



AllAboutTrees

Arboricultural & Ecological Consultancy
Chartered Arboriculturalists & Environmentalists

Arboricultural Impact Assessment

For Trees At

19 West Meadows Road,

Cleadon



For

Mrs A Mulholland



Document Verification



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Prepared By	<ul style="list-style-type: none">• Tim Archment ND HND Arb MArborA
Authorised By	<ul style="list-style-type: none">• Andrew Watson FLS MICFor CBiol MRSB FArborA CEnv LCGI

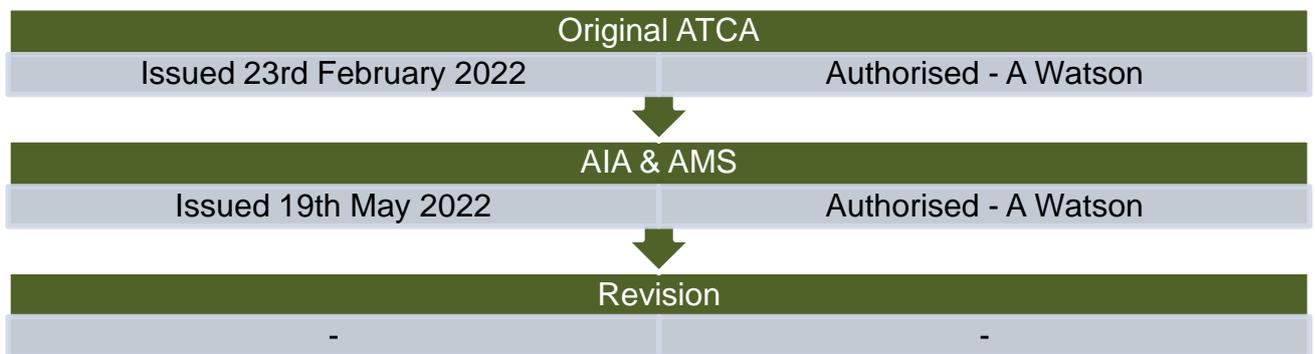


Table of Contents

	Page
1. Introduction	1
2. Protected Status Of Trees	2
3. Site Visit & Description	3
4. Appraisal	4
5. Tree Protection Measures	7
6. Conclusion	11

Appendices

- 1. Tree Survey**
- 2. Glossary of Terms**
- 3. Site Plans**
 - **Existing Trees Shown On Existing Layout (AIA Exi)**
 - **Retained Trees Shown On Proposed Layout With Protective Measures Indicated -Tree Protection Plan (AIA TPP)**

1. Introduction

1.1 We are instructed by Mrs A Mulholland to provide an Arboricultural Impact Assessment (AIA) for the significant trees at 19 West Meadows Road, Cleadon.

1.2 This report is produced to evaluate the proposed demolition of the existing dwelling and subsequent construction of a new home. The developments juxtaposition with the existing trees is considered.

1.3 We were provided with the following documents:

- Existing plan in digital AutoCAD format
- Proposed development plans in digital AutoCAD format

1.4 This assessment is concerned with recording the species, size and condition of the trees. Recommendations are made where appropriate to establish acceptable levels of safety for the site and also to establish a higher level of arboricultural management.

1.5 The trees are also evaluated for the purposes of British Standard 5837–2012 Trees in relation to design, demolition & construction, with regard to their quality and value. The type and size of the root protection area is calculated and the position of the protective barriers is determined. The remaining contribution or safe useful life expectancy is estimated as an indication of the trees period of retention.

1.6 All observations were from ground level without detailed investigation. No invasive examination or climbing inspections were carried out to confirm visual or audible signs of defect and no tissue or soil samples were taken for laboratory analysis.

1.7 Trees are living organisms whose health and condition may change rapidly and all observations, recommendations and conclusions are based on the status of the tree at the time of inspection. The recommendations contained within this report are valid for a period of one year only.

1.7.1 Both abiotic and biotic factors can alter the health/structural integrity of trees rapidly. No liability can be accepted for any physiological or structural deterioration of the tree occurring after the date of our inspection or that was not evident on the day of inspection. Where this report is relied upon at a later date the reader should be aware that the physiological and structural condition of the surveyed trees may have changed; Re-inspection may lead to significantly different observations, recommendations and conclusions.

1.7.2 Any significant alteration to the site which may affect the trees (demolition activity, construction activity, alterations to infrastructure, level

changes, hydrological changes, extreme climatic events, etc) will necessitate a re- assessment of the trees.

1.8 This report was prepared for use by our client in accordance with the terms of the contract and for planning purposes only. It is not a substitute for a tree condition, insurance, or mortgage service. Information provided by third parties used in the preparation of this report is assumed to be correct. The contents are copyright and may not be duplicated or used by third parties without the written consent of AllAboutTrees Ltd.

2. Protected Status Of Trees

2.1 Trees may be legally protected, this may either be in the form of a Tree Preservation Order (TPO) or that the trees are located within a Conservation area.

2.2 Potentially large penalties may be enforced for illegally carrying out works on protected trees. It is recommended that checks are made before any works are undertaken and no work should commence until permission has been granted. Please note that there are a number of exemptions from the requirement to obtain a felling licence including land on which full planning permission has been granted by the local authority, however this exemption does not cover land where only outline planning permission has been granted, or on land which has been allocated for residential development within local authority urban and local development plans.

2.3 Using online facilities AllAboutTrees have been able to ascertain with South Tyneside Council (the Local Planning Authority) on Wednesday 23rd February 2022 that the study area is outside of the Cleadon Conservation Area.

2.3.1 South Tyneside Council have confirmed, via e-mail, that there are no Tree Preservation Orders within the site.

3. Site Visit & Description

Site location – N 54° 56' 51.97 W 01° 23' 57.55
O/S Grid reference- NZ 385 616 GB Grid



Figure 1- The study area is indicated by the red boundary line as shown on the above image.

3.1 A site visit was undertaken on Tuesday 22nd February 2022 by Tim Archment. The weather was fine with no visibility constraints.

3.2 The study area is a detached residential dwelling, located on the east flank of West Meadows Road, Cleadon.

3.3 Vehicle access to the site is granted on the west boundary. The house has a long driveway, providing ample off-road parking, which leads directly to a detached garage.

3.4 The dwelling is positioned towards the west of the plot providing a small front garden and much larger rear garden. The garden is stocked with a variety of trees and shrubs. Most are in good order though a small quantity of works have been recommended to establish a higher level of arboricultural management. Lawson cypress appears to be a particular favourite with a variety of cultivars present.

3.5 The study area is relatively flat with no apparent drainage issues.

4. Appraisal

4.1 The trees have been surveyed on site and plotted on the site plan. Their positions are considered accurate given the provision of a detailed topographical survey.

4.2 All significant trees within the specified site area have been surveyed in accordance with British Standard 5837:2012 – Trees in relation to design, demolition and construction and the individual tree details are included in Appendix 1.

4.2.1 Trees 3, 4 and 8-12 have been removed following the initial survey. Information pertaining to these trees has been removed from the reports and plans.

4.3 Root Protection Areas (RPAs)

4.3.1 The British Standard Root Protection Areas (RPAs) are indicated by the red circles surrounding the trunk position of the trees on the associated plans. These indicative circles do not take into consideration site specific conditions such as the presence of buildings, roads, footpaths, topography, underground utility services etc. and are representative of typical root morphology where said structures are not encountered.

4.4 Tree Removals

4.4.1 It will be necessary to remove some of the existing trees to facilitate the proposed development and to establish a higher level of arboricultural management for the site:

- Trees 1-2
- Groups 2, 3, 5
- Sections of groups 1 & 6

will need to be removed to facilitate the construction of the new buildings and associated infrastructure.

4.4.2 A breakdown of recommended removals, alongside their BS5837 category rating is provided in the table below. For further information regarding the BS5837 quality categorisation system please refer to Appendix 2 (II).

Tree Category Rating	Remove To Facilitate The Development
A – High	
B – Moderate	
C – Low	Trees 1-2, Groups 2, 3, 5 and Sections of groups 1 and 6
U – Unsuitable For Retention	

- Trees 1-2 have been removed to establish a suitable offset from the proposed dwelling and adjacent vegetation. Removal will also improve working space making construction easier.
- Group 2 is in conflict with the driveway realignment. A small section could be retained though would make limited contribution. It would be preferable to remove the group in its entirety.
- Group 3 is in conflict with the realignment of the driveway.
- Sections of groups 1, 5 and 6 require removal due to direct conflict with the building footprint and adjacent hardstanding. Removal will establish a suitable offset from the proposed dwelling and adjacent vegetation as well as improving working space during construction.

4.5 Retained Trees

4.5.1 Protective barriers as per section 5.1 of this report should be erected around all retained trees in the position indicated by the blue line on the Tree Protection Plan prior to any works on site. Signs should also be attached stating that the area is a protected zone and should not be entered.

4.6 Wildlife Habitats

4.6.1 As part of the survey the significant trees were inspected from ground level for signs of wildlife habitation, in particular birds and bats.

Bats

4.6.2 All UK bats and their roosts are protected by law. The legislation protecting bats are:

- The Wildlife & Countryside Act 1981 (WCA)
- Conservation of Habitats and Species Regulations 2017

For all countries of the UK, the legal protection for bats and their roosts may be summarised as follows:

You will be committing a criminal offence if you:

1. Deliberately* capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost

**In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will most likely have.)*

4.6.3 Penalties on conviction - the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

4.6.4 No visual signs were found to indicate the presence of bats in the surveyed trees.

4.6.5 When carrying out tree works it is essential that the contractor or other competent person carries out a specific 'bats in trees risk assessment' which can be obtained from the 'Arboricultural Association' or the 'Bat Conservation Trust' (BCT). If evidence of bats is found work must stop immediately we should be contacted so that our licenced Ecologist can advise further.

Birds

4.6.6 In the UK, all wild birds, their nests and their eggs are protected by law.

In England, Scotland and Wales the legislation that protects wild birds is:

- The Wildlife and Countryside Act 1981
- The Countryside (or CRoW) Act 2000

4.6.7 No nesting birds were present at the time of inspection though given the scope of the site and the extent of vegetation potential exists for birds to nest and as such caution must be exercised.

4.6.8 As with bats the contractor has an obligation to carry out visual checks prior to works. Where possible tree works should be carried out in the period from August to the end of February in order to avoid the bird nesting season.

5. Tree Protection Measures

5.1 Root Protection Area & Barrier Specification

5.1.1 Trees on development sites are prone to damage during the course of demolition and construction works. Retained trees need to be protected in line with British Standard 5837–2012 Trees in relation to design, demolition & construction.

5.1.2 This usually involves identifying a construction exclusion zone around the tree which should remain undisturbed with appropriate protective barriers preventing access to this Root Protection Area for the duration of the project.

5.1.3 The minimum root protection areas (measured in a radius from the centre of the tree to the protective barrier) are outlined for each individual tree and the barrier layout is indicated on the plan.

5.1.4 The exact root spread of an individual tree is difficult to quantify, but in general, the bulk of a trees roots are situated in the upper 600mm of the soil with the finer absorbing roots prevalent in the upper 250mm.

5.1.5 Dependant on soil conditions and the species of the tree, the root plate may extend radially for distances in excess of the height of the tree.

5.1.6 In the case of development sites, the root protection area is designed to prevent any significant long-term damage to the tree by protecting the root plate and to some extent the lower branches of the tree.

5.1.7 The barriers should be erected prior to work commencing on site and should remain until construction activities have been completed. The root protection area should be considered essential and should not be removed or altered without prior recommendation by an Arboriculturalist and approval of the local planning authority.

5.1.8 The barrier should consist of proprietary 2m tall welded mesh panels mounted on rubber or concrete feet. The panels must be joined together with a minimum of two anti-tamper couplings situated at least 1m vertically apart and installed uniformly throughout the barrier so that they can only be removed from inside the barrier. The panels must be supported by stabilising struts mounted on a block tray.

5.1.9 No fixing shall be made to any tree and all possible care must be taken to prevent damage to tree roots when locating the posts.

5.1.10 All types of barriers must be firmly attached to prevent movement by site personnel or vehicles and all-weather signs with the wording "Construction exclusion zone- keep out" should be attached.

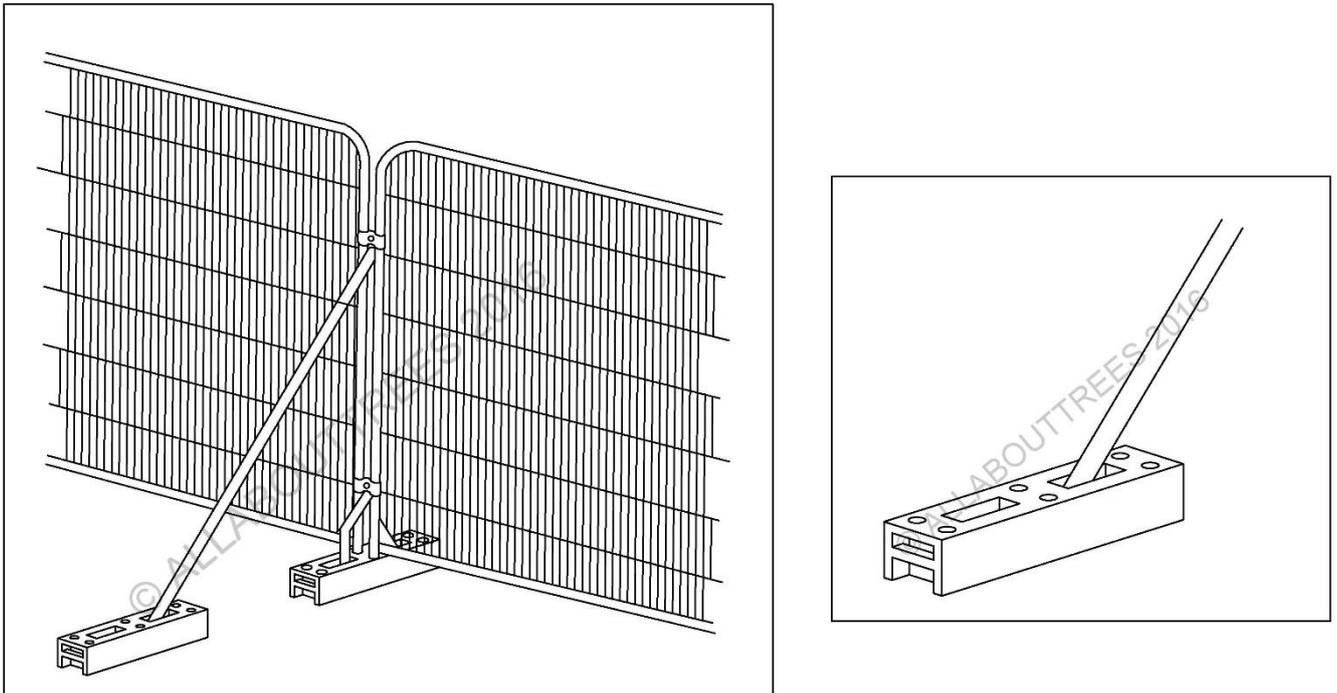


Figure 2 - Stabiliser strut mounted on block tray.



Figure 3 – An example of a barrier erected on a site

5.2 Service Runs

5.2.1 It is assumed that the existing service runs will be exploited where possible, but if new works are required it is important that they comply with the National Joint Utilities Group (NJUG) 'Guidelines for the planning, installation, and maintenance of utility services in proximity to trees' and BS 5837:2012. The excavation of open trenches by machine will be unacceptable within the protective zone of any of the retained trees.

5.2.2 Acceptable techniques (fuller details in the appendices) for the laying of services in order of preference are:

- **Trenchless-** by using thrust boring or similar techniques
- **Broken Trench-** to be dug by hand
- **Continuous trench-** to be dug by hand

5.2.3 Wherever possible, services should be routed outside of any retained trees RPA. When this is not possible apparatus should be routed together in a common duct and any inspection chambers sited outside the RPA.

5.2.4 When underground apparatus is to pass within the RPA of a retained tree, trenchless insertion methods should be used (see table below) with entry and retrieval pits sited outside the RPA.

5.2.5 Shallow services runs may be dug with hand tools if appropriate and preferably by compressed air soil displacement. Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.

Trenchless Solutions For Installation Of Underground Services					
Method	Accuracy (MM)	Bore ^(A) diameter (MM)	Maximum subterranean length (M)	Applications	Not suitable for
Micro tunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway under crossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1200	150	Pressure pipes, cables including fibre optic	Gravity fall pipes, e.g. drains and sewers ^(B)
Pipe ramming	≈150	150 to 2000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling ^(C)	≈50 ^(D)	30 to 180 ^(E)	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5m.

- (A) Dependent upon strata encountered
- (B) Pit-launched directional drilling can be used for gravity fall pipes up to 20m in subterranean length
- (C) Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
- (D) Substantial inverse relationship between accuracy and distance
- (E) Figures given relate to single pass: up to 300mm bore achievable with multiple passes

6. Conclusion

6.1 As with any construction exercise near trees, there are potential areas of conflict where damage could be caused to retained trees.

6.2 By using the protective elements dictated by British Standard 5837, no significant damage should take place during the demolition or construction phase and the tree cover should flourish in the longer term.

6.3 It is anticipated that all of the retained trees can be incorporated into the site design; however, it is vital that the ultimate size and spread of the trees should be considered when retaining trees near to the building and that shading and light penetration should also be considered when positioning the windows in the building.

6.4 All tree works must conform rigorously to BS 3998 (2010) 'Tree Work - Recommendations'. The contractors undertaking tree work must comply with the legal obligations to wildlife as outlined in both the AIA and AMS.

For and on behalf of
AllAboutTrees Ltd

Andrew Watson FLS MICFor CBiol MRSB FArborA CEnv LCGI
-Chartered Arboriculturalist & Registered Consultant

Appendix 1

Tree No.	Species Common Name Latin Name	Height (M)	Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
1	Lawson Cypress <i>Chamaecyparis lawsoniana</i>	3	1	1	0.5	1	80	1	1.5	1.5 S	Young	Fair	Fair	1	10+	C - Low	Crown distorted due to group pressure. Crown lifted in past.	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	None	18	4	A
2	Lawson Cypress <i>Chamaecyparis lawsoniana</i>	3.5	1	1	0.5	0.5	80	1	1.5	1.5 S	Young	Fair	Fair	1	10+	C - Low	Crown distorted due to group pressure. Crown lifted in past. Positioned approximately 30cm from garage, branches rubbing on eaves.	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	None	18	4	A
3	Tree removed following initial survey																					
4	Tree removed following initial survey																					
5	Hawthorn <i>Crataegus monogyna</i>	7.5	1	3	0	3	230	1	2.5	3.5 W	Mature	Fair	Fair	2.8	10+	C - Low	Asymmetric crown spread. Crown distorted due to group pressure. Crown lifted in past. Multiple saw wounds on lower stem.	This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	10	8	-
6	Sycamore <i>Acer pseudoplatanus</i>	11	4.5	4	3.5	5.5	530	1	2	3.5 N	Middle aged	Fair	Fair	6.4	20+	B - Moderate	Small diameter deadwood retained in canopy. Historic fire damage to east flank of tree.	This tree is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	22	15	-
7	Japanese Maple <i>Acer palmatum</i>	4.5	2.5	2	2	2.5	191	2	2	1.5 NW	Middle aged	Fair	Fair	2.3	20+	B - Moderate	Ivy starting to climb the stem. Stem divides below 1.5m.	This tree is retainable and will be adequately protected by the position of the protective barrier as	None	6	7	-

Tree No.	Species		Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
	Common Name	Latin Name	N	S	E	W														Height (M)	Height	
																	indicated by the blue line on the TPP. No tree works required at the present time.					
8	Tree removed following initial survey																					
9	Tree removed following initial survey																					
10	Tree removed following initial survey																					
11	Tree removed following initial survey																					
12	Tree removed following initial survey																					
13	Silver Birch <i>Betula pendula</i>	11	2.5	2.5	3	2.5	200	1	2	2.5 W	Middle aged	Fair	Fair	2.4	40+	B - Moderate	Located in neighbouring property. Located outside site boundary. Remote assessment, some dimensions estimated. No major visible defects.	This tree is retainable and will be adequately protected by the position of the existing boundary fence. No tree works required at the present time.	None	18	9	-
14	Beech <i>Fagus sylvatica</i>	7	2.5	1.5	2.5	1.5	150	1	0.5	0.5 S	Middle aged	Fair	Fair	1.8	40+	C - Low	No major visible defects. Single tree in hedge line allowed to grow.	This tree is retainable and will be adequately protected by the position of the existing boundary fence. No tree works required at the present time.	None	20	16	-
15	Norway Maple <i>Acer platanoides</i>	8	3	3	3	3	160	1	2.5	2.5 W	Middle aged	Fair	Fair	1.9	40+	B - Moderate	Located in neighbouring property. Located outside site boundary. Remote assessment, some dimensions estimated. Stem divides above 1.5m.	This tree is retainable and will be adequately protected by the position of the existing boundary fence. No tree works required at the present time.	None	18	12	-
16	Beech <i>Fagus sylvatica</i>	9	1	1.5	2	2	180	1	5	4 NW	Middle aged	Fair	Fair	2.2	20+	C - Low	Located in neighbouring property. Located outside site boundary. Remote assessment, some dimensions estimated.	This tree is retainable and will be adequately protected by the position of the existing boundary fence. No tree works required at the present time.	None	20	13	-

Tree No.	Species Common Name Latin Name	Height (M)	Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
																Asymmetric crown spread. Codominant stem removed.						
Groups																						
1	Lawson Cypress <i>Chamaecyparis lawsoniana</i>	4	-	-	-	-	200	1	-	-	Middle aged	Fair	Fair	2.4	20+	C - Low	Garden boundary group. Dominated by various cypress cultivars, trimmed to a variety of shapes and sizes. Measurements based on larger trees in group. Shrubs include berberis, fuchsia, cotoneaster, euonymus, Buddleja and hydrangea among others. Ivy established in group.	A section of this group is in conflict with the proposed design and will need to be removed to facilitate the development. The remainder is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	12	3	A
2	Mixed shrubs	1	-	-	-	-	120	1	-	-	Middle aged	Fair	Fair	1.4	10+	C - Low	Mixed shrubs adjacent to path. Includes juniper, lavender, periwinkle, thyme and Euonymus.	This group is in conflict with the design proposals and will need to be removed to facilitate the development.	None	6	6	A
3	Mixed shrubs	1.5	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	20+	C - Low	Mixed shrub group in island adjacent house, bordered by paths and driveway. Includes Lawson cypress cultivar, Pieris, Hydrangea, lavender and box among others.	This group is in conflict with the design proposals and will need to be removed to facilitate the development.	None	6	3	A
4	Lawson Cypress <i>Chamaecyparis lawsoniana</i>	1	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	20+	C - Low	Linear group abutting driveway. Tidy and maintained. Range of cultivars present. Rose planted in gaps. 1x dead individual.	This group is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. Remove dead tree.	None	12	4	A

Tree No.	Species Common Name Latin Name	Height (M)	Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
			N	S	E	W														Height	Spread	
5	Western Red Cedar Lawson Cypress Portugal Laurel <i>Thuja plicata,</i> <i>Chamaecyparis lawsoniana,</i> <i>Prunus lusitanica</i>	3.5	-	-	-	-	120	1	-	-	Middle aged	Fair	Fair	1.4	20+	C - Low	Maintained shrubs / small trees adjacent to dwelling. Includes Rhododendron, Pieris and Cotoneaster. Heights range from <1.0m to 3.5m.	This group is in conflict with the design proposals and will need to be removed to facilitate the development.	None	18	6	A
6	Cherry Plum Hazel Yew Lawson Cypress Apple Common Juniper <i>Prunus cerasifera,</i> <i>Corylus avellana, Taxus baccata,</i> <i>Chamaecyparis lawsoniana,</i> <i>Malus,</i> <i>Juniperus communis</i>	6.5	-	-	-	-	150	1	-	-	Middle aged	Fair	Fair	1.8	20+	C - Low	Mixed planting on garden boundary. Ivy established in group. Tidy and maintained. Smaller shrubs include lavender, periwinkle, hebe, mahonia, Euonymus and Buddleja.	A section of this group is in conflict with the proposed design and will need to be removed to facilitate the development. The remainder is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	18	6	A
7	Holly Lawson Cypress Hawthorn <i>Ilex aquifolium,</i> <i>Chamaecyparis lawsoniana,</i> <i>Crataegus monogyna</i>	2.5	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	20+	C - Low	Large shrubs / small trees. Ivy established in group.	This group is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	18	6	-
8	Sycamore Cherry Plum <i>Acer pseudoplatanus,</i>	10	-	-	-	-	300	1	-	-	Middle aged	Fair	Fair	3.6	40+	B - Moderate	Located in neighbouring property. Located outside site boundary.	This group is retainable and will be adequately protected by the position of the protective barrier as	None	22	20	-

Tree No.	Species		Height (M)	Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
	Common Name	Latin Name		N	S	E	W														Height	Spread	
		<i>Prunus cerasifera</i>															Remote assessment, some dimensions estimated.	indicated by the blue line on the TPP. No tree works required at the present time.					
9	Leyland Cypress Lawson Cypress Yew	<i>X Cupressocyparis leylandii,</i> <i>Chamaecyparis lawsoniana,</i> <i>Taxus baccata</i>	4.5	-	-	-	-	150	1	-	-	Middle aged	Fair	Fair	1.8	40+	C - Low	Maintained planting on garden boundary. Also includes Rhododendron, berberis, Pieris, spotted laurel, cotoneaster and pyracantha. Measurements based on larger trees in group.	This group is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	18	6	-
Hedges																							
1	Beech	<i>Fagus sylvatica</i>	2.5	-	-	-	-	120	1	-	-	Middle aged	Fair	Fair	1.4	40+	C - Low	Tidy and maintained hedge on site boundary.	This hedge is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	20	20	-
2	Mixed shrubs		1.5	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	20+	C - Low	Internal hedge. Mixed species including Ionicera, cotoneaster and ivy. Tidy and maintained.	This hedge is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	5	5	-

Tree No.	Species		Crown Spread (M)				Trunk Diameter (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Significant Branch Position (M)	Age	Physiological Condition	Structural Condition	Root Protection Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Bat Roost Potential	Ultimate Size For Species (M)		Priority
	Common Name	Latin Name	N	S	E	W														Height (M)	Height	
3	Western Red Cedar	<i>Thuja plicata</i>	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	40+	C - Low	Internal hedge. 1x moribund tree to north of hedge. Tidy and maintained.	This hedge is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. Remove moribund tree.	None	18	6	A
4	Berberis	<i>Berberis darwinii</i>	-	-	-	-	100	1	-	-	Middle aged	Fair	Fair	1.2	40+	C - Low	Internal hedge. Tidy and maintained.	This hedge is retainable and will be adequately protected by the position of the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	None	5	5	-

- 17 Crown Cleaning:** Cleaning out is defined as the removal of dead, dying or diseased branchwood, broken branches or stubs left from previous tree surgery operations (see also 16 Deadwooding) together with all unwanted objects, which may include ivy (if specified) and/or other climbing plants, nails, redundant cable bracing, rope swings, tree houses and windblown rubbish from the tree, and any such debris from any cavities within the tree.
- 18 Deadwood Removal:** Dead-wooding shall be defined as the removal of all dead and dying branches and limbs from the tree.
- 19 Crown Lifting:** Crown lifting shall be defined as the removal of all soft growth and branches or parts thereof which are below or which extend below the height specified in the tender documents. It is recognised that the resultant canopy base might not be one single level but might be stepped to allow for different clearances, for example where a tree overhangs both the footway and the road where different height clearances are required.
- 20 Crown Reduction:** Crown reduction shall be defined as the reduction of the complete outline dimension of the canopy, from the tips of limbs and branches to the main trunk, by pruning growth to an acceptable branch, twig or but to leave a flowing silhouette.

Appendix 2(11) Cascade Chart For Assessing Tree Quality

Category and definition Trees to be considered for retention	Criteria – Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
<p><u>Category High = A</u></p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially, if rare or unusual, or those that are essential components of groups, or of 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)	Green
<p><u>Category Moderate = B</u></p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	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	Blue
<p><u>Category Low = C</u></p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years; or young trees with a stem diameter below 150mm</p>	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 benefits	Yellow
<p><u>Category = U Trees unsuitable for retention</u></p> <p>Those of 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</p>	<p>NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</p> <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 U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease) or very low quality trees suppressing adjacent trees of better quality • Habitat reinstatement may be appropriate (e.g. U category trees used as a bat roost- installation of bat box in nearby tree) 			Red

Appendix 2(111)
Guidelines for the Planning, installation and
Maintenance of utility services in proximity to trees-
Based on information from National Joint Utilities
Group (NJUG)

Ideally all services should be placed outside of the trees root protection area, but in some situations this is not feasible due to the confines of the site. If services must be laid within the root protection area acceptable techniques are detailed below in order of preference.

- **Trenchless-** by use of thrust boring or similar techniques. The pit excavations for starting and receiving the machinery should be located outside of the root protection area. To avoid root damage, the mole should run at a depth of at least 600mm. Use of external lubricants on the mole other than water (e.g. oil or bentonite) should be avoided.
- **Broken trench-** by using hand dug trench sections together with trenchless techniques. It should be limited to practical access and installation around or below the roots. The trench must be dug by hand (see following comments re continuous trenching) and only be long enough to allow access for linking to the next section. The open sections should be kept as short as possible.
- **Continuous trench-** the trench is excavated by hand and retains as many roots as possible. The surface layer is removed carefully and hand digging of the trench takes place. No roots over 2.5cm diameter or clumps of smaller roots (including fibrous) should be severed. The bark surrounding the roots must be maintained. Cutting of roots over 2.5cm diameter should not be attempted without the advice of a qualified Arboriculturalist. If roots have to be cut, a sharp tool (defined as spade, narrow spade, fork, breaker bar, secateurs, handsaw, post hole shoveller, hand trowel) should be used.

Backfilling

Reinstatement of street works must comply with the code of practice New Roads and Streetworks Act 1991 (Specification for the reinstatement of openings in highways), but where tree roots are involved backfilling should be carefully carried out to avoid direct damage to retained roots and excessive compaction of the soil around them.

The backfill should incorporate an inert granular material mixed with top soil or sharp sand (not builders sand) around the retained roots. This will allow a measure of compaction for resurfacing whilst creating an aerated zone around the roots.

Roots and in particular fine roots, are vulnerable to desiccation on exposure to air. The roots are at greatest risk when there are rapid fluctuations in the air temperature around them (especially winter diurnal temperatures). It is vitally important that the roots are covered with sacking whilst the trench is open. The sacking should be removed once the trench is backfilled.

Planning of services

When laying new or replacement services it is wise to plan ahead to prevent future direct damage to the services from root growth by placing the services within a duct.

If roots have grown into a drain or duct and proliferated to cause a blockage, removal of the root mass will only have a temporary affect and the root will regrow. The fault is in the pipe or duct, not the tree roots and the only answer is to repair or replace the damaged area. Particular problems occur with old salt glazed pipes where clay has been used to seal the joints and has subsequently dried out leaving a gap for the roots to infiltrate.

A popular myth has arisen that tree roots are attracted to water or nutrients within piped systems, this is not so. Roots are adventitious and grow in all directions proliferating in areas where moisture or nutrients are present. They tend to grow near to the pipe to make use of the condensation or moisture build up on the outside of the pipe but will enter the pipe through any crack or damaged joint. They are not capable of breaking into sound pipes.



AllAboutTrees

Arboricultural & Ecological Consultancy
Chartered Arboriculturalists & Environmentalists

The Old School
Quarry Lane
Butterknowle
Co Durham
DL13 5LN

Telephone 01388 710481

Email – info@allabouttrees.co.uk
www.allabouttrees.co.uk

Registered in England & Wales No. 5301671
Registered Office: The Old School, Quarry Lane, Butterknowle, Co Durham,
DL13 5LN