TREE SURVEY REPORT
TREE VALUATIONS

- BS 5837 categorisation
- QTRA risk assessment
- Helliwell system
- CAVAT method
- CTLA DRC method

subjects at

Poynton Pool, East Cheshire

for

Poynton Town Council

February 2023

23202

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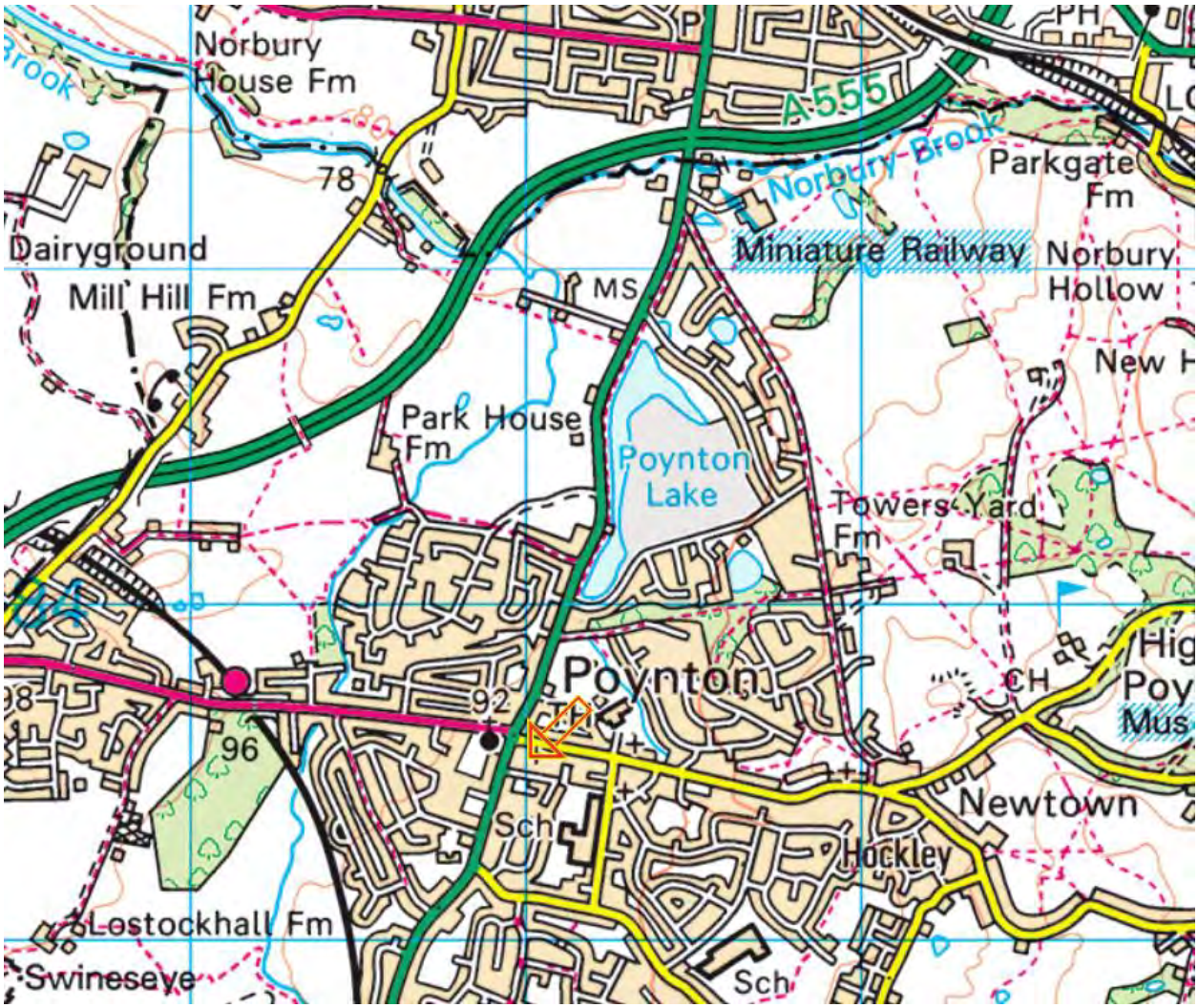
1. INTRODUCTION

1.1 Instruction

I have been instructed by Poynton Town Council to conduct an arboricultural survey and to report on any trees on the westmost embankments of the reservoir known as Poynton Pool, also known as Poynton Lake. The reservoir is situated about 1 km north of Poynton town centre in East Cheshire.



I am then instructed to provide valuations of all trees and groups of trees along the western edge, using a number of published methods. In addition, the service includes the provision of categorisations of the trees in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and preliminary risk assessments using the Quantified Tree Risk Assessment system.

The context has been explained to me, and the following is my general understanding – it should not be misconstrued as an opinion or a factual basis for any of my findings.

- East Cheshire Council, as owner, has decided that the Pool comprises a 'Reservoir' and therefore has recently undergone a periodic check of its compliance with current reservoir standards.
- One such check is whether the reservoir is resilient against a major flood event.
- The Council's engineers have found that compulsory safety improvements are necessary, and that the Council is required to take action which will improve the site's resilience against extreme flooding.
- According to the engineers, the west side of Poynton Pool has a 900m long bank and footpath and that in large floods, water will flow over this bank, meaning it could be considered as an emergency spillway to control the level of water in the pool; that the bank along the west side of the reservoir is not at a consistent level, and there are parts that are lower; that in a large flood event, water would not flow over the bank evenly and would cause damage to the bank, leading to an uncontrolled release of water; that, therefore, improvements to this bank are required.
- A programme of works is proposed to improve the flood resilience of the perimeter bank.

The programme of works is currently the subject of an Environmental Impact Assessment screening request. The proposal is somewhat imprecise but is stated as requiring the removal of 44 trees located within the direct footprint of the works and the possible removal (dependent on root structure and depth) of up to 37 more trees that are located close to the area of the proposed Scheme.

1.2 Reproduction, assignation and reliance

This report has been prepared for the sole use of the client – no other party is entitled to rely or act upon it or to reproduce all or any part of it without the express prior written consent of the author. The author cannot be held liable for any third party claim arising.

Notwithstanding, this report may be made available without the author's express consent to any statutory consultees insofar as the report may be required for Planning matters.

1.3 Surveyor and author relevant qualifications and experience

The author of this report is a former Chartered Surveyor (MRICS) with 20 years' experience as a property valuer and an additional 15 years' experience in the arboriculture industry, including providing tree valuations for a range of clients (such as for local authorities promoting and implementing flood prevention schemes) and as an expert witness in tree valuation in various court proceedings.

The author has also a wealth of experience of assessing trees using 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and is an experienced registered user of the *Quantified Tree Risk Assessment* system. Current and recent clients are public (including 10 local authorities) and private bodies.

The tree survey work and reporting has been carried out by Julian Morris, a professionally qualified and experienced Chartered Arboriculturist holding a Bachelor of Science Degree, the Arboricultural Association Technicians Certificate, the LANTRA Professional Tree Inspectors Certificate, Certificate of Public Sector Administration and the RICS Diploma in Surveying. Being a Professional Member (MICFor) of the Institute of Chartered Foresters and a member of the Arboricultural Association he is bound by their Codes of Professional Conduct.

2. GENERALITIES (PRE-SURVEY)

In this report, terms used that have Initial Capitals are proper nouns, have a recognised formal meaning or are defined in the Glossary appended to the report.

2.1 Purpose and scope

Purpose

A report is required which gives the assessment (by a number of methods) of the trees that might be affected by the flood prevention proposals. This may be used by interested parties to inform an evaluation of the impact of the proposals and/or to evaluate alternative proposals.

The following is an outline of the methods to be used; fuller details can be found by following the full references in the Bibliography appended to this report –

2.1.1 BS 5837:2012 "*Trees in relation to design, demolition and construction – Recommendations*"

This records the results of a tree survey for each tree or group, giving an above-ground height and spread and other information that can be used to delineate appropriate above ground constraints and below ground Root Protection Areas ("RPAs") for all trees or groups of trees. Taking into account the quality, life expectancy and condition of each of each, a ranked categorisation (A, B, C or U) is assessed, which represents the relative retention desirability for each. This can be used as a selection criterion in the event of design and development.

The tree survey data, plotted on a site plan to show tree locations and constraints, may be used as a design tool to inform decisions (in terms of constraints above and below ground, tree quality and longevity) as to which trees are to be retained and which are to be removed, avoided or pruned to accommodate a specific form of development.

Trees and groups are assessed independently of any specific design layout.

2.1.2 Quantified Tree Risk Assessment

This provides an assessment of the risk of harm or damage from failure of each tree or any part of it. Using ranges of values, the tree assessor considers (i) the land-use in terms of vulnerability to impact (damage to property) and likelihood of occupation (harm to

persons) (ii) the consequences of an impact, taking account of the size of the part that might fail and (iii) the probability of failure onto the assessed land-use. These factors are then used to derive an annual Risk of Harm for a tree and to make risk reduction recommendations by comparison with published advisory risk thresholds.

The risk associated with trees can be expressed in accordance with general advice from the Health & Safety Executive (2001).

In short, the magnitude of risk is a combination of *Probability of failure x Severity of harm or damage x Likelihood of someone or something being present.*

The risk is quantified and recorded for each component part within broad categories that combine to give, within an order of magnitude, overall risk categories.

Negligible → Acceptable → Tolerable (medium) → Tolerable (high) → Unacceptable

2.1.3 Valuation (generalities)

At present a number of published methods co-exist in the UK for attaching monetary value to amenity trees. The appropriateness of each depends on circumstances and no generalisation is readily possible.

Tree valuations are not 'Valuations' as defined in the Royal Institute of Chartered Surveyors "RICS Valuation – Global Standards, (or the RICS 'Red Book Global' as it has become widely known). Rather, they are monetisation of tree benefits under specific headings. For the purpose of this report the terms 'Valuation' and 'value' are used in that restricted context.

2.1.3.1 Valuation – Helliwell system

This system is published by the Arboricultural Association. It is for valuation of the visual amenity provided by trees and groups. It allocates scores to each tree or group under factors of size, expected duration (life expectancy), importance in the landscape, other tree cover present, suitability to setting and form. These are combined (multiplicatively) and the product is converted to a monetary value using a points-to-£s factor published by the Tree Council from time to time.

2.1.3.2 Valuation – CAVAT system

This system has been developed mainly by the London Tree officers Association. CAVAT ('Capital Asset Value for Amenity Trees') and gives two similar methods. The Full Method is used to provide a compensation replacement value for single trees or groups of trees, to be used when precision is required and sufficient time

is available for a full assessment. The Quick Method is used to determine the value of a population of public tree stock as a financial asset.

Since the methods can give substantially different figures for the same tree or group, for the purpose of this report the 'Full Method' has been used as the one that is more precise.

The Method uses the trunk cross sectional area to scale up the published replacement cost of a notional small replacement tree. This is then adjusted for local population density, public accessibility and visibility, physical depreciation and safe life expectancy to give something akin to a Depreciated Replacement Cost value.

2.1.3.4 Valuation – CTLA

This system is a suite of methods developed by the Council of Tree and Landscape Appraisers, published by the International Society of Arboriculture. It is aimed primarily at assessment of privately owned trees for compensation purposes. Of the suite, only the Functional Replacement Method is appropriate to this project.

It is a Depreciated Replacement Cost method that uses the stem cross sectional area to scale up the local tree nursery cost of the same or similar species, which is then depreciated for condition and functional redundancy.

2.2 Practicalities and assumptions

Plans, precision and accuracy

The site is identified on the OS Vectormap drawing provided to me, and this has been adapted by me to show only the trees and groups of trees recorded during the tree survey.

To assist with the plotting and interpretation of the tree data, additional base mapping has been acquired at OS Mastermap scale, and this has been added as an inset to the Vectormap mapping.

I have not been provided with a topographic survey plan showing the position of any trees.

Where tree positions have been plotted during the tree survey, this has been done using a combination of GPS positions and positions relative to physical features shown on the base map.

A degree of inaccuracy is inevitable, though rarely significant, but the position of trees may have to be plotted more accurately if they are found to be in very close proximity to proposed development.

Minimum sizes, grouping

Only trees and large shrub species with a stem diameter of 150 mm or more are to be recorded.

Where it is deemed appropriate, individual trees within homogeneous groups will not be identified; instead the group will be delineated, measured and described collectively.

Levels

BS5837 suggests that in a topographic survey spot levels at the base of trees should be recorded at the base of each tree. Where this has been done the information will already be available to designers, but it cannot be captured during a tree survey.

Risk and BS5837

The assessed risk will be reflected in the categorisation of the tree on the assumption that any recommended works have been carried out.

2.3 Generalities – limitations and statutory restrictions

The survey was carried out in accordance with the Methodology set out in the Appendix to this report. This report is based on a visual inspection from ground level only.

The trees have been assessed only on the basis of expected endemic weather patterns for the location.

No intrusive or destructive tests were carried out, the survey did not include exhaustive foliar examination (except for purposes of identifying the species) and the inspection was primarily visual and was conducted from the ground and no climbing was done.

The trees have been assessed during a single visit in a single season, in the weather conditions noted in the 'Findings' section of the report, with the limitations that this brings, such as the opportunity to assess the reaction of the tree to a variety of wind strengths and directions, the presence of seasonal fungal Fruiting Bodies, visibility of branch structures or fruit/foliage vitality.

Dense basal epicormics and/or ivy on trees, and occasionally dense undergrowth can obstruct the full inspection of trees. No permission has been sought from the owners to allow the removal of such obstructions, and none have been removed.

I have not been instructed to check the relevant Local Authority as to the existence of Conservation Area designation or Tree Preservation Orders. Such designations could

have the statutory effect of prohibiting certain tree works or be indicative of the Local Authority's existing view of the importance of the trees to the amenity of the area.

2.4 Generalities - Soil and other ground conditions

No sampling, examination or analysis of the soil was done. Unless otherwise stated at s.3.5 below, only general assumptions have been made in the course of the survey and reporting about likely ground conditions, related in part to observations of current tree vitality.

BS5837 suggests that a soil assessment should be undertaken by a competent person to inform any decisions relating to the root protection area (RPA), tree protection, new planting design and foundation design to take account of retained, removed and new trees. For existing trees, unless vitality is obviously being affected by ground conditions, soil testing is not always necessary. Ground conditions may be attributable to other factors, particularly hydrological ones, which may not be informed by soil tests.

Ground conditions, particularly shrinkable clays, relative to new planting design and foundation design to take account of retained, removed and new trees are beyond the scope of this report.

2.5 Generalities - Tree categorisation protocols

For a tree (or group of trees) to qualify under any given category, it should fall within the scope of that category, as defined in the British Standard BS5837:2012.

The main criteria are set out in Appendix 5 to this report.

3. INVESTIGATIVE FINDINGS (DURING SURVEY)

3.1 Practicalities

The tree survey was undertaken on 8th and 9th January 2023.

The conditions were overcast, intermittently dry to rainy, cold and with a moderate westerly breeze.

Access was taken to any land where (and to the extent that) this appeared to be unrestricted and where access was desirable to improve on the quality of the tree assessments.

Access to the base of some of the trees in the east side of the site was physically prevented or restricted due to water.

GPS signals were unusually poor in some parts of the site, particularly under dense tree cover, and the plotted tree positions reflect the resulting imprecision. For this survey it was found that the accuracy of plotting of trees was reasonably good, to within 1 to 2 metres.

No tags have been applied to any of the trees, nor were any older tags found. A sequential number has been assigned to each tree or group of trees.

Where trees were found to form cohesive arboricultural features either aerodynamically, visually or culturally (including for biodiversity), they have been recorded as Groups.

3.2 Site description (general)

The site comprises the west embankments of Poynton Pool, bounded as follows-

On the west by the heel of the footpath of the A523 Poynton to Stockport road.

On the north by Anglesey Drive.

On the east by the east side of the public car park and thereafter in a southwards direction by the Pool's water's edge.

On the south by an arbitrary position on the embankment where the ground level rises noticeably into an elongate mound heading southwards (beyond which point it is assumed that flood resilience is not in question).

The extent of the survey is shown on the plans following this report.

3.3 Trees and groups recorded

A total of about 150 trees and groups were recorded individually.

The spread of the crowns of the recorded trees have generally been estimated at 4 cardinal points. Only the average spread has been given where crowns were found to be approximately circular in horizontal extent.

Holly and other shrub species were noted but are generally considered shrubs that do not come within the remit of the British Standard, and individuals have only been recorded if they had the stature of what one would ordinarily call a 'tree' and/or.

There are a number of trees on the east edge of the land, all white willows or a hybrid thereof, which have collapsed eastwards and are partly in the reservoir. It is not possible to assess these as amenity trees using any of the chosen methods. Accordingly they have not been included in the survey, but their positions have been noted. They may have considerable ecological value which is not expressed in tree amenity valuations. There may be operational reasons why they cannot be retained in a reservoir, but this is not explored in this report.

The investigative findings for the survey stage (species, description, measurements, characteristics, categorisation etc.) are summarised in **the first Appendix** to this report.

The appendix is a precis of a much larger data set, and where there are empty parts in the table there may also be hidden data that has been used to inform the overall conclusions for each tree and group.

3.4 Veteran or ancient trees and ancient woodland

The survey did not identify the presence of individual veteran or ancient trees on or around the site.

3.5 Soil and ground conditions and conclusions

At 2.3 above the generalities of soil and other ground conditions have been stated.

The solid geology in the area is known to be Manchester Marls Formation - Mudstone. Sedimentary bedrock formed between 272.3 and 252.2 million years ago during the Permian period (north half of the survey area) and Chester Formation - Sandstone, pebbly (gravelly). Sedimentary bedrock formed between 250 and 247.1 million years ago during the Triassic period.

Superficial deposits in the area (where present) are known to be Till, Devensian - Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

During the course of the survey, no additional relevant observations were possible except to note that where trees have been windthrown in the past the soil exposed appeared to be clay-rich and pebbly. It is also surmised that the embankment is likely to comprise made ground, albeit won locally.

Due to past disruption, it is not possible to reach a conventional view on the suitability of the soils for tree growth and stability.

3.6 QTRA (Risk assessment data)

It was observed over the two survey days that use of the footpath through the survey area was at the low end of the QTRA range '8 to 72 persons per hour'. This is based on 2 weekday daytime winter days in moderately poor weather. It is predicted that this range is not likely to be exceeded habitually, even at peak times such as summer weekends in good weather.

Almost no pedestrian traffic was observed on the public footway of the adjacent public road. The average occupancy level is therefore estimated at the high end of QTRA range '7 to 2 persons per hour' and not habitually exceeding that range in peak usage.

Published vehicular traffic levels on the adjacent public road are of the order of 6,300 daily northbound and 7,400 daily southbound. The speed limit is 40 miles per hour. The occupation is therefore in QTRA occupancy range 1, '36,000 to 3,700 per day'.

3.7 Valuation data

In addition to the data required for BS5837 purposes, for each tree or group of trees, the data required for valuations by the Helliwell, CTLA and CAVAT valuation methodologies was gathered. This comprised –

- Crown spread diameter (north to south)
- Crown spread diameter (east to west)
- Tree live height
- Height to crown base
- % crown missing
- % Crown condition

- Crown light exposure
- Location Factor
- Functional Structural value
- Functional Crown value
- Adjustment Factor
- Safe Life Expectancy
- Value (%) retained
- Crown size
- Expected duration
- Position (importance)
- Other trees
- Relation to setting
- Form
- Physical deterioration and %
- Functional Limitations and %
- External limitations and %
- Direction to closest building
- Distance to closest building

For groups, the data used for each valuation are different. This is particularly so for groups, where the Helliwell system uses the visual area of the group whereas CAVAT and CTLA are based on the value of the components of the groups, times the number of components. To facilitate this, each group is recorded twice, the first for a Helliwell valuation and the second for a CTLA and CAVAT valuation.

The CTLA methodology requires the unit cost of the largest commonly available functional replacement nursery tree and associated transportation costs. This has been costed from data provided by several tree nurseries.

The CAVAT methodology requires a ‘Community Tree Index’ which is an indication of the relative density of population in the area. Indices for local authority areas in England are published by CAVAT, but no index is provided for East Cheshire. The appropriate index has therefore been calculated using government data of population and land area.

4. BS5837 TREE CONSTRAINTS (POST-SURVEY)

The tree constraints plan(s) referred to in the following sections are available in CAD format for use in detailed design. CAD plans will allow the constraints from each tree to be seen more clearly and for one or more trees (for example, all Category U trees) to be 'switched off' to clarify what the remaining constraints are.

4.1 Above ground constraints

The extent of the crowns is plotted on the plan appended to this report, colour-coded to give an immediate overview of their relative retention desirability.

For groups, the extent of the Group including the crown spreads of edge trees, is shown on the plan.

Within groups the spread of individual trees may overlap, such that the removal of individual trees from the group, may not allow construction in the volume that had been occupied by those trees. Importantly, removal of trees from Groups will result in loss to the remaining trees of companion shelter and may reduce the wind-firmness of remaining trees within the Group or the whole Group and/or may result in storm breakages of limbs or forks.

Using the plan as a guide, it may be appropriate to define areas within which development may be constrained by the presence of tree crowns or canopy. That said, the crown spreads do not necessarily represent the height at which crowns might constrain development.

To aid with this I have provided an average or representative crown or canopy height. For offsite or boundary trees this is the representative height of the on-site part of the crown.

Development below this height may be possible, or selective branch removal may be possible whilst retaining the rest of the tree.

4.2 Below ground constraints (present)

The root protection area ("RPA") indicates the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

Although the data necessary to plot these has been gathered, it is not immediately required for the purpose of the report at present, and it has not been portrayed on the Plan.

4.3 Tree shade and shadow

BS5837 provides an optional method of trying to portray the effect of tree shade and shadow on development sites. This has not been done because daylighting aspects are unlikely to be of relevance to the design of flood protection measures.

4.4 Retention desirability categorisation

The retention desirability categorisation of trees follows the guidance in BS5837. Greatest consideration could be given to retaining Category A and B trees (i.e. generally those with an estimated Remaining Contribution of 20 or more years).

Typically designers make the assumption that the amenity contribution of Category C trees (typically, those having and Estimated Remaining Contribution of 10 to 20 years) and Category U trees are likely to be exceeded by the design life of any proposed development, and these may be suitable for retention only in low risk or low visibility locations, as contributions to high/moderate quality tree groups or in positions where a replacement tree would be desirable in due course.

Through shared data on aspects like estimated life expectancy and condition, there is a general correlation between the categorisations and the monetary value of trees, and the plans attached to this report can therefore in a general sense indicate- and give an immediate impression of- (by colour coding) the positions and locations of the ‘best’ trees.

5. RISK FINDINGS AND RECOMMENDATIONS

5.1 Assessed risks (current usage)

Where failure of any tree or part of it cannot be reasonably foreseen in endemic weather conditions, the risk is automatically deemed to be ‘Acceptable’ or ‘Negligible’, as no further assessment of Target or Severity value is required.

No trees were found that presented a less than ‘Acceptable’ risk. The vast majority of the trees were found to have a ‘Negligible’ risk.

Accordingly, no risk reduction works are recommended in the context of current usage of the site at present.

6. VALUATION FINDINGS

Using the gathered data, each individual tree or group of trees has been valued according to the three methods (see 2.1.3 above).

The results of the valuations for each tree or group by each method are given in the appendix to this report.

7. CONSTRAINTS

7.1 Statutory constraints

I have not checked with the relevant Local Authority as to the existence of Conservation Area designation or Tree Preservation Orders which has or could have the statutory effect of prohibiting certain tree works or tree damage, or be indicative of the Local Authority's existing view of the importance of the trees to the amenity of the area.

Separate consent or notification would normally be required for tree works or wilful tree damage in a Tree Preservation Order or Conservation Area. It should be noted, though, that the cutting down, topping, lopping or uprooting of a tree when (and only to the extent that) that work is immediately required for the purposes of carrying out development authorised by detailed planning permission does not require separate consent.

A 'felling licence' is usually required from the Forestry Commission for larger volumes of timber. A number of exemptions exist, including for trees with a diameter not exceeding 10 centimetres, trees in orchards, gardens, churchyards or public open spaces, felling where the aggregate cubic contents 5 m^3 in any, the prevention of immediate danger to persons or to property, trees badly affected by Dutch Elm Disease and dead trees.

There is also an exemption for the felling of a tree where immediately required for the purposes of carrying out development authorised by planning permission granted or deemed to be granted under the Planning Acts.

7.2 Woodland or tree removal policy constraints

Woodland removal can trigger Government policies protecting against the loss of woodlands generally. Protection can be more stringent where remnants of ancient woodland character are present.

A definitive assessment of whether any parts of the site comprise protected woodland is beyond the scope of this report.

It is noted that East Cheshire Council's 'Site Allocations and Development Policies Document - Adopted December 2022' endorses the use of CAVAT as a means of assessing lost tree amenity in development situations.

8. SUMMARY

As an aid to (i) project design and selection of trees for retention and protection and (ii) assessing risk in the current usage of the site and (iii) consideration of the amenity value of the trees, all the trees and groups of trees on the site have been identified, measured and recorded and then (i) categorised for relative retention desirability, all in accordance with BS5837, (ii) assessed for risk using the Quantified Tree Risk System and (iii) the monetary value has been calculated using the Helliwell, CAVAT and CTLA valuation systems.

The qualifications and tree valuation expertise and experience of the surveyor are stated at the start of the report.

Where tree positions have been plotted during the tree survey, this has been done using a combination of any available topographic survey information, GPS positions and positions relative to physical features shown on the base map.

A degree of inaccuracy is inevitable, though rarely significant, but the position of trees may have to be plotted more accurately if they are found to be in very close proximity to proposed development. For this tree survey, the plotting of trees could be achieved at 1 to 2 metres accuracy.

The position of the trees and groups of trees, and the extents of their crowns and combined canopies (colour coded for relative retention desirability) are represented on the Plan immediately following this report.

A number of collapsed willows in the Pool itself, emanating from the east side of the embankment have been noted but cannot be assessed for amenity value using any of the methods. Separate consideration of their ecological value may be appropriate.

The data has been collected that would be required to plot the Root Protection Areas of the trees, but the plotting has not been done at this time.

The printed plan may not be convenient or adequate on its own for detailed design choices. A CAD version of the plan is being made available for viewing in greater detail and for use by designers if required. This allows each category of tree to be selected and/or the constraints of individual trees to be viewed.

The survey did not note the presence of any ancient or veteran trees on the site. No attempt has been made to establish whether any parts of the site comprise woodland of sufficient size and density to be relevant to Government policies on woodland removal if removal were proposed.

No checks have been made on Conservation Area or Tree Preservation Order restrictions on tree works. Separate consent would normally be required for tree works in a Tree Preservation Order area or Conservation Area or the felling of larger volumes of timber, unless exempted, and in particular by the grant of detailed planning permission.

No trees were found that might present an imminent and serious hazard to life or property or to constitute a less than 'Acceptable' risk, and the vast majority were assessed as constituting a 'Negligible' risk.

The trees and groups have been valued individually in accordance with the Helliwell, CAVAT and CTLA systems, to provide monetary values for each tree or group. These are provided in the Appendix to this report.

The individual figures, in conjunction with the BS5837 categorisation and the risk assessments may be used as the basis for assessing the arboricultural impact and monetising the collective effect on lost tree amenity for the proposed- or any other- flood prevention scheme.

Considerable differences arise between the total values derived from the 3 systems, as illustrated by the total figures for all trees and groups -

Helliwell	£ 418,490
CAVAT	£3,081,070
CTLA	£5,442,000
Mean value	£2,980,520

In view of the Council's policy on the use of CAVAT in development situations (See section 7.2 above), and since it gives and aggregate figure that is close to the mean value for all 3 methods, the CAVAT figures appear to represent the most suitable starting point for application of values to the development situation.

The values attributed to each tree can be used to calculate the total for any chosen development scenario.

Julian A. Morris

Signed 

Dated February 2023

Path

Car Park

90.1m

El Sub Sta

ANGLESE

utfall

Wayside

Poynton Pool

89.6m

Path

White House

Ward Bdy

89.8m

90.2m

RIVE

Category A group spread

Category B group spread

Category C group spread

Category 'A' Category 'B' Category 'C' Category 'U'

0 120m

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PROJECT: Poynton Pool tree valuation

DRAWING: Overview

SCALE : 1 : 1500 @ A3

DATE : 07/02/2023

N

The original of this drawing was produced in colour
- a monochronme copy should not be relied upon

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PROJECT: Poynton Pool

DRAWING: Tree and group positions and categorisations
North section (1 of 2)

SCALE : 1 : 750 @ A3 | DATE : 07/02/2023

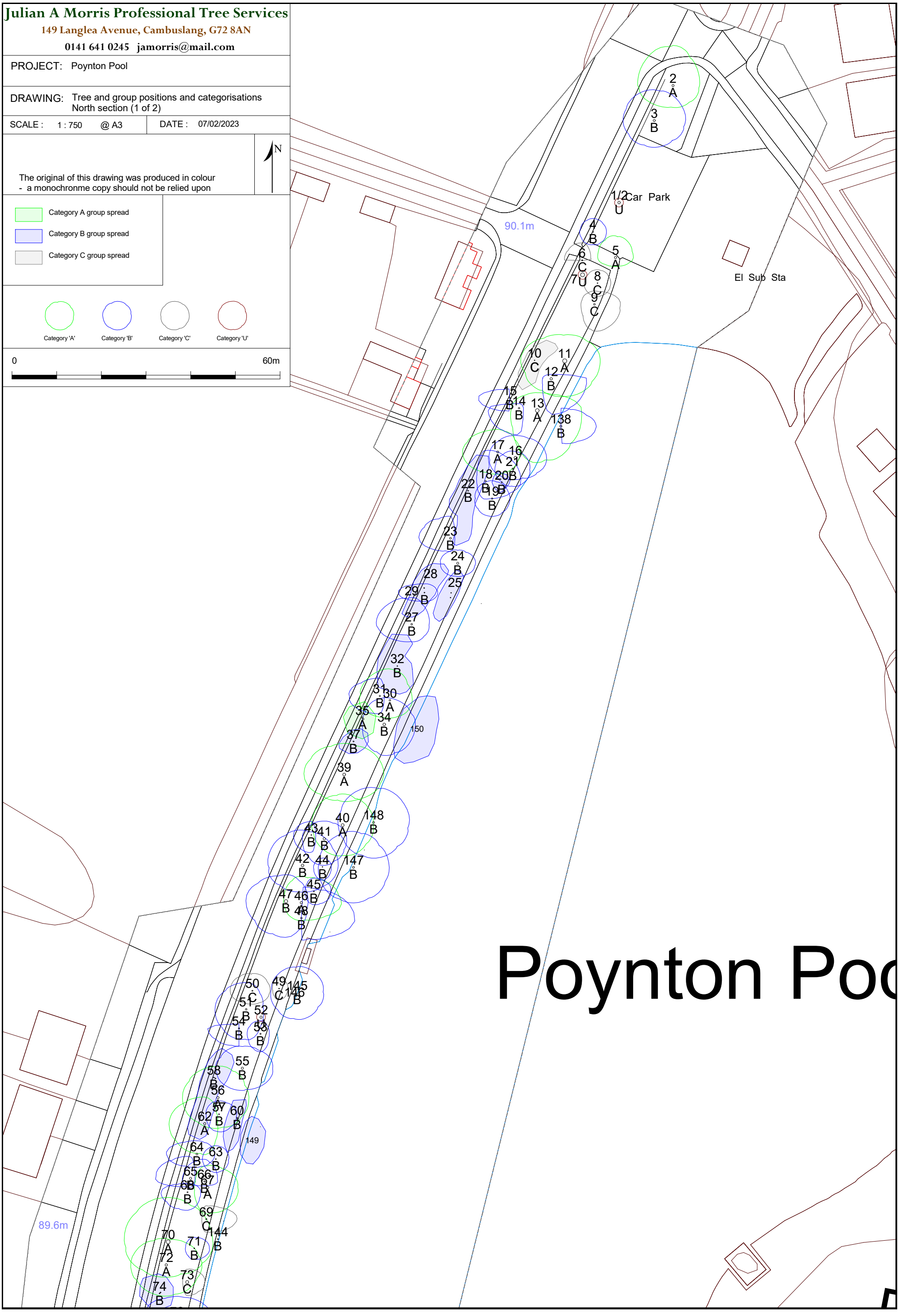
N

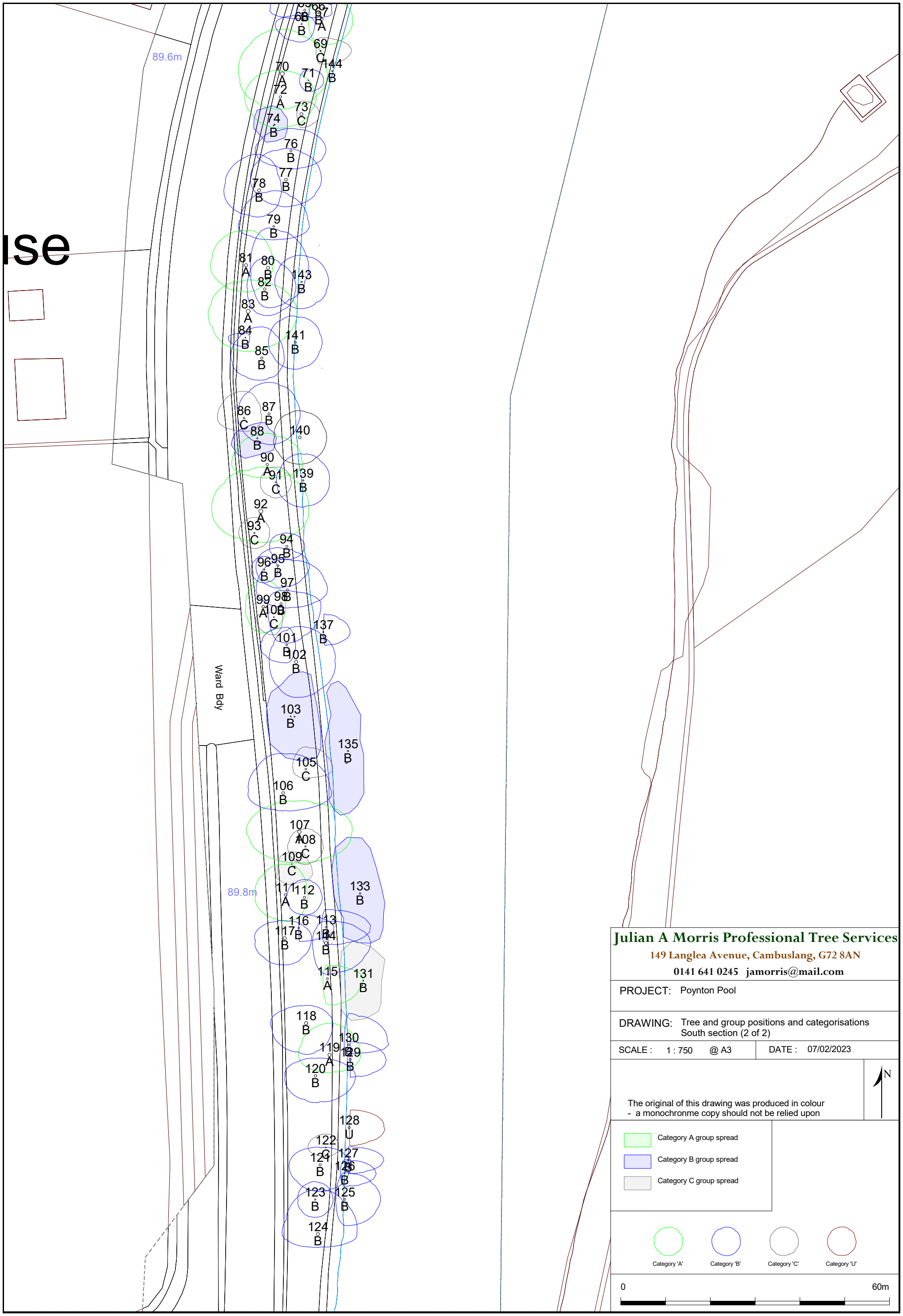
The original of this drawing was produced in colour
- a monochronme copy should not be relied upon

Category A group spread
Category B group spread
Category C group spread

Category 'A' Category 'B' Category 'C' Category 'U'

0 60m




89.6m
Ward Bdy
89.8m
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PROJECT: Poynton Pool
DRAWING: Tree and group positions and categorisations
South section (2 of 2)
SCALE : 1 : 750 @ A3
DATE : 07/02/2023
N
The original of this drawing was produced in colour
- a monochronme copy should not be relied upon
Category A group spread
Category B group spread
Category C group spread
Category 'A'
Category 'B'
Category 'C'
Category 'U'
0
60m

Ident-fier	Common name	*Binomial*	No of stems (if >1) or trees	Effective dia. (mm)	Tree Height [alive + dead] (m)	Live height [if different] [iT]	Height to crown base (m)	Spread N (m) or ave.	Spread E (m)	Spread S (m)	Spread W (m)	Observations	Risk [QTRA]	Inter-ventions	Cond-ition [iT]	Lifestage	ERC [BS5837]	BS5837 category	Helliwell points	Point value	Helliwell value (£)	CAVAT unit value (£/cm2)	Basic value	CAVAT VALUE (£)	Cross sectional area (cm2)	Unit cost (£/cm2)	No. of trees	CTLA VALUE (£)
	Individual Trees	***West of path***																										
1	Common Lime	*Tilia x europaea*		600	3	3	0	1	1	1	1	Stump. Kretzschmaria around base	Negligible	None	Poor	n/a	< 10	U	0.375	43	£20	18.44	52138	£470	2827	26	1	£2,200
2	Hornbeam	*Carpinus betulus*	2	500	10	10	1	9	6	5	8	Twin stemmed from base. Dense decurrent crown	Negligible	None	Good	Mature	> 40	A	243	43	£10,450	18.44	36207	£30,960	1964	26	1	£47,500
3	Sycamore	*Acer pseudoplatanus*		500	18	18	2.5	7	7	6	7	Upright largely excurrent. Light ivy to mid crown. Lower branch removal stub W	Negligible	Sever ivy around base	Fair to Good	Early-mature	> 40	B	162	43	£6,970	18.44	36207	£27,860	1964	26	1	£51,100
4	Lime	*Tilia sp.*		230	13	13	2	3	3	3	3	Topped at 9m and regenerating as multistemmed	Negligible	None	Fair to Good	Semi-mature	> 40	B	54	43	£2,320	18.44	7661	£6,550	415	26	1	£7,900
5	Sycamore	*Acer pseudoplatanus*		510	18	18	3.5	5	4	2	4	Slight lean N. Crown lifted. Dense ivy to mid crown	Negligible	None	Fair to Good	Early-mature	> 40	A	90	43	£3,870	18.44	37670	£32,210	2043	26	1	£38,800
6	Sycamore	*Acer pseudoplatanus*		230	10	10	2.5	4	2	0	4	Suppressed from S. Suppressing now gone. One sided	Negligible	None	Fair to Good	Semi-mature	> 40	C	26.25	43	£1,130	18.44	7661	£4,420	415	26	1	£9,300
7	Unknown broadleaf			900	7	7	2.5	1	1	1	1	Probably Norway Maple, 3 buds. Topped presumably inclusion fork risk	Negligible	None	Poor	Mature	< 10	U	1.5	43	£60	18.44	117310	£260	6362	26	1	£13,200
8	Holly	*Ilex aquifolium*	3	150	5	5	0	3	3	3	3	Shrubby and multistemmed from base	Negligible	None	Fair to Good	Young	> 40	C	31.5	43	£1,350	18.44	3259	£2,790	177	26	1	£4,300
9	Sycamore	*Acer pseudoplatanus*		390	16	16	4	3	6	6	3	Formerly suppressed from NW. Large stub at base S	Negligible	None	Fair	Semi-mature	10 to 20	C	38.25	43	£1,640	18.44	22028	£7,750	1195	26	1	£22,700
11	Beech	*Fagus sylvatica*		950	25	25	2.5	6	8	8	10	Upright balanced slight stem torsion	Acceptable	None	Fair to Good	Mature	> 40	A	117	43	£5,030	18.44	130707	£111,750	7088	26	1	£156,200
12	Pedunculate Oak	*Quercus robur*		550	23	23	2.5	1	8	8	2	Moderate bias SE.	Negligible	None	Fair to Good	Early-mature	> 40	B	67.5	43	£2,900	18.44	43810	£29,970	2376	26	1	£54,400
13	Pedunculate Oak	*Quercus robur*		850	23	23	4	4	10	12	6	Upright balanced decurrent. Lower deadwood. Slight thinness of crown	Negligible	None	Good	Mature	> 40	A	144	43	£6,190	18.44	104638	£80,520	5675	26	1	£127,600
14	Sycamore	*Acer pseudoplatanus*		350	20	20	2.5	1	1	6	7	Crown bias W. Moderate ivy to mid crown	Negligible	None	Fair	Semi-mature	20 to 40	B	50.6	43	£2,180	18.44	17741	£8,620	962	26	1	£23,300
15	Pedunculate Oak	*Quercus robur*		220	11	11	5	2	0	3	7	Lean and bias W over road	Negligible	None	Fair to Good	Young	> 40	B	30	43	£1,290	18.44	7010	£4,050	380	26	1	£7,600
16	Sycamore	*Acer pseudoplatanus*		600	19	19	3	5	7	5	6	Twin stemmed from good fork at 2.5m. midheight deadwood and breakages	Acceptable	None	Fair to Good	Mature	> 40	B	126.5625	43	£5,440	18.44	52138	£40,120	2827	26	1	£60,200
17	Sycamore	*Acer pseudoplatanus*		460	21	21	2.5	5	5	5	8	Upright slight bias W. Twin stemmed from 6m	Negligible	None	Fair to Good	Early-mature	> 40	A	87.75	43	£3,770	18.44	30646	£19,650	1662	26	1	£40,200
18	Sycamore	*Acer pseudoplatanus*		350	13	13	3.5	7	8	4	2	Decurrent. Moderate deadwood	Negligible	None	Fair	Semi-mature	20 to 40	B	51.75	43	£2,230	18.44	17741	£5,110	962	26	1	£22,000
19	Holly	*Ilex aquifolium*	6<10	320	8	8	2	4	4	4	4	Multistemmed from base. Close to path	Negligible	None	Good	Early-mature	> 40	B	42	43	£1,810	18.44	14830	£12,680	804	26	1	£17,100

Julian A Morris Professional Tree Services,
149 Langlea Avenue, Cambuslang, G72 8AN

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21	Yew	*Taxus baccata*		300	9	9	2	4	4	4	4	Poorly crown lifted	Negligible	None	Fair to Good	Early-mature	> 40	B	81	43	£3,480	18.44	13034	£10,030	707	26	1	£15,000
23	Pedunculate Oak	*Quercus robur*		430	19	19	2	5	1	3	7	Crown bias W. Lower deadwood	Negligible	None	Fair to Good	Semi-mature	> 40	B	55	43	£2,370	18.44	26779	£13,740	1452	26	1	£35,100
24	Sycamore	*Acer pseudoplatanus*		480	19	19	3.5	3	4	3	4	Dense ivy to mid crown. Poor lower vigour	Negligible	Sever ivy around base	Fair to Good	Semi-mature	> 40	B	75	43	£3,230	18.44	33368	£25,680	1810	26	1	£40,700
27	Pedunculate Oak	*Quercus robur*		370	18	18	3	6	4	4	8	Blocking streetlight	Negligible	Prune back from streetlight	Good	Semi-mature	> 40	B	78	43	£3,350	18.44	19827	£14,870	1075	26	1	£24,600
30	Beech	*Fagus sylvatica*		380	22	22	4	7	5	4	7	Upright balanced excurrent	Negligible	None	Good	Semi-mature	> 40	A	175.5	43	£7,550	18.44	20913	£14,900	1134	26	1	£27,400
31	Sycamore	*Acer pseudoplatanus*		310	12	12	2.5	4	1	4	7	Distorted form.	Negligible	None	Fair to Good	Semi-mature	20 to 40	B	34.5	43	£1,480	18.44	13918	£6,010	755	26	1	£16,100
34	Sycamore	*Acer pseudoplatanus*		610	18	18	3.5	6	7	7	5	Lower deadwood. Decurrent from 9m	Negligible	None	Good	Early-mature	> 40	B	117	43	£5,030	18.44	53890	£41,470	2922	26	1	£65,700
39	Turkey Oak	*Quercus cerris*		670	28	28	4	7	9	6	9	Suppressed SE. Minor deadwood	Negligible	None	Good	Mature	> 40	A	96	43	£4,130	18.44	65013	£37,060	3526	26	1	£75,000
40	Lime	*Tilia sp.*		680	30	30	4	7	7	7	7	Well buttressed upright balanced	Negligible	None	Good	Mature	> 40	A	216	43	£9,290	18.44	66968	£57,260	3632	26	1	£92,500
41	Common Lime	*Tilia x europaea*		550	28	28	0	4	5	6	5	Dense basal epicormics. Burred stem. Upper breakages.	Negligible	None	Fair	Mature	20 to 40	B	51.75	43	£2,230	18.44	43810	£21,030	2376	26	1	£45,100
42	Norway Maple	*Acer platanoides*	2	620	25	25	5	8	8	6	8	Twin stemmed from long inclusion fork with fair adaptive growth	Acceptable	None	Fair	Mature	20 to 40	B	51.75	43	£2,230	18.44	55672	£21,040	3019	26	1	£50,400
43	Holly	*Ilex aquifolium*		180	6	6	0	3	1	4	4		Negligible	None	Good	Early-mature	> 40	B	31.5	43	£1,350	18.44	4692	£3,520	254	26	1	£6,200
44	Holly	*Ilex aquifolium*		170	6	6	0	2	2	3	2		Negligible	None	Good	Early-mature	> 40	B	30	43	£1,290	18.44	4186	£3,580	227	26	1	£5,500
45	Holly	*Ilex aquifolium*		230	10	10	0	3	4	3	2		Negligible	None	Good	Early-mature	> 40	B	54	43	£2,320	18.44	7661	£7,280	415	26	1	£10,600
46	Horse Chestnut	*Aesculus hippocastanum*		550	20	20	2.5	6	9	4	4	Well buttressed. Crown bias E. Suppression S recently removed	Negligible	None	Good	Mature	> 40	A	175.5	43	£7,550	18.44	43810	£28,090	2376	26	1	£50,600
47	Turkey Oak	*Quercus cerris*		760	20	20	2	6	5	8	9	Suppression S recently removed. Imbalanced crown E. Midsize deadwood	Negligible	None	Fair to Good	Mature	> 40	B	64.4	43	£2,770	18.44	83653	£40,150	4536	26	1	£86,100
48	Pedunculate Oak	*Quercus robur*		380	17	17	3	7	12	5	0	Steady lean E	Negligible	None	Fair to Good	Early-mature	20 to 40	B	128.0813	43	£5,510	18.44	20913	£13,380	1134	26	1	£24,500
49	Holly	*Ilex aquifolium*	3	210	6	6	1.5	2.5	2	2.5	1.5	3 related stems	Negligible	None	Fair to Good	Semi-mature	> 40	C	33.75	43	£1,450	18.44	6387	£3,690	346	26	1	£8,400
50	Lime	*Tilia sp.*		250	12	12	0	4	4	3	5	Maturing basal epicormics. Crown damaged by adjacent tree	Negligible	None	Fair	Semi-mature	20 to 40	C	34.5	43	£1,480	18.44	9052	£4,400	491	26	1	£9,900

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51	Lime	*Tilia sp.*		370	18	18	1.5	6	4	7	7	Upright. Blocking streetlight	Negligible	Prune back from streetlight	Fair to Good	Semi-mature	> 40	B	78	43	£3,350	18.44	19827	£12,710	1075	26	1	£22,900
52	Sycamore	*Acer pseudoplatanus*		540	7	7	0.5	1	1	1	1	Large basal cavity. Removed at 5m and regenerating weakly	Negligible	None	Poor	Early-mature	< 10	U	5.1	43	£220	18.44	42232	£250	2290	26	1	£4,800
53	Yew	*Taxus baccata*		260	8	8	0	3	2	4	3	Decaying stubs at base E	Negligible	None	Fair to Good	Early-mature	> 40	B	42	43	£1,810	18.44	9790	£7,530	531	26	1	£10,700
54	Sycamore	*Acer pseudoplatanus*		300	12	12	2.5	1	0	4	7	Imbalanced crown E	Negligible	None	Fair to Good	Semi-mature	> 40	B	33.75	43	£1,450	18.44	13034	£7,520	707	26	1	£15,000
55	Common Lime	*Tilia x europaea*		500	25	25	0	5	7	5	6	Dense basal epicormics	Negligible	None	Fair to Good	Early-mature	> 40	B	202.5	43	£8,710	18.44	36207	£20,900	1964	26	1	£44,200
56	Lime	*Tilia sp.*		500	28	28	3	7	7	7	8	Well buttressed upright balanced	Negligible	None	Good	Early-mature	> 40	A	144	43	£6,190	18.44	36207	£25,800	1964	26	1	£51,100
57	Yew	*Taxus baccata*		240	9	9	2	3	4	4	3		Negligible	None	Fair to Good	Early-mature	> 40	B	72	43	£3,100	18.44	8342	£6,260	452	26	1	£11,800
62	Beech	*Fagus sylvatica*		550	21	21	5	6	3	7	8	Well buttressed upright balanced. Suppression E gone	Negligible	None	Good	Mature	> 40	A	126	43	£5,420	18.44	43810	£31,210	2376	26	1	£51,300
63	Holly	*Ilex aquifolium*		190	8	8	0	3	3	3	3		Negligible	None	Fair to Good	Semi-mature	> 40	B	42	43	£1,810	18.44	5228	£4,470	284	26	1	£6,400
64	Horse Chestnut	*Aesculus hippocastanum*		430	16	16	2	3	4	3	7	Decurrent	Negligible	None	Fair to Good	Semi-mature	20 to 40	B	37.95	43	£1,630	18.44	26779	£11,570	1452	26	1	£27,200
65	Beech	*Fagus sylvatica*		480	21	21	1	5	1	2	8	Heavily biased W. Deadwood at 4m	Negligible	None	Fair to Good	Early-mature	> 40	B	30	43	£1,290	18.44	33368	£19,260	1810	26	1	£36,300
66	Horse Chestnut	*Aesculus hippocastanum*		330	18	18	2.5	5	3	1	5	Close to larger lime	Negligible	None	Fair to Good	Semi-mature	20 to 40	B	46	43	£1,980	18.44	15772	£5,680	855	26	1	£20,700
67	Common Lime	*Tilia x europaea*		600	23	23	2	5	7	6	3	Dense and maturing basal epicormics. Twin stemmed from 4m.	Negligible	None	Good	Mature	> 40	A	90	43	£3,870	18.44	52138	£49,530	2827	26	1	£61,000
68	Common Lime	*Tilia x europaea*		250	18	18	1.5	2	3	4	6	Maturing basal epicormics	Negligible	None	Fair to Good	Semi-mature	20 to 40	B	41.25	43	£1,770	18.44	9052	£4,890	491	26	1	£9,900
69	Sycamore	*Acer pseudoplatanus*		300	13	13	2	3	7	3	1	Decayed hollow stem with fair adaptive growth. Leaning E	Acceptable	None	Poor	Semi-mature	10 to 20	C	38.25	43	£1,640	18.44	13034	£2,870	707	26	1	£7,000
70	Beech	*Fagus sylvatica*		900	30	30	2	10	10	8	10	Upright balanced. Light ivy	Negligible	None	Good	Mature	> 40	A	96	43	£4,130	18.44	117310	£64,520	6362	26	1	£145,600
71	Horse Chestnut	*Aesculus hippocastanum*		200	7	7	0	2.5	3.5	2.5	2		Negligible	None	Fair to Good	Semi-mature	> 40	B	37.5	43	£1,610	18.44	5793	£5,500	314	26	1	£8,200
72	Beech	*Fagus sylvatica*		550	24	24	3	6	8	7	8	Upright balanced decurrent	Negligible	None	Good	Early-mature	> 40	A	144	43	£6,190	18.44	43810	£31,210	2376	26	1	£54,400
73	Pedunculate Oak	*Quercus robur*		700	11	11	1.5	3	4	3	1	Large cavities. Topped at 10m	Negligible	None	Fair	Mature	10 to 20	C	11.9	43	£510	18.44	70966	£9,760	3848	26	1	£53,000

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76	Beech	*Fagus sylvatica*		500	20	20	2.5	5	8	4	8	Burred stem with large cavity developing	Negligible	None	Fair	Early-mature	20 to 40	B	103.5	43	£4,450	18.44	36207	£15,210	1964	26	1	£34,700
77	Horse Chestnut	*Aesculus hippocastanum*		650	20	20	2	7	8	6	8	Large basal cavity W	Negligible	None	Fair to Good	Mature	20 to 40	B	110.4	43	£4,750	18.44	61190	£30,840	3318	26	1	£59,200
78	Beech	*Fagus sylvatica*		700	20	20	1	8	5	6	8	Small cavity developing at base	Negligible	None	Good	Mature	20 to 40	B	69	43	£2,970	18.44	70966	£38,320	3848	26	1	£81,900
79	Lime	*Tilia sp.*		430	18	18	2.5	8	8	3	8	Crown bias N	Negligible	None	Good	Early-mature	> 40	B	135	43	£5,810	18.44	26779	£25,440	1452	26	1	£37,800
80	Beech	*Fagus sylvatica*		710	24	24	4	9	9	9	4	2 large basal cavities. Triple stemmed from fair inclusion forks at 4m	Acceptable	None	Fair to Good	Mature	20 to 40	B	73.6	43	£3,160	18.44	73008	£46,720	3959	26	1	£70,900
81	Common Lime	*Tilia x europaea*		700	27	27	2	8	6	6	8	Crown bias E. Minor deadwood. Blocking streetlight	Negligible	None	Good	Mature	> 40	A	96	43	£4,130	18.44	70966	£45,510	3848	26	1	£81,400
82	Beech	*Fagus sylvatica*		580	24	24	5	7	7	6	4	Well buttressed upright. Imbalanced crown E. Large basal cavity N. Rocking slightly in wind	Acceptable	None	Fair to Good	Early-mature	20 to 40	B	69	43	£2,970	18.44	48720	£31,180	2642	26	1	£50,200
83	Beech	*Fagus sylvatica*		920	27	27	5	7	11	9	9	Upright balanced decurrent	Negligible	None	Good	Mature	> 40	A	144	43	£6,190	18.44	122582	£87,340	6648	26	1	£172,800
84	Sycamore	*Acer pseudoplatanus*		210	9	9	3	1	1	2	4	Crown bias W	Negligible	None	Fair to Good	Semi-mature	> 40	B	26.25	43	£1,130	18.44	6387	£3,640	346	26	1	£7,800
85	Common Lime	*Tilia x europaea*	3	530	22	22	1.5	7	5	5	7	Triple stemmed from base with light basal epicormics	Negligible	None	Good	Early-mature	> 40	B	135	43	£5,810	18.44	40682	£34,780	2206	26	1	£49,600
86	Common Lime	*Tilia x europaea*	6<10	430	20	20	2.5	6	4	3	6	Multistemmed stump regeneration with central decay	Negligible	None	Fair	Semi-mature	10 to 20	C	33.15	43	£1,430	18.44	26779	£7,730	1452	26	1	£21,300
87	Common Lime	*Tilia x europaea*	2	500	22	22	3	7	7	7	7	Twin stemmed with maturing basal epicormics	Negligible	None	Fair to Good	Mature	> 40	B	90	43	£3,870	18.44	36207	£30,960	1964	26	1	£44,000
90	Lime	*Tilia sp.*		560	24	24	6	7	8	3	8	Upright balanced. Blocking streetlight	Negligible	None	Good	Early-mature	> 40	A	135	43	£5,810	18.44	45418	£32,360	2463	26	1	£59,600
91	Lime	*Tilia sp.*	2	270	8	8	2	3.5	3.5	3.5	3.5	Twin stemmed from base. Suppressed	Negligible	None	Fair to Good	Semi-mature	20 to 40	C	27.6	43	£1,190	18.44	10558	£3,550	573	26	1	£12,400
92	Beech	*Fagus sylvatica*		930	24	24	1.5	10	11	7	11	Well buttressed upright balanced. Slight historic lean N self corrected	Negligible	None	Good	Mature	> 40	A	144	43	£6,190	18.44	125262	£119,000	6793	26	1	£176,600
93	Lime	*Tilia sp.*	2	280	16	16	1	3.5	3.5	3.5	3.5	Multistemmed stump regeneration with central decay	Negligible	None	Fair	Semi-mature	10 to 20	C	25.5	43	£1,100	18.44	11354	£2,530	616	26	1	£9,600
94	Common Lime	*Tilia x europaea*		500	19	19	2.5	3	4	3	4	Dense basal epicormics. Weak crown	Negligible	None	Fair to Good	Early-mature	20 to 40	B	50.6	43	£2,180	18.44	36207	£13,900	1964	26	1	£39,800
95	Lime	*Tilia sp.*		450	20	20	2.5	4	7	5	5		Negligible	None	Good	Early-mature	> 40	B	117	43	£5,030	18.44	29328	£20,900	1590	26	1	£41,400
96	Holly	*Ilex aquifolium*	3	240	6	6	0	3	3	3	3	Triple stemmed from base	Negligible	None	Good	Semi-mature	> 40	B	63	43	£2,710	18.44	8342	£5,350	452	26	1	£11,800

Julian A Morris Professional Tree Services,
149 Langlea Avenue, Cambuslang, G72 8AN

Ident-fier	Common name	*Binomial*	No of stems (if >1) or trees	Effective dia. (mm)	Tree Height [alive + dead] (m)	Live height [if different] [iT]	Height to crown base (m)	Spread N (m) or ave.	Spread E (m)	Spread S (m)	Spread W (m)	Observations	Risk [QTRA]	Inter-ventions	Cond-ition [iT]	Lifestage	ERC [BS5837]	BS5837 category	Helliwell points	Point value	Helliwell value (£)	CAVAT unit value (£/cm2)	Basic value	CAVAT VALUE (£)	Cross sectional area (cm2)	Unit cost (£/cm2)	No. of trees	CTLA VALUE (£)
97	Lime	*Tilia sp.*		540	23	23	4	7	9	4	7		Negligible	None	Good	Early-mature	> 40	B	90	43	£3,870	18.44	42232	£36,110	2290	26	1	£40,400
98	Beech	*Fagus sylvatica*		520	16	16	1	3	9	9	3	Well buttressed. Crown bias SE	Negligible	None	Good	Early-mature	> 40	B	90	43	£3,870	18.44	39161	£25,110	2124	26	1	£55,200
99	Turkey Oak	*Quercus cerris*		580	20	20	2.5	6	5	6	4	Lower deadwood	Negligible	None	Good	Mature	> 40	A	84	43	£3,610	18.44	48720	£31,240	2642	26	1	£53,000
100	Sycamore	*Acer pseudoplatanus*		190	9	9	1.5	1	2	4	4	Decaying basal stubs	Negligible	None	Fair to Good	Semi-mature	10 to 20	C	11.475	43	£490	18.44	5228	£920	284	26	1	£5,000
101	Norway Maple	*Acer platanoides*		380	14	14	2	4	2	4	6	Stem knotholes. Rather suppressed	Negligible	None	Fair to Good	Early-mature	20 to 40	B	69	43	£2,970	18.44	20913	£8,030	1134	26	1	£17,900
102	Beech	*Fagus sylvatica*		750	23	23	3	8	9	8	6	Crown bias E	Negligible	None	Good	Mature	> 40	B	96	43	£4,130	18.44	81466	£52,240	4418	26	1	£88,700
105	Beech	*Fagus sylvatica*		410	10	10	1.5	5	6	2	3	Large decaying stub at base	Negligible	None	Fair	Early-mature	10 to 20	C	17.85	43	£770	18.44	24346	£6,330	1320	26	1	£25,100
106	Turkey Oak	*Quercus cerris*		620	20	20	4	9	11	4	8		Negligible	None	Good	Mature	> 40	B	90	43	£3,870	18.44	55672	£35,700	3019	26	1	£64,200
107	Beech	*Fagus sylvatica*		800	24	24	5	7	12	7	12	Well buttressed upright balanced	Negligible	None	Good	Mature	> 40	A	216	43	£9,290	18.44	92690	£66,040	5027	26	1	£130,700
108	Lime	*Tilia sp.*	4	300	11	11	1	4	4	4	4	Multistemmed stump regeneration	Negligible	None	Fair to Good	Semi-mature	10 to 20	C	22.95	43	£990	18.44	13034	£3,870	707	26	1	£13,400
111	Beech	*Fagus sylvatica*		630	24	24	5	7	5	6	7	Well buttressed upright balanced . Twin stemmed from 8m	Negligible	None	Good	Mature	> 40	A	84	43	£3,610	18.44	57482	£40,960	3117	26	1	£75,400
112	Common Lime	*Tilia x europaea*		500	14	14	0	4	4	4	4	Dense and maturing basal epicormics. Somewhat suppressed	Negligible	None	Fair to Good	Early-mature	20 to 40	B	51.75	43	£2,230	18.44	36207	£17,600	1964	26	1	£44,900
113	Holm Oak	*Quercus ilex*		390	11	11	1	4	10	4	1	Strong bias E over path and pool. Large flush cut on stem at 2m. Rocking slightly in eind	Negligible	None	Fair to Good	Mature	20 to 40	B	93.15	43	£4,010	18.44	22028	£12,690	1195	26	1	£21,400
114	Beech	*Fagus sylvatica*		700	22	22	4	5	10	7	3	Well buttressed upright reasonably balanced . Buttress abrasion	Negligible	None	Good	Mature	> 40	B	73.6	43	£3,160	18.44	70966	£45,990	3848	26	1	£81,900
115	Holm Oak	*Quercus ilex*		440	11	11	2	3	8	6	1	Steady lean over path and pool	Negligible	None	Good	Mature	> 40	A	67.5	43	£2,900	18.44	28039	£21,580	1521	26	1	£39,500
116	Sycamore	*Acer pseudoplatanus*		410	20	20	5	3	8	3	0	Suppressed	Negligible	None	Fair to Good	Early-mature	20 to 40	B	69	43	£2,970	18.44	24346	£9,350	1320	26	1	£34,300
117	Horse Chestnut	*Aesculus hippocastanum*		720	19	19	1	4	6	6	7	Maturing basal epicormics l. Decaying stubs	Negligible	None	Fair to Good	Mature	20 to 40	B	59.8	43	£2,570	18.44	75079	£32,430	4072	26	1	£72,900
118	Turkey Oak	*Quercus cerris*		750	17	17	4	4	6	7	8	Heavily imbalanced crown W. Decurrent	Acceptable	None	Fair to Good	Mature	20 to 40	B	24.15	43	£1,040	18.44	81466	£39,590	4418	26	1	£95,300
119	Beech	*Fagus sylvatica*		750	19	19	4	7	7	4	7	Slight crown bias E . Roots on path exposed	Negligible	None	Good	Mature	> 40	A	75	43	£3,230	18.44	81466	£77,390	4418	26	1	£88,700

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120	Sycamore	*Acer pseudoplatanus*		570	16	16	2.5	4	9	6	7	Decurrent	Negligible	None	Good	Early-mature	> 40	B	90	43	£3,870	18.44	47055	£30,170	2552	26	1	£66,300
121	Beech	*Fagus sylvatica*		550	19	19	6	4	7	6	7	Minor deadwood	Negligible	None	Fair to Good	Early-mature	> 40	B	62.1	43	£2,670	18.44	43810	£33,710	2376	26	1	£51,300
122	Beech	*Fagus sylvatica*		210	7	7	1.5	3	3	2	4	Pruning stubs	Negligible	None	Fair to Good	Semi-mature	> 40	C	15	43	£650	18.44	6387	£5,460	346	26	1	£6,600
123	Lime	*Tilia sp.*	4	330	12	12	1	4	4	4	4	Multistemmed stump regeneration or maturing basal epicormics	Negligible	None	Fair to Good	Semi-mature	20 to 40	B	34.5	43	£1,480	18.44	15772	£6,810	855	26	1	£16,200
124	Beech	*Fagus sylvatica*		700	22	22	4	10	9	3	8	Twin stemmed from good tensile fork at 3m	Negligible	None	Good	Mature	> 40	B	144	43	£6,190	18.44	70966	£60,680	3848	26	1	£81,400
125	Alder	*Alnus glutinosa*	4	450	15	15	0	6	8	6	2		Negligible	None	Good	Mature	20 to 40	B	51.75	43	£2,230	18.44	29328	£14,250	1590	26	1	£19,500
126	Sycamore	*Acer pseudoplatanus*		250	12	12	3	3	7	3	1		Negligible	None	Fair to Good	Semi-mature	> 40	B	55.2	43	£2,370	18.44	9052	£4,400	491	26	1	£7,700
127	Alder	*Alnus glutinosa*		400	13	13	0	3	8	3	0	Steady lean E	Negligible	None	Fair to Good	Mature	20 to 40	B	55.2	43	£2,370	18.44	23172	£11,260	1257	26	1	£16,400
128	Alder	*Alnus glutinosa*		500	14	14	1.5	4	8	4	0	Fungus at base. Rapid crown decline. Deadwood over pool	Negligible	None	Poor to Fair	Mature	< 10	U	30.6	43	£1,320	18.44	36207	£490	1964	26	1	£11,800
129	Alder	*Alnus glutinosa*		520	13	13	1.5	4	8	4	0	Steady lean E	Negligible	None	Fair to Good	Mature	20 to 40	B	55.2	43	£2,370	18.44	39161	£19,030	2124	26	1	£29,400
130	Alder	*Alnus glutinosa*	4	380	14	14	0	7	9	2	1	Steady lean E. Multistemmed from base Light ivy	Negligible	None	Fair to Good	Mature	20 to 40	B	55.2	43	£2,370	18.44	20913	£10,160	1134	26	1	£16,600
137	Alder	*Alnus glutinosa*	3	260	10	10	2	4	6	3	0	Triple stemmed from base leaning E	Negligible	None	Good	Semi-mature	> 40	B	41.4	43	£1,780	18.44	9790	£4,760	531	26	1	£8,400
138	Alder	*Alnus glutinosa*	3	480	8	8	0	4	8	4	0	Triple stemmed from base. Leaning E.	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	1810	26	1	£26,500
	Individual trees	***East of path***																										
139	Alder	*Alnus glutinosa*		330	8	8	0	3			6	Triple stemmed from base. Leaning E.	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	855	26	1	£12,500
140	Alder	*Alnus glutinosa*	3	630	8	8	0	3			6		Negligible	None	Fair to Good	Mature	20 to 40	B	41.4	43	£1,780	18.44	33368	£14,410	3117	26	1	£43,200
141	Alder	*Alnus glutinosa*	4	500	8	8	0	3			6	4 stemmed from base. Leaning E.	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	1964	26	1	£28,800
n/a	Willow	*Salix sp.*											Negligible	None														
143	Alder	*Alnus glutinosa*	3	360	8	8	0	3			6	Triple stemmed from base. Leaning E.	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	1018	26	1	£14,900

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n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
144	Unknown	*unk.*		250									Negligible	None	Fair	Semi-mature	20 to 40	B	32.2	43	£1,380	18.44	33368	£18,020	491	26	1	£7,200
n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
145	Ash	*Fraxinus excelsior*		0									Negligible	None	Poor to Fair		< 10	U	0	43	£0	18.44	33368	£80	0	26	1	£0
146	Alder	*Alnus glutinosa*		350	10	10	0	3			6	Leaning E	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	962	26	1	£14,100
n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
147	Alder	*Alnus glutinosa*		450	10	10	0	4			8	Leaning E	Negligible	None	Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	1590	26	1	£23,300
n/a	Willow	*Salix sp.*										Fallen	Negligible	None														
148	Alder	*Alnus glutinosa*		450	12	12	0	4			8	Leaning E	Negligible		Fair to Good	Early-mature	> 40	B	41.4	43	£1,780	18.44	33368	£18,020	1590	26	1	£23,300
n/a	Willow	*Salix sp.*										Fallen	Negligible															
	Groups	***West of path***																										
10	Group - mixed species broadleaf		6<10	130	8	8	0.5	0				Mostly with dense ivy. Leaning towards road	Negligible	None	Fair	Young	20 to 40	C	31.05	43	£1,340							
10	Group - mixed species broadleaf		6<10	130	8	8	0.5	0				Mostly with dense ivy. Leaning towards road	Negligible	None	Fair	Young	20 to 40	C				18.44	2448	£7,210	133	26	7	£15,400
20	Group - Single species broadleaf		2	200	8	8	0	0				2 holly cut as hedge on path side	Negligible	None	Fair to Good	Early-mature	> 40	B	60	43	£2,580							
20	Group - Single species broadleaf		2	200	8	8	0	0				2 holly cut as hedge on path side	Negligible	None	Fair to Good	Early-mature	> 40	B				18.44	5793	£8,920	314	26	2	£12,600
22	Group - mixed species broadleaf		11<20	230	12	12	1	0				Oak sycamore elm ash along roadside. Ivy	Negligible	None	Fair to Good	Semi-mature	> 40	B	108	43	£4,640							
22	Group - mixed species broadleaf		11<20	230	12	12	1	0				Oak sycamore elm ash along roadside. Ivy	Negligible	None	Fair to Good	Semi-mature	> 40	B				18.44	7661	£3,930	415	26	1	£8,800

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25	Group - mixed species broadleaf		4	150	8	8	0	4.5	2	4.5	2	Holly and birch	Negligible	None	Fair to Good	Semi-mature	> 40	B	54	43	£2,320							
25	Group - mixed species broadleaf		4	150	8	8	0	2	2	2	2	Holly and birch	Negligible	None				B				18.44	3259	£11,160	177	26	4	£16,000
32	Group - mixed species broadleaf		6<10	180	13	13	1	0					Negligible	None				B	66	43	£2,840							
32	Group - mixed species broadleaf			180	13	13	1	3	3	3	3	Sycamore and holly	Negligible	None	Fair to Good	Semi-mature	> 40	B				18.44	4692	£2,410	254	26	1	£5,400
35	Group - Single species broadleaf		2	370	20	20	2	0				2oak	Negligible	None				A	36	43	£1,550	18.44	19827					
35	Group - Single species broadleaf		2	370	20	20	2	4	3	5	5	2 oak close together on break of slope	Negligible	None	Fair to Good	Semi-mature	> 40	B				18.44	19827	£22,880	1075	26	2	£45,800
37	Group - mixed species broadleaf		4	250	11	11	1	0				Whitebeam cherry sycamore	Negligible	None	Fair to Good	Early-mature	20 to 40	B	69	43	£2,970							
37	Group - mixed species broadleaf		4	250	10	10	1	3	3	3	3		Negligible	None				B				18.44	9052	£9,560	491	26	4	£40,000
58	Group - mixed species broadleaf		6<10	200	9	9	1	0				Holly hornbeam hawthorn. Leaning over road	Negligible	None				B	67.5	43	£2,900							
58	Group - mixed species broadleaf		8	200	9	9	1	2	1	2	4		Negligible	None	Fair to Good	Semi-mature	> 40	B				18.44	5793	£33,040	314	26	8	£50,400
60	Group - mixed species broadleaf		6<10	230	10	10	0	0				Holly	Negligible	None	Fair to Good	Semi-mature	> 40	B	60	43	£2,580							
60	Group - Single species broadleaf		7	230	10	10	0	2	2	2	1	Line of holly	Negligible	None	Good			B				18.44	7661	£34,370	415	26	7	£61,600
74	Group - mixed species broadleaf			200	9	9	1.5	0				4 oak sycamore beech	Negligible	None	Good	Semi-mature	> 40	B	42	43	£1,810							
74	Group - mixed species broadleaf		3	200	9	9	1.5	3	3	3	3		Negligible	None	Good			B				18.44	5793	£12,390	314	26	3	£22,800
88	Group - mixed species broadleaf		4	300	16	16	1.5	0				Beech and sycamore	Negligible	None	Fair to Good	Semi-mature	> 40	B	135	43	£5,810							
88	Group - mixed species broadleaf		4	300	16	16	1.5	2.5	2.5	2.5	2.5		Negligible	None				B				18.44	13034	£33,440	707	26	4	£64,800
103	Group - mixed species broadleaf		6<10	230	16	16	0	0				Holly beech other	Negligible	None	Good	Semi-mature	> 40	B	135	43	£5,810							
103	Group - mixed species broadleaf		9	230	16	16	0	3	3	3	3	9 trees	Negligible	None	Good			B				18.44	7661	£39,780	415	26	9	£85,500
109	Group - Single species broadleaf		3	150	12	12	2	0					Negligible	None	Fair to Good	Semi-mature	> 40	C	60	43	£2,580							

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109	Group - Single species broadleaf		3	150	12	12	2	2.5	2.5	2.5	2.5	Sycamore	Negligible	None				C				18.44	3259	£2,090	177	26	1	£4,600
	Groups	***East of path***																										
131	Group - Single species broadleaf		3	180	11	11	0	0				Alder leaning E	Negligible	None	Good	Semi-mature	> 40	B	55.2	43	£2,370							
131	Group - Single species broadleaf		3	180	11	11	0	2	7	2	1		Negligible	None				B	0	43	£0	18.44	4692	£6,840	254	26	3	£11,100
133	Group - Single species broadleaf		4	380	10	10	0	0				Alder leaning E. Mostly multistemmed	Negligible	None	Good	Early-mature	> 40	B	69	43	£2,970							
133	Group - Single species broadleaf		4	350	10	10	2	3	7	3	0		Negligible	None				B	0	43	£0	18.44	17741	£8,620	962	26	1	£15,200
135	Group - mixed species broadleaf		11<20	350	13	13	0	n/a				12 alder and sycamore	Negligible	None	Fair to Good	Early-mature	20 to 40	B	110.4	43	£4,750							
135	Group - mixed species broadleaf		12	350	13	13	1	3	7	2	0	12 Alder and sycamore leaning E	Negligible	None				B	0	43	£0	18.44	17741	£112,060	962	26	13	£163,800
149	Group - Single species broadleaf		3	450	12	12	1					3 Alder leaning E	Negligible	None	Fair to Good	Mature	20 to 40	B	110.4	43	£4,750							
149	Group - Single species broadleaf		3	450	12	12	1	3	6	3	1		Negligible	None				B	0	43	£0	18.44	29328	£42,750	1590	26	3	£62,400
150	Group - mixed species broadleaf		4	450	12	12	1					3 Alder and 1 Willow leaning E	Negligible	None	Fair to Good	Mature	20 to 40	B	110.4	43	£4,750							
150	Group - mixed species broadleaf		4	450	12	12	1	2	7	2	0		Negligible	None				B	0	43	£0	18.44	29328	£57,000	1590	26	4	£83,200

Total Helliwell values	**£418,490**		**Total CAVAT values**	**£3,081,070**	**Total CTLA values**	**£5,442,000**

APPENDIX 2 - GLOSSARY OF TERMS

Adaptive growth: An increase in wood production in localised areas in response to a decrease in wood strength or external loading to maintain an even distribution of forces across the structure.
Adventitious/epicormic growth: New growth arising from dormant or adventitious buds directly from main branches/stems or trunks.
Binomial: Unless otherwise stated the Linnaean binomial name of the species is stated for the avoidance of any ambiguity arising from varying usage of common names.
Bracing: The installation of cables, ropes, rods and/or belts to reduce the probability of failure of parts of the tree structure due to weakened elements under excessive movement.
Callus: Undifferentiated tissue initiated as a result of wounding and which become specialised tissues ('Woundwood') of the repair over time.
Cavity: A void within the solid structure of the tree, normally associated with decay or deterioration of the woody tissues.
Co-dominant stems: Two or more, generally upright, stems of roughly equal size and vigour competing with each other for dominance.
Compression fork: an inherently weak fork in which continued radial growth of two competing substems results in pressure which tends to push the fork apart.
Conservation Area: A designation made under the Planning Acts in the interest of preserving or enhancing the special architectural or historic character or appearance of an area.
Crown: The foliage bearing section of the tree formed by its branches and not including any clear stem/trunk.
Crown Lifting: The removal of the lowest branches and/or preparing of lower branches for future removal.
Crown Reduction: The reduction in height and/or spread of the crown of a tree.
Crown Spreads: The extent of the live crown, measured from the centre of the base of the canopy, in each of the four cardinal points (in the order north, east, south, west)
Crown Thinning: The removal of a portion of smaller/tertiary branches, usually at the outer crown, to produce a uniform density of foliage around an evenly spaced branch structure.
Condition:

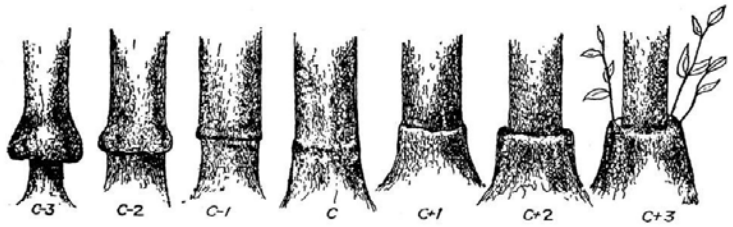
Good	Generally free from defects and in good health
Fair	Reasonably healthy but defects are present that may adversely affect Estimated Remaining Contribution but that may be addressed in the short term by minor intervention
Poor	In decline and/or defective requiring major intervention
Dead	No signs of life or so little that death is inevitable

Construction Exclusion Zone (CEZ): area based on the Root Protection Area (and low crowns) from which access is prohibited for the duration of a project
Decurrent: Widely spreading on several limbs
DBH/Diameter: Stem diameter, more fully known as Diameter at Breast Height (1.5m).
Dieback: No signs of life on branch tips due to age or external influences.
Epicormic Growth: See Adventitious Growth
Excurrent: Having a main stem and radiating limbs of limited length
Estimated Remaining Contribution: The number of years that the tree in substantially its current form (or better) is expected to continue to make an arboricultural or landscape contribution.

40+ years	corresponding with BS 5837 40+ years
20 to 40 years	corresponding with BS 5837 20+ years
10 to 20 years	corresponding with BS 5837 10+ years
0 to 10 years	corresponding with BS 5837 less than 10 years

Fruiting bodies: The fruiting body is the spore bearing, reproductive structure of that fungus.
Graft: The growing together, naturally or deliberately, of two plant parts (including from different

species or varieties) with joined vascular cambia. Varying degrees of compatibility (see below)



Hazard beam: Upwardly curving part of a tree prone to longitudinal splitting
Inclusion fork: A compression fork further weakened by the inclusion of bark from both competing substems at their interface.
Life Stage:

Newly planted	Not fully established and capable of being transplanted or easily replaced
Young	Establishing, usually with good vigour
Early mature	Established, usually vigorous and increasing in height
Mature	Fully established around half their species' life expectancy, generally good vigour and achieving full height potential but crown still spreading
Late mature	Moderate vigour, no additional height expected and growth rate slowing
Over-mature	Fully mature, in last quarter of life expectancy, vigour decreasing
Veteran	See Veteran definition
Ancient	Beyond maturity, old in comparison with other trees of the same species; showing Veteran (see below) values and characteristics because of age rather than past events

Occlusion: growth of callus and wound wood, sealing wounds.
Planning Acts: Primary Planning legislation in England relevant to trees and their protection, principally the Town & Country Planning Act 1990, as amended in particular by the Planning Act 2008.
Pollard: The removal of the top of a young tree at a prescribed height to encourage multi-stem branching from that point, repeated on a cyclical basis always retaining the initial pollard point.
Quality/Value Category: As defined and used by BS5837 -

A	Trees of high quality and value
B	Trees of moderate quality and value
C	Trees of low quality and value

Subcategories of these record the main value of the tree

1	Mainly Arboricultural values
2	Mainly landscape values
3	Mainly cultural values, including conservation

Retrenchment pruning: A form of reduction intended to encourage development of lower shoots and emulate the natural process of tree aging.
Risk Category: In accordance with the Health & Safety Executive's general parameters.
Lower than 1:1,000,000 'Acceptable' Between 1:1,000,000 and 1:1,000 'Tolerable'
Higher than 1:1,000 'Unacceptable' So low that it cannot be quantified, 'Negligible'.
Root Protection Area (RPA) layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Tree Preservation Order: An Order made under the Planning Acts in the interests of the amenity of an area.
Veteran: A survivor that has developed some of the habitat features such as wounds or decay found on an ancient tree, not necessarily as a consequence of time, but of past events or its environment. It may look old relative to other trees of the same species.
Vigour: The health and resilience of a tree reflected in shoot extension, leaf size and density.
Woundwood: lignified and differentiated tissue produced as a response to wounding.

APPENDIX 3 - SURVEY METHODOLOGY & LIMITATIONS

This methodology complements the methodology requirements of BS5837, which are not restated here.

Each tree is inspected initially from a distance to ensure closer inspection is safe.

The position of trees or the outline of groups is captured on site using a Geographic Information System ('GPS') and the trees' attributes are recorded as a map layer. These are brought into the report as an Excel spreadsheet for processing and use. The data includes a 16 digit Ordnance Survey grid reference, which may be used to plot trees or group polylines on a georeferenced plan. The strength and position of satellite signals used by GPS is variable in quantity, strength and quality, and reflections from buildings, fences or vehicles can result in aberrations. Generally 1.5 metre GPS accuracy is achieved, suitable only for indicative relative position of trees. If these are within 12 x their stem diameter of any linear features, their distance and orientation relative to those features is measured and recorded.

The height is estimated by the use of a clinometer and trigonometry. Distances are measured using calibrated paces or a laser measuring device, adjusted where necessary for the terrain.

Diameters of stem are measured using a diameter tape which measures circumference ('girth') and gives the equivalent average diameter. Where trees are multistemmed from below 1.5m, either the diameter at a lower representative point, or the equivalent stem diameter of the combined cross sectional area of all the stems is given. For offsite trees, stem diameters are estimated using a laser measurement device and tacheometry; distances are estimated.

The tree species is identified from knowledge supported by Johnson and Moore (see Fuller Citation at Appendix 4) using bark, buds, twigs, fruit, flowers, form and habit.

Binoculars are used where appropriate to examine visible features and structures above a few metres in height. A hand lens is used to examine small features and to help narrow down the list of possible species of any pathogen growths on the tree.

Whilst it is not possible without laboratory examination and testing to confirm definitive identifications of pests, diseases and fungal infections, all reasonable attempts are made to eliminate possibilities and in most cases a species or genus or a common name can be state with a reasonable degree of confidence that the implications arising from the identification will be appropriate to the other outcomes of the report such as risk assessment, recommendations and Estimated Remaining Contribution.

Soundings will be taken either with a rubber mallet or a nylon-tipped hammer to try and ascertain the existence and likely extent of cavities or other invisible decay. Cavities will be inspected visually with a torch only insofar as this is reasonably possible from the ground, removing only enough of loose material as is necessary to reach conclusions about the extent and nature of decay or defects.

Except to the extent stated in the report, the assessment is based on a visual inspection from ground level only, from publicly accessible and privately available vantage points.

Soil present around the base of trees is not removed and root collars are not examined except where, and to the extent, they are already exposed. No sampling, examination or analysis of the soil was done. No intrusive or destructive tests is carried out. The survey does not include exhaustive foliar examination (except for purposes of identifying the species).

Trees are generally assessed during a single visit, with the limitations that this brings, such as the opportunity to assess (i) the reaction of trees to a variety of wind strengths and directions, (ii) the presence of seasonal fungal Fruiting Bodies, (iii) foliage density (iv) structural elements concealed by foliage. Only a broad indication of the intensity of usage of the site and the immediately surrounding land and pedestrian/vehicle routes is gained from a single visit.

Obstacles liked dense basal epicormics and/or ivy on trees, and occasionally dense undergrowth can obstruct the full inspection of trees, including their rooting area. Only enough to reach a preliminary or final conclusion about any such affected trees will be removed.

APPENDIX 4 - Fuller citation of texts, if referred to

Mattheck and Breloer (1994) – *The body language of trees*

Roberts, Jackson and Smith (2006) – *Tree Roots in the Built Environment*

British Standards Institute (2011) – *BS3998: Recommendations for tree work*

British Standards Institute (2012) – *BS5837: Trees in relation to design, demolition and construction - Recommendations.*

Johnson and Moore (2004) – *Collins Tree Guide*

White, John and Forestry Commission (1998) - *Estimating the Age of Large and Veteran Trees in Britain' - Forestry Commission Information Note*

Schwartze, Engels and Mattheck (2000) - *Fungal Strategies of Wood Decay in Trees*

Mynors (2022) – *The Law of Trees, Forests and Hedgerows (3rd edition)*

Health & Safety Executive (2001) - *Reducing Risk, Protecting People*

BS EN 17037:2018 "*Daylight in buildings*"

Littlefair, Paul, BRE (2011) – *Site Layout Planning for Daylight and Sunlight*

British Standards Institute (2015) BS8596 *Surveying for bats in trees and woodland – guide*

British Standards Institute (2015) *Microguide to surveying for bats in trees and woodland*

Statutory Nature Conservation Organisations/ Bat Conservation Trust (2015) – *Method Statement for the Appropriate Use of Endoscopes by Arborists*

Arboricultural Association (2017) Guidance Note 11 *Aerial Inspections: A guide to good practice*

Arboricultural Association (2020) Guidance Note 12 *The use of cellular confinement systems near trees: A guide to good practice*

Council of Tree & Landscape Appraisers (2019) *Guide for Plant Appraisal 10th Edition*

Arboricultural Association (2017) Guidance Note *4 Visual Amenity Valuation of Trees and Woodlands - The Helliwell System 2008*

Doick and others (2018) - *CAVAT (Capital Asset Value for Amenity Trees): valuing amenity trees as public assets*

APPENDIX 5

Table 1 **Cascade chart for tree quality assessment**

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 **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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)	See Table 2
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	See Table 2
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 benefits	Trees with no material conservation or other cultural value	See Table 2