

6.4 Woodbank Tree Report and Assessment Matrix

TREE SURVEY REPORT TREE CONSTRAINTS PLANS

subjects at

Woodbank, Balloch

For

Flamingoland
per

Stantec/Anderson Bell Christie Architects

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Julian A Morris

B Sc, Dip Surv, Cert Pub Sect Man, Tech Cert Arb, PTI

Professional Tree Services

149 Langlea Avenue

Cambuslang

G72 8AN

0141 641 0245

0778 654 8072

jamorris@mail.com



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1. INTRODUCTION

1.1 Instruction

I have been instructed by Stantec on behalf of Flamingoland as prospective planning applicant and developer of a site at Woodbank in Ballochbto conduct an arboricultural survey and to report on several trees on (and where present, around) the site.

The principal purpose is to assess their condition and relative suitability for retention in the context of development, based mainly on quality and estimated remaining amenity contribution. I am also to indicate the constraints above and below ground that they would present (if retained) to any design and development.

This information can be used by landowners and designers to select trees for retention and/or the juxtaposition of trees and proposed development.

It does not consider the impact on any of the trees of any specific development proposal.

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 future owner and developer of the site and to Loch Lomond and Trossachs National Park Authority and to any statutory consultees insofar as the report may be required for Planning matters.

1.3 Qualifications

The industry standard of best practice for such situations is BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* – and it requires tree surveys and assessments to be carried out by an Arboriculturist, defined as "a person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction".

The tree survey work has been carried out by

(i) Julian Morris, a professionally qualified and experienced 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 and being an Associate member of the Institute of Chartered Foresters and a member of the Arboricultural Association and bound by their Codes of Professional Conduct;

assisted by

(ii) Gavin Scott, a professionally qualified and experienced arboriculturist holding a Foundation Degree and the LANTRA Professional Tree Inspectors Certificate, trained in the use of the Quantified Tree Risk Assessment system, the Visual Tree Assessment methodology and the Specialist Survey Method for Ancient and Veteran Trees. and a member of the Arboricultural Association and bound by their Codes of Professional Conduct;

and

(iii) Gregor Hardie, a practising arborist and professionally qualified arboriculturist holding the Arboricultural Association Technicians Certificate, the LANTRA Professional Tree Inspectors Certificate and being a member of the Arboricultural Association and bound by their Codes of Professional Conduct.

The reporting has been carried out by Julian Morris.

2. GENERALITIES

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

A report is required in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* – recording the results of a tree survey, providing retention desirability categorisation, above-ground height and spread and giving preliminary advice on appropriate Root Protection Areas ("RPAs") for all the trees or groups of trees. It also reports on any trees that are an imminent and serious hazard to life or property.

The tree survey data, plotted on a site plan to show the tree locations and constraints, may be used as a design tool to inform decisions (in terms of constraints above and below ground, 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.

In accordance with BS5837 the trees have been assessed independently of any specific design layout.

A separate report, taking account of a specific design layout, can if required be provided to evaluate trees to be removed and the impact of the proposed development on retained trees ('Arboricultural Impact Assessment') and the physical extent of protection to be provided ('Tree Protection Plan').

The site is identified on the drawings provided to me, and where required these drawings have been adapted by me to show only the trees and groups of trees recorded during the tree survey.

I have been provided with a topographic survey plan which showed the position of most of the trees.

The positions have been adopted by me without checking unless they were found to be significantly inaccurate.

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 imprecision and 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.

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 be available to designers, but it cannot be captured during a tree survey. Where it is required to check for changes in soil levels around trees, it is unlikely to be useful in isolation since such changes close to the stem are better witnessed by exposure of roots or burial of root collars. It cannot adequately document levels within the whole root protection area where even small changes may be detrimental to tree vitality.

To accord with BS5837, only trees with a stem diameter of 75 mm or more (or in the case of woodlands or substantial tree groups, only individual trees with stem diameters greater than 150 mm) are to be recorded, including any offsite trees that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter.

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

This report is **not a tree hazard and risk assessment**, and any reporting on risk is restricted to instances (if any) where trees were observed that might present an imminent and serious hazard to life or property (where the risk is assessed as 'Unacceptable'). Where other trees present a lesser (but still less than 'Acceptable') risk to people or property for the existing permitted use of the site, this will be reflected in the categorisation of the tree after any recommended works have been carried out. A separate, systematic, risk assessment may be required during or after finalization of development design.

2.2 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 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. Only enough to reach a preliminary or final conclusion about any such affected trees will have been removed.

I have only checked with the relevant Local Authority as to the existence of Conservation Area designation or Tree Preservation Orders to the extent that I have been instructed to do so. 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.

2.3 Generalities - Soil and other ground conditions

No sampling, examination or analysis of the soil was done. Unless otherwise stated, 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.

2.4 Generalities - Tree categorisation protocols

In assessing the merit of the trees and their retention desirability, any specific design layout must be disregarded.

The purpose of the tree categorization method, as stated in BS5837, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

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. Trees are categorised (A, B, C or U) by estimated remaining amenity contribution combined with quality.

If a distinction is required for trees in categories A to C, one or more of the three subcategories (1, 2, 3) can be added to reflect arboricultural qualities (1), landscape qualities (2) or cultural (including conservation) values (3). However, for this site the distinction between (1) and (2) has not been made as it is not relevant in the context of the proposed development type.

In some situations the development of certain attributes in a tree such as the maturation of basal epicormics, the unchecked growth of dense ivy in the crown or overextension of limbs, results in the shortening of a tree's Estimated Remaining Contribution or quality, which would prematurely reduce the categorisation, and so where recommendations have been made to carry out management works to prevent this, the categorisation presumes that these works will be carried out.

3. INVESTIGATIVE FINDINGS

3.1 Practicalities

The tree survey was undertaken on 5 days during early and mid December 2021.

The conditions were highly variable, from still to storm force winds, overcast to cloudy, dry to drizzly and always cold. Daylight beneath the tree and shrub canopy was consistently poor.

No access was taken to adjacent land.

Access to the base of some of the trees in some parts of the site was physically prevented or restricted due to dense undergrowth.

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.

Every tree (over 75mm diameter) on-site recorded individually has been affixed with a uniquely numbered tag (see picture below).

Where trees were found to form cohesive arboricultural features either aerodynamically, visually or culturally (including for biodiversity), they have been recorded as Groups. Groups on-site have been identified by tagging a prominent tree within the group (tags notched at the bottom hole, see picture below).



Examples of individual (left) and group (right) tags

Older tags were found on some of the trees, and these have been recorded for cross-reference purposes if required.

Trees or groups of trees on adjacent land that are close enough to the site to qualify for recording were not tagged, and these have instead been assigned an arbitrary sequential number, followed by a 'os'. Where it was not clear whether the tree was on- or off-site, its number is followed by 'unk.' and if it is on the boundary it is followed by 'bdy.'

3.2 Site description (general)

The site is situated at the west edge of Balloch. The east part is near-level open ground currently under grass, and bounded on the east north east by the Old Luss Road and on the south by Lomond Woods Holiday Park. As the ground rises slightly to the south west there is an access road and the ruins of the former Woodbank House, and ruined stables to the north of that. Immediately west of the house is a levelled area which may have been a kitchen garden. Then to the north west the ground rises quite steeply and is generally tree- and shrub-covered. Whereas old maps indicated paths around the inside edge of the wooded area, in reality these are undefined and in some places almost impassible. The slopes are cut by a number of gullies with no permanent streams. Large areas are covered with dense rhododendron, cherry laurel, bamboo, Portuguese laurel or gaultheria. The site is bounded on the west by a narrow strip of grazing land along the edge of the A82 road cutting.

No bodies of water or water courses on or near the site present a flooding risk materially affecting the trees.

3.3 Trees and categorisations

A total of about 420 trees on and around the site were recorded individually.

Many more trees have been recorded in Groups, with dominant species, typical stem diameter, crown spread radius, height and clear height.

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

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

The retention desirability categorisation of the 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). A fuller explanation is given in **Appendix 5** to this report.

Typically designers make the assumption that the amenity contribution of Category C trees (typically, those having an 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.

Special notes on tree categorisations and species identification for this site

BS5837 states that young trees with a diameter less than 150mm be automatically categorised 'C' regardless of their lifestage, species or Estimated Remaining Contribution. Although 'C' suggests poor condition or short estimated remaining contribution, in the context of young trees the interests of amenity may be just as well served by replacement in a more appropriate position rather than by retention.

150mm diameter is an arbitrary threshold, and trees just above this threshold might still be categorised as C to reflect limited amount of amenity. Where good trees beyond the 'young' stage are below the 150mm threshold but are of an inherently smaller species, they may have been upgraded to Cat B, particularly if well placed.

Wych Elm (*Ulmus glabra*) and other species of elm have been all but wiped out in most parts of the UK by Dutch Elm Disease, which usually causes rapid death of trees after the age of around 15 years. Young trees and/or regenerating stumps are not uncommon but usually succumb before early maturity. Accordingly, unless Elms recorded during the survey are of sufficient maturity to indicate resistance to or localised absence of Dutch Elm Disease, Elms have been categorised C or U (dependent on size and whether uninfected or infected) based on Estimated remaining Contribution. In contrast, the rarity of mature Elms suggests that good specimens should be categorised 'A'.

Designers and tree owners should be aware that Elms categorised A or B could become infected as a result of construction activity around them, or at any time in the future by factors outwith the site owner's control.

It may be prudent for designers to aim to retain Elms only in less prominent and less trafficked situations where risk and appearance are not critical to amenity.

Common Ash (*Fraxinus excelsior*) and other species of ash are vulnerable to 'Ash Dieback (*Chalara*)', a recent but now widespread fungal infection which has the effect of causing anything from minor temporary (but cyclical) dieback to outright death of trees. Trees or parts of trees may rapidly become brittle and may therefore be an unacceptable risk. In the context of development and tree amenity, individual trees may be disfigured or lost completely in a matter of months or a couple of years. So far, it is beyond the scope of BS5837 to predict the effect of the disease on the Estimated Remaining Contribution or risk for individual trees.

Where ash trees have been recorded and are showing symptoms of infection, they have been categorised based on impairment of quality rather than Estimated Remaining Contribution, but for trees without tolerance or resistance this may amount to the same thing.

It may be prudent for designers to aim to retain ash only in less prominent and less trafficked situations where risk and appearance are not critical and where natural recovery may take place safely and without important effects on amenity.

*A number of **willows** have been recorded, and whilst they have been nominally identified as a specific species such as Grey or Goat Willow there appeared to be one or more hybrids present. Hybridisation of willows is very common.*

3.4 Veteran or ancient trees and ancient woodland

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

Parts of the site are delineated on NatureScot's (Scottish Natural Heritage's) 'Ancient Woodland Inventory'.



That Inventory is a set of map shapes interpreted from old maps from 1750 to 1860 which may suggest historic woodland, and so shows possible modern sites of ancient woodland habitat. Some of these may be Plantations on Ancient Woodland Sites, sites of Long Established Plantation Origin or Ancient Semi Natural Woodlands. The Inventory may support Government policies protecting ancient woodland habitat. The importance of sites may be for ancient trees, including habitat within ancient or veteran trees, but a steady turnover of trees or appropriate tree replanting of sites may have preserved substantially the continuous and important non-tree aspects of ancient woodland habitat.

Conversely sites in the Inventory can be no longer considered ancient woodland or having any relict ancient woodland character if they have been cleared of trees for significant periods of time or replanted with non-native tree species that were not conducive to the survival of native woodland floor fauna and flora.

No assessment of ancient woodland has been undertaken beyond the identification of individual or populations of ancient or veteran trees. The converse may also be inferable if the tree cover is non-native or non-existent, particularly if the age classes of tree cover suggests a long period of non-native tree growth.

Other indications such as planting ridges or other earthworks and dense non-native understorey shrub cover might suggest degrees of loss of natural native habitat.

The systematic and detailed recording of significant non-tree aspects of ancient woodland habitat are beyond the scope of this report. However, it was observed that the remnants of paths, a bridge, apparently man-made drainage channels and of course the ruined house and stables and hardstanding areas around these indicate significant disruption and at least partial complete removal of woodland habitat. The lower edge of the woods is also dominated by non-native tree species including larch, common lime, Lawsons cypress and cedar, while much of the woodland area is non-native sycamore. Native species oak, downy birch and willow are present in significant numbers, but the oak in particular are well spaced out and upright, suggesting planted origin.

Large areas of rhododendron, cherry laurel, portugese laurel, bamboo and gaultheria will have displaced any native shrub cover that may have been present and prevented the continuation of any ground layer native plants. In areas clear of invasive shrubs, occasional sparse cover of ferns/bracken, grasses and mosses was noted.

A preliminary look at old editions of mapping in the area suggests some tree cover on parts of the site (particularly the north west part) since at least 1860, but the density and nature of this changes over time. On the ground, there are no very old and few old trees and probably none pre-dating 1900.

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The indication is that native woodland has been largely overwritten by building, past felling, artificial planting and modification of topography and drainage and displacement by invasive shrub cover.

4. TREE CONSTRAINTS

The tree constraints plan(s) referred to in the following sections are available in CAD format for use in detailed design.

4.1 Above ground constraints

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.

BS5837 also recognises that "it is not always practical or necessary to record branch spread for every tree in a group", and following this rationale, only the collective canopy spread has been given for trees recorded within groups. Trees on the edge of groups frequently have asymmetric spreads.

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

The plan also indicates as 'Unclassified' any small or offsite trees that were recorded only for reference purposes or context. These do not present any material constraints above or below ground.

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.

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.

The extents of idealised root protection areas for each tree are plotted on the Tree Constraints Plan appended to this report.

N.B. 'Root Protection Area' is a concept defined in BS5837 for optimal 2 dimensional representation of suitable and sufficient rooting volume; dependent on factors such as tree species, life-stage and condition there may be alternative 2 dimensional shapes and/or areas that would contain suitable and sufficient rooting volume that would maintain the tree's viability.

For groups, unless otherwise indicated for most practical purposes the extent of the below-ground constraints of a Group is approximately the same as the canopy spread of the Group, shown on the plan as a collective Root Protection Area.

Within dense groups the Root Protection Areas of individual trees may overlap, such that the removal of individual trees from the group, may not allow construction in the space created without further precautions to assess and protect root and rooting volumes of remaining trees.

Where there was no need to modify the Root Protection Areas of individual trees, the default circular RPAs suggested by BS5837 have been plotted.

If and where pre-existing site conditions or other factors indicate that a normal depth of rooting exists but is distributed asymmetrically influenced by past or existing site conditions (e.g. the presence of impermeable surfaces, underground vertical structures, permanent waterlogging or known underground apparatus), a polygon of equivalent area has been produced, based on an arboricultural assessment of likely root distribution.

The RPA represents a volume of soil, and where rooting is deeper than normal the overall superficial area of the RPA may be reduced to reflect downward rooting in adequately drained soil. This is to be expected, for example, where roots develop downwards at retaining walls.

The plotted Root Protection Area is occasionally less than that stipulated in BS5837, and this has been used where the evidence suggests that the vitality of the tree is significantly compromised by a lack of adequate existing rooting volume or the tree’s stem diameter is not representative of the tree’s physiological requirements due to significant and permanent loss of part of the crown.

In due course this or circular RPAs may need to be modified further due to -

- a) unseen underground apparatus, structures etc.;
- b) topography and drainage;
- c) the soil type and structure;
- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management

4.3 Below ground (future - advisory)

The following are some other aspects that are beyond the reporting requirements of BS5837 at this stage but may be relevant design constraints.

a. BS5837 offers advice about the minimum distance that should be left between trees and various structures, services and surfaces to avoid future direct damage to those. This would require, among other things, an estimate of eventual stem diameter at maturity. As a precaution, it is recommended that no buildings, services or hard surfaces are proposed within 3 metres radius of the centre of any retained or proposed tree without further arboricultural advice as to growth potential, longevity and mitigation design measures that could be put in place to avoid or reduce such damage potential.

Notwithstanding, where existing underground structures have effectively prevented the radial spread of existing roots, proposed underground structures in the same or similar (but no closer) position are likely to be acceptable if they are of equivalent effectiveness in preventing root development at all soil depths.

b. BS 8002:2015 *Code of Practice for Earth Retaining Structures* makes recommendations about the proximity of trees to retaining structures relative to species and mature height of trees.

c. The NHBC has published guidance (Chapter 4.2) on meeting the technical requirements when building near trees, shrubs and hedgerows, particularly on shrinkable soils. This guidance may be relevant even if a development will not involve the NHBC or housing.

4.4 Tree shade and shadow

BS5837 provides a method of predicting the effect of tree shade and shadow on development sites, but this is not mandatory. Trees close to development can reduce the amount of sunlight and skylight to open spaces and windows, in some cases causing light levels to fall below the recommended levels. However, I consider that the recommendations in BS5837 for portraying the shade from individual trees is not a

reliable or useful design tool. I have therefore not reported this aspect of the constraints that trees would present to development design.

Trees are seasonal in effect and species can be a significant factor. It can be said generally, though, that shading is worst on the north side of trees and/or where many crowns coalesce to form a dense barrier to light.

Daylighting assessments of individual retained trees or groups of trees can be carried out on request, using the detailed methods published by the Building Research Establishment. This may require further survey effort, since the shading and shadowing zone of influence of trees can be much greater than the distances covered by assessments of physical constraints (4.1 and 4.2 above).

4.5 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. It is therefore advisable that all tree works that are proposed for the development (and any proposed replanting, whether compensatory or not) of a site are explicitly stated in any application.

A 'felling permission' is usually required from Scottish Forestry 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 m³ in any quarter (except in small native woodlands of Caledonian Pinewoods), 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 Town and Country Planning (Scotland) Act 1997. Particular care is usually needed in the use of this last exemption. I have not specifically checked whether an exemption applies or would (on granting of planning permission) apply here.

4.6 Woodland removal 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. There is no legal definition of 'woodland'. Areas over 0.1 Hectare with 20% or more canopy cover could in certain circumstances be deemed as woodland.

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

5. RISK REDUCTION RECOMMENDATIONS

As required by BS5837, this report must address only imminent serious risk.

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

This report only concerns itself with risk in the last (or occasionally second-last) category.

No trees were found that present an imminent and serious hazard to life or property.

Several trees were noted that could not be assessed for risk because of the presence of Debris, dense basal epicormics or obstacles around the base.

The provisional categorisation is based on a presumed absence of hazards or structural defects. Where such trees are of a size and position that could present a less than acceptable risk in the context of development and occupation of the site, this is indicated in the 'risk' column of the **first Appendix** as 'Not assessed'.

It is generally recommended that the obstacles to risk assessment be removed and the risk properly assessed and the categorisation be finalised before any reliance is put in the British Standard (A/B/C/U) categorisation as a design tool, as suitability for retention risk in the context of development may change based on risk and/or Estimated Remaining Contribution once a tree is fully assessed. The removal of obstacles appears as a recommendation in the **first Appendix**.

The following risk assessments do not form part of the British Standard but are provided to help explain how less imminent and less serious risks can be considered by designers.

Several trees were noted as having obvious defects that could create a level of risk that could make them unsuitable for retention (without some form of tree work intervention) beneath or in close proximity to buildings and human occupation in the context of the proposed development and use of the site. This is indicated in the Risk column of the **first Appendix** as 'Potential'.

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The level of risk depends on proximity to ‘targets’ (buildings, structures, roads, footpaths etc.). It is recommended that a more thorough assessment of the tree risk is done relative to specific design proposals before any final decision is made about the retention or removal of trees of ‘potential’ risk in the context of development.

6. SUMMARY OF SURVEY FINDINGS AND CONSTRAINTS

All the trees and groups of trees on and around the site have been identified, measured and recorded and then categorised for relative retention desirability, all in accordance with BS5837.

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 Tree Constraints Plan.

The trees and groups of trees have had their Root Protection Areas calculated with reference to species, growing environment and other factors and a representative proportion of these have been plotted, modified from simple circles where known or expected ground conditions require it. These are represented on the Tree Constraints Plan.

A CAD version of the plan is being made available for viewing in greater detail and for use by designers if required.

The survey did not note the presence of any ancient or veteran trees on the site.

Parts of the site are delineated on Scottish Natural Heritage's 'Ancient Woodland Inventory'. Government policy presumes against loss of ancient woodland. The survey did not note populations of ancient or veteran trees. The Assessment of non-tree aspects of ancient woodland habitat are beyond the scope of this report but preliminary observations have been made in the body of this report which suggest that the native ancient woodland habitat has been substantially overwritten.

Parts of the site may be deemed to comprise woodland of sufficient size and density to have implications for Government policies on woodland removal if removal were proposed.

The report also refers to other Standards and advisory factors by which trees might present constraints to development.

No checks have been made on statutory 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.

One or more trees were noted as having obvious defects that could make them a less than 'Acceptable' risk in the context of the proposed development and use of the site. If these are not to be removed, they should be risk-assessed against any specific design layout before selecting them for retention.

One or more trees were noted that have been categorised only provisionally due to obstacles preventing a full assessment. If the trees are to be retained, the risk should be fully assessed after removal of obstacles so that the categorisation can be finalised.

Separate management recommendations have been made for tree works where these are necessary to preserve the assessed categorisation and without which the quality or Estimated Remaining Contribution of a tree is likely to be reduced prematurely.

The tree survey has done independently of any development proposal.

BS 5837 recommends that “The constraints imposed by trees, both above and below ground (see Note to 5.2.1) should inform the site layout design, although it is recognized that the competing needs of development mean that trees are only one factor requiring consideration.” The tree data can be used to inform site layout, including during construction. Having regard to the Estimated remaining Contribution and quality of each tree or group (represented by the retention desirability category) and the design life of the development proposal, factors such as shading of buildings and open spaces, privacy and screening, amenity value of trees, future pressure for removal, seasonal nuisance, servitudes and wayleaves and statutory undertaker powers and requirements, regulatory protection, soil shrinkability (subsidence or heave), known or potential tree risk and conservation benefits need to be weighed up alongside other design considerations to achieve a satisfactory juxtaposition of trees and site usage.

Julian A. Morris

Signed



Dated

December 2021

Julian A Morris Professional Tree Services
149 Langlea Avenue, Cambuslang, G72 8AN
0141 641 0245 jamorris@mail.com

PROJECT: Woodbank, Balloch

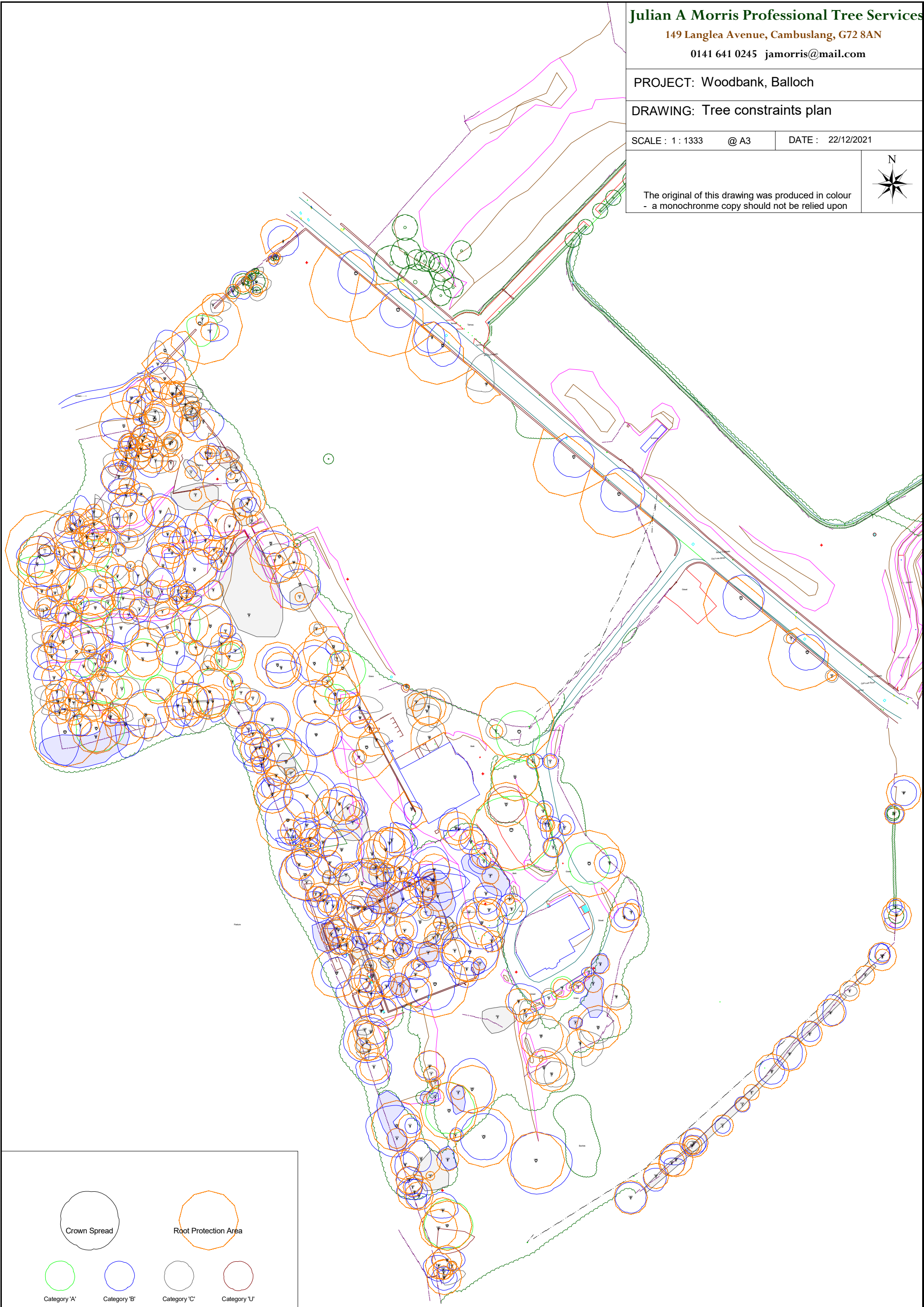
DRAWING: Tree constraints plan

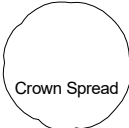
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DATE : 22/12/2021


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

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





Crown Spread


Root Protection Area



Category 'A'


Category 'B'


Category 'C'


Category 'U'

0



100m

APPENDIX 1 - TREE DATA

LOCATION: Woodbank, Balloch

DATE: December 2021

Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effective DBH (mm)	Measured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Condition	Life-stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
489		Ash	<i>Fraxinus excelsior</i>		150		9	2.5				2.5 to 3.5	Minor dieback	Fair	Semi-mature	10 to 20 yrs	C		
490	510	Common Lime	<i>Tilia x europaea</i>		1000		28	7				0 to 1	Maturing stem epicormics. Well buttressed upright balanced.	Good	Mature	>40 yrs	B		
491		Sycamore	<i>Acer pseudoplatanus</i>		160		8.5	2	2	2	3	2.5 to 3.5	Twin stemmed from good inclusion fork at 2m.	Fair to good	Semi-mature	>40 yrs	C		
492	509	Common Lime	<i>Tilia x europaea</i>		1000		30	9	9	8	7	0 to 1	Dense basal epicormics. Well buttressed upright balanced	Fair to good	Mature	>40 yrs	B	Not assessed	
493	508	Common Lime	<i>Tilia x europaea</i>		1050		28	10	10	7	7	1.5 to 2.5	Slight lean NE. Minimal epicormics. Damaging wall	Fair to good	Mature	20 to 40 yrs	B		
494	507	Common Lime	<i>Tilia x europaea</i>		1000		28	8				0 to 1	Dense epicormics around 3m. Damaging wall	Fair to good	Mature	>40 yrs	B		
495	506	Common Lime	<i>Tilia x europaea</i>		500	1000	18	12	3	3	8	1.5 to 2.5	Moderate basal epicormics. Main stem lost at 8m. Large tear to base. overextended limb N. Wall replaced	Fair	Mature	20 to 40 yrs	C		
496	505	Common Lime	<i>Tilia x europaea</i>		1000		28	9	7	8	6	1.5 to 2.5	Maturing basal epicormics. Well buttressed upright balanced.	Fair to good	Mature	>40 yrs	B		
497	504	Sycamore	<i>Acer pseudoplatanus</i>		490		20	6	5	6	7	1.5 to 2.5	Triple stemmed from 3m.	Fair to good	Early-mature	>40 yrs	B		
498	503	Common Lime	<i>Tilia x europaea</i>		1300		30	8	7	7	7	1.5 to 2.5	Well buttressed upright balanced. Dense branch epicormics around 3m. Twin stemmed from 4m. Minor wall damage.	Fair to good	Mature	>40 yrs	B	Not assessed	
499		Common Lime	<i>Tilia x europaea</i>		1180		28	9	7	8	7	1.5 to 2.5	Well buttressed upright balanced. Minor basal epicormics. Dense branch epicormics around 3m.	Fair to good	Mature	>40 yrs	B		
1	os.	Sycamore	<i>Acer pseudoplatanus</i>	2	500		20	6				2.5 to 3.5	Twin stemmed from base	Fair to good	Early-mature	>40 yrs	B		
500		Sycamore	<i>Acer pseudoplatanus</i>		130		8	0	2.5	3	1	1.5 to 2.5	Large stem wound	Fair	Young	10 to 20 yrs	C		

APPENDIX 1 - TREE DATA

LOCATION: Woodbank, Balloch

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
501			Hawthorn	<i>Crataegus monogyna</i>	3	180		9	1	2	3	2	1.5 to 2.5	Triple stemmed from 0.5 m	Fair to good	Early-mature	>40 yrs	B	
502			Downy Birch	<i>Betula pubescens</i>		190		15	3	4	4	3	1.5 to 2.5	Large old stem wound. Occlusion unlikely	Fair	Early-mature	10 to 20 yrs	C	
503			Sycamore	<i>Acer pseudoplatanus</i>	4	380		14	2	6	4	2	1.5 to 2.5	Multistemmed from 1m. Squirrel damage all over	Fair	Semi-mature	20 to 40 yrs	C	
504			Group - Single species broadleaf		6<10	150		14	0				1.5 to 2.5	Sycamore mostly squirrel damage.	Fair	Semi-mature	20 to 40 yrs	C	
505			Wild Cherry	<i>Prunus avium</i>		250		14	5	4	6	5	1.5 to 2.5	Excurrent	Fair to good	Early-mature	>40 yrs	B	
506			Sycamore	<i>Acer pseudoplatanus</i>	2	230		9	2	2	4	3	1.5 to 2.5	Growing from base of wall	Fair to good	Semi-mature	>40 yrs	C	
507			Ash	<i>Fraxinus excelsior</i>	3	350		12	2	7	3	1	1.5 to 2.5	Very large cavity at base. Multistemmed. Fence wire in wood. Midsize deadwood	Poor to fair	Early-mature	10 to 20 yrs	C	
508			Downy Birch	<i>Betula pubescens</i>		300		8	3	7	4	0	1.5 to 2.5	Slight lean and very biased crown E	Fair to good	Early-mature	20 to 40 yrs	B	
509			Pedunculate Oak	<i>Quercus robur</i>		200		7	2	8	2	0	2.5 to 3.5	Swept E	Fair	Young	20 to 40 yrs	C	
510			Sycamore	<i>Acer pseudoplatanus</i>	3	1200		25	3	7	9	5	4 to 5.5	Decurrent from long inclusion fork at base. Minor breakages from fallen neighbour	Good	Mature	>40 yrs	A	
511	unk.		Sycamore	<i>Acer pseudoplatanus</i>	3	900		23	8	8	5	4	4 to 5.5	Triple stemmed from base.	Fair to good	Mature	>40 yrs	B	
512	unk.		Ash	<i>Fraxinus excelsior</i>	2	480		25	9	4	4	4	> 10	Both stems sounding slightly hollow	Poor to fair	Early-mature	10 to 20 yrs	C	Potential
513			Sycamore	<i>Acer pseudoplatanus</i>		670		19	5	8	8	6	0 to 1		Fair to good	Early-mature	>40 yrs	B	

APPENDIX 1 - TREE DATA

LOCATION: Woodbank, Balloch

DATE: December 2021

Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
514			Pedunculate Oak	<i>Quercus robur</i>		460	19	5	3	4	3	5.5 to 10		Fair to good	Early- mature	>40 yrs	B		
515			Pedunculate Oak	<i>Quercus robur</i>		490	18	2	3	7	3	4 to 5.5		Fair to good	Early- mature	20 to 40 yrs	B		
516			Sycamore	<i>Acer pseudoplatanus</i>		650	20	4	4	2	2	5.5 to 10	Light ivy. Perched over burn. Collateral crown damage S	Fair to good	Mature	20 to 40 yrs	B		
517			Pedunculate Oak	<i>Quercus robur</i>		800	16	3	8	6	9	5.5 to 10	Minor deadwood. Midheight breakage	Fair to good	Mature	>40 yrs	B		
518			Sycamore	<i>Acer pseudoplatanus</i>		200	10	2	7	1	0	1.5 to 2.5	Moderate lean E	Fair	Young	20 to 40 yrs	C		
519			Sycamore	<i>Acer pseudoplatanus</i>	4	320	19	3	2	3	6	5.5 to 10	2 dead substems. Generally suppressed	Fair	Semi- mature	20 to 40	C		
520			Sycamore	<i>Acer pseudoplatanus</i>	2	340	15	0	4	6	5	5.5 to 10	One side almost dead. Squirrel damage.	Fair	Semi- mature	10 to 20	C		
521			Sycamore	<i>Acer pseudoplatanus</i>	4	890	21	6	6	7	5	4 to 5.5	Multistemmed from base. Minor lower deadwood	Fair to Good	Early- mature	> 40	B		
522			Pedunculate Oak	<i>Quercus robur</i>		400	13	0	5	5	0	5.5 to 10	Imbalanced crown S E. Large upper section of crown dead.	Fair	Semi- mature	> 40	B	Potential	
523			Ash	<i>Fraxinus excelsior</i>		360	21	0	10	7	0	5.5 to 10	Steady lean SE for light.	Fair to Good	Semi- mature	10 to 20	C		
524			Hazel	<i>Corylus avellana</i>		350	7	4	9	4	2	0 to 1							
525			Wild Cherry	<i>Prunus avium</i>		440	13	3	10	5	0	4 to 5.5	Strong lean E. Much squirrel damage.	Poor to Fair	Semi- mature	10 to 20	C		
526			Sycamore	<i>Acer pseudoplatanus</i>	2	290	13	2	2	3	0	5.5 to 10	Twin stemmed from base. Moderate squirrel damage	Fair	Semi- mature	10 to 20	C		
527			Sycamore	<i>Acer pseudoplatanus</i>	3	440	17	2	4	7	3	4 to 5.5	Mainly twin stemmed from good tensile fork at base. Moderate squirrel damage.	Fair to Good	Early- mature	20 to 40	B		
528			Sycamore	<i>Acer pseudoplatanus</i>	4	290	15	3	4	3	3	4 to 5.5	Multistemmed stump regeneration with basal decay	Poor to Fair	Semi- mature	10 to 20	C		

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LOCATION: Woodbank, Balloch

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
529		Sycamore	<i>Acer pseudoplatanus</i>		200		13	2	3	4	3	5.5 to 10	Imbalanced crown S E. Moderate squirrel damage.	Fair	Semi-mature	20 to 40	C		
530		Ash	<i>Fraxinus excelsior</i>	5	400		16	2	3	5	6	5.5 to 10	Multistemmed from several inclusion forks at base. All sounding hollow.	Poor to Fair	Early-mature	10 to 20	C	Potential	
531		Ash	<i>Fraxinus excelsior</i>	2	300		14	1	1	3	1	> 10	Slender remnants of decayed stump	Poor to Fair	Young	< 10	U		
532		Pedunculate Oak	<i>Quercus robur</i>	2	240		15	0	8	5	0	5.5 to 10	Steady lean SE. Basal and substem decay.	Poor to Fair	Semi-mature	10 to 20	C		
533		Sycamore	<i>Acer pseudoplatanus</i>		510		18	3	4	8	7	4 to 5.5	Upright balanced. Minor squirrel damage	Fair to Good	Early-mature	> 40	B		
534		Sycamore	<i>Acer pseudoplatanus</i>		400		15	5				2.5 to 3.5	Imbalanced crown S W.	Fair to Good	Early-mature	> 40	B		
535		Sycamore	<i>Acer pseudoplatanus</i>		400		15	5				2.5 to 3.5	Well buttressed upright. Large break out wound from inclusion fork at 6m NE.	Fair	Early-mature	10 to 20	C	Potential	
536		Ash	<i>Fraxinus excelsior</i>		400		15	5				2.5 to 3.5	Strong lean S. Half of crown broken out at fork midheight. Long tear.	Fair	Semi-mature	10 to 20	C	Potential	
537		Sycamore	<i>Acer pseudoplatanus</i>		400		15	5				2.5 to 3.5	Well buttressed upright. Minor deadwood.	Fair to Good	Semi-mature	20 to 40	B		
538		Sycamore	<i>Acer pseudoplatanus</i>		400		15	5				2.5 to 3.5	Minor lower deadwood. Several knotholes	Fair	Semi-mature	20 to 40	B		
539		Sycamore	<i>Acer pseudoplatanus</i>	2	240		7	4	3	4	4	1.5 to 2.5	Distorted understorey tree. Dense ivy to mid crown.	Fair	Young	10 to 20 yrs	C		
540		Sycamore	<i>Acer pseudoplatanus</i>		400		19	5	2	1	4	5.5 to 10	Upright. Dense ivy to upper crown killing tree	Fair	Semi-mature	>40 yrs	B		Sever ivy around base
541		Sycamore	<i>Acer pseudoplatanus</i>		350		18	0	1	6	6	1.5 to 2.5	Dense ivy to upper crown killing tree	Poor to fair	Semi-mature	20 to 40 yrs	B		Sever ivy around base.
542		Unidentifiable broadleaf			0	200	4	0				n/a	Dead. Swamped with ivy	Dead	(n/a)	n/a	n/a		

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								N or ave.	E	S	W								
543		Ash	<i>Fraxinus excelsior</i>	2	420		14	3	3	8	9	5.5 to 10	Inequally twin stemmed from base. Dense ivy to mid crown. Large old substem breakage at 3m still attached	Poor to fair	Early-mature	10 to 20 yrs	C		
544		Hawthorn	<i>Crataegus monogyna</i>		150		7	1	2	3	3	0 to 1		Fair to good	Early-mature	>40 yrs	B		
545		Hazel	<i>Corylus avellana</i>	2	80		2	1	3	3	6	1.5 to 2.5	Formerly multistemmed from base. 2 decayed stubs at base	Fair	Semi-mature	<10 yrs	U		
546		Downy Birch	<i>Betula pubescens</i>		550		20	5	6	7	7	2.5 to 3.5	Well buttressed. Decurrent	Fair to good	Mature	20 to 40 yrs	B		
547		Sycamore	<i>Acer pseudoplatanus</i>		250		16	3	5	4	7	1.5 to 2.5	Well buttressed. Moderate squirrel damage	Fair	Semi-mature	20 to 40 yrs	B		
596		Ash	<i>Fraxinus excelsior</i>	2	360		15	3	5	3	2	5.5 to 10	Multistemmed stump regeneration with basal cavity.	Poor to fair	Semi-mature	10 to 20 yrs	C	Potential	
597		Sycamore	<i>Acer pseudoplatanus</i>		360		16	3	4	4	7	1.5 to 2.5	Twin stemmed from fair inclusion fork at 2m. Minor squirrel damage	Fair	Semi-mature	>40 yrs	B		
549		Pedunculate Oak	<i>Quercus robur</i>		700		20	8	9	9	9	4 to 5.5	Twin stemmed from good fork at 1m. Small split on stem N. Minor deadwood	Fair to good	Early-mature	>40 yrs	B		
550		Pedunculate Oak	<i>Quercus robur</i>		220		8	0	0	10	7	4 to 5.5	Stem leaning heavily SW.	Fair	Semi-mature	20 to 40 yrs	C		
551		Pedunculate Oak	<i>Quercus robur</i>		340		12	2	1	4	2	4 to 5.5	Minor deadwood. Well buttressed.	Fair	Semi-mature	20 to 40 yrs	B		
564		Sycamore	<i>Acer pseudoplatanus</i>		650		20	3	3	5	8	1.5 to 2.5		Good	Mature	>40 yrs	A		
563		Sycamore	<i>Acer pseudoplatanus</i>		670		20	8	6	3	9	2.5 to 3.5	Twin stemmed from 3m. Assorted deadwood	Fair to good	Mature	>40 yrs	B		
562		Sycamore	<i>Acer pseudoplatanus</i>		4750		21	7	4	2	3	1.5 to 2.5	Very decayed buttresses	Poor to fair	Early-mature	<10 yrs	U	Potential	

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								N or ave.	E	S	W								
561			Holly		150	360	6	4	2	3	2	1.5 to 2.5	Most of crown missing	Poor to fair	Mature	10 to 20 yrs	C		
556			Sycamore		400		24	4	3	5	6	2.5 to 3.5	Well buttressed upright. Small cavity at base.	Fair to good	Early- mature	20 to 40 yrs	B		
555			Sycamore		450		22	7	5	1	5	1.5 to 2.5	Pocket of white rot at base	Fair	Early- mature	10 to 20 yrs	C		
554			Sycamore		470		24	3	8	8	4	5.5 to 10	Well buttressed. Twin stemmed from weak inclusion fork at 4m.	Fair	Early- mature	20 to 40 yrs	B		
559			Sycamore		570		20	6	2	3	7	2.5 to 3.5	Lower deadwood. Twin stemmed from long inclusion fork at 3m. Stems impacting at 7m	Fair	Early- mature	20 to 40 yrs	B		
560			Sycamore		180		7	7	0	1	5	1.5 to 2.5	Understorey tree	Fair	Semi- mature	20 to 40 yrs	C		
558			Sycamore	2	300		17	5	2	2	2	2.5 to 3.5	Inequally twin stemmed from 1m	Fair to good	Semi- mature	20 to 40 yrs	B		
557			Sycamore		400		18	10	5	2	3	1.5 to 2.5		Fair to good	Early- mature	>40 yrs	B		
553			Ash		500		20	10	10	3	0	5.5 to 10	Decayed tensile roots. Stem sounding dull. Distorted crown. Several decay points on stem to 10m	Poor to fair	Mature	10 to 20 yrs	C	Potential	
552			Sycamore		260		13	7	4	2	0	2.5 to 3.5	Suppressed. Distorted	Fair	Semi- mature	20 to 40 yrs	C		
565			Hazel		250		6	1	8	4	0	0 to 1	Collapsed and spreading out over field	Poor to fair	Mature	10 to 20 yrs	C		

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								N or ave.	E	S	W									
566			Group - Single species broadleaf		3	250		7	0				1.5 to 2.5	Group of 3 sycamore	Fair	Semi- mature	20 to 40 yrs	C		
567			Sycamore	<i>Acer pseudoplatanus</i>	4	540		15	5	8	7	4	0 to 1	Multistemmed from base	Fair to good	Early- mature	>40 yrs	B		
569			Ash	<i>Fraxinus excelsior</i>		200		13	8	6	0	0	5.5 to 10	Strong lean NE	Poor to fair	Semi- mature	10 to 20 yrs	C		
568			Downy Birch	<i>Betula pubescens</i>		160		12	4	4	1	1	4 to 5.5	Upright	Fair to good	Semi- mature	20 to 40 yrs	B		
570			Group - Mixed broadleaf		3	420		5	5	12	2	0	0 to 1	Collapsed willow and sycamore on shared rootplate	Poor to fair	Semi- mature	10 to 20 yrs	U		
571			Group - Mixed broadleaf		6<10	180		15	0				1.5 to 2.5	Birch willow sycamore mainly leaning E	Fair	Semi- mature	20 to 40 yrs	C		
572			Group - Mixed broadleaf		2	180		9	0				1.5 to 2.5	Ash and sycamore. Poor form	Fair	Semi- mature	10 to 20 yrs	C		
573			Sycamore	<i>Acer pseudoplatanus</i>		140		8	3	4	3	2	2.5 to 3.5	Waterlogged S	Fair	Young	20 to 40 yrs	C		
574			Group - Mixed broadleaf		3	200		12	0				4 to 5.5	Sycamore and ash against base of ruin	Fair	Semi- mature	10 to 20 yrs	C		
594			Group - Single species broadleaf		5	200		15	0				2.5 to 3.5	Sycamore slender and generally multistemmed on unstable slope.	Fair	Semi- mature	20 to 40 yrs	C		
595			Sycamore	<i>Acer pseudoplatanus</i>	3	480		14	7	7	6	7	2.5 to 3.5	Triple stemmed from base. Contorted	Fair	Semi- mature	>40 yrs	B		
593			Pedunculate Oak	<i>Quercus robur</i>		420		16	8	8	1	2	2.5 to 3.5	Slight bias E	Fair to good	Semi- mature	>40 yrs	B		

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effective DBH (mm)	Measured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Condition	Life-stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
592			Group - Single species broadleaf	2	280		8	4	6	4	4	2.5 to 3.5	2 Oaks 0.6m apart intertwined and rubbing	Fair	Young	20 to 40 yrs	C		
591			Pedunculate Oak		200		9	3	3	2	1	2.5 to 3.5		Fair to good	Semi- mature	>40 yrs	B		
590			Unidentifiable broadleaf		250		6	0				n/a	Dead pole.	Dead	(n/a)	n/a	n/a		
589			Sycamore		490		19	3	7	9	6	2.5 to 3.5	Upright excurrent	Good	Early- mature	>40 yrs	A		
588			Pedunculate Oak		630		20	4	4	7	7	5.5 to 10	Torsion bark splits at base. Minor deadwood.	Fair to good	Early- mature	>40 yrs	B		
587			Sycamore		200		8	2	3	4	4	2.5 to 3.5	extensive basal decay Upper squirrel damage	Poor	Semi- mature	<10 yrs	U		
586			Pedunculate Oak		800		17	7	7	6	9	4 to 5.5	Lower stubs. Widespread dieback. Midsize deadwood	Fair	Mature	20 to 40 yrs	B	Potential	
585			Pedunculate Oak		350		18	6	8	6	5	5.5 to 10	Basal cavity S. Upright. Minor dieback	Fair	Semi- mature	10 to 20 yrs	C		
584			Sycamore		220		11	4	6	4	3	2.5 to 3.5	Excurrent. Suppressed beneath oak	Fair to good	Semi- mature	>40 yrs	B		
583			Pedunculate Oak		800		25	8	12	11	9	4 to 5.5	Well buttressed upright balanced	Good	Mature	>40 yrs	A		
581			Downy Birch		250		13	2	1	4	6	5.5 to 10	Slight lean W	Fair to good	Early- mature	20 to 40 yrs	B		
582			Downy Birch		580		22	7	6	5	5	1.5 to 2.5	Rootplate partly lifted. Stem hollow. Supported by adjacent tree	Poor to fair	Late- mature	10 to 20 yrs	C		
576			Sycamore		290		15	3				4 to 5.5	Upright balanced	Fair to good	Early- mature	>40 yrs	B		
575			Pedunculate Oak		630		15	2	4	10	8	1.5 to 2.5	Heavily imbalanced S	Fair to good	Early- mature	>40 yrs	B		

APPENDIX 1 - TREE DATA

LOCATION: Woodbank, Balloch

DATE: December 2021

Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
577		Holly	<i>Ilex aquifolium</i>	6<10	400		9	4				0 to 1	Very decayed at centre	Poor to fair	Mature	10 to 20 yrs	C		
577		Sycamore	<i>Acer pseudoplatanus</i>		220		12	1	0	3	6	1.5 to 2.5	Suppressed	Fair	Semi-mature	>40 yrs	C		
579		Pedunculate Oak	<i>Quercus robur</i>		340		7	1	0	3	8	4 to 5.5	Suppressed. Imbalanced crown W	Fair to good	Semi-mature	20 to 40 yrs	B		
580		Pedunculate Oak	<i>Quercus robur</i>		410		16	4	3	4	7	4 to 5.5		Fair to good	Semi-mature	>40 yrs	B		
578		Pedunculate Oak	<i>Quercus robur</i>	2	360		8	2	0	4	8	1.5 to 2.5	Waterlogged. Twin stemmed from base. Imbalanced W	Fair	Semi-mature	10 to 20 yrs	C		
636		Norway Spruce	<i>Picea abies</i>		850		28	4				4 to 5.5	Circling roots. Minor fire damage at base SE. Excurrent	Fair to good	Mature	>40 yrs	B		
641		Laburnum	<i>Laburnum sp.</i>	2	190		5	4	5	1	1	1.5 to 2.5	Moderate lean NE. Twin stemmed from 1m.	Fair	Early-mature	10 to 20 yrs	C		
639		Group - Mixed broadleaf		4	200		11	0				4 to 5.5	Willow and sycamore.	Fair	Semi-mature	20 to 40 yrs	C		
637		Scots Pine	<i>Pinus sylvestris</i>		550		23	1	3	5	3	0 to 1	Slight lean E. Replacement leader from 5m.	Fair	Mature	20 to 40 yrs	B		
638		Scots Pine	<i>Pinus sylvestris</i>		430		22	2	2	3	3	5.5 to 10	Lower deadwood. Excurrent. Thin crown	Fair	Early-mature	20 to 40 yrs	B		
642		Sycamore	<i>Acer pseudoplatanus</i>		750		20	5	7	4	6	1.5 to 2.5	Decurrent	Fair to good	Mature	>40 yrs	B		
643		Larch	<i>Larix sp.</i>		800		30	5	7	10	7	0 to 1	Minor deadwood. Thin crown. Solitary low branch NE	Fair	Mature	10 to 20 yrs	C		
644		Sycamore	<i>Acer pseudoplatanus</i>	2	260		9	2	4	2	4	4 to 5.5	Twin stemmed or 2 trees.	Fair	Semi-mature	20 to 40 yrs	C		

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action	
								N or ave.	E	S	W									
645			Sycamore	<i>Acer pseudoplatanus</i>	3	500		13	4	7	4	2	0 to 1	Triple stemmed from fair inclusion forks. Perched on collapsing wall. Much damaged by adjacent tree failure	Fair to good	Early- mature	20 to 40 yrs	C	Potential	
646			Pedunculate Oak	<i>Quercus robur</i>		750		20	6	8	8	8	2.5 to 3.5	On collapsed wall. Decurrent. Minor breakages	Fair to good	Mature	>40 yrs	B		
647			Group - Single species broadleaf		6<10	150		8	0				2.5 to 3.5	Slender sycamore. Squirrel damage on most	Fair	Young	10 to 20 yrs	C		
648			Sycamore	<i>Acer pseudoplatanus</i>		230		7	2	4	2	1	2.5 to 3.5	Steady lean E. Squirrel damage	Poor to fair	Semi- mature	10 to 20 yrs	C		
649			Norway Spruce	<i>Picea abies</i>		760		28	4	4	3	3	0 to 1	Well buttressed upright excurrent balanced. On collapsed wall	Fair to good	Mature	>40 yrs	B		
650			Lime	<i>Tilia sp.</i>		750		28	7				2.5 to 3.5	Maturing basal epicormics. Well buttressed upright. Decurrent by 10m.	Fair to good	Mature	>40 yrs	B		
651			Ash	<i>Fraxinus excelsior</i>		230		10	3	5	1	1	1.5 to 2.5	Imbalanced crown NE. Pendulous	Fair to good	Semi- mature	10 to 20 yrs	C		
652			Pedunculate Oak	<i>Quercus robur</i>		900		25	7	9	9	6	2.5 to 3.5	Beside collapsed wall. Upright balanced. Decurrent.	Good	Mature	>40 yrs	A		
653			Norway Spruce	<i>Picea abies</i>		180		9	2				4 to 5.5	Upright well buttressed. Linked stem	Fair to good	Semi- mature	>40 yrs	C		
654			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		700		27	4				4 to 5.5	Uncharacteristically excurrent.	Good	Early- mature	>40 yrs	A		
655			Yew	<i>Taxus baccata</i>		350		15	4	8	4	1	2.5 to 3.5	Initial lean E downslope self corrected. Minor deadwood.	Fair to good	Early- mature	>40 yrs	B		
658			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		150	450	8	0	4	2	0	4 to 5.5	Top list. One remaining branch almost dead	Poor	Early- mature	<10 yrs	U		
657			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		600		25	3	4	4	4	4 to 5.5	Well buttressed. Twin stemmed from good tensile fork at 4m.	Fair to good	Early- mature	20 to 40 yrs	B		

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LOCATION: Woodbank, Balloch

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
656		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		450		21	5	9	2	0	4 to 5.5	Strong lean E. Supported by wall. Self correcting. Twin stemmed from weak inclusion fork at 2m.	Fair	Early- mature	10 to 20 yrs	C		
659		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		420		18	3	5	3	1	2.5 to 3.5	On wall. Slight lean E self corrected.	Fair	Early- mature	10 to 20 yrs	C		
660		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		950		25	4	7	6	4	5.5 to 10	Multistemmed on upturned limbs from 4m. Thin crown	Fair	Mature	10 to 20 yrs	C		
661		Ash	<i>Fraxinus excelsior</i>		230		17	3	2	4	4	4 to 5.5		Fair to good	Semi- mature	10 to 20 yrs	C		
662		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		550		20	3	4	6	3	5.5 to 10	Upright largely excurrent.	Fair to good	Early- mature	>40 yrs	B		
669		Goat Willow	<i>Salix caprea</i>	3	550		17	5				4 to 5.5		Fair	Late- mature	10 to 20 yrs	C		
664		Goat Willow	<i>Salix caprea</i>		450		17	3	5	8	8	4 to 5.5	Steady lean E. Sounding dyl. Inclusion fork at 1.5m	Fair	Mature	10 to 20 yrs	C		
665		Goat Willow	<i>Salix caprea</i>	4	550		17	8	9	8	0	0 to 1	multistemmed from inclusion forks at base.	Fair	Mature	10 to 20 yrs	C		
667		Sycamore	<i>Acer pseudoplatanus</i>	2	100	300	4	1	1	2	2	0 to 1	Almost dead. Little bark	Poor	Semi- mature	<10 yrs	U		
666		Group - Mixed broadleaf		3	280		13	0				2.5 to 3.5	Sycamore and willow. Poor form.	Fair	Semi- mature	20 to 40 yrs	C		
671		Elm	<i>Ulmus sp.</i>		210		8	5	4	3	4	1.5 to 2.5	Wishbone twin stems. Strong lean self corrected.	Fair	Semi- mature	20 to 40 yrs	C		
672		Pedunculate Oak	<i>Quercus robur</i>		1200		23	8	8	12	9	2.5 to 3.5	Large tear wound at 6m W. Large limb breakages E. Several PRFs.	Fair to good	Mature	>40 yrs	A		
674		Downy Birch	<i>Betula pubescens</i>		210		10	3	4	3	2	2.5 to 3.5		Good	Semi- mature	>40 yrs	B		

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								N or ave.	E	S	W								
675			Pedunculate Oak	<i>Quercus robur</i>		200	10	3				1.5 to 2.5		Good	Semi- mature	>40 yrs	B		
673		499	Pedunculate Oak	<i>Quercus robur</i>		750	20	7	9	9	9	1.5 to 2.5	Well buttressed upright balanced.	Good	Mature	>40 yrs	A		
676			Downy Birch	<i>Betula pubescens</i>	2	250	112	4	4	5	3	4 to 5.5	Twin stemmed from inclusion fork at base	Fair to good	Semi- mature	20 to 40 yrs	B		
677			Downy Birch	<i>Betula pubescens</i>		250	20	3	6	6	2	2.5 to 3.5	Slight lean SE self corrected.	Good	Early- mature	20 to 40 yrs	B		
678			Pedunculate Oak	<i>Quercus robur</i>		200	15	2	6	6	1	4 to 5.5	Initial lean self corrected.	Fair to good	Semi- mature	>40 yrs	B		
679			Downy Birch	<i>Betula pubescens</i>	2	210	9	5	4	3	2	1.5 to 2.5		Fair to good	Semi- mature	20 to 40 yrs	B		
701			Pedunculate Oak	<i>Quercus robur</i>		300	13	4				4 to 5.5	Upright excurrent balanced	Good	Semi- mature	>40 yrs	B		
680			Deodar Cedar	<i>Cedrus deodara</i>		1050	16	8				2.5 to 3.5	Upright balanced	Good	Mature	>40 yrs	A		
681			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	2	490	14	3	3	4	4	0 to 1	Twin stemmed from base	Fair to good	Semi- mature	>40 yrs	B		
682			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	2	470	15	4				1.5 to 2.5	Inequally twin stemmed from base. Dense	Fair to good	Early- mature	>40 yrs	B		
683			Downy Birch	<i>Betula pubescens</i>		280	18	5	4	3	3	1.5 to 2.5	Upright	Good	Early- mature	20 to 40 yrs	B		
684			Group - Mixed broadleaf		4	300	20	0				4 to 5.5	Downy birch and ancillary willow	Fair to good	Early- mature	>40 yrs	B		
688			Downy Birch	<i>Betula pubescens</i>		150	14	2	1	2	3	4 to 5.5	Upright excurrent balanced	Good	Semi- mature	>40 yrs	B		
690			Laburnum	<i>Laburnum sp.</i>	4	420	6	5	5	4	5	0 to 1	Splitting apart at basr	Fair	Late- mature	10 to 20 yrs	C		

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								N or ave.	E	S	W								
689			Group - Single species broadleaf		6<10	280	20	0				4 to 5.5	Slender downy birch.	Fair to good	Early- mature	>40 yrs	B		
694			Ash		<i>Fraxinus excelsior</i>	4	700	20	7	6	6	7	2.5 to 3.5	Multistemmed from base possibly stump regeneration. Several basal cavities	Fair	Early- mature	10 to 20 yrs	C	
695			Goat Willow		<i>Salix caprea</i>	2	450	10	5	9	9	0	0 to 1	Twin stemmed. Main stem almost on ground initially. Poor form	Fair	Early- mature	10 to 20 yrs	C	
702			Group - Single species broadleaf		2	220	20	0				2.5 to 3.5	Downy birch. Upright	Good	Early- mature	>40 yrs	B		
696			Goat Willow		<i>Salix caprea</i>	2	530	15	5	9	5	3	0 to 1	Twin stemmed from base. Decay on both	Poor to fair	Mature	10 to 20 yrs	C	
697			Goat Willow		<i>Salix caprea</i>	3	560	15	8	9	6	6	2.5 to 3.5	Triple stemmed from base. Daedalopsis on deadwood.	Fair	Mature	10 to 20 yrs	C	
698			Goat Willow		<i>Salix caprea</i>	5	700	15	7	11	8	6	1.5 to 2.5	Multistemmed or related stems. Spreading. Several spundi g dull.	Fair	Late- mature	10 to 20 yrs	C	
699			Downy Birch		<i>Betula pubescens</i>		240	18	3	5	5	1	5.5 to 10	Well buttressed. Slight initial lean E self corrected. Deep cavity at 1m W.	Fair	Early- mature	10 to 20 yrs	C	
700			Goat Willow		<i>Salix caprea</i>		380	15	4	8	4	2	1.5 to 2.5	Well buttressed. Slight lean E.	Fair	Early- mature	20 to 40 yrs	C	
693			Hybrid Willow		<i>Salix x</i>	2	250	9	4	3	4	3	2.5 to 3.5	Twin stemmed from base. Possibly caprea cinerea cross	Fair to good	Early- mature	10 to 20 yrs	C	
692			Silver Birch		<i>Betula pendula</i>		290	19	4.5				4 to 5.5	Well buttressed upright balanced	Good	Mature	>40 yrs	A	

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								N or ave.	E	S	W								
689		Downy Birch	<i>Betula pubescens</i>		160		14	2.5				1.5 to 2.5	Upright balanced excurrent	Good	Semi-mature	>40 yrs	B		
703		Sycamore	<i>Acer pseudoplatanus</i>		600		22	3	6	8	7	0 to 1	Well buttressed upright balanced	Good	Early-mature	>40 yrs	A		
705		Downy Birch	<i>Betula pubescens</i>		230		22	1	5	6	1	5.5 to 10	Moderate stem epicormics.	Fair	Early-mature	10 to 20 yrs	C		
704		Pedunculate Oak	<i>Quercus robur</i>		370		22	4	9	8	2	> 10	Well buttressed	Fair to good	Semi-mature	>40 yrs	B		
706		Pedunculate Oak	<i>Quercus robur</i>		390		20	4	8	7	2	5.5 to 10	Minor deadwood	Fair to good	Semi-mature	>40 yrs	B		
707		Sycamore	<i>Acer pseudoplatanus</i>		160		9	2				0 to 1	Extreme squirrel damage	Poor	Young	10 to 20 yrs	C		
708		Sycamore	<i>Acer pseudoplatanus</i>		310		18	6	4	4	2	1.5 to 2.5	Unusual upward cavity at base. Moderate squirrel damage	Fair	Semi-mature	20 to 40 yrs	C		
709		Group - Single species broadleaf		3	150		14	0				1.5 to 2.5	3 sycamore	Fair to good	Young	20 to 40 yrs	C		
710		Sycamore	<i>Acer pseudoplatanus</i>	2	310		16	4	4	5	4	4 to 5.5	Edge of gully. Twin stemmed from base	Fair to good	Semi-mature	20 to 40 yrs	B		
711		Sycamore	<i>Acer pseudoplatanus</i>		240		18	7	6	3	3	4 to 5.5	Edge of gully. Strong initial lean S self corrected.	Fair	Semi-mature	20 to 40 yrs	B		
712		Sycamore	<i>Acer pseudoplatanus</i>		360		18	9	5	3	6	4 to 5.5	Decurrent	Fair to good	Semi-mature	>40 yrs	B		
713		Pedunculate Oak	<i>Quercus robur</i>		670		20	9	9	9	8	4 to 5.5	Well buttressed upright balanced. Minor lower deadwood	Fair to good	Mature	>40 yrs	B		
714		Sycamore	<i>Acer pseudoplatanus</i>		350		20	2	7	4	3	5.5 to 10		Fair to good	Semi-mature	>40 yrs	B		

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								N or ave.	E	S	W								
715		Sycamore	<i>Acer pseudoplatanus</i>		130		9	1.5				2.5 to 3.5		Fair	Young	20 to 40 yrs	C		
716		Pedunculate Oak	<i>Quercus robur</i>		400		20	2	8	5	2	5.5 to 10	Minor deadwood	Fair to good	Semi-mature	>40 yrs	B		
717		Sycamore	<i>Acer pseudoplatanus</i>		180		15	2	6	3	0	5.5 to 10		Fair to good	Semi-mature	20 to 40 yrs	C		
718		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		220		9	3.5				1.5 to 2.5	Upright excurrent balanced. Large basal abrasion with superficial decay.	Fair	Semi-mature	>40 yrs	B		
719		Sycamore	<i>Acer pseudoplatanus</i>		700		22	8	9	8	4	5.5 to 10	Minor deadwood	Fair to good	Mature	>40 yrs	B		
720		Sycamore	<i>Acer pseudoplatanus</i>		330		20	0	3	8	3	5.5 to 10	Intergrown with 731	Fair to good	Semi-mature	>40 yrs	B		
721		Sycamore	<i>Acer pseudoplatanus</i>		600		21	9	6	3	9	0 to 1	Edge of gully. Well buttressed. Twin stemmed by 6m	Fair to good	Mature	>40 yrs	B		
722		Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		400		17	4	4	4	2	1.5 to 2.5	Recent fire damage 50% bark loss	Poor to fair	Semi-mature	<10 yrs	U		
723		Sycamore	<i>Acer pseudoplatanus</i>		650		24	8	8	7	3	1.5 to 2.5	Twin stemmed from fair inclusion fork at 5m	Fair to good	Mature	20 to 40 yrs	B		
724		Sycamore	<i>Acer pseudoplatanus</i>		340		15	4	4	3	1	2.5 to 3.5	Poor form. Edge of gully.	Fair	Semi-mature	10 to 20 yrs	C		
725		Sycamore	<i>Acer pseudoplatanus</i>		320		20	4				4 to 5.5	Upright balanced	Fair to good	Semi-mature	>40 yrs	B		
726		Sycamore	<i>Acer pseudoplatanus</i>		320		20	1	3	4	4	5.5 to 10	Upright	Fair to good	Semi-mature	20 to 40 yrs	B		
727		Sycamore	<i>Acer pseudoplatanus</i>	3	510		22	2	8	9	6	5.5 to 10	Triple stemmed from base.	Fair to good	Early-mature	>40 yrs	B		
728		Pedunculate Oak	<i>Quercus robur</i>		600		25	8	6	4	4	5.5 to 10		Fair to good	Early-mature	>40 yrs	B		

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									N or ave.	E	S	W								
729			Sycamore	<i>Acer pseudoplatanus</i>		450		22	6	4	3	4	4 to 5.5		Fair to good	Early-mature	>40 yrs	B		
##	os.		Sycamore	<i>Acer pseudoplatanus</i>	3	550		17	5				5.5 to 10		Fair to good	Early-mature	>40 yrs	B		
##	bdy		Sycamore	<i>Acer pseudoplatanus</i>	2	320		12	3.5				2.5 to 3.5	Untagged	Fair to good	Semi-mature	20 to 40 yrs	B		
##	bdy		Pedunculate Oak	<i>Quercus robur</i>	2	470		13	4	4	5	5	1.5 to 2.5	Untagged. Topped at 10m	Fair	Semi-mature	>40 yrs	B		
##	bdy		Holly	<i>Ilex aquifolium</i>		290		10	3	2.5	2	2.5	1.5 to 2.5	Untagged. Somewhat suppressed crown	Fair to good	Semi-mature	>40 yrs	B		
##	bdy		Norway Maple	<i>Acer platanoides</i>	2	450		14	5	3	3	5	1.5 to 2.5		Fair	Semi-mature	>40 yrs	B		
##	bdy		Holly	<i>Ilex aquifolium</i>		220		6	5	3	2	3	0 to 1		Fair	Semi-mature	>40 yrs	B		
##	bdy		Group - Mixed broadleaf		6<10	300		3	0				0 to 1	Rowan & Hawthorn hedge with Sycamore standards topped at 1n	Fair	Early-mature	20 to 40 yrs	C		
##	bdy		Beech	<i>Fagus sylvatica</i>	3	320		5	2	3	2	2	0 to 1	Topped at 1m	Poor to fair	Semi-mature	20 to 40 yrs	C		
##			Pedunculate Oak	<i>Quercus robur</i>		440		15	7	6	5	3	4 to 5.5	Crown bias W	Fair	Semi-mature	>40 yrs	B		
##	bdy		Ash	<i>Fraxinus excelsior</i>	4	400		13	5	4	3	3	4 to 5.5	ADB	Fair	Early-mature	20 to 40 yrs	B		
##			Beech	<i>Fagus sylvatica</i>	6<10	540		17	7	5	6	5	4 to 5.5		Fair to good	Early-mature	>40 yrs	B		
##	bdy		Sycamore	<i>Acer pseudoplatanus</i>	4	550		16	5				4 to 5.5		Fair	Early-mature	>40 yrs	B		
##	bdy		Beech	<i>Fagus sylvatica</i>		220		12	3				4 to 5.5		Good	Semi-mature	>40 yrs	B		
##			Hawthorn	<i>Crataegus monogyna</i>	6<10	340		9	3				2.5 to 3.5		Fair	Early-mature	20 to 40 yrs	B		

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LOCATION: Woodbank, Balloch

DATE: December 2021

Tag off site ?	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action	
								N or ave.	E	S	W									
##			Ash	<i>Fraxinus excelsior</i>	4	450		16	6	5	4	4	2.5 to 3.5	ADB. Ivy to mid crown	Fair	Early- mature	20 to 40 yrs	B		
##			Ash	<i>Fraxinus excelsior</i>		300		18	4	5	4	4	1.5 to 2.5		Fair	Early- mature	>40 yrs	B		
##	bdy .		Hawthorn	<i>Crataegus monogyna</i>		240		10	2	3	2	2	2.5 to 3.5	Ivy to mid crown	Fair	Semi- mature	>40 yrs	C		
##			Sycamore	<i>Acer pseudoplatanus</i>	4	540		22	6	4	2	6	2.5 to 3.5		Fair to good	Early- mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>	2	420		21	2	5	5	3	4 to 5.5		Fair to good	Early- mature	>40 yrs	B		
##			Beech	<i>Fagus sylvatica</i>		400		16	3	4	6	5	0 to 1		Fair to good	Early- mature	>40 yrs	B		
##			Group - Mixed broadleaf		21<50	250		3	0				0 to 1	Hedgerow with occasional topped outgrown standards. Occasionally to 5m. Hawthorn dominates	Fair	Semi- mature	>40 yrs	B		
##	bdy .		Beech	<i>Fagus sylvatica</i>		530		17	6				0 to 1		Good	Early- mature	>40 yrs	B		
##			Group - Mixed broadleaf		3	220		9	0				1.5 to 2.5	Blackthorn & young Oak	Fair	Young	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>	2	650		16	7	4	5	7	2.5 to 3.5	Leans W from base with stilt roots, self corrected	Fair	Mature	>40 yrs	B		
##			Ash	<i>Fraxinus excelsior</i>		460		17	5	5	7	4	2.5 to 3.5		Fair	Early- mature	>40 yrs	B		
##			Ash	<i>Fraxinus excelsior</i>		430		17	5	5	6	5	4 to 5.5		Fair	Early- mature	>40 yrs	B		
##			Norway Maple	<i>Acer platanoides</i>		300		12	3	4	4	3	1.5 to 2.5	Restricted rooting area	Fair	Semi- mature	>40 yrs	B		
##			Silver Birch	<i>Betula pendula</i>		550		17	5	5	3	7	4 to 5.5		Good	Early- mature	>40 yrs	B		
##			Silver Birch	<i>Betula pendula</i>		450		17	1	3	5	5	2.5 to 3.5	Bias NE	Fair to good	Early- mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		400		16	7	6	3	7	1.5 to 2.5		Fair to good	Early- mature	>40 yrs	B		

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
##			Pedunculate Oak	<i>Quercus robur</i>		780	18	10	10	9	9	0 to 1		Fair to good	Mature	>40 yrs	A		
##			Scots Pine	<i>Pinus sylvestris</i>		600	20	0	15	10	0	> 10	Wind blown hung up on adjacent Oak. Self corrected. Decay in base.	Poor to fair	Mature	<10 yrs	U		
##			Ash	<i>Fraxinus excelsior</i>		900	19	11	14	13	10	4 to 5.5	Tree has shed major scaffold limbs	Fair	Mature	>40 yrs	B	Potential	
##			Pedunculate Oak	<i>Quercus robur</i>		950	18	9				2.5 to 3.5	Almost dead	Poor	Over Mature	>40 yrs	B3	Potential	
##			Ash	<i>Fraxinus excelsior</i>		190	10	3	3	2	2	1.5 to 2.5		Fair	Young	>40 yrs	B		
##			Sessile Oak	<i>Quercus petraea</i>		900	22	11	10	9	9	1.5 to 2.5		Fair	Mature	>40 yrs	A		
##			Sessile Oak	<i>Quercus petraea</i>		760	18	12	8	9	10	0 to 1		Fair	Mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>		470	15	5	7	4	6	0 to 1		Fair	Early- mature	>40 yrs	B		
##			Silver Birch	<i>Betula pendula</i>		420	18	4	4	6	6	2.5 to 3.5		Fair	Semi- mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>		550	14	4	5	5	5	2.5 to 3.5		Fair to good	Early- mature	>40 yrs	B		
##			Scots Pine	<i>Pinus sylvestris</i>		320	16	0	9	6	0	> 10	Bias SE	Poor	Semi- mature	10 to 20 yrs	C	Potential	
##			Pedunculate Oak	<i>Quercus robur</i>		220	10	1	4	4	2	1.5 to 2.5		Fair	Semi- mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		150	8	2	2	2	1	0 to 1		Fair	Young	>40 yrs	C		
##			Group - Single species broadleaf		11<20	140	7	0				0 to 1	Fallen Willows	Poor	Semi- mature	10 to 20 yrs	C		

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LOCATION: Woodbank, Balloch

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effective DBH (mm)	Measured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Condition	Life-stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
##			Group - Single species broadleaf	2	350		16	0				1.5 to 2.5	Black Poplar	Fair	Semi- mature	>40 yrs	B		
##			Ash		800		22	8	8	12	12	> 10		Fair	Mature	>40 yrs	B		
##			Rowan		380		5	3	4	3	2	1.5 to 2.5		Fair	Early- mature	20 to 40 yrs	B		
##			Group - Mixed broadleaf	6<10	320		10	0				0 to 1	Holly & Hawthorn	Fair	Semi- mature	>40 yrs	B		
##			Group - Single species broadleaf	2	280		12	0				2.5 to 3.5	Cherry	Fair	Semi- mature	20 to 40 yrs	B		
##			Group - Single species broadleaf	2	180		10	0				2.5 to 3.5	Cherry	Poor	Semi- mature	10 to 20 yrs	C		
##			Myrobalan Plum	3	240		6	2	2	3	3	0 to 1	Co-dominant union	Poor to fair	Semi- mature	10 to 20 yrs	C		
##			Flowering Cherry		500		13	6	6	5	6	2.5 to 3.5		Fair	Early- mature	20 to 40 yrs	B		
##			Pedunculate Oak		450		14	4	7	7	7	1.5 to 2.5		Good	Early- mature	>40 yrs	B		
##			Beech		600		16	10	10	8	9	0 to 1	Multistem from >2m	Fair to good	Mature	>40 yrs	B		
##			Pedunculate Oak		570		13	4	7	5	5	4 to 5.5	Dead decaying.	Dead	(n/a)	n/a	B3	Potential	Monoarb @ 7m, reduce spread of deadwood

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								N or ave.	E	S	W								
##			Sycamore	<i>Acer pseudoplatanus</i>		300		12	4	3	2	4	1.5 to 2.5	Dieback	Poor to fair	Semi-mature	10 to 20 yrs	C	
##			Group - Single species broadleaf		2	250		10	0				2.5 to 3.5	Sycamore	Fair	Semi-mature	>40 yrs	C	
##			Hawthorn	<i>Crataegus monogyna</i>	3	290		5	0	0	3	5	0 to 1	Leans E with decay in base	Poor	Early-mature	10 to 20 yrs	C	
##			Goat Willow	<i>Salix caprea</i>		500		12	5	6	6	5	0 to 1		Fair	Early-mature	>40 yrs	B	
##			Goat Willow	<i>Salix caprea</i>		410		14	1	5	6	5	1.5 to 2.5		Fair	Early-mature	>40 yrs	B	
##			Sycamore	<i>Acer pseudoplatanus</i>	5	720		22	7	7	7	5	4 to 5.5	Multistem	Good	Mature	>40 yrs	B	
##			Goat Willow	<i>Salix caprea</i>		400		14	6	3	5	7	4 to 5.5	Deadwood/dieback	Poor	Early-mature	10 to 20 yrs	C	Potential
##			Goat Willow	<i>Salix caprea</i>	3	520		14	5	5	7	9	0 to 1	Ivy clad to mid crown	Fair to good	Early-mature	>40 yrs	B	
##			Sycamore	<i>Acer pseudoplatanus</i>	11<20	780		15	6				1.5 to 2.5	Multistem - re grown coppice	Fair	Mature	>40 yrs	B	
##			Sycamore	<i>Acer pseudoplatanus</i>	2	420		20	4	6	6	6	2.5 to 3.5	Co-dominant stems with acute compression fork E->W	Poor	Early-mature	10 to 20 yrs	C	Potential
##			Sycamore	<i>Acer pseudoplatanus</i>	5	450		17	2	4	6	4	2.5 to 3.5	Multistem	Fair	Early-mature	>40 yrs	B	
##			Pedunculate Oak	<i>Quercus robur</i>		300		17	5	3	0	5	> 10		Fair	Early-mature	>40 yrs	B	
##			Silver Birch	<i>Betula pendula</i>	3	290		16	0	3	3	5	2.5 to 3.5	Ivy	Fair	Semi-mature	>40 yrs	C	
##			Pedunculate Oak	<i>Quercus robur</i>		200		12	0	0	5	3	1.5 to 2.5		Fair	Young	>40 yrs	B	

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								N or ave.	E	S	W								
##			Group - Mixed broadleaf	6<10	350		18	0				2.5 to 3.5	Large Willows, Hawthorn understorey	Fair	Early- mature	>40 yrs	B		
##			Group - Single species broadleaf	3	330		17	0				2.5 to 3.5	Sycamore. Ivy present	Fair	Early- mature	>40 yrs	B		
##			Group - Single species broadleaf	4	190		13	0				2.5 to 3.5	Sycamore	Fair	Young	>40 yrs	C		
##			Holly	<i>Ilex aquifolium</i>	250		6	1	2	5	4	0 to 1	Suppressed upper crown	Fair	Semi- mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>	220		13	3				4 to 5.5		Fair	Semi- mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>	300		13	3	2	5	4	1.5 to 2.5		Fair	Semi- mature	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>	5	580	13	0	6	9	8	0 to 1	Leaning S self corrected & partially supported on adjacent Sycamore	Fair	Early- mature	20 to 40 yrs	B	Potential	
##			Goat Willow	<i>Salix caprea</i>		310	16	5	5	5	3	5.5 to 10		Fair	Early- mature	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>	4	680	17	7	6	9	8	5.5 to 10	Ivy to mid crown	Fair	Mature	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>	3	670	18	1	9	14	7	1.5 to 2.5	Bias S. Co dominant stems fork S- >N. Deadwood	Fair	Mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>	250		13	5	5	0	1	2.5 to 3.5		Poor to fair	Semi- mature	20 to 40 yrs	C	Potential	
##			Group - Single species broadleaf	6<10	400		15	0				0 to 1	Yew. Decay in some stems with aparrant sound residual wood	Fair	Early- mature	20 to 40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>	590		22	7	6	7	6	5.5 to 10		Good	Mature	>40 yrs	B		

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								N or ave.	E	S	W								
##		Goat Willow	<i>Salix caprea</i>	4	660		20	10				> 10	Compression fork split @ 3m	Fair	Mature	>40 yrs	B	Potential	Compressi on fork split @ 3m- prune out
##		Pedunculate Oak	<i>Quercus robur</i>		300		18	7	5	5	8	> 10		Good	Early- mature	>40 yrs	B		
##		Sycamore	<i>Acer pseudoplatanus</i>		210		15	3				2.5 to 3.5	Squirrel damage	Poor to fair	Young	20 to 40 yrs	C		
##		Hawthorn	<i>Crataegus monogyna</i>	2	180		10	0	1	2	1	5.5 to 10		Fair	Young	>40 yrs	C		
##		Sycamore	<i>Acer pseudoplatanus</i>	2	310		15	1	2	6	5	4 to 5.5	Minor deadwood	Fair	Semi- mature	20 to 40 yrs	B		
##		Goat Willow	<i>Salix caprea</i>	2	360		13	0	5	5	2	5.5 to 10	Fallen stem self corrected	Fair	Semi- mature	20 to 40 yrs	B		
##		Sycamore	<i>Acer pseudoplatanus</i>	2	250		12	3				2.5 to 3.5	Squirrel damage	Fair	Young	>40 yrs	C		
##		Silver Birch	<i>Betula pendula</i>		250		15	5	3	3	4	5.5 to 10		Fair to good	Semi- mature	>40 yrs	B		
##		Sycamore	<i>Acer pseudoplatanus</i>		310		16	4	3	3	4	5.5 to 10		Good	Semi- mature	>40 yrs	B		
##		Group - Single species broadleaf			240		13	0				1.5 to 2.5		Poor to fair	Young	20 to 40 yrs	C	Potential	
##		Silver Birch	<i>Betula pendula</i>	2	330		18	3	4	5	3	> 10		Good	Semi- mature	>40 yrs	B		
##		Group - Mixed broadleaf			240		12	0				1.5 to 2.5	Sycamore v& Hawthorn	Good	Semi- mature	>40 yrs	B		
##		Sycamore	<i>Acer pseudoplatanus</i>	2	300		15	0				2.5 to 3.5	Sycamore	Fair to good	Semi- mature	>40 yrs	B		

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									N or ave.	E	S	W								
##			Goat Willow	Salix caprea	5	430		14	4	6	4	1	2.5 to 3.5	Multistem	Fair to good	Early-mature	>40 yrs	B		
##			Group - Single species broadleaf		2	220		13	0				2.5 to 3.5	Sycamore	Fair	Semi-mature	20 to 40 yrs	C		
##			Silver Birch	Betula pendula		350		18	5	6	6	5	5.5 to 10		Good	Early-mature	>40 yrs	B		
##			Goat Willow	Salix caprea	6<10	1050		20	9	8	10	10	4 to 5.5		Fair	Mature	>40 yrs	B		
##			Sycamore	Acer pseudoplatanus		500		17	5	5	8	8	5.5 to 10		Fair	Early-mature	>40 yrs	B		
##			Ash	Fraxinus excelsior	2	440		16	6	6	2	4	> 10	Twin stems with slight compression fork	Fair	Early-mature	>40 yrs	B		
##			Rowan	Sorbus aucuparia		190		11	3	3	2	3	1.5 to 2.5		Good	Semi-mature	>40 yrs	B		
##			Group - Single species broadleaf		5	300		14	0				2.5 to 3.5	Goat Willow	Fair to good	Early-mature	>40 yrs	B		
##			Ash	Fraxinus excelsior		350		17	2	7	5	2	5.5 to 10		Fair	Early-mature	20 to 40 yrs	B		
##			Goat Willow	Salix caprea	6<10	940		18	10	11	9	11	0 to 1	Multistem. Some stems have failed at base, live Phoenix growth self corrected. Upright stems aparrantly stable	Fair	Mature	20 to 40 yrs	B	Potential	Remove snapped stems E
##			Group - Single species broadleaf		2	210		16	0				2.5 to 3.5	Sycamore	Fair	Semi-mature	>40 yrs	B		
##			Pedunculate Oak	Quercus robur		400		16	3	5	7	7	4 to 5.5		Fair	Semi-mature	>40 yrs	B		
##			Sycamore	Acer pseudoplatanus	2	230		14	3	5	2	3	1.5 to 2.5		Fair	Young	>40 yrs	C		

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								N or ave.	E	S	W								
##			Sycamore	<i>Acer pseudoplatanus</i>	180		15	3				2.5 to 3.5		Fair	Semi-mature	>40 yrs	C		
##			Group - Single species broadleaf		160		11	0				1.5 to 2.5	Sycamore	Poor	Young	10 to 20 yrs	C	Potential	
##			Sycamore	<i>Acer pseudoplatanus</i>	4	410	17	6	4	6	8	> 10	Ivy to mid crown	Fair	Early-mature	>40 yrs	B	Not assessed	Sever ivy ri
##			Sycamore	<i>Acer pseudoplatanus</i>		250	17	5	2	6	5	> 10	Ivy to upper crown	Fair	Semi-mature	>40 yrs	B	Not assessed	
##			Group - Single species broadleaf		4	470	22	0				2.5 to 3.5	Linear Sycamore group. Ivy to upper crown	Fair	Early-mature	>40 yrs	B	Not assessed	
##			Sycamore	<i>Acer pseudoplatanus</i>	2	620	22	6	13	9	7	5.5 to 10	Ivy to upper crown	Fair	Early-mature	>40 yrs	B	Not assessed	
##			Sycamore	<i>Acer pseudoplatanus</i>		300	18	3	14	5	0	> 10	Bias E. Ivy to upper crown	Fair	Early-mature	>40 yrs	B	Not assessed	
##			Lawson Cypress	<i>Chamaecyparis lawsoniana</i>		600	18	6	5	3	3	1.5 to 2.5	Ivy to mid crown. Twin co-dominant stems with defect at union @ 6m SE	Fair to good	Early-mature	20 to 40 yrs	B	Potential	
##			Sycamore	<i>Acer pseudoplatanus</i>	2	760	22	8	10	9	9	2.5 to 3.5	Twin stem with sound union	Good	Mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>		350	19	5	5	3	5	> 10		Good	Early-mature	>40 yrs	B		
##			Group - Single species broadleaf		3	220	12	0				1.5 to 2.5	Squirrel damage	Poor to fair	Young	20 to 40 yrs	C		
##			Pedunculate Oak	<i>Quercus robur</i>		400	14	3	5	6	6	5.5 to 10	Storm damage	Fair	Semi-mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		610	18	8	9	8	7	5.5 to 10		Fair	Mature	>40 yrs	B		
##			Ash	<i>Fraxinus excelsior</i>		800	23	10				> 10	Dense Ivy to mid crown.	Fair	Mature	>40 yrs	B	Not assessed	

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								N or ave.	E	S	W								
##			Holly		240		8	1	2	3	2	0 to 1	Almost dead Holly supporting Ivy. Healthy small stem W	Poor	Semi- mature	10 to 20 yrs	C		
##			Holly	5	450		13	4	6	6	5	0 to 1		Fair to good	Early- mature	>40 yrs	B		
##			Sycamore		400		16	6				2.5 to 3.5		Fair to good	Semi- mature	>40 yrs	B		
##			Sycamore		250		16	3	4	3	4	2.5 to 3.5		Good	Semi- mature	>40 yrs	B		
##			Sycamore		320		17	7	3	3	7	5.5 to 10		Good	Semi- mature	>40 yrs	B		
##			Silver Birch		480		19	7	6	6	7	5.5 to 10		Fair to good	Early- mature	>40 yrs	B		
##			Pedunculate Oak		270		12	0	1	5	7	1.5 to 2.5	Suppressed biased crown	Fair	Semi- mature	>40 yrs	B		
##			Rowan		330		13	0	2	6	5	1.5 to 2.5		Good	Mature	20 to 40 yrs	B		
##			Sycamore		980		20	9	7	9	9	2.5 to 3.5	Decay in stem W bias over field. Upright stem E aparrantly sound	Poor to fair	Mature	>40 yrs	B	Tolerable	
##			Sycamore		430		16	3	5	6	5	4 to 5.5		Fair	Early- mature	>40 yrs	B		
##			Silver Birch		500		22	9	14	10	5	> 10	Bias E	Fair	Mature	>40 yrs	B		
##			Pedunculate Oak		550		18	8	10	8	4	5.5 to 10	Bias E	Fair	Early- mature	>40 yrs	B		
##			Group - Mixed broadleaf	6<10	230		18	0				5.5 to 10	Slender Birch growing on hillside among Rhododendron. Stems lean E. Occasional Sycamore	Fair	Semi- mature	20 to 40 yrs	C		
##			Sycamore	2	400		14	5	8	5	2	1.5 to 2.5		Fair	Semi- mature	>40 yrs	B		
##			Yew		350		12	6				2.5 to 3.5		Fair to good	Early- mature	>40 yrs	B		

APPENDIX 1 - TREE DATA

LOCATION: Woodbank, Balloch

DATE: December 2021

Tag off site ?	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action	
								N or ave.	E	S	W									
##			Wych Elm	<i>Ulmus glabra</i>		150		11	3	1	0	0	4 to 5.5		Poor	Young	10 to 20 yrs	C		
##			Wych Elm	<i>Ulmus glabra</i>		360		16	3	6	8	5	1.5 to 2.5		Fair	Semi-mature	20 to 40 yrs	B		
##			Wych Elm	<i>Ulmus glabra</i>		350		15	5	7	7	5	2.5 to 3.5		Good	Semi-mature	20 to 40 yrs	B		
##			Common Lime	<i>Tilia x europaea</i>		700		25	10				4 to 5.5	Base obscured by extensive growth. Larger suckers to 220mm shown on topo adjacent main stem	Fair	Mature	>40 yrs	B	Not assessed	Remove basal growth
##			Ash	<i>Fraxinus excelsior</i>	2	340		10	2	5	4	0	1.5 to 2.5	Decay	Poor	Semi-mature	<10 yrs	U	Potential	
##			Wych Elm	<i>Ulmus glabra</i>	2	210		10	5	4	0	3	0 to 1	Re-grown from felled stump	Poor to fair	Young	10 to 20 yrs	C		
##			Sycamore	<i>Acer pseudoplatanus</i>		210		15	5	4	1	2	2.5 to 3.5	Ivy to mid crown	Fair	Semi-mature	20 to 40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		500		22	9	6	4	9	5.5 to 10	Ivy to upper crown	Fair	Mature	>40 yrs	B	Not assessed	
##			Sycamore	<i>Acer pseudoplatanus</i>		200		16	0	3	4	1	4 to 5.5		Fair	Semi-mature	>40 yrs	B		
##			Silver Birch	<i>Betula pendula</i>	3	420		17	5	8	4	2	5.5 to 10		Fair to good	Early-mature	>40 yrs	B		
##			Flowering Cherry	<i>Prunus sp.</i>	3	290		18	3	6	8	1	5.5 to 10	Poorly occluding cavity W	Poor	Semi-mature	<10 yrs	U		
##			Silver Birch	<i>Betula pendula</i>		280		17	0	7	8	0	> 10	Bias SE. Ivy to mid crown	Poor to fair	Early-mature	20 to 40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		450		18	9	6	6	6	> 10	Twin stems from 3m with aparrant sound upright union	Fair	Early-mature	>40 yrs	B		

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effect ive DBH (mm)	Meas- ured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Cond- ition	Life- stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
##		Sycamore	<i>Acer pseudoplatanus</i>	2	620		22	9	10	9	5	2.5 to 3.5		Fair	Mature	>40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>	2	500		17	8	11	5	0	5.5 to 10	Growing on slope. Bias E	Fair	Mature	>40 yrs	B		
##		Sycamore	<i>Acer pseudoplatanus</i>		400		16	7	9	5	0	0 to 1	Growing on slope. Bias E	Fair	Early-mature	>40 yrs	B		
##		Group - Mixed broadleaf and conifer		6<10	150		9	0				1.5 to 2.5	Trees within understorey	Fair	Young	>40 yrs	C		
##		Sycamore	<i>Acer pseudoplatanus</i>		720		22	10	12	10	9	1.5 to 2.5	Twin stems from 2.5n	Fair	Mature	>40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>	2	600		18	6	8	6	6	> 10		Fair to good	Mature	>40 yrs	B		
##		Rowan	<i>Sorbus aucuparia</i>	3	400		10	3	2	5	3	2.5 to 3.5		Fair	Early-mature	20 to 40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>		320		16	4	4	4	5	> 10		Fair to good	Early-mature	>40 yrs	B		
##		Common Lime	<i>Tilia x europaea</i>		720		25	9	12	11	9	1.5 to 2.5	Twin stems above 7m	Fair	Mature	>40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>		380		18	5	2	3	5	1.5 to 2.5		Fair	Early-mature	>40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>		300		15	3	0	3	7	1.5 to 2.5		Fair	Early-mature	>40 yrs	B		
##		Group - Mixed broadleaf			150		11	0				1.5 to 2.5	Sycamore & Oak	Fair	Young	>40 yrs	C		
##		Sycamore	<i>Acer pseudoplatanus</i>		540		18	7	9	6	7	1.5 to 2.5		Fair to good	Early-mature	>40 yrs	B		
##		Pedunculate Oak	<i>Quercus robur</i>		320		16	4	5	5	6	2.5 to 3.5		Fair	Semi-mature	>40 yrs	B		
##		Silver Birch	<i>Betula pendula</i>		500		22	7	5	7	9	> 10		Fair to good	Early-mature	>40 yrs	B		

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LOCATION: Woodbank, Balloch

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Tag	off site	Old tag	Species	Binomial	Stems (if >1)	Effective DBH (mm)	Measured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Condition	Life-stage	ERC (yrs)	Grading	risk	action
									N or ave.	E	S	W								
##			Pedunculate Oak	<i>Quercus robur</i>		360		15	5	7	4	7	5.5 to 10		Fair to good	Semi-mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>		240		12	2	1	2	5	2.5 to 3.5		Fair	Semi-mature	>40 yrs	B		
##			Sycamore	<i>Acer pseudoplatanus</i>		520		17	7				2.5 to 3.5	Stubs	Fair to good	Early-mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>	2	530		16	8	1	1	7	1.5 to 2.5	Deadwood	Fair	Semi-mature	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>		360		16	0	5	8	6	5.5 to 10		Fair	Early-mature	>40 yrs	B		
##			Beech	<i>Fagus sylvatica</i>		390		18	6	6	3	4	0 to 1		Fair	Early-mature	>40 yrs	B		
##			Goat Willow	<i>Salix caprea</i>		430		15	4	5	6	6	5.5 to 10		Fair	Early-mature	>40 yrs	B		
##			Silver Birch	<i>Betula pendula</i>	2	220		18	3	1	5	6	> 10		Fair	Semi-mature	>40 yrs	B		
##			Group - Mixed broadleaf			270		16	0				2.5 to 3.5	Stems inaccessible among dense shrubs. Beech Willow Sycamore	Fair	Semi-mature	>40 yrs	B		
##			Pedunculate Oak	<i>Quercus robur</i>		1300		28	13	16	16	16	4 to 5.5	Significant specimen multi stems from >3m	Good	Mature	>40 yrs	A		
##			Yew	<i>Taxus baccata</i>		700		14	7				1.5 to 2.5	Extensive fire damage	Poor	Mature	<10 yrs	U		
820	bdy		Ash	<i>Fraxinus excelsior</i>		450		17	4	5	6	7	5.5 to 10	Twin stemmed from fair tensile fork at 2m. Moderate dieback	Fair	Early-mature	10 to 20 yrs	C		
821			Beech	<i>Fagus sylvatica</i>	2	520		15	1	7	8	2	1.5 to 2.5	Distorted possibly lapsed hedge.	Fair to good	Early-mature	20 to 40 yrs	B		
822			Beech	<i>Fagus sylvatica</i>	3	520		20	1	2	6	6	1.5 to 2.5	Numerous bleeding cankers at base. Poor form	Poor to fair	Early-mature	10 to 20 yrs	C		
823			Pedunculate Oak	<i>Quercus robur</i>		750		20	9	10	9	5	4 to 5.5	Well buttressed upright balanced decurrent. Minor deadwood	Good	Mature	>40 yrs	A		

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Tag off site 2	Old tag	Species	Binomial	Stems (if >1)	Effective DBH (mm)	Measured DBH (mm)	Ht. (m)	Spread (m)				Crown ht.(m)	Observations	Condition	Life-stage	ERC (yrs)	Grading	risk	action
								N or ave.	E	S	W								
824			Ash		310		15	2	7	7	3	5.5 to 10	Initial lean E downslope. Matured basal epicormics. Diminishing vigour	Fair	Semi-mature	10 to 20 yrs	C		
825			Group - Single species broadleaf	5	500		14	0				0 to 1	Long-Lapsed beech hedge remnant.	Fair to good	Early-mature	>40 yrs	B		
826			Pedunculate Oak		1100		20	9	6	13	9	1.5 to 2.5	Moderate ivy to mid crown. Strips of dead bark possibly old lightning damage. Overextended limb SW into field.	Fair to good	Mature	>40 yrs	B		
827			Sycamore	2	360		14	4	4	4	5	1.5 to 2.5	Suppressed and distorted	Fair	Semi-mature	20 to 40 yrs	B		
828			Pedunculate Oak		800		22	11	11	9	8	4 to 5.5	Well buttressed upright balanced decurrent. Minor deadwood	Good	Mature	>40 yrs	A		
829			Downy Birch		260		20	6	9	2	0	5.5 to 10	Slender. Slight lean E. Heavy high crown.	Fair	Early-mature	10 to 20 yrs	C		
830			Rowan	2	150	250	6	5	7	1	1	2.5 to 3.5	Armillaria at base. Decay to 2m.	Poor	Mature	<10 yrs	U		
831			Oak	2	650		22	0	8	13	4	1.5 to 2.5	Twin stemmed from good tensile fork at base. Steady lean S	Fair to good	Mature	>40 yrs	B		
832			Sycamore	6<10	750		20	10	9	9	8	4 to 5.5	Multistemmed from base possibly stump regeneration.	Fair to good	Early-mature	>40 yrs	B		
833			Beech		200		5	1	3	8	4	0 to 1	Very imbalanced crown S	Fair	Semi-mature	20 to 40 yrs	C		
834			Pedunculate Oak		450		25	0	3	12	8	1.5 to 2.5	Steady lean S	Fair to good	Early-mature	>40 yrs	B		
835			Beech	2	560		14	5	4	6	4	0 to 1	Crown bias S. Possible hedge remnant	Fair to good	Early-mature	>40 yrs	B		
836			Ash		600		25	7	7	10	5	5.5 to 10	Well buttressed. Decurrent.	Fair to good	Mature	20 to 40 yrs	B		

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								N or ave.	E	S	W								
837		Pedunculate Oak	<i>Quercus robur</i>	2	500		6	0	4	12	6	0 to 1	Leader small and almost dead. String substem S becoming horizontal.	Fair	Early- mature	20 to 40 yrs	C		
838		Downy Birch	<i>Betula pubescens</i>		250	400	15	5	8	2	0	> 10	Large basal cavity. Steady lean E	Poor	Mature	<10 yrs	U	Potential	
844		Downy Birch	<i>Betula pubescens</i>		280		2	8	7	2	2	> 10	Well buttressed. Over-tall. Poor form.	Fair	Mature	10 to 20 yrs	C		
843		Beech	<i>Fagus sylvatica</i>		660		17	12	7	4	5	2.5 to 3.5	Surface roots. Split in buttress SE	Fair to good	Mature	20 to 40 yrs	B		
839		Downy Birch	<i>Betula pubescens</i>		270		20	10	10	0	0	> 10	Strong lean NE. Stem sounding dull. Heavy high crown.	Fair	Mature	10 to 20 yrs	C	Potential	
840		Sycamore	<i>Acer pseudoplatanus</i>		160		6	0	1	4	4	2.5 to 3.5	Distorted. Squirrel damage.	Fair	Young	10 to 20 yrs	C		
841		Pedunculate Oak	<i>Quercus robur</i>		350		6	5	0	1	7	1.5 to 2.5	Strong lean NE into field.	Fair	Semi- mature	20 to 40 yrs	C		
842		Downy Birch	<i>Betula pubescens</i>		380		18	7	2	4	7	4 to 5.5	Burred stem. Impact damage Armilaria and bleeding cankers at 1m.	Fair	Mature	10 to 20 yrs	C		
847		Pedunculate Oak	<i>Quercus robur</i>		370		8	3	3	4	9	1.5 to 2.5	Distorted. Large diameter deadwood. Heavily imbalanced crown W.	Fair	Early- mature	10 to 20 yrs	C		
848		Pedunculate Oak	<i>Quercus robur</i>		400		9	7	3	1	8	1.5 to 2.5	Strong lean N. Distorted form.	Fair	Early- mature	20 to 40 yrs	B		
845		Holly	<i>Ilex aquifolium</i>		350		10	6	4	4	3	0 to 1	Basal cavity E. Minor deadwood. Twin stemmed from good tensile fork at 2m.	Fair to good	Mature	20 to 40 yrs	B		
846		Pedunculate Oak	<i>Quercus robur</i>		480		20	9	9	5	5	5.5 to 10	Well buttressed upright. Minor lower deadwood	Good	Early- mature	>40 yrs	A		

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									N or ave.	E	S	W								
848			Pedunculate Oak	<i>Quercus robur</i>		470		12	5	2	5	8	1.5 to 2.5	Heavily imbalanced crown W over field	Fair to good	Early-mature	>40 yrs	B		
849			Sycamore	<i>Acer pseudoplatanus</i>		230		8	2	0	2	5	1.5 to 2.5	Upper squirrel damage	Poor to fair	Semi-mature	10 to 20 yrs	C		
850			Sycamore	<i>Acer pseudoplatanus</i>	2	630		20	6	4	3	6	4 to 5.5	Twin stemmed from good fork at base. Minor deadwood. Minor squirrel damage	Fair to good	Early-mature	>40 yrs	B		
851			Pedunculate Oak	<i>Quercus robur</i>		500	800	20	12	8	3	9	5.5 to 10	Several dead substems at base.	Fair to good	Mature	20 to 40 yrs	B	Potential	Remove deadwood at 2m
852			Pedunculate Oak	<i>Quercus robur</i>		450		20	3	4	4	7	5.5 to 10	Well buttressed upright reasonably balanced.	Good	Early-mature	>40 yrs	A		
853			Sycamore	<i>Acer pseudoplatanus</i>		150		10	2.5				2.5 to 3.5	Excurrent	Fair to good	Young	>40 yrs	C		
854			Sycamore	<i>Acer pseudoplatanus</i>		350		18	4	4	3	3	4 to 5.5	Large basal cavity	Fair	Semi-mature	10 to 20 yrs	C		
855			Sycamore	<i>Acer pseudoplatanus</i>		180		11	3				2.5 to 3.5	Distorted. Initial lean E self corrected.	Fair	Semi-mature	20 to 40 yrs	C		
856			Pedunculate Oak	<i>Quercus robur</i>		600		18	12	10	8	3	4 to 5.5	Minor deadwood. Old stem split E.	Fair to good	Early-mature	>40 yrs	B		
857			Unknown conifer			160		6	2.5				1.5 to 2.5	Cypress. Twin stemmed from 3m.	Fair to good	Young	20 to 40 yrs	B		
858			Sycamore	<i>Acer pseudoplatanus</i>	2	470		19	8	5	4	7	1.5 to 2.5	Twin stemmed from 1m.	Fair to good	Semi-mature	>40 yrs	B		
859			Pedunculate Oak	<i>Quercus robur</i>		600		20	8	7	6	6	5.5 to 10	Well buttressed upright. Somewhat distorted form.	Fair to good	Early-mature	>40 yrs	B		
860			Sycamore	<i>Acer pseudoplatanus</i>		180		12	3.5				5.5 to 10	In gully. Excurrent	Fair to good	Young	20 to 40 yrs	C		
861			Pedunculate Oak			550		18	8				4 to 5.5	Well buttressed upright balanced	Good	Early-mature	>40 yrs	A		

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								N or ave.	E	S	W								
862			Pedunculate Oak	<i>Quercus robur</i>		650	18	9	3	5	8	5.5 to 10	Midsize deadwood. Crown E absnt	Fair	Mature	>40 yrs	B		
863			Pedunculate Oak	<i>Quercus robur</i>		530	20	9	7	3	9	5.5 to 10	Crown bias N.	Fair to good	Early- mature	>40 yrs	B		
864			Pedunculate Oak	<i>Quercus robur</i>		600	19	8	5	4	8	5.5 to 10	Wet ground. Much lower deadwood. Upper dieback	Poor to fair	Early- mature	10 to 20 yrs	C		
865			Sycamore	<i>Acer pseudoplatanus</i>		230	14	3	3	3	4	5.5 to 10	Initial lean NW self corrected. Distorted form	Fair to good	Semi- mature	20 to 40 yrs	C		
866			Pedunculate Oak	<i>Quercus robur</i>		600	22	8	4	8	6	5.5 to 10	Well buttressed upright. Lower deadwood	Good	Early- mature	>40 yrs	A		
867			Sycamore	<i>Acer pseudoplatanus</i>		300	15	4	4	4	2	2.5 to 3.5	Distorted form.	Fair	Semi- mature	20 to 40 yrs	C		
868			Pedunculate Oak	<i>Quercus robur</i>		700	22	8				4 to 5.5	Large lower breakages E.	Fair to good	Early- mature	>40 yrs	B		
869			Downy Birch	<i>Betula pubescens</i>		230	15	5	4	1	2	5.5 to 10	Slender. Heavy high crown.	Fair	Early- mature	10 to 20 yrs	C		
870			Sycamore	<i>Acer pseudoplatanus</i>		280	10	4	4	2	2	1.5 to 2.5		Fair to good	Semi- mature	>40 yrs	B		
871			Ash	<i>Fraxinus excelsior</i>		290	18	8	1	4	6	5.5 to 10	Torn substem at base. Very spread out crown	Poor to fair	Semi- mature	10 to 20 yrs	C	Potential	
872			Pedunculate Oak	<i>Quercus robur</i>		350	20	3	8	4	1	> 10	Upright. Imbalanced crown E	Fair to good	Semi- mature	>40 yrs	B		
873			Sycamore	<i>Acer pseudoplatanus</i>		240	9	3	4	3	2	1.5 to 2.5	Upright balanced. Lower breakages	Fair to good	Semi- mature	20 to 40 yrs	B		
874			Sycamore	<i>Acer pseudoplatanus</i>		480	20	5				2.5 to 3.5	Upright balanced.	Good	Early- mature	>40 yrs	A		
875			Pedunculate Oak	<i>Quercus robur</i>	2	330	9	7	3	1	2	4 to 5.5	Twin stemmed from base. Heavy bias N	Fair to good	Semi- mature	20 to 40 yrs	C		

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								N or ave.	E	S	W									
876			Wild Cherry	<i>Prunus avium</i>		330		15	10	8	1	3	5.5 to 10	Strong initial lean N self correcting.	Fair	Early- mature	20 to 40 yrs	B		
877			Pedunculate Oak	<i>Quercus robur</i>		420		20	6	6	4	6	4 to 5.5	Upright balanced. Twin stemmed from 5m	Good	Semi- mature	>40 yrs	A		
878			Sycamore	<i>Acer pseudoplatanus</i>	2	330		13	5	7	4	2	1.5 to 2.5	Decayed large low limb SE. Deadwood throughout	Fair	Semi- mature	10 to 20 yrs	C		
879			Downy Birch	<i>Betula pubescens</i>		230		17	3	5	5	3	4 to 5.5	Fluted stem. Surface root SW. Slight initial lean SE self corrected.	Fair to good	Early- mature	20 to 40 yrs	B		
880			Lime	<i>Tilia sp.</i>	3	730		30	7	7	3	6	1.5 to 2.5	Triple stemmed from base.	Fair to good	Mature	>40 yrs	B		
881			Lime	<i>Tilia sp.</i>		500		30	3	8	8	6	2.5 to 3.5	Multistemmed from base.	Fair to good	Mature	>40 yrs	B		
882			Common Lime	<i>Tilia x europaea</i>		700		30	7	8	9	7	1.5 to 2.5	Dense basal epicormics. Upright. Twin stemmed from 7m.	Good	Mature	>40 yrs	B		
883			Pedunculate Oak	<i>Quercus robur</i>		700		23	6	10	8	4	5.5 to 10	Burred stem with epicormics. Old breakages. General dieback and small deadwood.	Fair	Mature	20 to 40 yrs	B		
884			Group - Mixed broadleaf		5	250		13	0				2.5 to 3.5	Cherry and hawthorn. Scrappy.	Fair	Early- mature	20 to 40 yrs	C		
885			Goat Willow	<i>Salix caprea</i>	2	420		12	7	10	5	4	4 to 5.5	Twin stemmed from base. General bias E. Much lower deadwood.	Fair	Mature	20 to 40 yrs	B		
886			Group - Single species broadleaf		6<10	300		13	0				2.5 to 3.5	Scattered pole stage sycamore. Nondescript	Fair	Semi- mature	20 to 40 yrs	C		

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

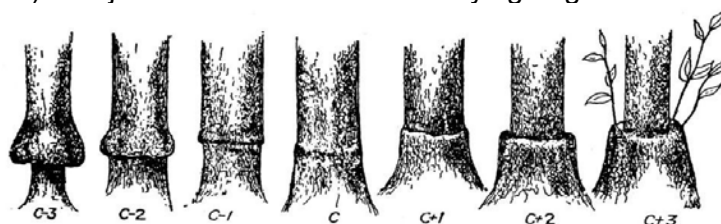
Estimated Remaining Contribution: The number of years that the tree in substantially its current form (or better) is expected to continue to make an arboricultural or landscape contribution.

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 Scotland relevant to trees and their protection, principally the Town & Country Planning (Scotland) Act 1997, the Planning etc. (Scotland) Act 2006 and The Town and Country Planning (Tree Preservation Order and Trees in Conservation Areas) (Scotland) Regulations 2010.

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.

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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

Strouts and Winter (1994) *Diagnosis of ill-health in trees*

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*

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

Mynors (2002) – *The Law of Trees, Forests and Hedgerows*

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

British Standards Institute (2008) – *BS8206-2: Lighting for buildings. Code of practice for daylighting*

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*

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	<ul style="list-style-type: none">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 declineTrees 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 <p><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>			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

6.4 Assessment Matrix

Proposal	Ancient Woodland Value	Other Woodland Value	TPO Amenity Value	Sensitivity	Magnitude of Change	Significance of Effects	Significance After Mitigation	Significance After Additional Mitigation	Residual Effects
Woodland bothies	Medium	n/a	n/a	Medium	Slight	Minor negative	Minor positive	Moderate positive	Negligible
Woodland lodges (Woodbank)	Low	Medium	n/a	Low	Moderate	Minor negative	Minor negative	Minor positive	Negligible
Woodbank House	Low	Low	n/a	Low	Major	Minor negative	Neutral	Minor positive	Negligible
Pierhead	n/a	Low	n/a	Medium	Substantial	Major negative	Major negative	Minor negative	None
Woodland lodges (Riverside)	n/a	Medium	n/a	Low	Low	Minor negative	Negligible	Minor positive	Negligible
Staff Area	Low	Medium	n/a	Medium	Moderate	Moderate	Moderate negative	Minor negative	Negligible
Boathouse	Low	n/a	Low	Low	Slight	Moderate negative	Minor negative	Minor negative	Negligible
Riverside parking	n/a	Medium	n/a	Medium	Moderate	Moderate negative	Moderate negative	Minor negative	None
Overall						Moderate negative	Minor negative	Neutral	None or negligible