LAND PLANNING & DESIGN

CUNNANE STRATTON REYNOLDS

TREE SURVEY

Lucan Demense,
Lucan,
Co Dublin.

May 2024

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SUMMARY

This report presents an inspection record of existing trees located at Lucan Demense, in the context of a proposed elevated boardwalk access.

Trees have been surveyed as individuals or tree groups in accordance with *BS 5837 (2012) "Trees in relation to design, demolition and construction".* The site tree survey was undertaken on 16th April 2024 by Cunnane Stratton Reynolds arborist;

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

This survey and report are based on the topographic site survey information supplied.

A full survey record is presented in Appendix 1, together with accompanying drawings Tree Constraints Dwg No 22414B_T_101, Arboricultural Impact Assessment Dwg No 22414B_T_102 and Tree Protection Plan Dwg No 22414B_T_103. After introducing the terms of reference and the methodology of the survey, the report summarises the survey findings in an overview of the existing tree cover within the site area.

A total of thirty-six individual trees were recorded within the site area. It is proposed that the development design will not require the removal of any tree.

Every effort has been made to access all trees for inspection, however where site conditions prevent full physical access, some measurements may be visually estimated. Where trees are heavily obscured by existing ivy growth a best assessment is made however this must considered preliminary until full visual access is available.

The report concludes with recommendations for protection measures to ensure the conservation of retention trees during the proposed development.

1. INTRODUCTION

Terms of Reference

Cunnane Stratton Reynolds (CSR) were instructed to undertake a tree survey, to inform the design process for a proposed elevated boardwalk between the Sluice car park and the riverside walkway along the river Liffey at Lucan, Co Dublin.

CSR undertook a site survey and considered those trees that might potentially be impacted by the proposed boarwalk and produced a subsequent tree survey report presenting our findings, together with recommendations for their best practice management in relation to the proposed development.

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

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

- Topographic Survey
- CSR - Proposed Site Plan

Site Inspection & Methodology

The site was surveyed on 3rd of May 2024 by a qualified Arborist. A visual inspection from the ground was performed on all relevant existing trees / tree groups on site. Where access allowed principal individual trees were examined, with critical measurements taken and observations made.

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

The findings of the survey are recorded and presented in this Tree Survey Report and Tree Schedule (Appendix 1). A Tree Classification and Constraints drawing was produced to inform the design process. An Arboricultural Impact Assessment and Tree Protection Proposals were considered in relation to the proposed scheme.

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

Accompanying Drawings

The tree survey report should be read in conjunction with;

- Tree Classification & Constraints (Dwg No 22414B/T/101).
- Arboricultural Impact Assessment (Dwg No 22414B/T/102).
- Tree Protection (Dwg No 22414B/T/103).

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

2. DESCRIPTION OF EXISTING TREES

Site Location

2.1 The site is located between the Sluice car park and the riverside walkway along the southern bank of the river Liffey.

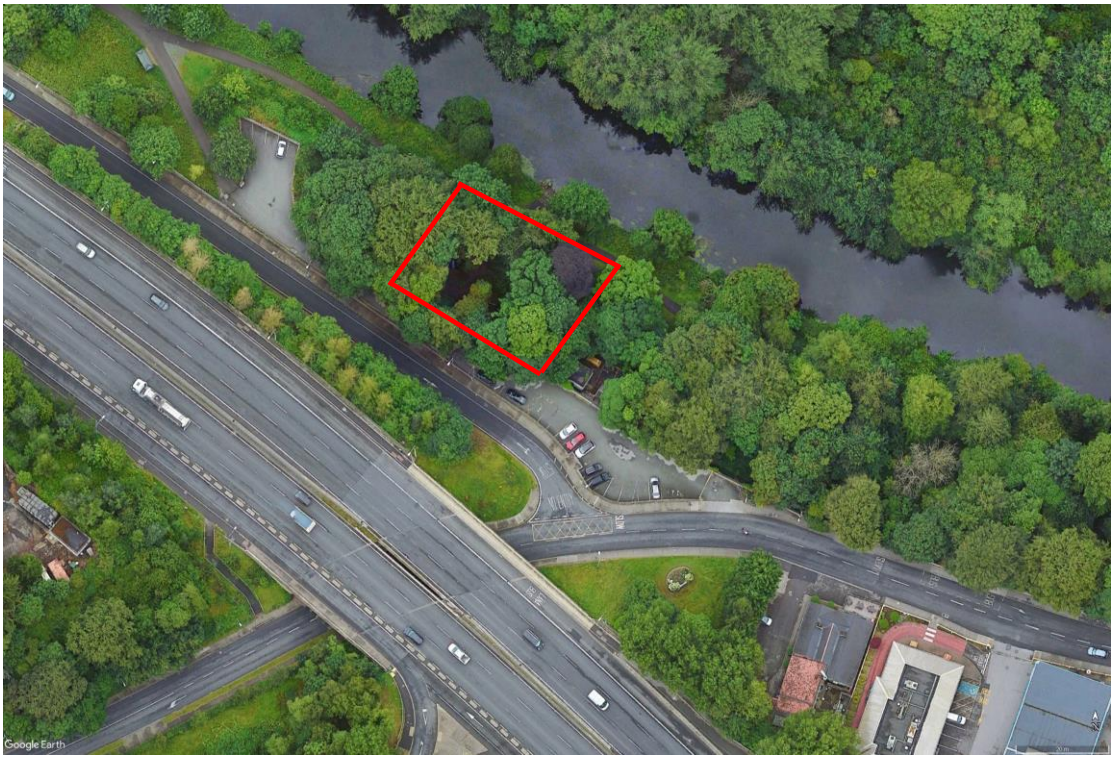

Figure 1: Low resolution satellite image of approximate site area in red (courtesy of Google Earth).

The location is currently covered in mature woodland either side of the existing access pathway between the car park and the riverside path.

Their location, size and quality category may be reviewed with reference to the accompanying Tree Survey Dwg No 22414B/T/101 and the tree survey (Appendix 1).

2.2 Photographic Summary of Trees Surveyed

T1993

T1994

T947

T948/T949

T950/T951

T952-954

T947-954 (seen from car park)

T955-957

T958-961

T962-969

T972-975

T976-978

T979/980

2.3 The trees located within the site are typically of a moderate to high value, mixed deciduous species. Many are restricted for space and have developed in a phototropic manner competing for light, resulting in a tall thin form (typically trees in middle of woodland), and lopsided form (typically trees on woodland edge). The age profile of the trees is young to mature, with a good of mature and young sapling developing as light availability allows. There is one veteran tree (T1994) which is in decline and has been monlithed to a safe height.

Trees generally become more valuable as collective groups, than they might be when considered solely as individuals in isolation - a grouping or woodland being generally of significant visual and ecological value. As such it should be noted that the cumulative value of evaluated Tree Groups often reflects an increased catergorised value than might be awarded to the constituent trees if they were assessed in isolation as individuals.

The woodland as a whole/collective is considered to be of high quality.

3. ARBORICULTURAL IMPACT ASSESSMENT

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

3.2 Category 'U' trees are recommended for immediate removal, (fell or monolith to safe height), on general management grounds, irrespective of site development – no category U trees were identified.

T1994 does however have a large branch overhanging the proposed boardwalk and given the trees declining condition it is recommended that this branch be removed if construction were to proceed.

Direct Loss of Trees

3.3 The development proposal, through a combination of route selection and sensitive construction techniques intends to retain all existing trees - meaning there should be no direct conflict resulting in tree loss.

Indirect Impacts

3.4 Cognisance must also be given to indirect impacts - in particular care must be taken to ensure the proposed development and ancillary works do not represent an unacceptable conflict with the calculated 'Root Protection Area' of the existing trees proposed for retention.

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

Careful planning and site management therefore will be required during construction works to ensure these areas are not adversely impacted by construction activities.

In particular the proposed excavation of ground for post foundations shall be undertaken by hand and monitored by an arborist / landscape architect to ensure significant structural roots are not severed and root loss is kept to a negligible level. The location of post foundations may have to be adjusted on site if significant conflict with roots positions arise.

It is critical that the excavation area is limited to the minimum required footprint. The size of the individual excavations for each post shall be 400mm square by 1.2m deep or 600mm square by 300mm deep, and shall have a level of flexibility in location in order to avoid significant structural tree roots if present.

It is important that the site manager carefully review the tree protection drawing Dwg 22414B_T_103, prior to commencement of works on site and raise any queries prior to commencement of works.

The use of tree protection fencing to minimise the works area and exclude unnecessary construction access to root protection areas of trees, as illustrated in tree protection drawing Dwg 22414B_T_103, will be critical to avoiding detrimental impacts and the long-term viability of the retained tree.

As tree roots will be present in the proposed working areas, it is recommended that ground protection mats be used in areas of regular work traffic to reduce potential for ground compaction.

Proposed tree protection measures should be in place from the outset prior to the commencement of works. Any queries should be raised with the project Arborist prior to commencement of works on site.

Provided proper tree protection measures are adhered to it is not anticipated that any further trees will require removal due to indirect impact**s.**

Additional Considerations

3.5 Scrub removal and tree works should take place outside the bird nesting season (1st March – 31st August).

Summary

3.6 Table 1 illustrates trees to be removed and their classification.

Table 1.

Tree Class	**Trees proposed for removal**
A Class Trees	0
B Class Trees	0
C Class Trees	0
U Class Trees	0
TOTAL	**0**

Tree Protection

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

3.8 Tree Protection Areas (TPAs) are proposed, as indicated on accompanying Tree Protection Plan (Dwg No 22414B_T_103). Protective fence line locations and details for these fences are also illustrated on the plan.

Services

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

4. RECOMMENDATIONS – Arboricultural Method Statement

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

1. Tree Works.

Subject to the required permissions, pruning work should be performed prior to project commencement, by reputable contractors in accordance with BS 3998:2010 and current best practice. (Removal of scrub vegetation and ivy clearance should be performed outside of the bird nesting season (1st March – 31st Aug). Tree works should be preceded by a competent assessment as to the presence of any protected wildlife species, where required specialist advice should be sought if necessary.

2. Protective Fencing.

Protective fencing (barriers) should be erected in the positions and alignments as indicated on the Tree Protection Plan (Dwg No 22414B_T_103) and signed off by the project arborist or landscape architect prior to commencement of works. Fencing should be in accordance with BS 5837:2012 unless otherwise agreed with the planning authority. Commencement of development should not be permitted without adequate protective fencing being in place. This fencing, enclosing the minimum tree protection areas indicated, must be installed prior to any plant, vehicle or machinery access on site. Fencing should be signed 'Tree Protection Area – No Construction Access'. Fencing is not to be taken down or re-positioned without written approval of the project Arborist. No excavation, plant or vehicle movement, materials handling or soil storage is to be permitted within the fenced tree protection areas indicated on plan.

3. Protective Ground Mats

A proposal method statement for the use of specialist protective ground mats in proposed area of work / traffic shall be submitted for review by the project arborist / landscape architect prior to commencement. Depending on the construction plan it may be possible to relocate mats on an ongoing basis to follow the work activity.

3. Monitoring & Compliance

A professionally qualified Arborist or Landscape Architect is recommended to be consulted as required by the principal contractor or developer to monitor compliance. It is advised that tree protection fencing, any required special engineering and supervision works etc. must be included / itemised in the main contractor tender document, including responsibility for the installation, costs and maintenance of tree protection measures throughout all construction phases.

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

Limitations and Scope of this Survey Report

This report covers only those trees individually inspected, (shown on the 'Tree Survey Drawings' and described in the 'Schedule'), reflecting the condition of those trees at the time of inspection. Inspection is limited to visual examination of the subject trees from the ground without; test boring, use of tomographic equipment, dissection, probing, coring, ivy removal or excavation to establish structural integrity. The trees were not climbed, and dimensions are approximate, but considered a reasonable reflection of the trees measurements. This survey can only therefore be regarded as a preliminary assessment.

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

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

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

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

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

References/Bibliography

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

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

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

TREE SURVEY KEY

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

Tree No.

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

Species

Latin botanical names of species are provided

Height

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

Stem Diameter

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

Crown Spread

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

Height of lowest branch

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

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

Life stage

The tree's age is defined as:

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

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

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

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

V = Veteran Tree (exceptionally old tree).

Physiological Condition

The tree's physiological condition is defined as:

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

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

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

Dead - No longer living.

Structural Condition

The trees structural condition is defined as:

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

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

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

Preliminary Management Recommendations & Timescale

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

Estimated Remaining contribution (Years)

Life of the tree is given as;

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

Tree Quality Assessment Category

U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)

• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline

• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality

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

A High quality

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

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

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

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

B Moderate quality

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

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

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

B3 Trees with material conservation or other cultural value

C Low quality

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

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

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

C3 Trees with no material conservation or other cultural value.

APPENDIX 1

Tag	Species	Height (m)	Crown Spread (m) N/S/E/W	Diameter (mm)@ 1.5m	RPA circle radius (m)	Height lowest branch (m) & direction of growth	Life Stage	Estimated remaining contribution (years)	Physiological Condition	Structural Condition	Preliminary management recommendations	Category of retention + sub-category	Notes
1993	Acer platanoides	14	2/6/4/4	390	4.68	7m s	MA	20+	Good	Fair	Remove Ivy	B2	occluded wound at base
1994	Aesculus hippocastanum	11	0/4/0/0	1300	15.60	4m s	V	10<	Fair	Fair	Remove overhanging branch	B2	decay cavity at base
947	Fagus sylvatica	17	0/7/4/4	430	5.16	8m s	MA	40+	Good	Fair	Remove Ivy	B1	
948	Acer pseudoplatanus	15	0/7/6/3	490	5.88	9m all	MA	40+	Good	Fair		B1	
949	Fagus sylvatica	9	1/3/1/1	100	1.20	2m all	Y	40+	Good	Fair		C1	
950	Aesculus hippocastanum	21	3/6/4/4	500	6.00	1m n	MA	40+	Good	Fair	Remove Ivy	B1	
951	Fagus sylvatica	21	3/3/3/3	400	4.80	8m n	MA	40+	Good	Fair		B1	
952	Fraxinus excelsior	17	3/5/2/4	330	3.96	15m all	MA	40+	Good	Fair	Remove Ivy	B2	
953	Fagus sylvatica	18	1/3/2/2	320/230	4.73	0m e/w	MA	40+	Good	Fair	Remove Ivy	B2	
954	Aesculus hippocastanum	20	3/3/3/3	340	4.08	8m w	MA	40+	Good	Fair	Remove Ivy	B2	
955	Fagus sylvatica	22	5/5/5/5	560	6.72	10m w	MA	40+	Good	Fair	Remove Ivy	A2	1986
956	Fagus sylvatica	22	4/5/2/4	540	6.48	12m all	MA	40+	Good	Fair	Remove Ivy	A2	1985
957	Fagus sylvatica	15	1/3/1/1	210	2.52	4m all	Y	40+	Good	Good	Remove Ivy	B2	
958	Fagus sylvatica	22	5/3/4/4	600	7.20	4m e/w	MA	40+	Good	Fair		A2	
959	Fagus sylvatica	18	8/0/3/3	280/120	3.66	0m s	MA	40+	Good	Fair		B2	
960	Fagus sylvatica	19	0/3/1/1	250	3.00	6m all	Y	40+	Good	Fair		B2	
961	Fagus sylvatica	22	5/5/5/5	610	7.32	7m n	MA	40+	Good	Fair	Remove Ivy	A2	self bracing
962	Fagus sylvatica	19	8/0/2/2	530	6.36	5m n	MA	40+	Good	Fair	Remove Ivy	A2	
963	Fagus sylvatica	22	9/2/3/3	540	6.48	9m n	MA	40+	Good	Fair	Remove Ivy	A2	
964	Fagus sylvatica	8	9/0/3/3	270	3.24	5m w	MA	40+	Good	Fair	Remove Ivy	B2	
965	Aesculus hippocastanum	8	4/1/3/1	150	1.80	3m all	Y	40+	Good	Fair	Remove Ivy	B2	
966	Acer pseudoplatanus	15	2/2/2/2	270	3.24	10m all	MA	40+	Good	Fair	Remove Ivy	B2	
967	Fagus sylvatica	8	4/1/1/1	140	1.68	3m n	Y	40+	Good	Fair		B2	
968	Acer pseudoplatanus	24	10/3/5/5	520	6.24	7m n	MA	40+	Good	Fair	Remove Ivy	A2	
969	Acer pseudoplatanus	24	10/1/3/3	420	5.04	9m all	MA	40+	Good	Fair		A2	
970	Acer pseudoplatanus	24	1/3/5/5	470	5.64	9m e/w	MA	40+	Good	Fair	Remove Ivy	A2	
971	Acer pseudoplatanus	24	0/6/5/5	480	5.76	11m s	MA	40+	Good	Fair	Remove Ivy	A2	
972	Acer pseudoplatanus	24	5/5/3/3	360/380	6.23	1m e/w	MA	40+	Good	Fair	Remove Ivy	A2	
973	Acer pseudoplatanus	18	8/4/5/5	400	4.80	0m all	MA	40+	Good	Fair	Remove Ivy	A2	
974	Fagus sylvatica	27	5/5/5/5	690	8.28	8m n	MA	40+	Good	Fair	Remove Ivy	A2	
975	Acer pseudoplatanus	18	7/0/6/5	400/390	6.71	0m e/w	MA	40+	Good	Fair	Remove Ivy	A2	
976	Acer pseudoplatanus	23	6/2/2/2	350	4.20	4m s	MA	40+	Good	Fair		A2	
977	Fagus sylvatica	23	10/2/5/5	400/300x2	7.00	1m all	MA	40+	Good	Fair		A2	
978	Fagus sylvatica	23	10/2/6/6	930	11.16	2m se	M	40+	Good	Fair		A2	
979	Fagus sylvatica	23	7/2/5/5	390	4.68	8m n	MA	40+	Good	Fair		A2	
980	Acer pseudoplatanus	24	1/6/3/3	360x2	6.10	0m n/s	MA	40+	Good	Fair		B2	