murray & associates
landscape architecture

ARBORICULTURAL INVENTORY AND IMPACT ASSESSMENT

Incorporating a

TREE PROTECTION STRATEGY

At

BLACKROCK SENIOR LIVING, BLACKROCK RUGBY CLUB, STRADBROOK ROAD, BLACKROCK

FOR

TETRARCH RESIDENTIAL LTD

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Contents

ISSUE SHEET

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Introduction

The trees and hedgerows were surveyed on the 15th June by the undersigned. The purpose of the findings of this survey and assessment have been summarised and recorded in the following report. A number of mature trees on the development site area were surveyed and assessed.

Scope

The site has a number of existing mature trees in the car park and around the site boundary. The site is composed of a car park and an existing commercial building. The majority of the trees are approx. 30-40 years old.

Photo 1 – existing evergreen oak

Photo 2 – existing mature laurel hedge along southern boundary

This report should be read in conjunction with the following drawings:

Landscape Plan (REF: **1873_PL_P_01)**;

Tree Survey: (REF. **1873_TS_P_01**);

Tree Protection Plan: (REF.1873**_TS_P_02**);

Proposed Development

The proposed mixed-use development at a site of some 0.4813 ha on Stradbrook Road, Mountashton, Blackrock, Co. Dublin will comprise: the demolition of existing buildings and surface car park, and the construction of: 108 No. Build-to-Rent residential senior living apartments (83 No. 1-bed apartments and 25 No. 2-bed apartments), with balconies / winter gardens at all elevations, across 2 No. blocks ranging between 3 to 7-storeys with set back at sixth-floor level and additional basement storey. The proposal also includes for 148 No. secure bicycle parking spaces, 55 No. underground car parking spaces, a two-way vehicular entrance ramp and bin storage, circulation areas and associated plant at basement level; a self-contained office unit, a residential staff management suite, resident's facilities, residents' communal amenity rooms, and residents' communal open space, as well as 13 No. surface car parking spaces (incl. 1 No. accessible commercial car parking space and 12 No. car parking spaces for use by the adjoining creche (incl. 1 No. accessible)), 24 No. secure cycle spaces within separate bike store, separate bin store for office use, 30 No. short-term bicycle parking spaces, and 3 No. ESB substations at ground floor level; additional communal amenity rooms at first, second, third, fourth and fifth-floor levels; roof gardens / terraces at third, fourth and sixth-floor levels; green roofs; and PV panels on third, fourth and sixth- floor roof-level; amendments to existing boundary wall to provide new vehicular and pedestrian entrances; provision of security gates; and associated site landscaping, lighting and servicing, and all associated works above and below ground.

Figure 1 – Site location aerial image

Methodology Employed

An initial tree survey and visual condition assessment was carried out on the 15th June. For the purpose of this report, the trees were assessed in accordance with BS 5837:2012 “Trees in relation to design, demolition and construction”. Only trees with diameters of 75mm or greater were surveyed, and those smaller than this were noted in the survey. In accordance with section 4.4.2.3 of the British standard document where trees formed obvious groups these were assessed and recorded as groups. All trees were recorded in a GIS based system on site and they were also tagged with a metal tag.

Section 4.4.2.3 of BS 5837: 2012 states:

Trees growing as groups or woodland should be identified and assessed as such where the arboriculturist determines that this is appropriate. However, an assessment of individuals within any group should still be undertaken if there is a need to differentiate between them, e.g. in order to highlight significant variation in attributes (including physiological or structural condition).

NOTE: The term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture), in respect of each of the three subcategories.

Tree Survey Methodology

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.

Tree 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 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 condition.

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 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 categorized using the following sub-categories (e.g. C1, C2 or C3)

- **1** Mainly Arboricultural qualities,
- **2** Mainly landscape qualities,
- **3** Mainly cultural values.

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.

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)

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

√ ((mean stem diameter)2 × number of stems)

The survey concentrated primarily on the significant trees located within the development area. The objective of this survey was to gather information regarding the tree's location on the proposed development site and the impact the proposed development may have on the trees. Please refer to appendix 1 for the tree inventory. Significant trees can be equated as those trees whose visual importance to the surrounding area is enough to justify special efforts to protect/preserve and whose loss would have an irremediable adverse impact on the local environment. Significance can also be placed depending on the age of the tree, another variable to imply significance can be the aesthetic merit of the tree based on its unusual size, intrinsic physical features, or outstanding appearance or occurring in a unique location or context, and thus provides a special contribution as a landmark or landscape feature

Tree diameters (DBH) were estimated at 1.5 meter above grade as per standard arboricultural practice. Tree height was measured with the use of a digital clinometer. The trees were categorized in accordance with BS5837:2012.

Tree Survey Results & Discussion

Category	Number of trees	Trees to be removed
B	3	3
C	33	33

Table 1. Category of the Trees surveyed (BS 5837:2012, Item 4.5 Tree categorisation method)

The table below provides an analysis of the species composition of the site. The majority of mature trees in good condition are Birch, Cherry and Alder. Many of the trees on site are in decline due to their species and age.

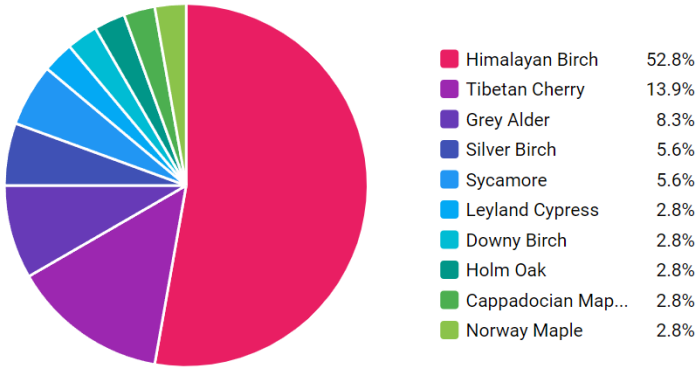

Chart 1 – Species composition of the site

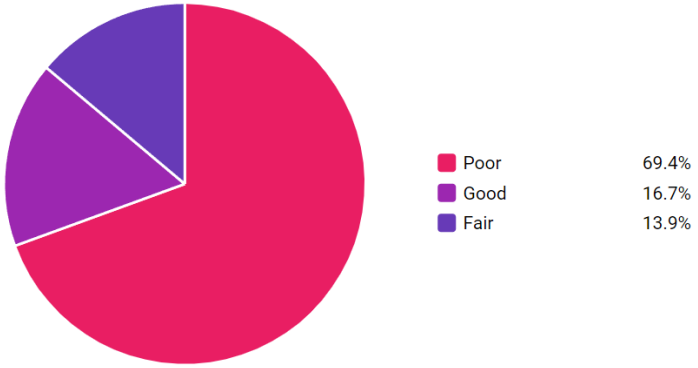

Chart 2 - % analysis of tree condition

The majority of trees on the site are in poor condition. This is mainly due to their age and species. All of the trees on the site are to be removed to facilitate the proposed development.

Conclusion

The majority of the tree cover on the site is of limited arboricultural/amenity interest and is in decline, particularly the white birch and cherry species. The proposed development will entail the replanting of tree species on the site which will mitigate the loss of the existing tree cover.

Cascade chart for tree quality assessment- BS5837:2012

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (See Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012]* ***4.5.7****.*			
Trees to be considered for retention				
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefit	Trees with no material conservation or other cultural value	

Tree Inventory

ID	Latin Name	Common Name	Stem Diameter [cm]	Tree Height [m]	Branch Spread [m] N	E	S	W	Life Stage	Structural Condition	Physiological Condition	Quality Category	RPA [m]	Comments	Recommendations
1361	Acer platinoides	Norway Maple	42	5	3.2	2.7	3.2	3.2	Mature	Fair	Good	B3	5.04		
1365	Betula jaquemontii	Himalayan Birch	43	5	4.9	3.6	4.4	3.8	Mature	Poor	Poor	C3	5.16		
1366	Alnus incana	Grey Alder	32	5	2.7	2.5	2.5	2.3	Early-mature	Good	Good	C1	3.84		
1367	Cupressus x leylandii	Leyland Cypress	53.824	6	4	3.5	1.5	3	Mature	Poor	Poor	C3	6.46		
1368	Alnus incana	Grey Alder	38.275	5	2.7	2.5	2.5	2.3	Early-mature	Good	Good	C1	4.59		
1369	Alnus incana	Grey Alder	56.859	5	2.7	2.5	2.5	2.3	Early-mature	Good	Good	C1	6.82		
1370	Betula jaquemontii	Himalayan Birch	22	5	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64		
1371	Betula jaquemontii	Himalayan Birch	17	5	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.04		

1372	Betula jaquemontii	Himalayan Birch	20	5	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.4	
1373	Betula jaquemontii	Himalayan Birch	18	5	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.16	
1374	Betula jaquemontii	Himalayan Birch	18	4	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.16	
1375	Betula jaquemontii	Himalayan Birch	20	4	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.4	
1376	Betula jaquemontii	Himalayan Birch	22	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	
1377	Betula jaquemontii	Himalayan Birch	22	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	
1378	Betula jaquemontii	Himalayan Birch	25	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	3	
1379	Betula jaquemontii	Himalayan Birch	25	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	3	
1380	Betula jaquemontii	Himalayan Birch	25	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	3	
1381	Betula jaquemontii	Himalayan Birch	25	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	3	

1382	Betula jaquemontii	Himalayan Birch	20	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.4	
1383	Betula jaquemontii	Himalayan Birch	22	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	
1384	Betula jaquemontii	Himalayan Birch	22	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	
1385	Prunus serrula	Tibetan Cherry	34	5	2.5	2	2	1.5	Mature	Poor	Poor	C3	4.08	
1386	Betula pubescens	Downy Birch	19	7	2.5	1.7	2.5	1.5	Mature	Fair	Fair	C3	2.28	
1387	Betula pendula	Silver Birch	74	10	4.5	5	5	4.5	Mature	Good	Good	B3	8.88	
T25	Acer pseudoplatanus	Sycamore	42	7	3.5	3.5	3	3.2	Mature	Fair	Fair	C2	5.04	
1388	Prunus serrula	Tibetan Cherry	26	6	2.7	2.5	2.6	2.7	Mature	Poor	Poor	C3	3.12	
1389	Prunus serrula	Tibetan Cherry	26	6	2.7	2.5	2.6	2.7	Mature	Poor	Poor	C3	3.12	
1362	Betula pendula	Silver Birch	36	8	2.4	2	2.3	2.4	Mature	Fair	Fair	C1	4.32	

1390	Quercus ilex	Holm Oak	67	11	5.3	5.5	5.7	5.4	Mature	Good	Good	B1	8.04	
1363	Prunus serrula	Tibetan Cherry	26	6	2.7	2.5	2.6	2.7	Mature	Poor	Poor	C3	3.12	
1391	Prunus serrula	Tibetan Cherry	26	6	2.7	2.5	2.6	2.7	Mature	Poor	Poor	C3	3.12	
T32	Acer pseudoplatanus	Sycamore	62.225	12	2.2	2.1	2	2.2	Mature	Fair	Fair	C2	7.47	
1392	Acer cappadocicum	Cappadocian Maple	55	10	3	2.5	2.6	2.7	Mature	Fair	Fair	C1	6.6	
T35	Betula jaquemontii	Himalayan Birch	25	3	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	3	
T36	Betula jaquemontii	Himalayan Birch	22	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	
T37	Betula jaquemontii	Himalayan Birch	22	2	3.2	2.8	3	2.9	Mature	Poor	Poor	C3	2.64	

Figure 2 – Tree inventory plan (REF. 1873_TS_P_01)

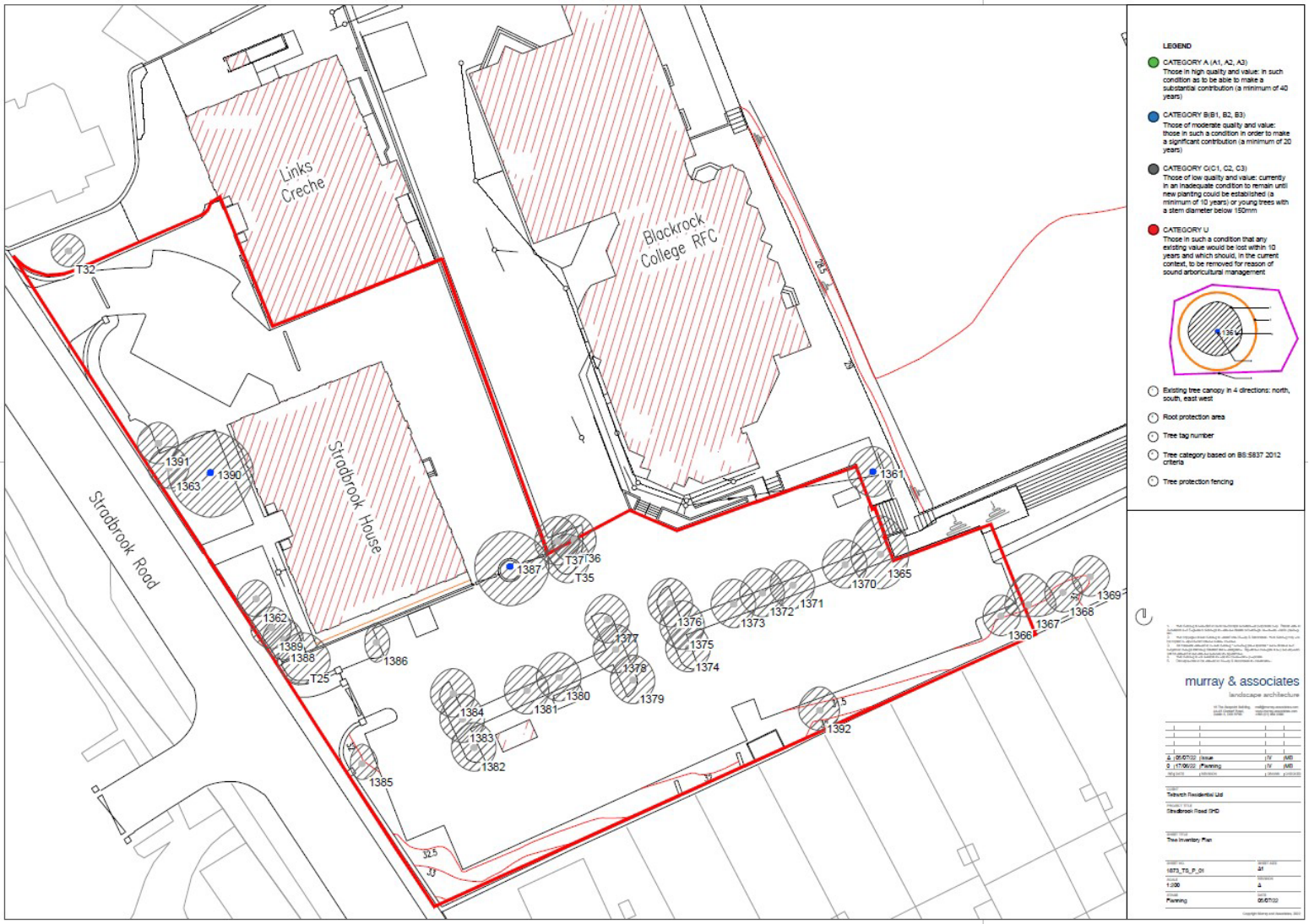

Figure 3 - Proposed landscape layout (REF1873_TS_P_02)

Disclaimers

This report is intended solely for the benefit of the parties to whom it is addressed, and no responsibility is extended to any third party for the whole or any part of its contents. The conclusions and recommendations in this report are only valid for a period of one year. This period of validity may be reduced in the case of any change in conditions to or in proximity to the tree. In the event of adverse weather conditions, there is the possibility of any tree despite good report surveys, falling over.

In the event of a falling tree causing damage to residential or non-residential buildings in their proximity, no liability will attach to this firm, in the event of damage by such trees, to any person, any building public or private, or any mechanical vehicle or otherwise. Recommendations made in this report are subject to the knowledge and expertise of the qualified Arborist that carried out the above inspections.

Signed John Ward

Dated: 5th July 2022

John Ward

ISA Certified Arborist