

Cumbria Tree Surveys

Arboricultural Consultancy, Surveys, Inspections & Advice

Broadings

Bolton By Bowland

Arboricultural Impact Assessment

Tree Protection Plan

Method Statement

September 2023

cumbriatreesurveys.co.uk
info@cumbriatreesurveys.co.uk



PR228

Arboricultural Impact Assessment
Broadings September 2023

Contents

1.0	Terms of Reference	1
2.0	Arboricultural Impact Assessment Constraints Details and Observations	2
3.0	Arboricultural Impact Assessment Survey Data Table	5
4.0	Root Structure and Root Protection Area	6
5.0	Tree Location Plan Root Protection Area	7
6.0	Arboricultural Impact Assessment Tree Protection Method Statement	8
7.0	Mitigation Planting	10
8.0	Arboricultural Impact Assessment Recommendations	10
9.0	Photographic Evidence	11

Definitions	i
<i>Bibliography</i>	

1.0 Terms of Reference

1.1 This Broadings Arboricultural Impact Assessment has been commissioned by Mr Stephen Kearney as a result of a development proposal within the curtilage of Broadings, Anna Lane, Bolton By Bowland, Clitheroe. BB7 4NZ.

1.2 The proposed development being the construction of a detached garage. The development proposal has the potential to affect a mature Ash, *Fraxinus excelsior* and a young Alder, *Alnus glutinosa*. As trees are to be given material consideration in the planning process, an arboricultural impact assessment is required.

1.3 The site visit, assessment, investigation and arboricultural impact assessment tree protection report, have been undertaken by [REDACTED] M.Arbor.A., N.C. Arb., H.N.D. Arb., N.E.B.O.S.H. General Certificate, of Cumbria Tree Surveys Arboricultural Consultancy.

1.4 The site investigations, assessments and arboricultural impact assessment report have been established by implementing the following:

British Standard 5837:2012.

Trees in relation to design, demolition and construction – Recommendations.

British Standard 3998:2010.

Tree work – Recommendations.

National Tree Safety Group.

Common Sense Risk Management of Trees. Forestry Commission 2011.

Visual Tree Assessment (VTA) methods, and Cumbria Tree Survey protocols.

1.5 The site survey being undertaken on the 19th September 2023, from ground level with no exploratory excavation works undertaken. Weather at time of survey, heavy rain with moderate wind.

1.6 The purpose of this Broadings Arboricultural Impact Assessment Report is to evaluate the tree stock in relation to the proposed development. The arboricultural impact assessment is an assessment of the tree stock on the date of survey. Decay, defects and faults that are noticeable in the tree stock have been observed, commented on and recommendations stated. This arboricultural impact assessment is not a health and safety inspection and no such inference can be arrived at from it. No liability will be held by the surveyor or Cumbria Tree Surveys for events that occur post survey date.

2.0 Arboricultural Impact Assessment Constraints, Details and Observations

2.1 In accordance with the requirement of British Standard 5837:2012. The tree stock in the proposed development area has been inspected to establish the following details.

2.2 Tree Species.

Common name first, with the botanical name in *italics*.

2.3 Age Class, Life Stage.

Four age classes referred to in British Standard 5837:2012 as “Life Stages” are available for use. That is Young, Semi-Mature, Mature and Over Mature. This system represents the tree specimen within its life cycle.

Young being in the early formative years and still with the potential for future vigorous extension growth.

Semi-Mature being in essence middle aged with growth having slowed.

Mature is regarded as the stage in the life cycle of the tree specimen when extension growth has virtually ceased and the tree specimen is, in the main, sustaining the life cycle with little or no extension growth.

Over Mature is that stage in the life cycle of the tree where the specimen is in decline with evidence to suggest this is the case.

2.4 Number of Stems.

The number of stems originating from the base of the specimen.

2.5 Stem Diameter at 1.5 metres from ground level.

Stem diameter measured at 1.5 metres from ground level and referred to as Diameter at Breast Height, DBH, as recommended by British Standard 5837:2012. For trees with multiple stems the combined stem diameter should be calculated in accordance with the prescribed formula in BS 5837:2012.

2.6 Tree Height.

Expressed in metres and measured by means of a TruPulse 200e laser measure from ground level. Where sight lines for the laser have been restricted, an estimate has been provided.

2.7 Crown Spread.

As required by British Standard 5837:2012, representing the four compass cardinal points, expressed in metres.

2.8 Crown Height.

The existing height above ground level of the tree crown / canopy. That is the clearance from ground level to the underside of the crown / canopy.

2.9 Root Protection Area.

Calculated from the stem diameter at 1.5 metres from ground level. The root protection area is 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. British Standard 5837:2012 capping the maximum root protection area radius at 15 metres from stem base equating to an area of 707 square metres.

2.10 Arboricultural Observations and Comments.

Observations on the health and safety status, structural condition and overall physiological condition of the tree specimen.

2.11 Arboricultural Recommendations.

Recommendations required for the benefit of sound arboricultural practice, good tree care management and to abate any potential health and safety issues arising from the tree specimen.

2.12 Estimated Remaining Contribution.

The life expectancy, in years, of the specimen in its current condition. Four categories are recommended in BS 5837:2012, and are as follows: <10, 10+, 20+, 40+.

2.13 British Standard 5837:2012 Category.

A system as defined in British Standard 5837:2012 for tree categorisation and classification. Each specimen should be classified according to its category A, B, C or U and colour coded accordingly. All specimens in the category A – C being further defined into a subcategory 1, 2 or 3. In general terms:

- 1 being mainly arboricultural qualities.
- 2 being mainly landscape qualities.
- 3 being mainly cultural values including conservation.

Category A, B and C trees have the potential to be considered for retention. Whilst category U are those trees that are recommended for removal. An abridged definition of the categorisation system follows.

2.13 continued.

A

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

A1. Trees that are particularly good examples of their species, especially if rare or unusual or form essential components of a group.

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

A3. Trees, groups or woodlands of significant conservation historical, commemorative or other value.

B

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

B1. Trees that might be included in Category A, but are downgraded because of impaired condition.

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

B3. Trees with material conservation or other cultural value.

C

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

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

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

C3. Trees with no material conservation or other cultural value.

D

Trees 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. This includes those specimens that are considered dead, dying or dangerous at time of survey.

Arboricultural Impact Assessment
Broadings September 2023

3.0 Arboricultural Impact Assessment Survey Data Table

3.1 Broadings Arboricultural Impact Assessment Survey Data Table.

Tree No.	Tree Species	Life Stage	No. of Stems	Stem Diameter mm	Tree Height m	Crown Spread m	Crown Height m	Root Protection Area	Arboricultural Observations and Comments	Arboricultural Recommendations	Estimated Rem. Contrib.	BS 5837 Retention Category
T1	Common Ash (<i>Fraxinus excelsior</i>)	Mature	1	630	16	N:5 E:7 S:7 W:7	3	Radius: 7.6m. Area: 181 sq m.	Mature specimen adjacent to highway at entrance to and within falling distance of property and proposed development area. Asymmetrical crown due south over highway. Evidence of Ash dieback with crown dying back and with deadwood present. Specimen in decline. The Ash dieback infestation has compromised the anticipated life expectancy of the Ash. The life expectancy being less than 10 years.	Monitor due to the presence of Ash dieback.	<10 years	C1
T2	Common Alder (<i>Alnus glutinosa</i>)	Young	1	210	8	N:3 E:4 S:4 W:3	2	Radius: 2.5m. Area: 20 sq m.	Specimen of average shape and form in elevated garden position. Grade change of circa 1.5 metres. Removal required to facilitate construction.	Removal required to facilitate construction.	10+ Years	C1

3.2 T1 mature Ash has evidence of Ash dieback and whilst currently contains live tissue, the specimen is in decline. It is highly likely the specimen will continue to decline over the next 2 – 3 growth seasons. The specimen may require removal during this time scale. The specimen being in falling distance of the public highway, existing property and proposed detached garage.

3.3 The specimen is contained in a section of the garden in an ornamental bed bordered by a dry stone wall. The wall offers protection to the base of the specimen and prevents access into this area.

3.4 The north aspect of the root protection area is currently covered by existing hard standing and utilised for vehicle parking etc. The south aspect being dissected by the public highway.

3.5 Mr Kearney appreciates the amenity value of the Ash and aims to retain the Ash for as long as its condition allows. The Ash does not need to be felled to facilitate construction.

3.6 T2 is a young Alder that requires removal to facilitate construction. The loss of the Alder to be mitigated with replacement planting.

4.0 Root Structure and Root Protection Area

4.1 Collectively known as the root protection area. Rooting systems of trees are made up essentially of two rooting types. Fine / ephemeral fibrous feeding roots and structural stability roots.

4.2 Fibrous feeding roots are those that absorb water and nutrients from the soil, whilst structural stability roots are those that form a frame that supports the stem and crown.

4.3 The spread of these roots from the base of the stem for single stemmed trees is regarded in British Standard 5837:2012 as being the area equivalent to a circle with a radius 12 times stem diameter. Diameter, in general, being measured at 1.5 metres from ground level. This area is referred to as the Root Protection Area.

4.4 As tree roots grow radially from the base of the stem, they are usually contained within the upper most 300mm – 600mm of soil and can be quite shallow. Fibrous feeding roots are usually in the upper most 300mm where oxygen, moisture and nutrient content is concentrated and are usually fine and often ephemeral. Structural stability roots are usually deeper for stability. Local soil conditions, the presence of hard standing and soil compaction through continued use, have a direct influence on the depth and spread roots will penetrate. This is likely to be the case for T1 mature Ash in relation to the proposed development.

4.5 The root protection area is the area where soil disturbance should be avoided as this is likely to damage the rooting system with the consequences of this damage being detrimental to the health and stability of the tree.

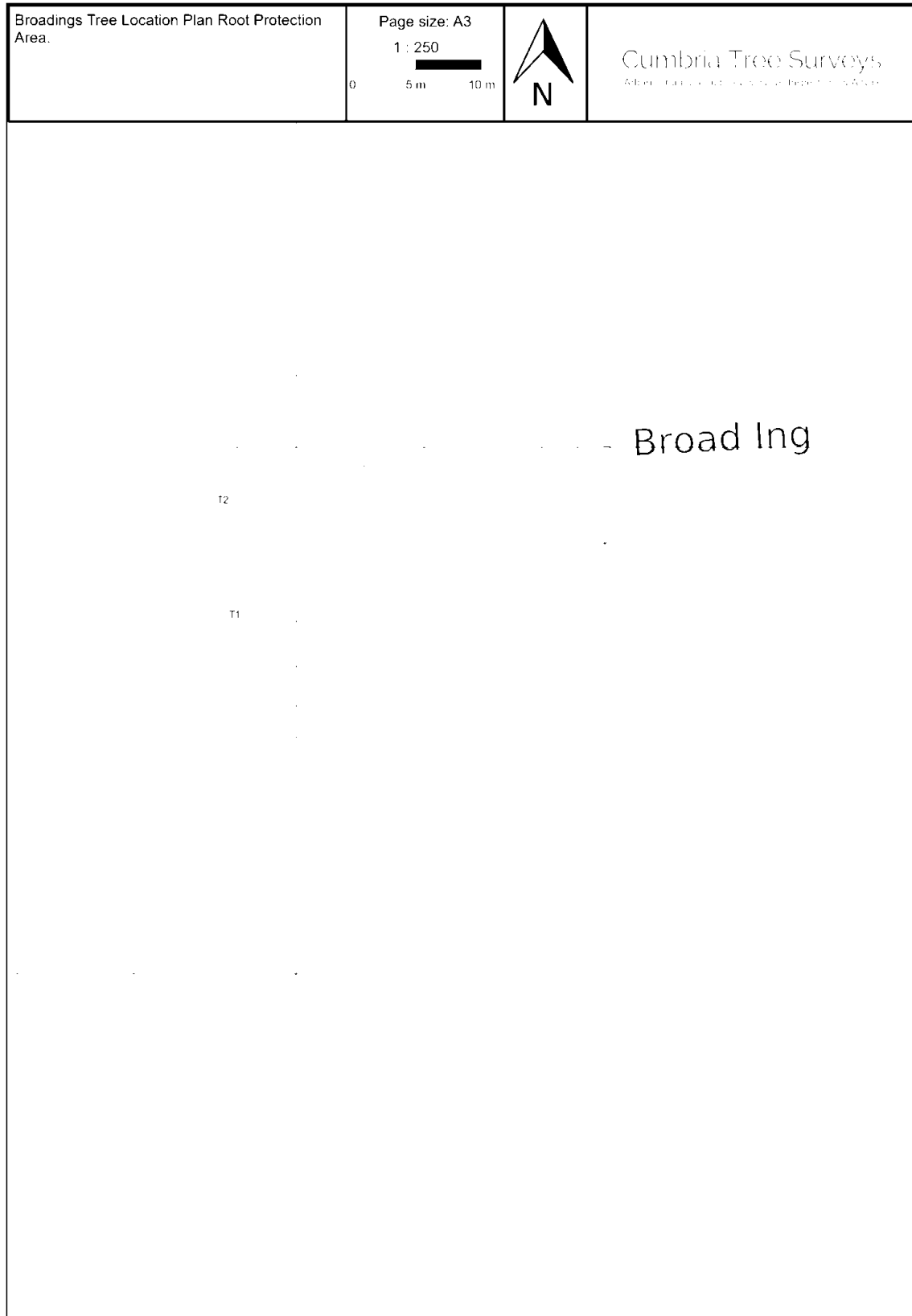
4.6 Damage to the fibrous feeding roots will impede the trees ability to absorb oxygen, moisture and nutrients. This is detrimental to tree health and depending on the degree of disturbance and damage may take 3 to 5 years for the effects of this disturbance to become evident as the tree starts to decline.

4.7 The usual form of damage to the structural stability roots takes the form of being cut / severed during construction, excavation and or trenching activities. This form of damage will also have a detrimental effect on the health of the tree whilst also affecting the trees stability. Any actions detrimental to tree stability may weaken the trees ability to withstand wind and storm events. This may predispose the tree to failure and windblow.

Arboricultural Impact Assessment
Broadings September 2023

5.0 Tree Location Plan Root Protection Area

5.1 Broadings tree location plan with the trees identified by the British Standard retention category and represented by the root protection area.



6.0 Arboricultural Impact Assessment Tree Protection Method Statement

6.1 Contained within the proposed development Construction Zone is an area of ornamental planting consisting of ground cover scrub growth including woody herbaceous growth. These being beyond the remit of the arboricultural impact assessment.

6.2 Within the planning process it is generally accepted that Category U and C, low quality tree specimens, are excluded from consideration regarding development proposals and considerations. Category C only being retained where individual tree specimens do not impede or pose any constraint on development.

6.3 T2, young Alder, requires removal to facilitate construction. T1, mature Ash is to be retained and as such shall be offered the required tree protection measures necessary taking into account the trees location and aspect. The base of the specimen being contained in the Construction Exclusion Zone. The theoretical root protection area as calculated from the British Standard extends into the Construction Zone.

6.4 The basis for this Tree Protection Method Statement is that disturbance to the root protection areas shall be kept to an absolute minimum. At all stages of design, demolition, (site clearance) and construction, consideration shall be given to tree protection, reducing excavation, ground disturbance and soil compaction.

6.5 The root protection area as calculated from the British Standard being represented in the Section 5 Tree Location Plan Root Protection Area. The plan represents the theoretical root spread in optimum growing conditions. The presence of hard standing and soil compaction through continued use for the parking of vehicles on the root protection area will have impeded root development and establishment. It can be expected therefore, that the actual root protection area of the mature Ash shall not be as per the British Standard calculation.

6.6 The development proposal requires a very minor incursion within the northern most aspect of the theoretical root protection area. The proposed foundation design requires an excavation of 330mm (13inches) at 7,150mm from the base of the mature Ash. Such works shall not significantly negatively impact the health and safety status and structural condition of the mature Ash.

6.7 Ground breaking activities required for the proposed development including the excavation for service ducts should be undertaken as sympathetically as possible avoiding the root protection area of the mature Ash where possible.

6.8 In the unlikely event the excavation works establish the presence of roots an assessment of the roots shall be undertaken. Those less than 25mm diameter can be cleanly cut to allow construction activities to continue. Any roots greater than 25mm diameter shall be assessed on an individual basis with advice sought from Cumbria Tree Surveys Arboricultural Consultancy.

6.9 The location of the mature Ash negates the need to offer temporary tree protection fencing. The mature Ash being located in the Construction Exclusion Zone, is bounded by 1 metre high dry-stone walls, which together with its distance away from the proposed garage affords the Ash adequate protection during construction works.

6.10 Photo representing the location of the mature Ash. The existing dry stone walls offering suitable and sufficient tree protection measures for the proposed development.



6.11 No excavation works are required within the area of hard standing as represented above.

Arboricultural Impact Assessment
Broadings September 2023

6.12 The parking of plant, machinery, equipment, vehicles and the storage of materials should only be undertaken within the Construction Zone. Under NO circumstances should any grass areas beyond the construction zone be disturbed.

6.13 Failure to adhere to the correct sequence, manner and timing of operations detailed within this Broadings Arboricultural Method Statement may result in damage to the retained Ash and as a consequence breach planning consent. Retained trees are protected by planning law and damage or tree removal may result in a stop notice or prosecution.

7.0 Mitigation Planting

7.1 The development proposal requires the removal to facilitate construction of the young Alder T2, C1 retention category. The applicant proposes to mitigate the loss of the Alder by planting a new 40 metre length of Beech, *Fagus sylvatica*, hedgerow along the boundary between the site and the applicants top field lying to the west. Planted in the next available planting season after approval of planning. The Beech hedgerow would run from the proposed garage to the existing stable block and would be interspersed with 6 native trees of size 8-10cm girth. Species to be confirmed.

7.2 The proposed Beech hedgerow with interspersed trees will complement the aesthetics of Broadings, improve biodiversity and further, screen the proposed garage and its rear elevation from Knotts Lane.

8.0 Arboricultural Impact Assessment Recommendations

8.1 Following the site visit and investigation the following recommendations and those as listed in the Arboricultural Survey Data Table are proposed.

8.2 The required arboricultural work, felling of T2, Young Alder, should only be undertaken by a trained, competent fully insured Arboricultural Contractor. The contractor should be familiar with implementing the standards as required by the British Standard 3998:2010, Tree work - Recommendations.

8.3 Implementing the recommendations stated in this Broadings Arboricultural Impact Assessment Tree Protection Plan and Method Statement shall ensure the retained mature Ash is offered the required tree protection methods necessary for the proposed development. Doing so shall ensure the proposed development does not result in any detrimental consequences for the retained Ash.

9.0 Photographic Evidence

T1 Mature Ash with low crown over highway and deadwood throughout crown.



Mature Ash in decline as a result of Ash dieback.



Arboricultural Impact Assessment
Broadings September 2023

T2. Young Alder. Removal required to facilitate construction.



Signed:

Date: 20th September 2023

 M.Arbor.A., N.C. Arb., H.N.D. Arb., N.E.B.O.S.H. Gen Cert.

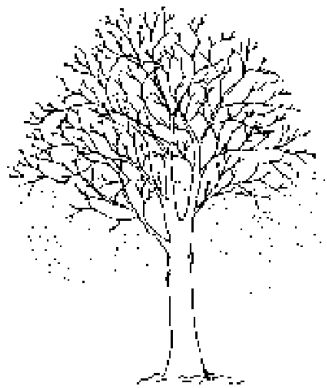
Cumbria Tree Surveys Arboricultural Consultancy.

Definitions

The following definitions are based on British Standard 3998:2010, Tree work - Recommendations, British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations and Arboricultural terminology.

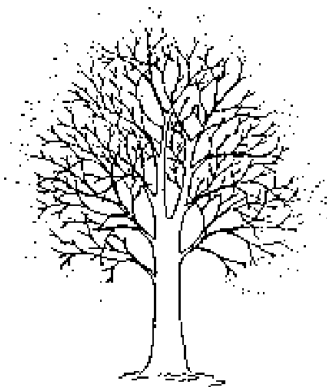
Tree Structure

Stem:	Main supporting body / truck of the tree and crown.
Scaffold Branch:	Main supporting branches for the crown and lead off the main stem.
Secondary Branch:	Branches that lead off the scaffold branches.
Tertiary Branches:	Those branches that lead off the secondary branches are usually small in diameter and contain the leaf cover.



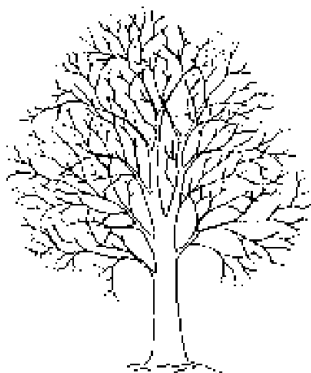
Crown Raising / Crown Lifting

Crown Raising / Crown Lifting is the removal of the lowest branches. Crown Raising is an effective method of increasing the height of the crown over a given target / hazard or obstacle. Crown Raising also enables light transmission to areas closer to the tree. At least two thirds of the total height of the tree should remain. Crown lifting should be specified with reference to a fixed point, e.g. "Crown Raise" to give 5.5 metres clearance above ground level'.



Crown Reduction

Crown Reduction is the reduction in height and / or spread of the crown. The final result should retain the main framework of the crown, and a significant proportion of the leaf bearing structure, leaving a similar, although smaller outline. Not all species are suitable for this treatment and crown reduction should not be confused with 'topping', an indiscriminate and harmful treatment



Crown Thinning

Crown Thinning is 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. It is usually confined to broad-leaved species. Crown thinning does not alter the overall size or shape of the tree. Material should be removed systematically throughout the tree, should not exceed the stated percentage and not more than 30% overall. Common reasons for crown thinning are to allow more light to pass through the tree, reduce wind resistance and reduce weight. It is rarely a once only operation particularly on species that are known to produce large amounts of epicormic growth.

Arboricultural Impact Assessment
Broadings September 2023

Crown Balance

The method of pruning branches to develop an evenly distributed and weighted crown.

Crown Clean

The method of pruning those branches that are dead, dying, dangerous and deemed to be of poor-quality including crossing and rubbing branches.

Side Prune

Method of pruning branches on one side of a tree crown to achieve a clearance from an object / obstruction. Similar to Crown Raise.

Coppicing

Cutting trees close to ground level with the intention of encouraging regrowth of multiple shoots. This practice is species and age dependent.

Deadwood

The pruning of dead, dying branches from the crown of the tree. This may be for the entire crown or specific branches as specified in the Arboricultural Report.

Epicormic Growth

The growing of a previously dormant bud on the main stem or limb of a tree. Often as a result of defoliation or radical pruning.

Fell

The felling or dismantling in sections, of a tree to ground level.

Hedge Laying

The established practice of making and or establishing a hedge by correct cutting and pegging techniques. Stems are cut part way through, laid horizontally and pegged to hold them in position.

Pollarding

Quite a specific process that involves pruning a tree so as to encourage formation of numerous branches arising from the same height on a main stem or principal branches. Important. This process ought to be undertaken on a cyclical basis on trees that have not reached maturity.

Root Protection Area

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.

Windblow / Windblown

Complete failure of the tree due to a wind or storm event.

Bibliography

British Standard 5837:2012

Trees in relation to design, demolition and construction - Recommendations.

British Standard 3998:2010

Tree work – Recommendations.

National Tree Safety Group.

Common Sense Risk Management of Trees. Forestry Commission 2011.

Town and Country Planning Act 1990.