



**Highcroft**

**Painter Wood**

**Billington**

**Arboricultural Impact Assessment**

**Tree Protection Plan**

**Method Statement**

**August 2023**

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PR228

Arboricultural Impact Assessment  
Highcroft August 2023

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## **1.0 Terms of Reference**

1.1 This Highcroft Arboricultural Impact Assessment has been commissioned as a result of a development proposal within the curtilage of Highcroft, Painter Wood, Billington. BB7 9JD.

1.2 The proposed development has the potential to affect a mature Ash, *Fraxinus excelsior* within the curtilage of the proposed development area. 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 Mr Daniel Bold 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 from ground level with no exploratory excavation works undertaken, on the 21<sup>st</sup> August 2023. Weather at time of survey, bright sunny clear with slight breeze.

1.6 The purpose of this Highcroft Arboricultural Impact Assessment Report is to evaluate the mature Ash in relation to the proposed development. The arboricultural impact assessment is an assessment of the mature Ash on the date of survey. Whilst any defects that are noticeable have been observed, commented on and recommendations stated. This arboricultural report 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 mature Ash 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.

### 2.6 Tree Height.

Expressed in metres and measured by means of a TruPulse 200e laser measure from ground level.

### 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.

**U**

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.

### 3.0 Arboricultural Impact Assessment Survey Data Table and Analysis

#### 3.1 Highcroft Arboricultural Impact Assessment Survey Data Table.

Tree No.	Species	Life Stage	No. of Stems	Stem Diameter mm	Tree Height m	Crown Spread m	Crown Height m	Root Protection Area	Estimated Rem. Contrib.	BS 5837 Retention Category
T1	Ash <i>Fraxinus excelsior</i>	Mature	1	810	12	N:7 E:8 S:7 W:7	1	Radius: 9.7m. Area: 296 sq m.		B1

#### 3.2 Arboricultural Observations and Comments

- Mature specimen Circumference 2560mm in corner aspect of plot being situated in existing hedgerow.
- Grade change from base of hedgerow to the north of circa 1 metre. The south aspect of the specimen being 1 metre higher than that to the north.
- Structural stability roots coming to surface in grazing field north aspect. Damage has occurred due to access being gained to field in terms of vehicle access and pedestrian access over the public footpath to base of specimen.
- Cavity at crown fork with young Elderberry growing from cavity. Severity of cavity not analysed. However. The cavity is likely to be an area of structural weakness which may fracture and fail at some time in the future. The potential fracture would lead to the entire west aspect of the crown failing and falling onto the public footpath.
- Two scaffold branches from crown fork due east with structural faults and cavities. These also being in falling distance of the public footpath.
- Secondary branch over footpath with cavity and area of decay.
- Minor deadwood and branch stub from secondary branch failure in crown.
- Specimen with low crown over grazing field to south east.
- Specimen of average shape and form. No evidence of Ash dieback at time of survey.

#### 3.3 Arboricultural Recommendations.

- Prune to crown clean and remove deadwood.
- Prune to crown raise to crown fork removing those secondary and scaffold branches with cavities and damage.
- The crown fork should be monitored to establish any notable rate in decline in the structural integrity of the specimen at this location.
- Monitor for the presence of Ash dieback.



#### **4.0 Tree Location Plan**

4.1 Highcroft mature Ash location plan with the Ash identified by the British Standard retention category.





## **5.0 Root Structure and Root Protection Area**

5.1 Rooting systems of trees are made up essentially of two rooting types. Fine / ephemeral fibrous feeding roots and structural stability roots.

5.2 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.

5.3 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. For multi stemmed trees the method of calculation differs slightly. However, the 12 times stem diameter rule still applies. This area is referred to as the Root Protection Area.

5.4 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.

5.5 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.

5.6 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.

5.7 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.



**6.0 Arboricultural Impact Assessment Tree Protection Method Statement**

6.1 The arboricultural inspection has identified that only T1 the mature Ash has the potential to be affected by the proposed development. It is understood the mature Ash has quite recently been offered statutory tree protection in the terms of a temporary tree preservation order.

6.2 The root protection area of the specimen clearly extends north as evidence of the structural stability roots coming to surface is apparent. Damage has occurred as a result. As the specimen is located in the hedgerow with grazing fields to the south, the substrate shall be favourable for good root development and establishment.

6.3 Existing site factors in terms of the existing hedgerow and post and rail fence within the root protection area offer protection to the root protection area to the north and east. These areas in effect being Construction Exclusion Zone. A section of the south west root protection area extends into the proposed development area Construction Zone. Access for construction purposes is not required or indeed permitted to the north and east. This Highcroft Arboricultural Method Statement shall reflect existing site factors offering protection to the root protection area of the mature Ash.

6.4 The basis for this Highcroft Tree Protection Method Statement is that disturbance to the root protection area 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 7 Tree Location Plan Root Protection Area. The plan represents the theoretical root spread in optimum growing conditions. It is fair to conclude the growing conditions are favourable.

6.6 The mature Ash has a retention category of B1 and must therefore be offered temporary tree protection methods during all stages of construction activities. Existing site factors offering protection requires only the south west aspect of the root protection area to be offered temporary tree protection fencing.

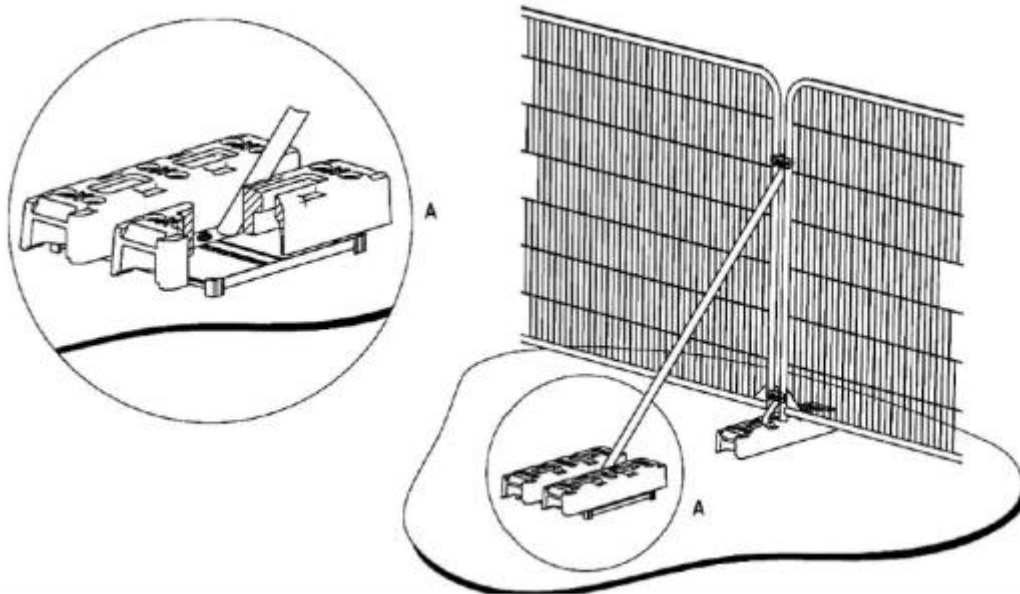


6.7 Prior to any construction activity being undertaken the temporary tree protection fencing is to be installed in accordance with the requirements of this Highcroft Arboricultural Impact Assessment Tree Protection Method Statement and the section 7 Tree Protection Plan.

6.8 The temporary tree protection fencing should be installed at a distance from the base of the mature Ash of at least 9.7 metres. It shall tie into the post and rail fence to the south east and existing hedge to the west. This shall create a sterile Construction Exclusion Zone around the base of the specimen.

6.9 It is recommended the tree protection fencing to be installed should be Heras type fencing in accordance with that as detailed in British Standard 5837:2012. Heras fencing is a method of temporary fencing intended for use on construction sites. It consists of individual panels approximately 3.5 metres wide and 2 metres high. Each panel consists of metal mesh contained in a metal tubing frame. The feet slot into concrete or synthetic blocks. They are light weight easy to install by hand and clip together by the means of a nut and bolt clasp connecting the metal frames.

Tree Protection Fencing.



"A" represents supporting struts, if required.

6.10 British Standard 5837:2012 section, 6.2.1.5 states the following:

*It should be confirmed by the project arboriculturist that the barriers and ground protection have been correctly set out on site, prior to the commencement of any other operations.*

6.11 To ensure compliance with 6.2.1.5. It is recommended that an Arboricultural Watching Brief be commissioned to ensure the Tree Protection Fencing is installed in accordance with the requirements of this Highcroft Arboricultural Impact Assessment Tree Protection Method Statement.

6.12 The temporary tree protection fencing should include signage at regular intervals stating the reason for the tree protection fence and that it should not be moved or disturbed. For Example, "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

6.13 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.

6.14 In the highly 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.

6.15 The parking of plant, machinery, equipment, vehicles and the storage of materials should only be undertaken within existing hard standing areas of the proposed development area or Construction Zone.

6.16 Due to the location of the mature Ash the possibility of the following are highly unlikely but nonetheless worthy of mention. The parking of plant, machinery, equipment, vehicles and the storage of materials and the disposal of washings must NOT be within the root protection area of the mature Ash.

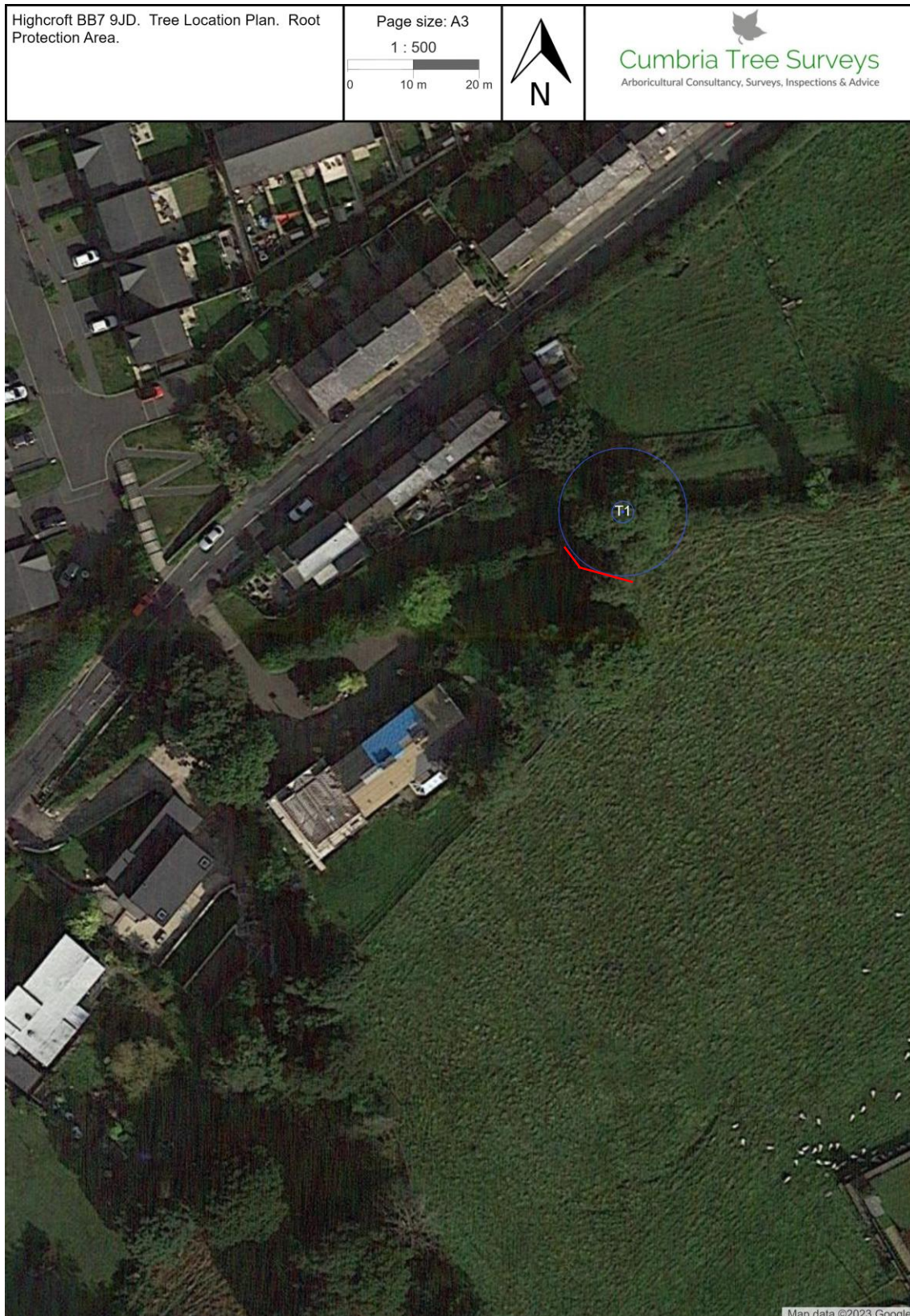
6.17 The temporary tree protection fencing is to remain in situ for the duration of construction. Only on completion of the development is the tree protection fencing to be removed.

6.18 Failure to adhere to the correct sequence, manner and timing of operations detailed within this Highcroft Arboricultural Method Statement may result in damage to the mature 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 Tree Protection Plan

7.1 The mature Ash represented and colour coded in accordance with the British Standard retention category and represented by the root protection area. The section of root protection area requiring temporary tree protection fencing represented in Red.



## **8.0 Arboricultural Impact Assessment Recommendations**

8.1 Following the site visit, assessment and investigation the following recommendations and those as listed in 3.3 Arboricultural Recommendations are proposed.

8.2 The recommended arboricultural work, often referred to as tree surgery, should only be undertaken by a trained, competent fully insured Arboricultural Contractor. Ideally holding a recognised health and safety accreditation. 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 Highcroft 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 mature Ash.

8.4 In accordance with good tree care management, sound arboricultural practice and for reasons of Health and Safety. It is recommended that the mature Ash be inspected on an annual basis from the anniversary of the Arboricultural Impact Assessment survey date by a professional, trained, experienced and competent arboricultural consultant following Cumbria Tree Surveys Arboricultural Consultancy protocols.





**9.0 Photographic Evidence**

T1 Situated in hedgerow with post and rail fence at boundary of land ownership.



Structural stability roots coming to surface north aspect.





Arboricultural Impact Assessment  
Highcroft August 2023

Two scaffold branches from crown fork due east with structural faults and cavities. These also being in falling distance of the public footpath. Secondary branch over footpath with cavity and area of decay.



Signed: *Daniel Bold*

Date: 24<sup>th</sup> August 2023.

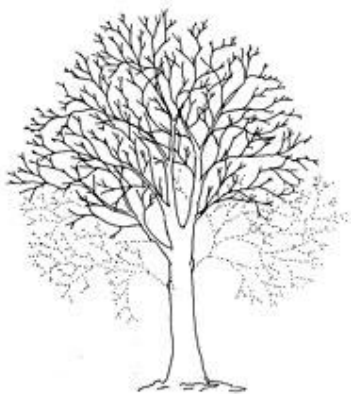
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Cumbria Tree Surveys Arboricultural Consultancy.

## 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.

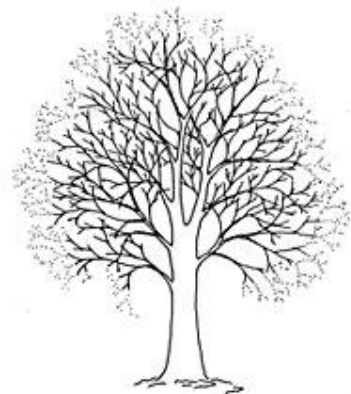
### Tree Structure

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.



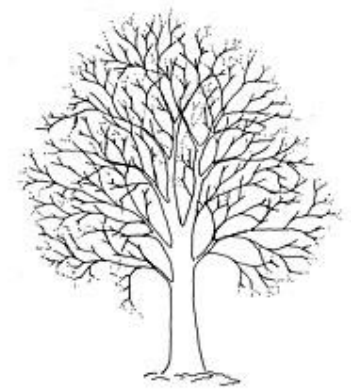
### **Crown Raising / Crown Lifting**

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.



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.*

