

Aboricultural Assessment Report

Microsoft Ireland Lands
Grangecastle Business Park
Dublin 22

BSM

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**Brady Shipman
Martin**

**Built.
Environment.**

Survey
Assessment
**Built
Environment**

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Tree Survey Report

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TABLE OF CONTENTS

1 TABLE OF CONTENTS

1	Introduction	1
2	Report Limitations.....	1
3	Methodology.....	1
4	Survey Key.....	1
4.1	Tree, Tree Group and Hedge Number	1
4.2	Species.....	1
4.3	Age Class.....	2
4.4	Stem Diameter, Tree Height and Crown Size Measurements.....	2
4.5	Condition.....	2
4.6	Comments.....	2
4.7	Recommendations.....	2
4.8	Tree Retention Category (Cat) (BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations).....	2
4.9	Root Protection Area	3
5	Findings.....	3
6	Preliminary Recommendations	4
7	Arboricultural Impact Of New Development	4
8	Arboricultural Method Statement	4
8.1	Tree Surgery Works	4
8.2	Tree Protection Measures.....	5
9	Site Photographs.....	6
10	Schedule Of Trees included in the Survey.....	9

1 INTRODUCTION

Microsoft Ireland are submitting an application for proposed development on lands in Grangecastle Business Park, Dublin 22. There are a number of hedges and trees around the site and this report has been commissioned to provide an Arboricultural Assessment of these trees and hedges to assist with the plans for the development of the site and for inclusion in the planning application. The survey data was collected and collated in accordance with BS5837: (2012) *Trees in relation to design, demolition and construction – Recommendations*.

The accompanying drawings **TS100A and TS100B** show the locations of the individual trees, hedges and tree groups identified on the site during the survey.

2 REPORT LIMITATIONS

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

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

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

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

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

3 METHODOLOGY

The trees/hedges were accessed on foot and assessed using Visual Tree Assessment (VTA) techniques only. Hedges and groups of trees were assessed collectively in accordance with BS5837: (2012) *Trees in relation to design, demolition and construction – Recommendations*. Trees that were inaccessible due to obstacles, undergrowth/ivy etc. were assessed on the basis of what parts of the trees were visible to the surveyor.

4 SURVEY KEY

4.1 Tree, Tree Group and Hedge Number

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

4.2 Species

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

4.3 Age Class

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

4.4 Stem Diameter, Tree Height and Crown Size Measurements

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

4.5 Condition

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

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

4.6 Comments

Additional description/commentary on individual trees where appropriate.

4.7 Recommendations

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

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

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

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

Sub Categories

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

4.9 Root Protection Area

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

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

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

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

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

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

5 FINDINGS

The trees, hedges and tree groups were assessed during a site visit on the 22nd October 2020. The field survey findings are recorded in the survey schedule appended to the report and include the data for the individual trees hedges groups surveyed.

The site is mostly flat with the majority of the land area being disused grassland and former golf course now partially occupied by construction compounds. The site is bordered to the northwest by the main access road into the Grangecastle Business Park, to the south by the R134 Nangor Road and to the east by developed lands and lands currently under development.

The site includes some remnant agricultural hedging along the eastern boundary (H1), southern boundary (H2), the northern boundary areas (Hedges H5 & H6)) and through the centre of the site (H4). These hedges are now partially degraded following years of lapsed hedgerow management and groundworks and development works on adjacent lands. They still however provide some habitat and landscape value to the site.

The trees and hedges around the derelict house off the R134 are of mostly low value, having been left grow unchecked and unmanaged for a number of years, many trees have also been impacted by a series of groundworks that have been undertaken in this part of the site.

Many of the trees on the site are more recent plantings, with several young plantations (G5, G6 and G15) having been established along raised mounds/berms in the central and northern eastern parts of the survey site. Somewhat older plantations and landscape plantings dominate the north-western and northern boundary areas of the site, along the Griffeen river channel, and in the roadside verge along the Business Park road in particular.

The young mixed plantation (G11) established along the Griffeen River channel now provides a valuable landscape screen into the property from the northwest, as well as a developing riparian habitat area.

The street trees planted in the verge are mostly young *Tilia* spp. of variable quality, with many unfortunately having been subject to bark damage from grass maintenance machinery, and some having leaning stems. Tree vitality seems to be reasonably good and most of these trees should develop into attractive mature specimens in time.

6 PRELIMINARY RECOMMENDATIONS

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

7 ARBORICULTURAL IMPACT OF NEW DEVELOPMENT

The site is to be developed which will require the removal of most of the hedges and trees from the central, southern and eastern parts of the site to facilitate the proposed new layout.

The northern boundary areas of the site will remain intact, except where a narrow section of group G11 will be removed to allow space for the construction of a proposed bridge and access route into the site across the Griffeen River corridor. The new bridge will span the river channel on land where the existing tree cover is relatively sparse; between the group of young Pines (G12) and a Birch Tree (T8) on the northern bank and through a narrow section of the young plantation (G11) to the south.

The impact of the new layout on the existing trees and hedges is shown on the Tree Survey Drawings TS100A and TS100B.

The reconfiguring of the site will be accompanied by a substantial new tree planting within a comprehensive new landscape plan; this will see large numbers of trees planted around the southern, northern and western parts of the site and should result in a significant net improvement in the arboricultural value of the site over the coming years as the new planting matures.

The northern section of hedgerow H1 and the old hedge H5 will be retained and enhanced through improved management and additional infill planting, ensuring their long-term survival as landscape features.

8 ARBORICULTURAL METHOD STATEMENT

8.1 Tree Surgery Works

The trees and hedges to be removed to facilitate the new development are marked on the Tree Survey Drawings TS100A and TS100B; this includes trees labelled.

The felling of trees and any remedial pruning works to the retained trees identified will be undertaken by professional tree surgeons working to BS 3998 (2010) Tree Work – Recommendations.

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

8.2 Tree Protection Measures

Sturdy tree protection fencing will be erected along or outside Root Protection Areas / canopy lines of the trees/hedges to be retained as shown on the Tree Survey Drawings TS100A and TS100B to prevent damage from construction works. The fencing will be erected as soon as the tree and hedge removal works have been completed and will not be removed or moved until construction is complete unless authorised by a qualified arborist.

Where machinery has to encroach the RPAs of the trees/hedges to be retained for reasons unforeseen and unavoidable; suitable ground protection will be put in place to prevent any significant soil compaction or root damage near the trees; this should take the form of suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight.

All site offices, materials storage, staff parking etc. will be located outside of the RPAs of the trees/hedges; there is ample space on the site to accommodate these facilities outside the RPAs of the retained trees and hedges.

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

The tree protection measures and specialist work methods will be overseen by a qualified arborist; the arborist should also make regular visits to the site during the construction process to ensure compliance and be available to provide advice and guidance where necessary.

The retained trees/hedges should be assessed by a qualified arborist following the completion of the construction works.

9 SITE PHOTOGRAPHS



Photo 1. Hedge H2 and conifer group G1 viewed from the west



Photo 2. Trees of groups G3 and G4 next to the derelict house in the southern part of the site



Photo 3. Willow, Birch and Poplar trees planted around the landscape scheme next to the river channel in the far west of the site



Photo 4. Young plantation (G11) along southern side of river channel

Microsoft Ireland Grangecastle
Arboricultural Assessment Report



Photo 5. Landscape planting between entrance road and river channel in western part of site



Photo 6. Hedgerow H5 and young Lime trees (Group G13) along the north western edge of the site (viewed from the north east)

10 SCHEDULE OF TREES INCLUDED IN THE SURVEY

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
G	1	X Cupressocyparis leylandii (Leyland Cypress)	EM	12	300	1	2	3	3	3	3	<10	Fair	Fair/Poor. Truncated linear conifer group at 1-2m spacing. Upright form. Very sparse lower crowns. Recent major groundworks around trees; likely to have caused serious root damage. Some bark wounds to lower stem. Limited value and potential.	Consider removal as part of good management.	3.6	U
G	2	Chamaecyparis lawsoniana (Lawson Cypress) Fraxinus excelsior (Ash) Prunus cerasifera (Cherry Plum)	EM	6	200	1	1	2	2	2	2	10+	Fair	Fair. Tree line along road frontage of house garden. Mostly Cypress trees of low value and potential.	No urgent works needed.	2.4	C2
G	3	Fagus sylvatica (Beech) Fraxinus excelsior (Ash) X Cupressocyparis leylandii (Leyland Cypress) Ilex aquifolium (Holly) Salix spp. (Willow)	EM	8 to 12m	400	4	0	3	3	3	3	10+	Fair	Fair. Mixed tree-line around edge of garden of derelict house. 1-2m spacing. Appears to be mixed a hedge left to grow unchecked as the property became unused. Beech mostly multi-stem as a result of earlier management works. Groundworks on adjacent lands have disturbed the topsoil and likely damaged some roots.	Cut back to control tree height and spread if retained.	4.8	C2
G	4	Fagus sylvatica (Beech) Fraxinus excelsior (Ash) Prunus cerasifera (Cherry Plum) Sorbus aucuparia (Rowan) Chamaecyparis lawsoniana (Lawson Cypress)	SM EM	6	200	1	1	2	2	2	2	10+	Fair/Poor	Fair. Smaller garden trees/bushes established inside the larger hedge. Trees have been partially suppressed by the hedge and are of limited value. The Cherry Plum is now in poor condition.	Prune back adjacent hedge.	2.4	C2

Microsoft Ireland Grangecastle
Arboricultural Assessment Report

G	5	Quercus robur (Common Oak) Prunus avium (Wild Cherry) Pinus sylvestris (Scots Pine) Fraxinus excelsior (Ash) Corylus avellana (Hazel)	SM	5 to 8	100 to 200	1	1	1.5	1.5	1.5	1.5	10+	Fair	Fair. Young mixed plantation along low mound/berm. 1-2m spacing. Slender, upright form.	No urgent works needed.	1.8	C2
G	6	Pinus sylvestris (Scots Pine) Prunus avium (Wild Cherry)	SM	6	150	1	1	2	2	2	2	10+	Fair	Fair. Fair vitality. Cluster of young trees planted along top of mound/berm.	No urgent works needed.	1.8	C2
G	7	Salix fragilis (Crack Willow)	EM	9	200	1	1	3	3	3	3	10+	Good	Fair. Two groups of Willow trees planted around water feature by river channel.	No urgent works needed.	2.4	C2
G	8	Betula pendula (Silver Birch)	EM	8	200	1	1	2	2	2	2	10+	Fair	Fair. Young Birch trees planted in landscape scheme near river channel. Upright form.	No urgent works needed.	2.4	C2
G	9	Tilia cordata (Small-leaved Lime)	SM	5	150	1	2	2	2	2	2	10+	Fair	Fair. Smaller sized tree. Good shape/form. Some bark wounds to lower stem.	No urgent works needed.	1.8	C2
G	10	Sorbus aria (Whitebeam)	EM	6.5	180	1	1	2	2	2	2	10+	Good	Fair. Three smaller sized trees along river bank.	No urgent works needed.	2.16	C2
G	11	Acer campestre (Field Maple) Alnus glutinosa (Common Alder) Betula pendula (Silver Birch) Quercus robur (Common Oak) Salix fragilis (Crack Willow) Sorbus aucuparia (Rowan) Pinus sylvestris (Scots Pine)	SM	6 to 10	<100 to 250	1	1	1.5	1.5	1.5	1.5	10+	Fair	Fair. Young plantation of mixed species trees alongside river and on river terrace. 1-2m spacing. Mostly good condition. Birch is dominant species on terrace, with Willow prevalent in river channel.	No urgent works needed.	1.8	C2
G	12	Pinus nigra (Austrian Pine)	SM	6	250	1	1	2	2	2	2	10+	Good	Fair. Smaller sized tree. Two clusters of five young trees on either side of river channel.	No urgent works needed.	3	C2

G	13	Tilia cordata (Small-leaved Lime)	SM	5	200	1	2	2.5	2.5	2.5	2.5	10+	Fair	Fair. Smaller sized street trees planted in verge. Good shape/form. Some bark wounds to lower stem.	No urgent works needed.	2.4	C2
G	14	Tilia cordata (Small-leaved Lime)	SM	5	100	1	2	2	2	2	2	10+	Fair	Fair. Smaller sized street trees planted in verge. Good shape/form. Some bark wounds to lower stem.	No urgent works needed.	1.2	C2
G	15	Betula pendula (Silver Birch) Quercus robur (Common Oak) Prunus avium (Wild Cherry)	Y	4	100	1	1	1	1	1	1	10+	Fair	Fair. Young plantations along sections of raised mounds/berms.	No urgent works needed.	1.2	C2
H	1	Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Prunus spinosa (Blackthorn) Sambucus nigra (Elder)	M	6 to 15	300	1	0	4	4	4	4	10+	Fair	Fair. Mature agricultural hedgerow between two heavily modified sites, with topsoil stripped and compacted. Emergent Ash stems to 15m. with majority of hedge Hawthorn and Blackthorn bushes 6-8m. No recent hedgerow management evident.	Cut back into shape if retained.	3.6	C2
H	2	Acer pseudoplatanus (Sycamore) Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Prunus spinosa (Blackthorn) Sambucus nigra (Elder)	EM	3	100	1	0	1	1	1	1	10+	Fair	Fair. Remnant section of hedgerow. Clipped to maintain a compact form.	No urgent works needed.	1.2	C2

Microsoft Ireland Grangecastle
Arboricultural Assessment Report

H	3	Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Sambucus nigra (Elder) Lonicera	EM	4	100	1	0	1.5	1.5	1.5	1.5	10+	Fair	Fair. Hedge along western edge of garden, formerly clipped into shape, now neglected and overgrown.	Clip back into shape.	1.2	C2
H	4	Crataegus monogyna (Hawthorn) Sambucus nigra (Elder) Prunus spinosa (Blackthorn)	EM	5.5	100	1	0	1.5	1.5	1.5	1.5	10+	Fair	Fair. Growing in hedgerow.	No urgent works needed.	1.2	C2
H	5	Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Acer pseudoplatanus (Sycamore) Sambucus nigra (Elder) Salix caprea (Goat Willow)	M	5	150	1	0	3	3	3	3	10+	Fair	Fair. Growing in hedgerow. Old hedgerow with little management, now dominated by Elder bushes as hawthorn declines in vigour. Some emergent Ash stems to 10-12m, with dense Ivy cover, most of the hedge bushes are between 4-6m. Hedge impacted by site works to south and ground level changes to north.	Cut back into shape, coppice/lay stems where appropriate, infill with fresh Hawthorn and replace Elder bushes.	1.8	C2
H	6	Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Sambucus nigra (Elder)	M	6	200	1	0	3	3	3	3	10+	Poor	Fair. Growing in hedgerow. Old hedgerow, now in decline through limited management over many years.	Coppice/lay stems to rejuvenate and infill gaps with fresh hedging plants.	2.4	C2
T	1	Fraxinus excelsior (Ash)	EM	11	500	2	1	4	4	4	4	10+	Fair	Fair/Poor. Medium sized tree. Previously topped with decay now established in old pruning points. Recent root damage likely from groundworks. Thick Ivy growth on tree stem.	Monitor tree condition.	6	C2

T	2	Betula pendula (Silver Birch)	EM	10	300	1	1	3	3	3	3	3	10+	Fair	Fair. Two young Birch trees <1m from site hoarding, with haul road within RPA and root damage likely. Upright form.	Monitor tree condition.	3.6	C2
T	3	Betula utilis (Himalayan Birch)	EM	6	200	1	1	2	2	2	2	2	10+	Fair	Fair. Two small Birch trees planted on either side of old entranceway.	No urgent works needed.	2.4	C2
T	4	Fagus sylvatica (Beech)	EM	12	583	3	3	3	3	3	3	3	10+	Fair	Poor. Tree inside old garden with multiple stems below 1.5m. Several tight unions with included bark below the main forks down to ground level. Limited potential to develop into fully mature tree due to structural weakness.	Prune periodically to maintain as smaller tree if retained.	7	C2
T	5	Salix X chrysocoma (Weeping Willow)	EM	9	250	1	0	4	4	4	4	4	20+	Fair	Fair. Two Weeping Willow trees planted in landscape scheme by river channel.	No urgent works needed.	3	C2
T	6	Populus spp. (Poplar)	EM	9	200	1	1	3	3	3	3	3	10+	Good	Fair. Single Poplar by river channel. Upright form.	No urgent works needed.	2.4	C2
T	7	Aesculus hippocastanum (Horse Chestnut) Quercus robur (Common Oak)	Y	5	100	1	1	1.5	1.5	1.5	1.5	1.5	10+	Fair	Fair. Smaller sized trees planted into verge. Some bark wounds to lower stem.	No urgent works needed.	1.2	C2
T	8	Betula pendula (Silver Birch)	SM	7	250	1	1	2	2	2	2	2	10+	Good	Fair. Two young trees by river channel.	No urgent works needed.	3	C2
T	9	Prunus avium (Wild Cherry)	SM	6	200	1	1	2	2	2	2	2	10+	Fair	Fair. Two young trees in verge.	No urgent works needed.	2.4	C2
T	10	Acer pseudoplatanus (Sycamore)	EM	11	424	2	1	4	4	4	4	4	10+	Good	Fair. Tree in hedgerow. Twin stem from ground level.	No urgent works needed.	5.09	C2

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19th July 2021

South Dublin County Council
Planning Department
County Hall
Town Centre
Tallaght
Dublin 24

RE: Proposed Modifications and minor additions to previously approved scheme (Planning Register Reference SD20A\0283) in respect of Data Centres (DUBs 14 & 15) & Central Administration Building at Grange Castle Business Park, Dublin 22 for Microsoft Operations Ltd.

Dear Sir or Madam,

We enclose the following documents in support of the full planning application.

Enclosures:

- This cover letter
- A cheque for €38,000.00
- Original completed Planning Application Form
- 1 Copy of the Site Notice
- 1 Original Newspaper Notice dated 5th July 2021
- Environmental Impact Statement (10 no. Hard Copies enclosed) prepared by McGill Planning.
- 10 no. sets of drawings and reports prepared by RKD Architects, Donnelly Turpin Architects, Arup Consulting Engineers & BSM Landscape Architects.
- Drawing List

We trust that you will find this application in full compliance for acceptance as a valid application and as a refinement to the previously approved development SD20A\0283.

Yours faithfully



Vicky Landy
Director
RKD Architects



N.B. THIS REPORT IS AS SUBMITTED FOR APPLICATION OF APPROVED SCHEME SD20A\0283

INCLUDED WITH THIS APPLICATION **FOR REFERENCE ONLY**

*CONTENT & SCOPE OF REPORT IS UNCHANGED & UNAFFECTED BY SCOPE OF PROPOSED DEVELOPMENT I.E. BY THE MODIFICATIONS PROPOSED TO THE APPROVED SCHEME.

Aboricultural Assessment Report

Report by BSM

