

Arboricultural Impact Assessment

1 The Cottage, Old Cassop

August 2022

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Appendix Detail

1	Tree, Group & Hedge Details
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	Existing Tree Location Plan
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1.0 **Introduction**

1.1 **Survey Scope**

1.1.1 The survey has been conducted to consider the impact on the trees of the proposed development layout and associated infrastructure.

1.1.2 Trees have been surveyed in accordance with BS5837:2012 Trees in Relation to design, demolition and construction – Recommendations.

1.1.3 The trees have been plotted using positions as indicated on the topographical plan provided. Any other trees and shrubs have been included as groups and hedges within the survey. All measurements should be checked on site.

1.2 **Site Details**

1.2.1 A site visit was undertaken in July 2022.

1.2.2 There are three large mature trees within the existing garden area of the site and a small shrub group following the alignment of the low retaining garden wall. A further large mature tree is in a neighbouring property garden.

1.2.3 The existing dwelling is to the north of the parking and garden area and there is a small annex in the garden.

1.2.4 Access to the site is via the single track road onto the tarmac parking area.

1.3 **Existing Protection of Trees**

1.3.1 Trees can be protected by being located within a Conservation area or by virtue of a Tree Preservation Order. The Local Authority can advise as to whether either of these applies.

1.3.2 For a works to trees in a Conservation Area notice of 6 weeks of intent to carry out works needs to be made to the Local Authority. For trees protected by virtue of a Tree Preservation Order it is necessary to make an application to the Local Authority before any works can be undertaken.

1.3.3 It is an offence to undertake works on trees under protection without making the relevant applications.

1.3.4 Using Durham County Council's online facilities at the time of checking it has been ascertained that the site falls within the Old Cassop Conservation area (designated 1981) but there are no Tree Preservation Orders Imposed on any of the trees. This information should be confirmed with the Local Authority.

2.0 **Summary of Tree Information**

2.1 **Individuals and Groups**

2.1.1 There were 4 individual trees surveyed. 3 of the trees have been given a A category rating (A2) and 1 of the trees has been given a U rating (unsuitable to retain). In addition to the individual trees 1 group was surveyed.

2.2 **Root Protection Areas**

2.2.1 The root protection area is indicated for each tree and group on each of the plans. The red circles around the trunks indicated the root protection areas as calculated in accordance with the British Standard (BS5837:2012). They are indicative only and do not take into account site specific condition such as topography and underground land forms, built structures and underground services.

2.2.2 There should be no level changes made or excavation within the root protection area of the retained trees.

2.2.3 On this site it is likely that the root protection areas are not as indicated on the plans, there is a large amount of hard surfacing and some level changes that may have affected the root spread. However without investigations it should not be assumed that the roots are not beneath the hard surfaces and they will need to be lifted in the appropriate way (see later sections).



Figure 1. Some of the hard surfacing and level changes around the trees.

2.3 **Trees to be Removed**

2.3.1 Tree 3 is recommended for removal due to the presence of *Polyporus squamosus* (Dryad's Saddle).

2.3.2 Dryad's Saddle bracket attached to the trunk at a stump of a previously lost branch (figure 2) and a mature bracket has fallen to the floor (figure 3). These brackets usually appear on an annual basis during the summer and autumn months; although the decaying degraded brackets can often be seen all year round. They are commonly found on old pruning wounds. This fungus feeds on the heartwood of the tree and produces white rot. The implication of this is that the wood can become

brittle and affected limbs may be more susceptible to failure. There is no certain way of accurately estimating when this may occur and other factors such as adverse weather conditions could also contribute to their failure not solely their condition.



Figure 2. Dryad's Saddle on tree 3.



Figure 3. (a & b) Mature Dryad's Saddle on floor at base of tree.

2.3.3 Given the location of the tree being surrounded by buildings and an access road to other properties it would be prudent for the tree to be removed. This will remove the risk of damage should the tree or limbs fail.

2.4 **Additional Tree Works Required**

2.4.1 Tree 2 has a large deadwood branch to be removed.

2.4.2 Any tree works carried out are to be in line with BS 3998 (2010) – Recommendations for Tree Work and the appropriate applications in place where required.

3.0 **Tree Protection Measures During Development**

3.1 **General**

3.1.1 Tree 4 located in a neighbouring property garden is shown to have a root protection area extending into the area currently tarmac proposed to be garden. During the development of the proposed dwelling extension the existing tarmac surface should be retained as it will provide a working space without causing any unnecessary disturbance to the tree. Protective barriers will need to be installed following the alignment of the existing low retaining wall but in a position that also protected group 1 as indicated on the Tree Protection Plan. These barriers will need to remain in place of the entire development.

3.2 **Protective Barriers**

3.2.1 Protective barriers will need to be erected in the position as indicated on the Tree Protection Plan by the thick cyan line in order to ensure minimal impact on retained trees adjacent to the working area. The barrier position protects both underground and aerial portions of the tree where possible.

3.2.2 There are to be no works or storage of materials (temporary or permanent) behind the barrier position within the root protection areas of any of the trees. The barriers will need to be in place before any excavation/development work takes place on site. All excavation/building must be outside of the root protection area.

3.2.3 BS 5837:2012 suggests that the default specification for protective barriers is as follows: Vertical and horizontal scaffold frame work that can be well braced (poles driven into the ground) to resist impact and have welded mesh panels securely fitted to. However where underground constraint inhibit the use of driven poles other options could be considered, such as a free-standing scaffold support framework with pins to secure their position. It is essential that the barriers cannot be 'pushed/nudged' by machinery or persons during works decreasing the protection area.

3.2.4 If the above level of protection is considered not necessary and an alternative may be suggested and agreed by the local planning authority. Suggestions are welded mesh panels supported on rubber or concrete feet that are joined with anti-tamper couplers.

3.2.5 Fencing should also have signs attached to it to make clear that the area beyond it should not be entered, "Construction Exclusion Zone – No Access". In addition to this all persons entering site should be given an induction briefing on safe working with regards to the trees.

3.2.6 There should be no storage of materials within the exclusion zones or within the root protection areas of any other trees.

4.0 Construction/Demolition Methods

4.1 **Lifting of Existing Surfacing and Low Retaining Wall**

4.1.1 The existing hard surfacing (tarmac) and a small section of the low retaining wall is to be removed and replaced as part of the development. The root protection areas of the trees are shown to extend into these locations. Given the constraints of the hard landscaping and level changes the root spreads may have been affected. However without investigations it should not be assumed that the roots are not beneath the hard surfaces and they will need to be lifted in the appropriate way. This means where possible by hand, it is accepted that this may not be possible for all elements of the works. Where it is necessary to use machinery it should be positioned a sensible distance from the trunk of the trees on the hard surfacing to be retained and care taken when using the arms/boom to not cause damage to any trees or roots discovered beneath the surface. Any roots encountered must be treated in the appropriate way. There must be no level changes within the root protection areas of the trees. This all applies to trees 1 and 2 (indicated in figure 4) and tree 4. This phase of the development must only take place once the protective barriers as indicated on the Tree Protection Plan in appendix 2 have been erected and the extension of the dwelling completed.

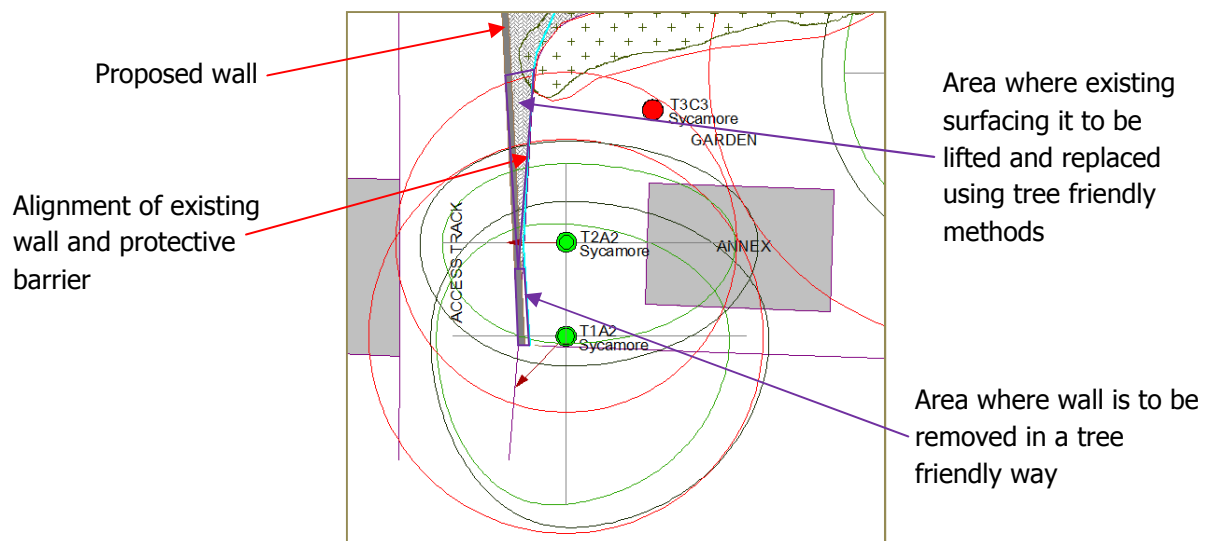


Figure 4. Areas for alternative tree friendly methods to be used

4.2 **New Surfacing**

4.2.1 When surfacing is lifted for any roots that have been exposed the guidance from the British Standard BS5837-2012 Trees in relation to design, demolition and construction – Recommendations is as follows. Any exposed roots should be wrapped or covered to avoid desiccation and protect them from environmental changes. The wrapping should be removed before new surface fill is installed; this should be as soon as possible. Roots requiring pruning (less than 25mm and not in clumps unless there has been consultation with a suitably qualified arborist and with appropriate permissions in place) can be done with an appropriate sharp tool. The roots must be surrounded by topsoil, loose sand (not builders' sand due to high salt content) or another appropriate loose granular fill. When the time occurs to install the new permanent surfacing (either hard or soft landscaping) the temporary fill should be removed and good quality uncontaminated soil or other suitable material used. There must be no contamination from the building materials to the exposed wounds on any of the trees/roots.

4.2.2 For new/replacement hard surfacing within the root protection areas of trees it will be necessary to use a no-dig tree friendly option. (If it is agreed that there are no roots in these areas following the lifting of the surfacing traditional methods can be used.)

4.2.3 ***Any areas where special construction methods are proposed for surfacing to be laid within Root Protection Areas must be agreed within the planning approval.***

4.2.4 Surface installation will be conducted in accordance with the guidance provided in BS5837: 2012 and as per the guidance provided by the supplier of the engineered solution.

4.2.5 Factors taken into consideration are as follows;

- The tolerance of the tree species.
- The design should not require excavation other than the removal of a turf layer or other surface vegetation using hand tools.
- Surfacing that is to be used by construction traffic should be suitable for purpose.
- Localised compaction should be avoided.
- The new permanent hard surface should not exceed 20% of the existing unsurfaced ground within the root protection area.
- Where there is the risk of waterlogging appropriate drainage must be included.
- Oxygen and water must be able to diffuse into the soil beneath the engineered surface.
- An appropriate sub-base must be used for a finished hard surface and can include three-dimensional cellular confinement systems or piles, pads and elevated beams to support bridging over roots (the use of two-dimensional load suspension systems is not recommended when the surface will be used by vehicles.
- The surface should be able to withstand deformation by tree roots and set away from the

4.3 **New walls and Fencing**

4.3.1 Where walls and fences are to be constructed as new boundaries or features and cross the root protection areas of trees it will be necessary for this to be done in a tree friendly way.

4.3.2 Walls will not be able to have traditional strip foundation and will require a pile and beam system instead and fences will need to be constructed so that all fence post are positioned to avoid major roots and post holes dug with care by hand.

5.0 **Future Site Management**

5.1 **On Completion of Development**

5.1.1 Following completion of the development and all materials including tree protection have been removed from the site a 'walk over' survey of the site should be undertaken. This survey will be to ascertain whether there has been damage to any trees and so remedial works can be undertaken where necessary although it is unlikely provided that the tree protection measures are adhered to.

5.2 **Additional Planting**

5.2.1 Any tree planting as part of the landscaping of the site should consider the following.

5.2.2 Careful consideration should be given to species selection and all new planting positions to ensure the trees can grow fully into maturity without requiring major or regular pruning works. The species choice will depend on what is to be achieved by the planting. Using heavy standards would provide immediate impact although the use of smaller standards is perfectly acceptable and less costly.

5.2.3 Usually the planting season for trees runs from mid-November to mid-March, when deciduous trees remain dormant. Any planting beyond March can be carried out although a comprehensive and regular irrigation programme will be required.

5.2.4 Staking and guards will be required initially when the tree is planted to provide support and protection. Larger guards can be fitted as the tree matures should it be required.

5.2.5 Watering will be essential following the planting of the tree in particular during the summer months (May to September). If conditions are wet additional watering may not be necessary.

5.2.6 Some pruning may also be required. At the time of planting any damaged branches must be cut back to a main junction or stem. At the end of the first season of growth, any branches showing signs of dieback must be cut back to live wood. Pruning must take place during the dormant period (mid November to mid March). Pruning works should be carried out to BS 3998 (2010), and if necessary a suitably qualified arborist consulted.

5.2.7 The above is not a full description of planting and care but gives an outline of timings and requirements.

6.0 **Conclusion**

6.1 Provided that protective measures as described in this report are adhered to and any tree works undertaken are done in accordance with BS3998 (2010) – Recommendations for Tree Work, the tree cover on this site should remain in order.

Appendix 1

Tree & Group Details

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
Individual Trees																		
1	Sycamore	13.5	5.0	8.0	7.5	5.0	730	8.8	1	1.0	2.0 SW	Mature	Fair	Fair	20+	A2	<p>Asymmetric crown shape.</p> <p>Trunk abuts southern boundary fence.</p> <p>Located in a small raised planting area.</p> <p>Overhead wires pass through crown.</p>	<p>A new boundary wall is to be constructed. This is shown to be within the root protection area of the tree. There is a low existing retaining wall and the tarmac surfaced access road already within the root protection area. It will be necessary for the southern end of the wall to be removed before the new wall can be constructed. Removal of the wall must be in a tree friendly way and by hand. If there are no roots beneath the wall then the new wall can be constructed in the usual way. If roots are beneath the wall it will be necessary to use an alternative construction method such as pile and beam (more detail in section 4.0).</p> <p>The tree will also be protected by the position of the barrier as indicated on the Tree Protection Plan</p>
2	Sycamore	14.0	3.5	7.5	4.5	5.5	630	7.6	1	1.7	2.0 W	Mature	Fair	Fair	20+	A2	<p>Asymmetric crown shape.</p> <p>1x large diameter branch of deadwood in crown.</p>	<p>Remove the deadwood branch from the crown.</p> <p>A new boundary</p>

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
																	Overhead wires pass through crown. (pole also close to tree)	wall is to be constructed. This is shown to be within the root protection area of the tree. There is an existing tarmac surfaced access road already within the root protection area; some of this will need to be lifted for the installation of the new boundary wall and new surfacing. The surface must be lifted in a tree friendly way and by hand. If there are no roots beneath the surfacing then the new wall and surfacing can be constructed in the usual way. If roots are beneath the surfacing it will be necessary to use an alternative construction methods (more detail in section 4.0). The tree will also be protected by the position of the barrier as indicated on the Tree Protection Plan
3	Sycamore	15.0	8.0	9.0	6.5	8.5	930	11.2	1	0	3.0 W	Mature	Fair	Poor?	<10	U	Previous pruning and decaying stumps within the crown. Epicormic growth. A mature Dryad's Saddle bracket has fallen from the tree and an young bracket is attached to the	The tree should be removed due to the identified fungus and limited life expectancy (more detail in section 2.3).

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
																	trunk. (see section XXX) Overhead wires pass through crown.	
4	Lime	15.0	7.5	7.0	7.0	6.0	1100	13.2	1	2.0	4.0 E	Mature	Fair	Fair	20+	A2	<p>The tree is located within a neighbouring property garden therefore a remote assessment was undertaken and dimensions have been estimated.</p> <p>The close boarded fencing inhibited any trunk inspection.</p> <p>The crown overhangs the existing garden and annex area.</p> <p>Previous pruning undertaken.</p> <p>Multiple stems above 2.0m.</p>	<p>Although the tree is located in a neighbouring property garden the root protection area on the plan is shown to extend into the site constraints such as level changes and hard surfacing may have resulted in the different spread to that shown. Therefore as a precaution the existing surface must be lifted in a tree friendly way and by hand. If roots are beneath the surfacing they must be treated in the appropriate way (more detail in section 4.0).</p> <p>The tree will also be protected by the position of the barrier as indicated on the Tree Protection Plan</p>
Groups																		
1	Elder, Ash	<3.0	-	-	-	-	<100	1.0	MS	0	-	Young to Semi Mature	Fair	Fair	10+	C1	<p>Multiple stemmed large shrubs and self seeded ash.</p> <p>Group overhangs the existing hard surfaced parking area.</p>	<p>It would be prudent to remove the self seeded ash.</p> <p>The group will be protected by the position of the barrier as indicated on the Tree Protection Plan.</p>

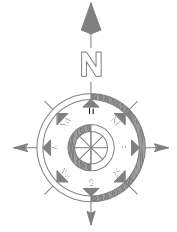
Appendix 2

Plans

Existing Tree Location Plan

Tree Protection Plan

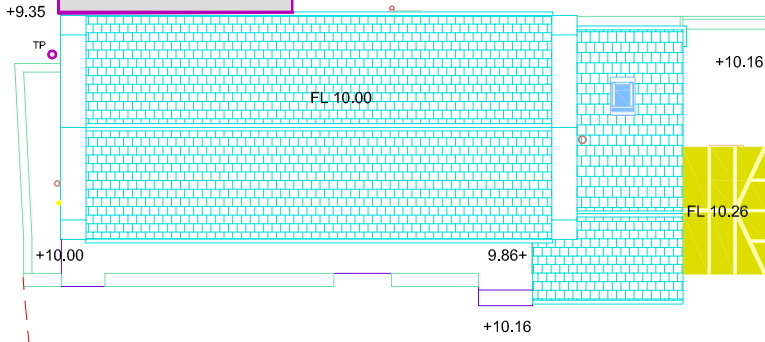
OLD CASSOP



CASSOP FARM BUNGALOW

THE HOLLYGARTH

TRAWBERRY HILL BARN



DRIVEWAY

THE SYCAMORES

T4A2 Lime

T3C3 Sycamore GARDEN

T2A2 Sycamore










ANNEX

T1A2 Sycamore

ACCESS TRACK

LLOWRIDGE BARN

Key

-  Trunk Position
-  Tree Number and Category Rating
A - High
U - Unsuitable to Retain
-  A - High Category with Green Centre
-  U - Unsuitable to Retain with Red Centre
-  Canopy Spread - Light green
-  Proposed Canopy Spread - Dark Green surrounding light green
-  Root Protection Area (as per calculations in BS5837 - 2012)
-  Direction of First Significant Branch
-  Group

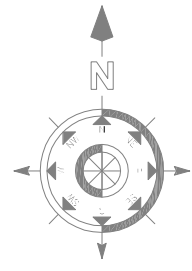
Existing Tree Location Plan
1 The Cottage
Old Cassop

1:200
at
A3

No.: ETLP-A

Drawn By: CR

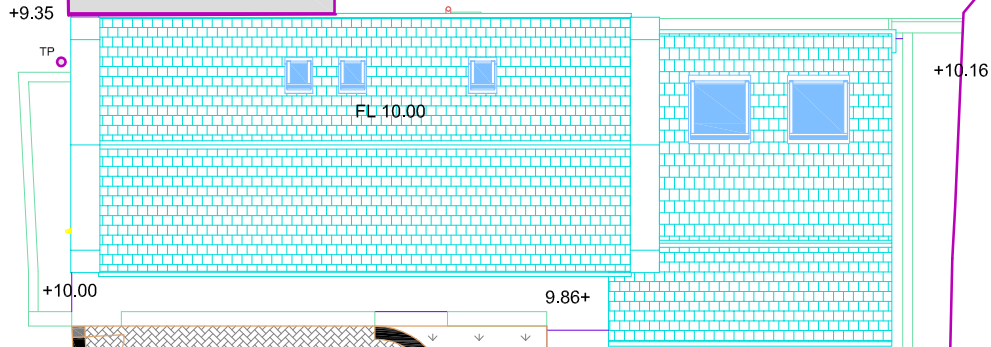
Date: August 2022



CASSOP FARM BUNGALOW

THE HOLLYGARTH

THE SYCAMORES



GARDEN

T3C3
Sycamore
GARDEN

T4A2
Lime











T2A2
Sycamore

ANNEX

T1A2
Sycamore

ACCESS TRACK

Key

-  Trunk Position
-  Tree Number and Category Rating
A - High
U - Unsuitable to Retain
-  A - High Category with Green Centre
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-  Canopy Spread - Light green
-  Proposed Canopy Spread - Dark Green surrounding light green
-  Root Protection Area (as per calculations in BS5837 - 2012)
-  Direction of First Significant Branch
-  Group
-  Protective Barrier

Tree Protection Plan
1 The Cottage
Old Cassop

1:200
at
A3

No.: TPP-A

Drawn By: CR

Date: August 2022