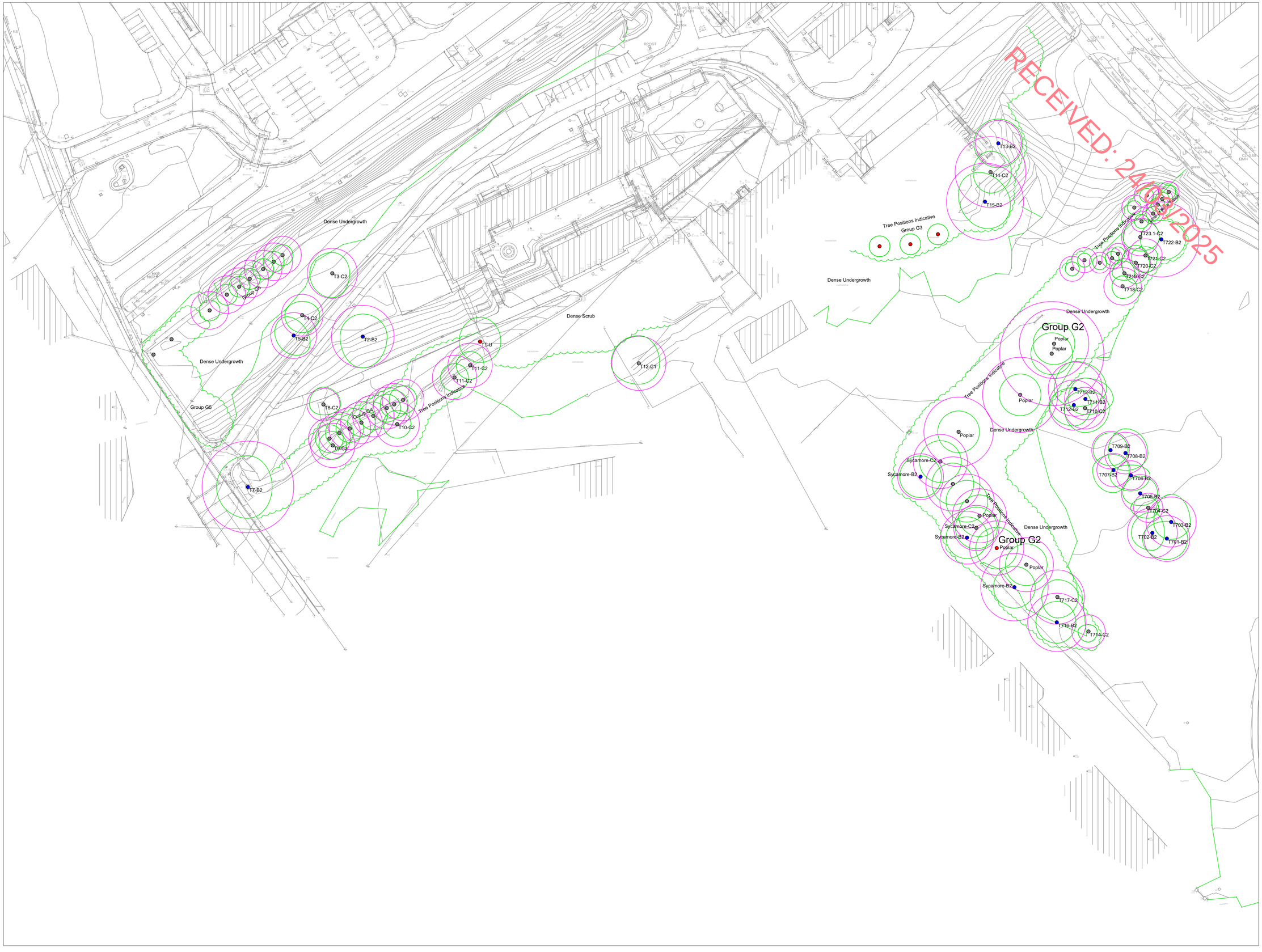
Drawing Number: 24005_TS Sheet 2

Client: Ballymore

Agent:

Date: 19/02/2024

Scale: 1:500@A1



LEGEND

- Root Protection Area
- Tree Canopy
- Tree Stem & Category Colour
- Tree Tag Number & Category
- Canopy Extent
- Tree Group Number

- Category A Trees (high value)
- Category B Trees (moderate value)
- Category C Trees (low value)
- Category U Trees (Poor Condition)

N

NOTES:
Please see Tree Survey Report for further detail.
All drawings to be read in conjunction with the consulting architects and engineers drawings.

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Project Name: River Quarter Phase 2, Bray, Co. Wicklow

Drawing Title: Tree Survey/Constraints Plan

Drawing Number: 24005_TS Sheet 3

Client: Ballymore

Agent:

Date: 19/02/2024

Scale: 1:500@A1

5.2 Bat Survey

AtkinsRéalis

Bat Survey Report

Shankill Property Investments Limited

February 2025

0089313DG0020

SEA GARDENS PHASE 2

Notice

This document and its contents have been prepared and are intended solely as information for Shankill Property Investments Limited Property Investments Limited and use in relation to a Sea Gardens Phase 2.

AtkinsRéalis Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Document history

Document title: Bat Survey Report

Document reference: 0089313DG0020

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0.0	Bat Survey Report	DB	CW	CW	CW	17/02/2025

Client signoff

Client	Shankill Property Investments Limited
Project	SEA GARDENS PHASE 2
Job number	0089313
Client signature/date	

Contents

Tables

Figures

1. Introduction

AtkinsRéalis, on behalf of Shankill Property Investments Limited, are currently delivering engineering and environmental services in respect of a masterplan residential development at Ravenswell, Bray in County Wicklow. As part of these environmental services AtkinsRéalis has undertaken a series of bat surveys within the proposed Sea Gardens Phase 2 development site (hereafter referred to as 'the Site'). The purpose of the bat surveys was to assess how the Site is utilised by bats and to determine if there are any bats roosts within the Site.

This report outlines the findings and results of the bat surveys and advises on the potential impacts the proposed development may have on bats and additionally provides recommendations for minimising potential negative effects so as to allow bats to continue to utilise the local environment.

1.1 Project Background

The proposed residential development is located on the northern side of Bray town centre at approximate grid reference 53°12'29.0"N, 6°06'31.5"W.

The entire Masterplan site is 44 acres (17.8 hectares) in size and is bounded by the Ravenswell Road and the River Dargle to the South; the Dublin Road (R761) to the West; existing residential and commercial developments to the North; and the Dart railway line and coast to the East. Refer to Figure 1-1 below for the boundary of the Masterplan lands.

The overall Masterplan will comprise mixed use development providing approximately 1,200 new homes made up of houses, duplexes and apartments and circa. 20,000 of mixed use retail and commercial space, and associated car parking and site development works. The Masterplan site will be developed via three key phases, namely; Phase 1, Phase 2 and Phase 3.

Phase 1 of the overall Masterplan Development has been partially granted planning permission (ABP planning ref: 311181-21) and is currently under construction, with completion expected in Q4 2025, with the remaining portion of Phase 1 currently under consideration by ABP (planning ref: 314686-22).

Figure 1-1 - Masterplan Lands - Existing Setting

1.2 Sea Gardens Phase 2

The location of the proposed Sea Gardens Phase 2 development is presented in Figure 1-2 below (Phase 2 indicative site boundary denoted in red).

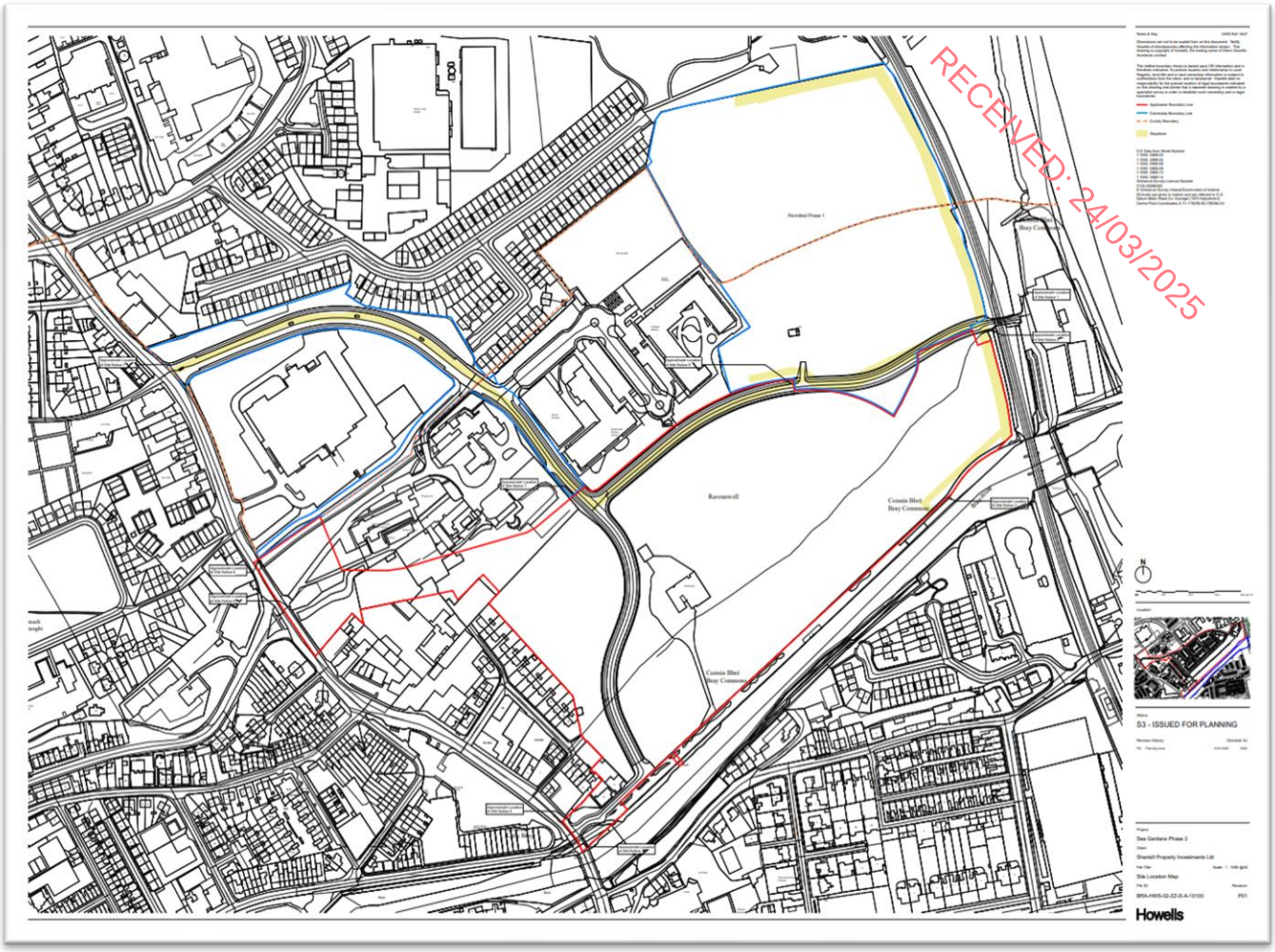

Figure 1-2 - Indicative boundary of Phase 2 Development

Sea Gardens Phase 2 proposes a mixed-use development comprising residential (c. 41,013 sq.m), retail/retail services (c. 8,155 sq.m), and commercial (c. 10,961 sq.m) spaces. The residential component will comprise 341 residential units (94 houses, 106 duplex units, and 141 apartments located in Blocks E and H). In addition, a 3-5 star hotel with 150 bedrooms is proposed in Block I, a public house in Block E, a childcare facility and a medical centre in Block H, and retail/retail services units distributed in Blocks E, G, H and I. The proposed development will also provide private, communal, and public open spaces, along with car and bicycle parking for residents and visitors. An internal road network for vehicles, cyclists, and pedestrians will connect to the existing transport networks. All associated development infrastructure will also be provided, including public lighting, hard and soft landscaping, utilities, drainage, and clearance, demolition and removal of existing structures on site. Building heights proposed are as follows: houses will be 2 storeys, duplex units will be 2-3 storeys, Block E will be 3-15 storeys, Block G will be 1-2 storeys, Block H will be 3-4 storeys and Block I will be 3-7 storeys.

Sea Gardens Phase 2 will complement the permitted Sea Gardens Phase 1A (construction of which is nearing completion) and Phase 1B, as well as the future Phase 3, which will be the subject of a separate application. Phase 3, located adjacent to the River Dargle, is expected to accommodate approximately 362 residential units above a podium, including approximately 14,000 sq.m of retail and other uses. The building heights in Phase 3 will range from 6-9 storeys. This area has been included in the current application for Sea Gardens Phase 2 to allow for temporary use during construction for storing materials and site facilities.

The overall objective of this report is to assess the effects the proposed Phase 2 Sea Gardens development will have on bats.

1.3 Existing Site Settings

The Site is located within the southern and western portion of the entire Masterplan lands and is accessed via a roadway which was developed as part of Colaiste Raithin and Ravenswell Primary School. The Site is bordered to the north by Colaiste Raithin, St. Philomena's Primary School, Ravenswell Primary School, and the Phase 1 lands which are currently under construction, to the south by the Ravenswell Road and River Dargle, the west by residential properties and to the east by the Dart railway line, a former landfill, and the coastline.

The majority of the Site is greenfield in nature (due to the former use of the site as a golf course), at the time of surveying the derelict golf club building located within the western portion of the Site had been demolished and this area is used as the site compound for the Phase 1 development. The existing roadway bounding the north of the proposed development will be extended west-wards to join the Dublin Road to the west of the proposed development and will be utilised as the access road to the proposed development.

Figure 1-3 illustrates the site layout for the proposed Sea Gardens Phase 2 development.

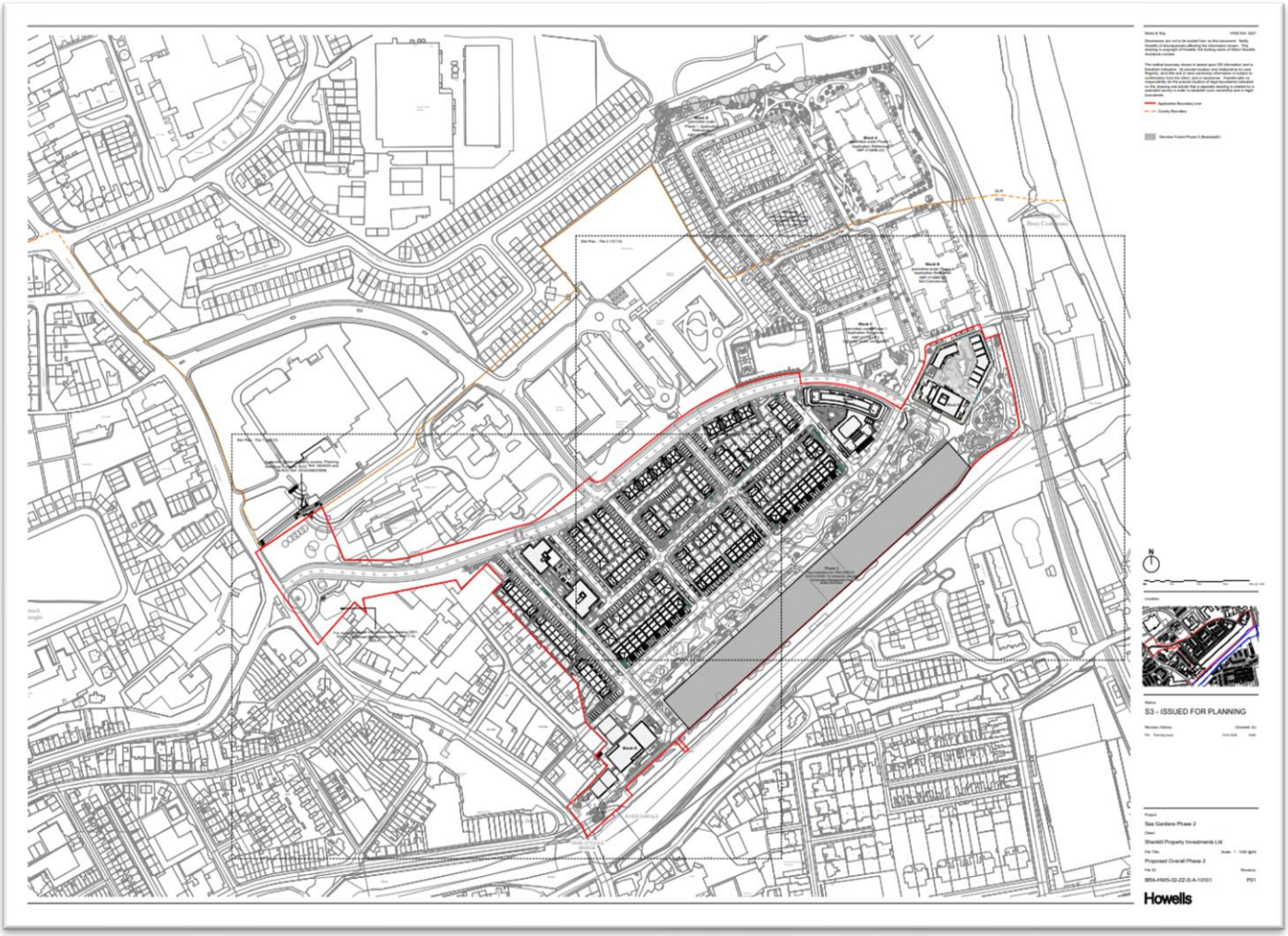

Figure 1-3 - Proposed Sea Gardens Phase 2 Site Layout

2. Legislative Context

All bat species in Ireland are protected under the Wildlife Acts 1976-2012 and are listed in Annex IV of the EU Habitats Directive 92/43/EEC (as amended). It is an offence under Section 23 of the Wildlife Acts 1976-2012 and under Section 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 to kill or to damage or destroy the breeding or resting place of any bat species. Under the Birds and Natural Habitats Regulations it is not necessary that the action should be deliberate for on offence to occur. This places an onus of due diligence on anyone proposing to carry out works that that might result in such damage or destruction.

The following information on legislation and licencing is summarised from Irish Wildlife Manual 134; *Bat Mitigation Guidelines For Ireland – V2*[1];

The Wildlife Acts 1976 to 2021

All bat species are protected under the Wildlife Act 1976 to 2021 which make it an offence to wilfully interfere with or destroy the breeding or resting place of these species. All species of bats in Ireland are listed on Schedule 5 of the 1976 Act, and are therefore subject to the provisions of Section 23, which make it an offence to:

- Intentionally kill, injure or take a bat;
- Wilfully interfere with the breeding or resting place of a bat.

It should be noted that, for the purposes of this legislation, the breeding and resting places of bats are considered to be protected whether bats are actually present in them at the time or not.

European Communities (Birds & Natural Habitats) Regulation 2011-2021

Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("the Habitats Directive") seeks to protect rare and vulnerable species, including all species of bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All species of bat found in Ireland are listed on Annex IV to the Directive. Under Article 12 of the Directive, Member States are required to put in place a system of strict protection for all species listed on Annex IV ('European protected species'). Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is also listed on Annex II to the Directive, requiring the designation of Special Areas of Conservation (SACs) for this species. The Habitats Directive is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011) (as amended) ("the Habitats Regulations"). Under Section 51 of those Regulations, which transposes Article 12 of the Habitats Directive, it is an offence to:

- Deliberately capture or kill a bat in the wild;
- Deliberately disturb a bat particularly during the period of breeding, rearing, hibernation and migration;
- Damage or destroy a bat's breeding site or resting place, or;
- Keep, transport, sell, exchange, offer for sale or offer for exchange any bat taken in the wild, other than those taken legally before the Habitats Directive before the Habitats Directive was implemented.

[1] Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

Derogation Licence

A person may apply to the Minister under Section 54 of the Habitats Regulations for a derogation licence to carry out one or more of the activities prohibited under Section 51. The Minister may only grant such a derogation licence if three criteria are met.

Firstly the Minister may only grant a derogation licence if it is for one of the following specified reasons listed in Regulation 54:

- In the interests of protecting wild fauna and flora and conserving natural habitats;
- To prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property;
- In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and the beneficial consequences of primary importance for the environment;
- For the purpose of research and education, of repopulating and introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants, or;
- To allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of bats.

Secondly, the Minister may only issue a derogation if there is no alternative to carrying out the prohibited activity. The first aim of the developer, whether from a private company or a public authority, working with professional advice, should be to entirely avoid any potential impact of a proposed development on bats and their breeding and resting places. Alternatives may involve redesigning a development so that bat roosts, and associated commuting routes and feeding areas are kept intact and that bats are not disturbed, for example by inappropriate lighting. It should be noted that the European Commission has a specific understanding of satisfactory alternative solution. “An alternative solution cannot be deemed unsatisfactory merely because it would cause greater inconvenience or compel a change in behaviour” (European Commission, 2021, page 13)[2]. Decisions about what solution is satisfactory must be science-based and should solve the problem of how to strictly protect the bats in light of the development.

Thirdly the Minister may only grant a derogation if it is not detrimental to the maintenance of the populations of bats at a favourable conservation status (FCS) in their natural range. There is case law from the Court of Justice of the European Union (CJEU) to back this up. One example is the Finnish Wolf Case C-674/17. The ruling establishes that the Member State must “clearly and precisely” identify in the derogation what the objectives of the derogation are. It must also establish that the derogation is capable of achieving those objectives and demonstrate that there is no satisfactory alternative. Cumulative effects of derogations must be taken into account when issuing derogations. The maximum number of all derogations must not be detrimental to the maintenance or restoration of the population at FCS. Consideration must be given to other human causes of mortality. Any risk to FCS must be ruled out by detailed conditions based on the level of population, its conservation status and its biological characteristics. The conditions must be precisely defined and they must be monitored to ensure they are implemented.

If any of these three criteria are not satisfied, the Minister cannot issue a derogation licence. It must never be assumed that a derogation licence will automatically be granted.

[2] https://op.europa.eu/en/publication-detail/-/publication/bbc7ace0-27e2-11ec-bd8e-01aa75ed71a1/language-en

3. Methodology

This section details the methodologies used for bat surveys undertaken within and around the development site. Surveys were undertaken in line with; *Bat Surveys for Professional Ecologists: Good Practise Guidelines (4th edition).*

Activity Surveys

A bat activity survey is conducted to determine the presence or absence of bats on a site and if present what the site is being used for (i.e. commuting, foraging, breeding etc).

A bat activity survey is conducted between April and October and must be conducted when temperatures are above 10°C, dry conditions and minimal wind. The survey is started 15 minutes before sunset (30 minutes in woodland) and is completed two hours after sunset. Environmental factors listed above, and the cloud cover and any potential constraints are to be recorded for the survey.

A surveyor uses a handheld bat detector (Echo Meter Touch Pro) to record and identify the species of bat present and coupled with sightings the behaviour can be identified.

A transect of the suitable habitat is walked by the surveyor with their detector noting the locations, species and behaviours of the bats. Larger locations can require multiple surveyors to ensure accuracy of recording.

As part of this survey two static bat detectors were placed on site to record bat activity in the absence of a surveyor.

On completion of the survey the data is analysed from the handheld and static detectors.

Emergence Surveys

A bat emergence survey is conducted to determine the presence or absence of roosting in a structure.

The bat emergence survey is conducted between April and October and must be conducted when temperatures are above 10°C, dry conditions and minimal wind. The survey commences 15 minutes before sunset (30 minutes in woodland) and is completed 90 minutes after sunset. Environmental factors listed above, and the cloud cover as well as any potential constraints are to be recorded for the survey.

Static Detectors

A static bat detector is left on a site to record bat echolocation calls without a bat surveyor present. This allows for baseline data of the site to be recorded and later examined by a suitably trained ecologist.

3.1 Statement of Authority

Daniel Blake (AtkinsRéalis) has a degree in Wildlife Biology and has been working in the environmental consultancy sector for the past six years. He has worked in both large scale government infrastructure projects as well as domestic projects across the UK and Ireland conducting both environmental and ecological roles. Primarily conducting protected species surveys such as bats, badgers, birds, reptiles, small mammals and amphibians as well as invasive species surveys. He has also earned a Natural England licence for the survey of Great crested newt. He has been involved in habitat surveying and assisted in the writing of Appropriate Assessments, Preliminary ecological appraisals and protected species reports. Throughout his career he has acted as an ECoW for numerous sites to ensure

environmental laws and practices are met. He has been involved in water and soil sampling surveys, levelling surveys and creation of hibernaculum.

Daniel Blake has been conducting and leading a variety of bat works for over 6 years from initial assessment of sites to surveying and monitoring for a variety of small and large-scale projects across the UK and Ireland. These projects ranged from small scale home assessments to large scale projects such as HS2 and network rail. Daniel has experience in assessing building, bridges, trees and other structures for bat suitability and planning, leading and conducting bat emergence and bat activity surveys. On completion of these works he is experienced in assessing and reporting bat data.

Kevin Coogan (AtkinsRéalis) has a BSc (Hons) in Zoology from University College Dublin. He was developed ecological surveying skills through country-wide small river sampling experience, as well as habitat evaluation experience in Spain. He has volunteer experience in bird surveying on North Bull Island SPA and Ireland's Eye SPA.

3.2 Desk Review

A desktop review was carried out in order to gather all available records for bat species that have been recorded in the vicinity of the Site. The review consisted of gathering records held by the National Biodiversity Data Centre's (NBDC) online database, last accessed 16/10/2024, and viewing the site remotely using aerial photography (via GoogleEarth and Bing Maps) as well as from street level using Google StreetView.

3.3 2020 Site Surveys

The overall Masterplan lands was subject to bat surveys in 2020 by Dr Tina Aughney. The findings of these 2020 surveys are summarised in this report. Summary findings are taken from the 2020 survey report; Aughney, T. (2020) *Bat Assessment prepared for Proposed Planning Application*.

3.4 2024 Site Surveys

The overall Site was visited on five occasions for bat surveys during 2024. Two bat emergence surveys were conducted on the trees which previously were determined as having bat roosts in 2020 (see 2020 survey details in Section 4.2 below) and bat activity surveys were undertaken on 3 no. transects across the Site as illustrated in Figure 3-1 below. Dates of Site surveys are presented in Table 3-1 below.

Table 3-1 - Bat Survey Dates

Emergence Survey 1	25/06/2024
Emergence Survey 2	17/07/2024
Activity Transect 1	26/06/2024
Activity Transect 2	02/07/2024
Activity Transect 3	03/07/2024

In addition to bat activity and bat emergence surveys, two static bat detectors were left on Site for 18 days to gain additional bat data between the following dates; 02/07/2024 and the 19/07/2024. One of these statics was placed in the location of the previously found roosts and along a treeline located between Transect 2 and 3 as illustrated in Figure 3-1 below.

Figure 3-1 - Location of Transects and Surveyed Trees

3.5 Survey Limitations

There were no limitations to the surveys in terms of the following: -

- Bat surveys were undertaken during June and July which is within the seasonally appropriate window.
- Weather conditions; an unexpected drizzle occurred on the 02/07/24 bat survey, bats were recorded both before and after this drizzle and thus is not being considered a limitation on the survey.
- Personal competence (qualifications, training, skills and experience); and,
- Time spent surveying.

4. Results

4.1 Desktop Research

A search of the National Biodiversity Data Centre showed the following bat species recorded on Site in 2020:

- Common Pipistrelle (*Pipistrellus pipistrellus*),
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Daubenton's Bat (*Myotis daubentonii*)
- Lesser Noctule (*Nyctalus leisleri*)

4.2 2020 Survey Findings

In 2020 Dr Tina Aughney was commissioned by Atkins to undertake bat surveys within the overall Masterplan lands. The Masterplan lands were surveyed for evidence of bat activity during July-August 2020. Bat surveys assessed the Masterplan lands for evidence of roosting, feeding and commuting bats and included Tree Potential Bat Roost (PBR) Surveys, Static Detector Surveys, Dusk and Dawn Bat Surveys, Walking Transects and Building Inspections. The landscape value for bats was also considered (after e.g. Entwhistle et al., 2001; etc.), while lighting proposals were also reviewed.

The information presented in this section of the report provides a summary of the findings of the 2020 bat surveys and assessment. Bat surveys not only recorded bat activity and surveyed for bat roosts but also assessed the Masterplan lands and the wider area for potential bat foraging habitats and potential bat commuting routes. In order to understand bat movements and activity in the wider environs surveys also encompassed areas outside of the project site including the woodlands around Rathmichael Stream (north of the Masterplan lands), golf club lands and the dark corridor of the River Dargle (south of the Phase 2 Site boundary) and old buildings and structures.

Bat species recorded within the Masterplan lands are noted to be: Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bat (*Nyctalus leisleri*). Outside of the Masterplan lands, along the River Dargle a fourth bat species was recorded; Daubenton's bat (*Myotis daubentonii*).

The PBR survey identified 6 no. trees within the Phase 1 development site which had the potential to be utilised as bat roosting habitat. All 6 no. trees (species noted to be 2 no. semi-mature Poplar and 4 no. mature Sycamore) are within the grasslands / central area of the Phase 1 site. In regard to bat usage, all 6 no. trees are assessed as having 'Low-Medium' potential of having bat roosts present.

In 2020 within the Phase 2 Sea Gardens Site, 2 no. oak trees had confirmed bat roosts (species noted to be Common pipistrelle). Surveying indicated that there was a Common pipistrelle roost as well as a likely Leisler's bat roost site in buildings within lands outside of the Site (old school buildings / near St John of God's lands).

Common pipistrelle was the most frequently recorded bat species during 2020 surveys. Activity was concentrated along treelines such as those adjacent to the old golf club house (now demolished) and to the north of the Phase 1 site leading into the woodland area of Rathmichael Stream. Soprano pipistrelles were infrequently recorded during walking transect surveys. Leisler's bats was the second most frequently encountered bat species and again activity was concentrated along treelines.

Common pipistrelle was the most frequently encountered bat species and a medium-high level of bat activity was recorded. Leisler's bats were recorded commuting into the survey area from a north-easterly direction but the early time of detection during the dusk surveys may indicate that some individuals are roosting in close proximity to the

Masterplan lands. A medium level of bat activity was recorded for this species of bat. Whilst Soprano pipistrelles were recorded foraging and commuting within the survey area, the timing of their encounters indicated that they travelled some distance before arriving to forage and therefore the roosting sites are not within the Masterplan lands nor immediately adjacent to it. A low level of bat activity was recorded for this species of bat. Daubenton's bats were only recorded on the River Dargle and this was at a low level of bat activity.

The 2020 survey report concluded that the former golf club lands/ Masterplan lands are an important foraging area for bats and treeline boundaries provide commuting habitat to and from the River Dargle and Rathmichael Stream. The urban areas of Bray town surround the Masterplan lands along the west, north and south, as a consequence, the rivers (and associated habitats) and coastal zone are essential areas which allow bats to commute to the wider landscape to the north and west of Bray urban area.

4.3 2024 Survey Findings

4.3.1 Bat Emergence Surveys

The Bat Emergence Surveys were undertaken to determine if the 2 no. oak trees within the Phase 2 Site, which had confirmed roosting bats in 2020, currently have roosting bats.

Emergence Survey 1

This survey was conducted in the appropriate seasonal window and faced no limitations or constraints, the environmental factors can be seen in Table 4-1 below. A surveyor was placed on each side of the trees observing potential features within the tree. The location of the surveyed trees and positioning of the ecologists is demonstrated in Figure 4-1 below.

No bat emergences were recorded during this survey. No roosting bats were noted within the oak trees. A single Common Pipistrelle was observed during this survey briefly foraging before proceeding west. No other bats were observed during this survey and activity recorded throughout the survey was minimal. This area was noted to be well lit by streetlighting throughout the survey period.

Table 4-1 - Environmental Factors from Emergence Survey 1

Date	**25/06/2024**
Start Time	21:43
Finish Time	23:27
Sunset Time	21:57
Temperature	16 °C
Rain	Dry
Wind	Light air
Cloud Cover	80%

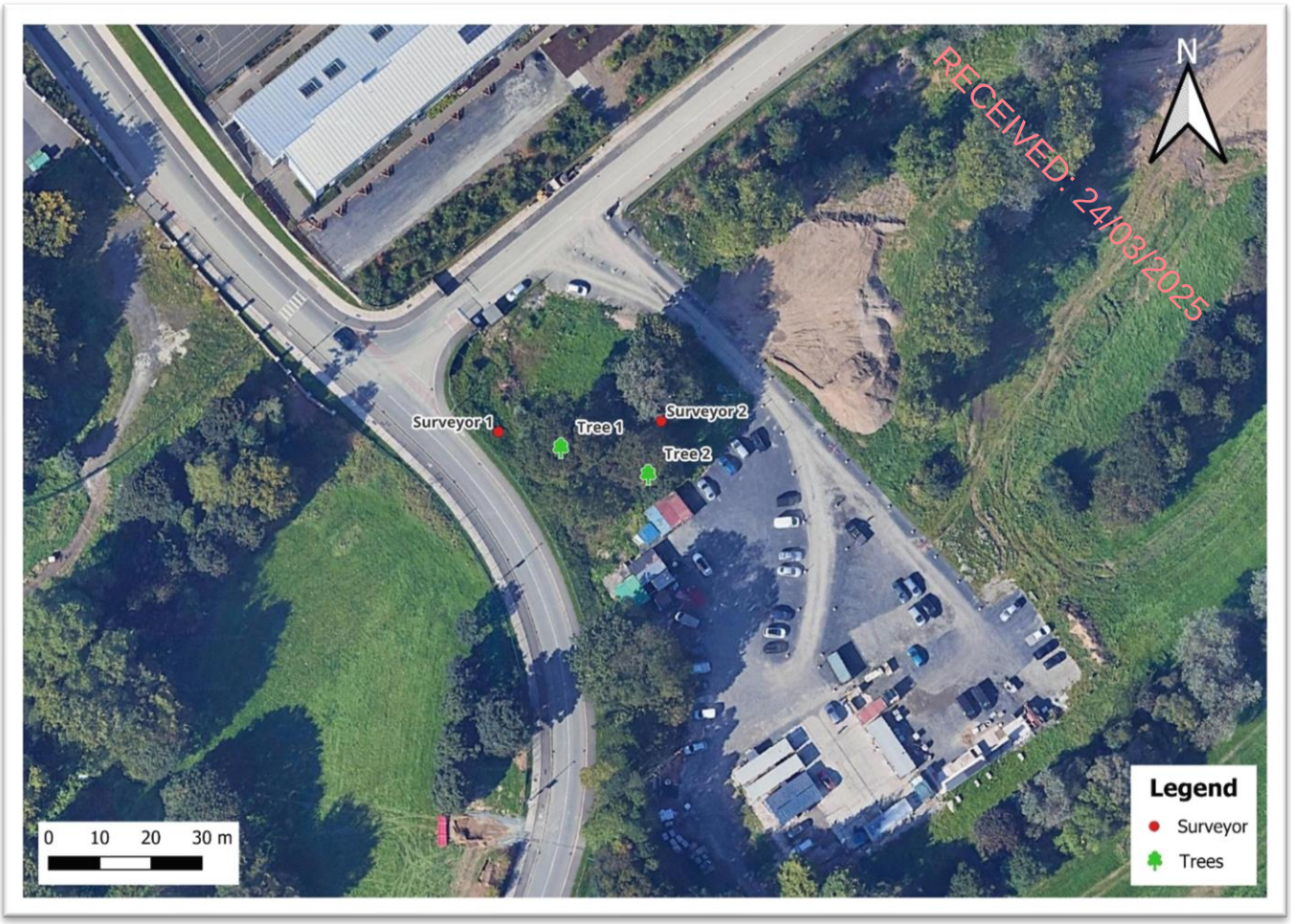

Figure 4-1 - Surveyor Positions and Recorded Activity of Emergence Survey 1

Emergence Survey 2

This survey was conducted in the appropriate seasonal window and faced no limitations or constraints, the environmental factors can be seen in Table 4-2 below. This survey was conducted over three weeks after the first emergence survey as is considered best practice. A surveyor was placed on each side of the trees observing potential features within the tree, this survey moved one surveyor slightly further back onto the road for ease of setting up the survey. This change does not affect the surveyors view nor survey results. Activity from the survey and positioning of the ecologists is demonstrated in Figure 4-2 below.

No bat emergences were recorded during this survey. No roosting bats were noted within the oak trees. Similarly, to the previous emergence survey activity was minimal with a singular Common Pipistrelle observed commuting and a singular Leisler being recorded, this was likely commuting overhead as this is a high flying bat species.

Table 4-2 - Environmental Factors from Emergence Survey 2

Date	**17/07/2024**
Start Time	21:26
Finish Time	23:11
Sunset Time	21:41
Temperature	17 °C

Rain	Dry
Wind	Light air
Cloud Cover	100%

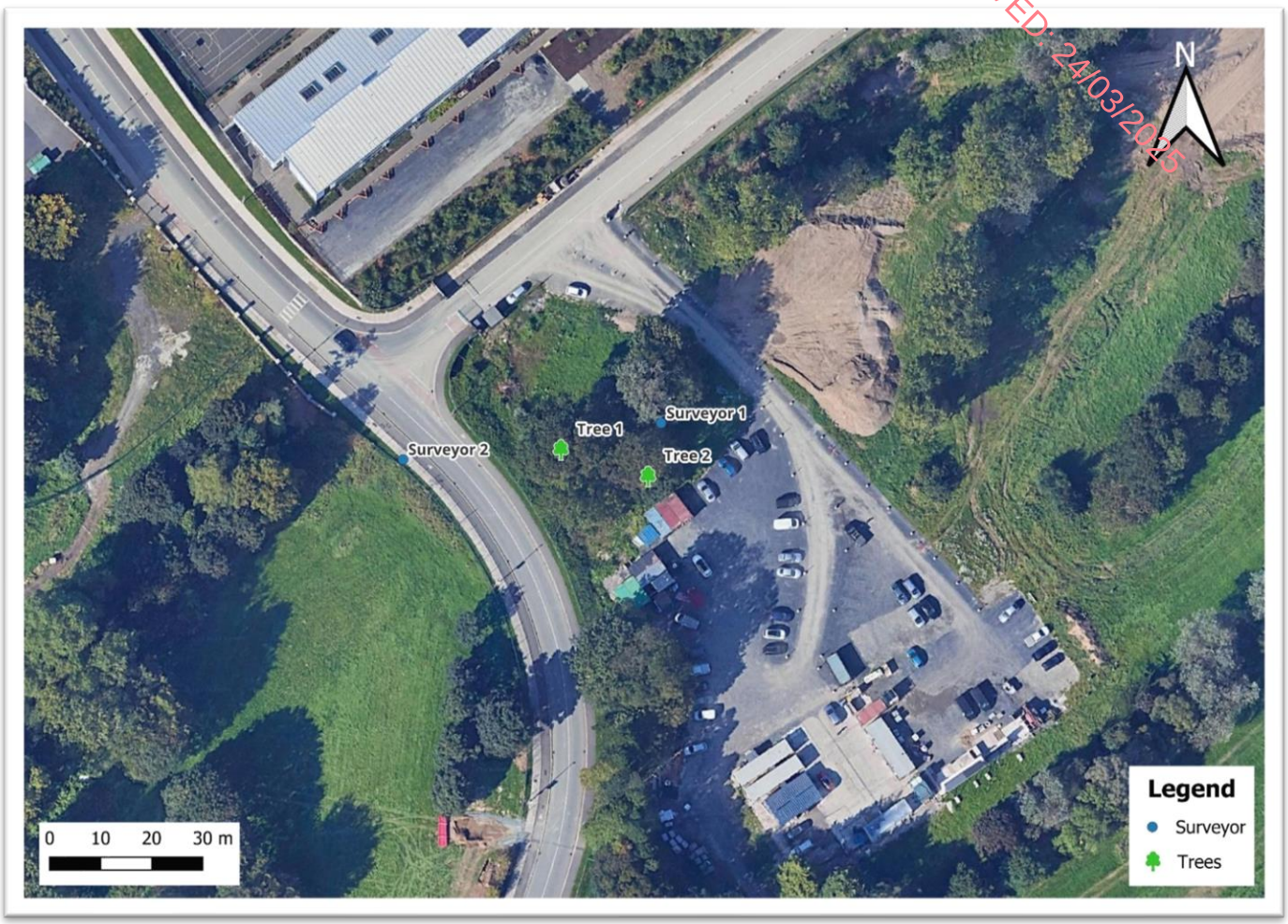

Figure 4-2 - Surveyor Positions and Recorded Activity of Emergence Survey 2

4.3.2 Bat Activity Surveys

Activity Survey of Transect 1

This survey was conducted in the appropriate seasonal window and faced no limitations or constraints, the environmental factors can be seen in Table 4-3 below. Four species of bat were recorded during this survey Common & Soprano Pipistrelles, Leisler's bat and Daubenton's bat. It was noted that the Phase 1 Site compound was lit (for security reasons) throughout the survey but the remainder of the site was naturally darker.

Common & Soprano Pipistrelles were both seen and recorded on Site. There were both instances of foraging and commuting behaviour by these species. Foraging behaviour was observed primarily by the trees north of the Phase 1 Site compound where a single bat foraged and in the grassland south of the central treeline where three bats were observed foraging. Other singular instances of individuals foraging around the treeline were observed.

A Leisler's bat was recorded at the start of the survey but was never directly observed, this would suggest this species is commuting over this Site and as this is a high-flying bat is typically not observed while it commutes. These observations were primarily recorded around the central treeline.

A single recording of a Daubenton's bat was recorded on the Southern boundary of the transect along the River Dargle. This was an individual call, and the bat was not observed within the transect. This species hunts over water so was likely foraging on the river off Site.

The overall bat activity in this area was deemed as low with the treelines deemed most active as commuting routes and foraging areas.

Table 4-3 - Environmental Factors from Activity Survey of Transect 1

Date	**26/06/2024**
Start Time	21:40
Finish Time	23:56
Sunset Time	21:50
Temperature	17 °C
Rain	Dry
Wind	None
Cloud Cover	85%

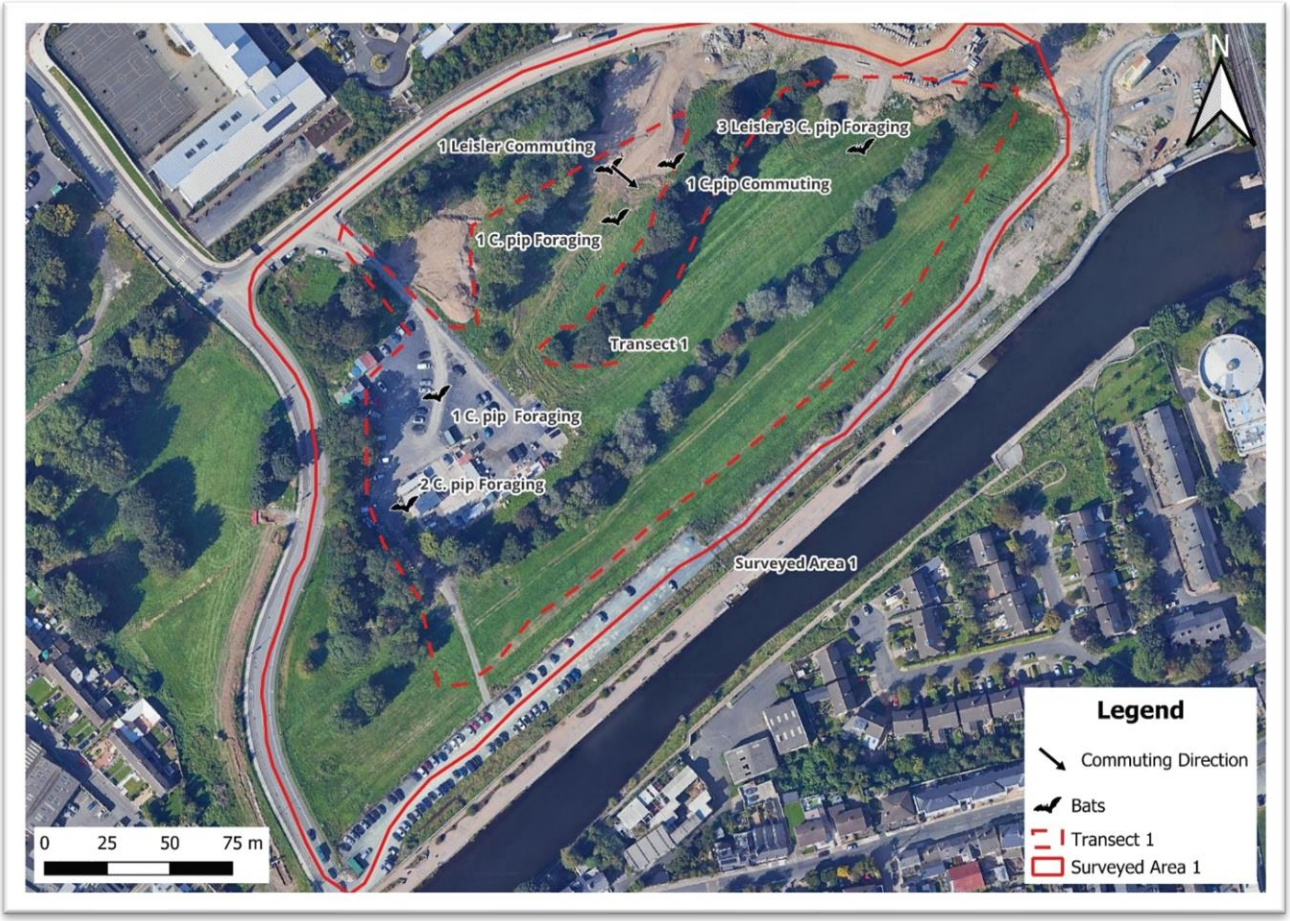

Figure 4-3 - Bat Activity Recorded in Transect 1

Activity Survey of Transect 2

This survey was conducted in the appropriate seasonal window and faced no limitations or constraints, the environmental factors can be seen in Table 4-4 below. A light drizzle occurred during this survey but due to its limited time and its light nature it is not considered a constraint. It was noted the light spill over from the street on the eastern side of the site was observed. Bat activity was noted to be similar both before and after the light drizzle. Two bat species were recorded during the survey Leisler's bat and Common Pipistrelle.

One instance of Leisler's bat was recorded during this survey. This bat was recorded but not observed likely commuting overhead out of eyeline.

Common Pipistrelle was both recorded and observed on Site. Near the commencement of the survey 4 no. pipistrelles were observed foraging along the north-western treeline for approximately thirty minutes in this area. Instances of common pipistrelles were recorded within the night, the locations of these recordings are illustrated in Figure 4-4 below.

Outside of the initial foraging of the pipistrelles at the start of the survey the bat activity on the Site was deemed to be low.

Table 4-4 - Environmental Factors from Activity Survey of Transect 2

Date	**02/07/2024**
Start Time	21:38
Finish Time	23:54
Sunset Time	21:54
Temperature	14 °C
Rain	Light drizzle between 22:30 and 23:00
Wind	Light air
Cloud Cover	100%

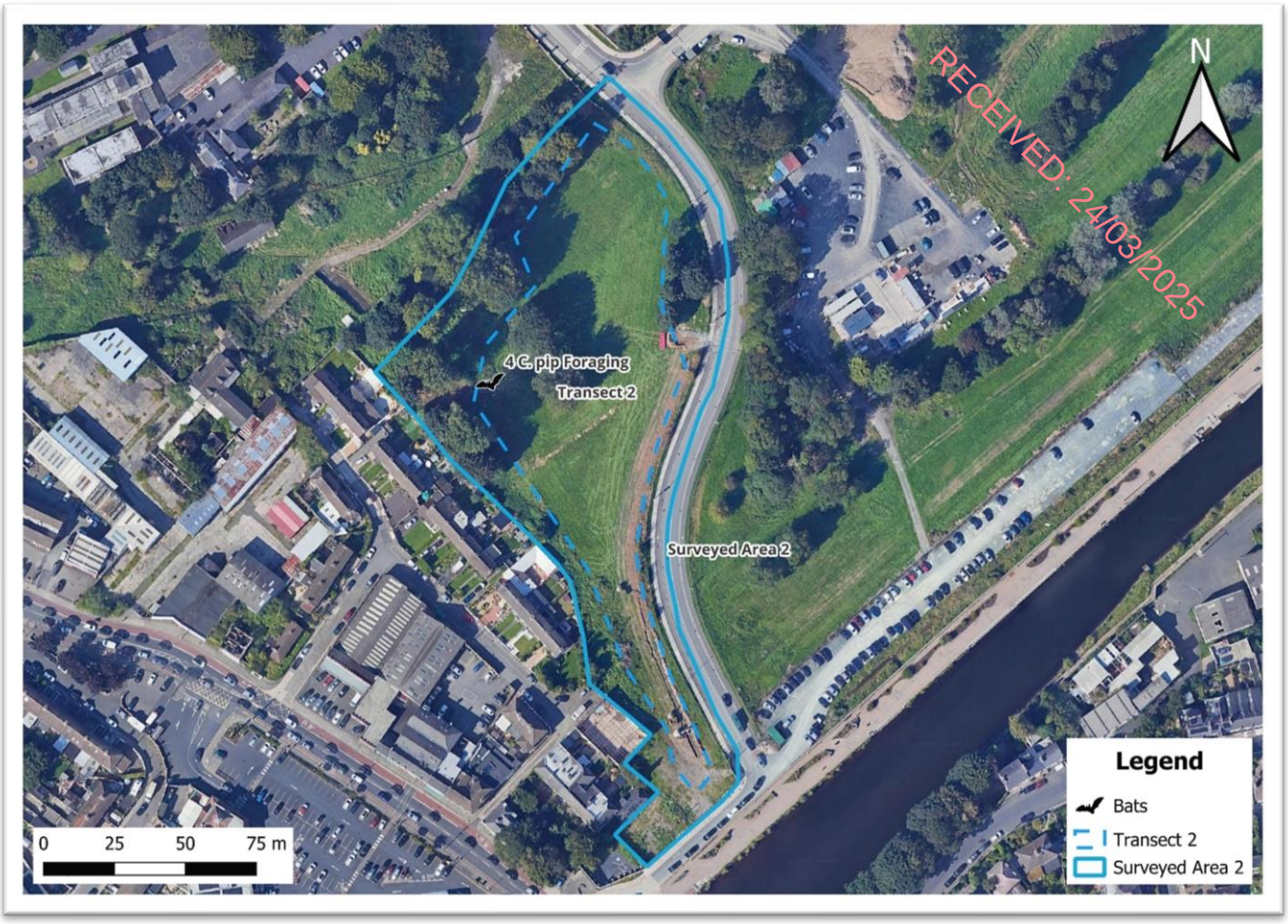

Figure 4-4 - Bat Activity Recorded in Transect 2

Activity Survey of Transect 3

This survey was conducted in the appropriate seasonal window and faced no limitations or constraints, the environmental factors can be seen in Table 4-5 below. Security lights from neighbouring buildings were noted to have turned on at 22:40 and remained on for the duration of the survey. A single bat species was recorded during the survey; the Common Pipistrelle.

Common Pipistrelles were both observed and recorded on Site. Two bats were observed commuting from the western side of the transect in an easterly direction. Later in the survey a single bat was recorded foraging within this western area. An individual was also noted to forage on the eastern side of the transect. A single bat was also noted to commute from the woodland near the St John of Gods centre south towards the River Dargle.

The overall bat activity in this area was deemed to be low.

Table 4-5 - Environmental Factors from Activity Survey of Transect 3

Date	03/07/2024
Start Time	21:38
Finish Time	23:53
Sunset Time	21:57

Temperature	14 °C
Rain	Dry
Wind	Light air
Cloud Cover	30%

Figure 4-5 - Bat Activity Recorded in Transect 3

Static Bat Detector Results

The static bat detectors were in place on Site for 18 no. days in July 2024 in the most suitable areas for bats to record the species present and activity within the area. These static detectors produced information indicative of the emergence and activity surveys providing a similar species profile and activity level seen within the scope of night surveys.

One additional species was recorded; a Brown Long-eared bat (*Plecotus auritus*). This bat was only recorded on three separate non-consecutive days and for individual calls suggesting it to be an occasional commuter within the area but not utilising the Site regularly.

Table 4-6 - Static Bat Detector Locations.

5. Discussion

Though Transect 1 was deemed to have low bat activity, the treelines present would be deemed locally important to bat populations. Where possible within this area some trees should be retained to maintain a linear feature within the landscape for bats to commute along and lighting should be minimised within this area. This will provide suitable useable habitat for Pipistrelle and Leislers' bats. The single instance of a Daubenton's bat is likely from off Site and as this species forages over water and was not recorded to be commuting or roosting on the Site, this species should not be impacted by the development. Any works on this Site should be done in daylight hours and security lighting near the river should be minimal as to minimise disturbance to bats and other wildlife utilising the river.

Transect 2 also demonstrated low bat activity except for an incidence of 4 no. pipistrelles feeding at the beginning of this survey. These bats likely use several sites within the area for foraging so the loss of this development area would have a negligible adverse effect upon local bats.

Bats are still utilising the area (live construction site), this demonstrates a tolerance to disturbance in this area and potential utilisation of other sites in the locality. This is further enforced by calls being heard but bats not being seen suggesting them commuting over the site to utilise other areas.

Transect 3 also demonstrated low bat activity and species diversity, a small number of bats were foraging but not for long periods of time suggesting that they are utilising other areas within the landscape. The number of commuting bats was also low in this area.

Within all three transects there are borders or areas which are illuminated by artificial lighting. These areas had no bat activity showing the effect of manmade lighting has on bats. The presence of existing construction works in the area may have created a less favourable roosting and foraging area for bats causing them to favour other areas within the wider landscape.

The emergence surveys demonstrated no roosting bats present within any trees. Two oak trees which had been previously surveyed had bats roosting in them in 2020. It is likely that these trees were transitional roosts meaning a bat utilised them for a time and has since moved on from the area. As this area has increased in both light pollution and noise it is a less suitable area for bats to roost and they would likely move to a darker quieter area within the wider landscape.

The major feature within the landscape for bats are the treelines present within the Site. Where possible trees should be retained and or the landscaping design should be sympathetic to bats creating similar commuting corridors. Where possible light should be restricted with the use of bat friendly lighting and sensor lights.

6. Conclusions and Recommendations

The overall bat activity on the Site was low. No bat roosts were found within the Site boundary during the surveys. Bats are known to use visual routes through an environment as well as echolocation. Due to this it is recommended that removal of existing trees should be minimised to reduce any negative effects to the local bat population. As the footprint of the development is large and will require some tree removal, landscaping and lighting designs should be sympathetic towards bats.

The proposed development lighting should be designed to minimise light spill on to habitat and landscape features and concentrate artificial light only where required. Where lighting it to be installed along the Site, the following proposals are recommended:

The lighting scheme should be designed in accordance with guidance contained in; *Guidance Note 08/23; Bats and Artificial Lighting at Night- Institute of Lighting Professionals.*

Project specific lighting designs should include: -

- Column height ≤6m
- Directional lighting to prevent light spillage & light pollution.
- All street lanterns calculated at 0° tilt in relevant areas
- All street lanterns in 2700K LED (warm White)
- Modern light technology to restrict the horizontal plane of luminaires.

It is recommended that bat friendly lighting is utilised along the eastern boundary of the Site and through any large green spaces within the development site boundary.

Trees within the central areas of the Site should be retained where possible. The landscaping design should include mixtures of flowering plants, trees and shrubs to encourage a diversity of insects to sustain bats and other wildlife throughout the year.

In addition to measures to avoid impacts, there is opportunity for ecological enhancement for bats as part of the proposed development. The addition of bat boxes, in a variety of designs suitable for bats with differing roosting habits could be installed on mature trees and buildings. Bat boxes should be installed on mature trees or buildings, positioned to face south, south east, or south west and at heights no less than 4m above ground level. Suitably experienced ecologists must oversee the installation of the boxes. All personnel should wear gloves to reduce transmission of human pheromones, which may reduce or delay uptake of boxes by bats.

7. Reference Material

Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition

Bat Conservation Trust and Institution of Lighting Professionals (2023) Guidance Note 8/23 Bats and Artificial Lighting

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Mitchell-Jones, A.J, & McLeish, A.P. (eds). 2004., 3rd Edition Bat Workers' Manual, JNCC, Peterborough, ISBN 1 86107 558 8

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Guidelines for the Treatment of Bats during the Construction of National Road Schemes (National Roads Authority, 2005).

Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011.

IEEN (2006) Guidelines for Ecological Impact Assessment in the United Kingdom - www.ieem.net/ecia.asp.

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