



Jack Pine Trees Ltd

ARBORICULTURAL IMPACT ASSESSMENT

Proposed development: Demolition of existing cottage and building of detached dwelling.

Client: Mr William Laws.

Site:
The Grove,
Bowden's Lane,
Penhow,
NP26 3AA

Agent:

As above

Author:

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Summary

Jack Pine Trees Ltd were engaged by Mr William Laws to provide an arboricultural impact assessment (AIA) for the proposed development at The Grove, Bowden's Lane, Penhow, NP26 3AA.

The proposed development is to demolish the existing semi-detached cottage and build a new detached two-story dwelling that includes the recently rebuilt garage and parking area. This AIA is a revision of the original tree survey for application 21/0865 and provides recommendations that enable the development to successfully take place within the existing tree constraints.

The survey identifies the trees that were lost to the previous development and details the minor changes to the tree dimensions in Appendix 1 that result from tree growth and/or pruning works that have been undertaken in the intervening period. These changes are reflected in the dimensions shown on the tree constraints plan (TCP) and the extent of the root protection areas (RPAs). The report and drawings represent the tree information requested by the council's Tree Officer in the pre-app process.

The mature Beech (T17) has the Tree Preservation Order (TPO) TPO 9 of 2021 protecting it. The tree was successfully retained during the construction process using a tree protection fence (TPF) and the use of a 'no dig' 100mm cellular confinement system that was laid on top of the existing tarmac. The cellular confinement system supports the access drive to the rental accommodation and remains intact, while the TPF will be extended to protect the lawn area and RPA of T17. With the agreement of the Tree Officer, this will consist of 1.2m high Chestnut paling fence supported on wooden tree fencing stakes, as described in BS5837:2012 Trees in relation to design, demolition and construction. Recommendations. This is because the development is a self-build and the client will be managing all works and deliveries on site.

The existing hard standing will remain intact and be where the demolished cottage is extracted over and where the mixing areas will be located. Storage of materials will take place in the existing garage.

The proposed development appears to impact the Eucalypt T21 in the neighbour's garden, where the new foul water drainage run to the sewage treatment plant appears to result in an incursion into the west quadrant of the RPA. However, the new drainage run was installed during the previous phase of the development, when the excavation for the run was installed in accordance with National Joint Utilities Group (NJUG) Volume 4 – Guidelines for the planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees: November 2007. No tree roots were encountered, and no excavation is necessary within the RPAs of T17 and T21 for this proposal.

The remaining trees are beyond the development site or will be protected by the Tree Protection Plan (TPP).

The remaining planting for 21/0865 will take place in the winter of 2025/26 and the planting of suitable tree and shrub species as part of a landscape scheme will soften the north boundary and promote biodiversity gain for this site.

1.0 Introduction.

1.1 Background Information.

I was instructed by Mr William Laws, verbally, to undertake a pre-development arboricultural impact assessment to BS5837:2012 at The Grove, Bowden's Lane, Penhow, NP26 3AA.

1.2 Scope of Survey.

- 1.2.1 Examine the principal trees associated with the site as highlighted on the supplied drawing.
- 1.2.2 Undertake a visual assessment of the condition of the trees.
- 1.2.3 Make recommendations for remedial work to enhance tree longevity and address any safety issues.
- 1.2.4 Estimate the potential future contribution that the trees may have to the site.
- 1.2.5 Provide nominal retention categories for trees with regard to possible future development of the site.
- 1.2.6 Provide an assessment of the impact on the trees and an arboricultural method statement for the installation of the driveway.

1.3 Limitations.

- 1.3.1 No documented information has been provided at the time of inspection regarding the following:

Historical circumstances and background relating to past planting and management of trees on the site.

Historic details of past land use, including mining.

The location and condition of drains and service runs.

The nature of soils and load bearing strata.

- 1.3.2 On consultation with the Newport City Council (NCC), it was confirmed that the Beech tree T17 is protected by TPO 9 of 2021.
- 1.3.3 Condition notes and recommendations are restricted to arboricultural considerations associated with tree condition and safety.

1.4 Inspection Notes.

- 1.4.1 The site was inspected by Stephen Clark BSc. (Hons) Env. Sci., MICFor, MArborA on November 11th, 2025. Weather conditions were overcast with rain.
- 1.4.2 The initial survey was restricted to the trees on and adjacent to The Grove, as shown on the site plan. The survey was carried out commencing with the Apple tree T1 to the north of the entrance to the property and proceeding in a clockwise direction around the garden and concluding with the Magnolia T29.
- 1.4.3 When assessing the trees, the following factors have been taken into consideration – species, maturity, structural condition, risk posed to people, roads and buildings in the event of failure, and likely response to remedial works.
- 1.4.4 The trees were inspected from ground level only and all measurements are approximate.
- 1.4.5 Age of trees has been divided into juvenile, semi-mature, early mature, fully mature and over mature.
- 1.4.6 A nominal retention value has also been given to the trees based on landscape contribution, health, maturity and life expectancy:-

A -	High:-	Prominent landscape trees of good form and health with good long-term life expectancy. Rare, historically and/or ecologically important specimens. Contribution of at least 40 years. (Shaded green on plan).
B -	Moderate:-	Mature trees of reasonable health and form but requiring remedial work. Tree groups with high collective value. Contribution of at least 20 years. (Shaded blue on plan).
C -	Low:-	Trees that may be safely retained (with or without remedial work), but of no particular merit. Trees with low life expectancy. Young trees that may be replaced. Contribution of at least 10 years. (Shaded grey on plan).
U -	Remove:-	Dead, decayed, dying or dangerous trees. Contribution less than 10 years. (Shaded red on plan).

2.0 The Site.

- 2.1 The site consists of the garden of The Grove with the trees, shrubs and hedges associated with it.
- 2.2 The development is to demolish the existing semi-detached cottage and build a detached dwelling in a similar location utilising the existing garage and parking area.

3.0 The Trees.

- 3.1 The trees associated with the proposed development site are mainly mature landscape/orchard/ornamental trees. There are also hedges and shrubs in the garden of the proposed development.
- 3.2 Some trees included in the original 2021 survey have been lost to the 21/0865 chalet development, disease and adverse weather. The new entrance gate and visibility splays have been installed while successfully retaining the apple tree T1. The Common ash T5 has not deteriorated through Ash Dieback Disease, as was expected and is being monitored. The Damson, T8, and plum, T12, were lost due to poor condition and T19, T22, T23, T24 and T25 were lost to the previous development. The Monkey Puzzle, T18, was moved temporarily and will remain within the TPF of T17 for the duration of the proposed development, before being permanently moved. The Magnolia, T29, was due to be felled, as part of the previous application, and this will now take place during the demolition process for this application.
- 3.3 The Beech tree (*Fagus sylvatica*), T17, is a mature tree, in the centre of the garden, and is protected with a TPO. It was successfully retained during the previous development and the TPF will be expanded to protect the lawn area in the RPA, and the cellular confinement system will remain in place as part of the drive, as agreed with the Tree officer.

4.0 Discussion.

4.1 Context

- 4.1.1 This report is a preliminary arboricultural impact assessment written to British Standard 5837:2012 - Trees in relation to design, demolition and construction. At this stage it is intended to inform the design process and discussion in relation to the proposed development and its impact on the existing trees.
- 4.1.2 This report is a revision of the original survey that was submitted to support 21/0865 and is intended to address the comments made by the Ecology Officer and Tree Officer in the pre-app report for the second phase of development on this site. As such the report aims to provide the requested information to the standards required and demonstrates that the potential conflicts or adverse impact between the retained trees and the proposed development have been designed out or addressed through recognised construction methods and are in line with the relevant policies.
- 4.1.3 The main potential impact of the proposed development on the trees on this site is where the new foul water drainage run encroaches into the RPA of T21. However, this drainage run was installed at the same time as the sewage treatment plant for

the previous development (21/0865) and when the RPA for T21 had a shorter radius. The works were carried out by hand, in accordance with NJUG 10 Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees - <https://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf> and no roots were encountered. The new inspection chamber is also beyond the revised RPA for T21.

- 4.1.4 The Magnolia, T29, was due to be felled to accommodate the revised visibility splays for the previous application, but it will be felled when the demolition works commence for this phase of the development.
- 4.1.5 The tree protection for T1 will be retained and a new run of TPF will be installed to protect the area of grass within the RPA of T17. This will be provided by constructing a protective fence of chestnut paling to 1.2m, from the shed by T17 to the shed closest to the existing cottage. This will create a construction exclusion zone and is suitable for this site because the self-build nature of the project means that the owner will be carrying out all the construction work and will work within the confines of the site without threatening the sanctity of the TPF and construction exclusion zone (CEZ).
- 4.1.6 Although it is not anticipated that any traffic will be required to use the drive below T17, the 100mm cellular confinement system that now forms the drive to the accommodation unit will continue to prevent any compaction of the roots in this part of the RPA.
- 4.1.7 The remaining trees and hedges are located beyond the potential impact of the proposed development and should be separated from the construction area by a TPF that will create a CEZ by separating the site from the rest of the garden.
- 4.1.8 The planting for the landscape scheme approved in 21/0865 was impacted by the droughts experienced in 2025, and the remaining planting will take place in the winter of 2025/26. The provision of suitable trees and shrubs in a landscaping scheme for this proposal will include trees in the hedgerow H6, which will soften views from the north, provide continuity of tree cover and contribute to biodiversity gain on this site.

4.2 Above ground considerations

Affects of the development on or near the site

- 4.2.1 The beech tree T17 will require remedial pruning works to address its condition and proximity to the proposed development site. This will require crown lifting to a height of approx. 4m around the skirt of the canopy. This will include the reduction of the low lateral limbs, in the west quadrant, to reduce the leverage on the south stem.
- 4.2.2 The trees adjacent to the proposed development site will be retained.

Pruning works to accommodate the development

4.2.3 To accommodate the proposed development the following remedial works will be required:

- T17 Beech - Crown lift to a height of approx. 4m around the skirt of the canopy. Reduce lateral growth by approx. 1-2m with 60-80mm pruning wounds in the west quadrant of the crown.
- T29 Magnolia – Fell.

4.3 Below ground considerations

4.3.1 The primary concern for the proposed development is the potential impact on the roots of T21, and the excavation required to install the new drainage run between the new inspection chamber and the existing sewage treatment plant.

4.3.2 However, the drainage run was excavated by hand and constructed in accordance with NJUG 10 Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees - <https://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf> during the previous development, so no impact on the RPA of T17 or T21 should be incurred.

4.3.3 The previous construction of the drive within the RPA of T17, used a cellular confinement system similar 100mm Cellweb® TRP, which remains in place and will continue to reduce compaction on any roots and assist in permeability and drainage.

4.4 Access

4.4.1 Access to the development site is via the track from the entrance gate to The Grove.

4.5 Development phase considerations

4.5.1 Due to the self-build nature of this development, the project management and site management will be carried out by the applicant who will ensure successful delivery of the development while preventing any damage to the trees on this site.

4.5.2 The remedial tree work should be agreed and carried out before the commencement of the project.

4.5.3 The TPF will be retained for T1, as shown. The TPF for T17 will be changed and installed as chestnut paling or similar between the shed adjacent to T17 and then run along the edge of the lawn area between the tree and the drive/parking area before tying into the shed adjacent to T18. This should provide physical

protection to the retained trees from movement of plant during the construction process.

- 4.5.4 The 'no dig' driveway and parking area will be retained and continue to provide protection from any vehicle movement within the RPA of T17.
- 4.5.5 The location of the mixing area will be on the existing hard surface of the parking area, and the storage of building materials will take place in or adjacent to the garage. Any burning areas should be indicated on the site plan. It should be noted that all these activities are potentially hazardous to trees. It is essential that all activities are carried out in such a manner as to prevent damage or spillage within the RPA.
- 4.5.6 Once the development works are completed, the TPF can be removed, and any landscaping can take place.

4.6 Landscape design and biodiversity gain.

- 4.6.1 It was noted that the planting required for 21/0865 had not been fully implemented, which was reportedly due to the droughts experience in 2025. This will now be completed in this planting season.
- 4.6.2 The limited scope for additional new planting will be addressed by planting suitable trees and shrubs in the adjacent hedgerows to soften the views from the north and contribute to biodiversity gain on this site.

5.0 Conclusion.

- 5.1 The trees associated with this property mainly achieve the retention values of 'B1' and 'C1', as shown on drawing 251215-TG-TCP-Rev D-NB. The proposed development at The Grove, Bowden's Lane, Penhow is to demolish the existing semi-detached cottage and build a new detached dwelling in a similar location to the existing cottage, as shown on drawing 251215-TG-AIA-Rev E-NB.
- 5.2 The drainage run between the new inspection chamber and the existing sewage plant was installed during the previous phase of the development when the excavation of the run was carried out by hand in accordance with NJUG 10 Volume 4: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. No tree roots were encountered, and it is not anticipated that any excavation will take place in the RPA of T17 & 21 for this proposal.
- 5.3 The protective fencing for T1 will be retained in its current location, while the TPF for T17 will be changed to use chestnut paling fence supported on stakes that will run from the shed by T17 and follow the edge of the lawn along the drive and around the parking area, before turning northeast to tie into the shed adjacent to

T18. The fencing should be strong enough to resist vehicle impact, as shown in drawing 251215-TG-TPP-Rev E-NB.

- 5.4 The access drive that traverses the RPA of T17, is constructed of tarmac supporting a cellular confinement system, such as 100mm Cellweb® TRP. This will remain in situ and prevent damage and compaction to the roots while retaining the protection of the existing tarmac.
- 5.5 The use of suitable trees and shrubs in the landscape scheme will provide continuity in tree cover and could contribute to biodiversity gain on this site.
- 5.6 The principle causes of damage to trees during development works are from root severance, compaction and changes in soil levels. It is therefore essential that all works on this site seek to keep the impact on the retained trees to a minimum, and that soil remediation takes place to improve the post development soil environment.
- 5.7 The majority of a tree's roots occur in the top 600mm of soil and can extend considerably further than the edge of the canopy. Guidance should be taken from BS5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.
- 5.8 All tree work should be undertaken prior to the development, conform to BS3998:2010 'Recommendations for Tree Work', and be carried out by a recognised contractor.

References:

Lonsdale, D. (1999). *Principles of tree hazard assessment and management*. HMSO, London.

Mattheck, C.Bethge, K. and Weber, K., (2015) *The Body Language of Trees: Encyclopaedia of Visual Tree Assessment*. Karlsruhe GmbH

British Standards Institution (2012). *BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations*. London.

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Mattheck, C.Bethge, K. and Weber, K., (2015) *The Body Language of Trees: Encyclopaedia of Visual Tree Assessment*. Karlsruhe GmbH

National Joint Utilities Group (2017) *NJUG 10 Volume 4: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*. London.

Appendix 1

Tree Survey Results

The Grove

Bowden's Lane

Penhow

Caldicott

NP26 3AA

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
T1	Apple <i>Malus domestica</i>	5	357@ 0.3	4.28	57.55	3 2.5 3 3	1.5 N	MA	F	F	Mature specimen. Forks at approx. 0.5m to give an open crown. Reasonable condition. Managed for fruit.	No action	>20	C1
T2	Apple <i>Malus domestica</i>	4.8	346@ 0.3	4.15	54.11	3 3 2 3	1.5 N	MA	F-P	F	Forks at 0.4m to give 4No. scaffold limbs supporting an open crown. Reduced vitality. Wind-blown appearance. Managed for fruit.	No action	>10	C1
H3	Hedge	0.6	40	0.48		1 1 1 1	0	MA	F	F	Hawthorn, Hazel, Laurel, Dogwood - maintained at 1.3m and 2m. New section added to accommodate altered visibility splay.	Mulch newly planted whips	>20	C3
T4	Apple <i>Malus domestica</i>	2.5	170 @ 0.25	1.94	11.82	1.5 2 1 2.5	1 W	MA	F	F	Forks at 0.3m to give open congested crown. Decay present in past pruning wounds. Canker also present. Pruned for fruit.	No action	>10	C1
T5	Ash <i>Fraxinus excelsior</i>	11	454	6.00	113.10	5.5 5 6 6	1.5 E	EM	F-P	F	Early signs of Ash Dieback Disease. Ivy clad. Internal dead wood present. Previous year's keys being retained. No significant deterioration in condition visible.	Re-inspect to assess condition when in full leaf	<10	U

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
H6	Hedge	1	50	0.60		1 1 1 1	0	MA	F	F	Hawthorn, Holly, Laurel, Thuja sp. Maintained annually.	No action	>20	C3
T7	Damson <i>Prunus domestica</i>	5	150	1.80	10.18	2.5 2 2 2	1.2 S	MA	F-P	F	Ivy clad hedgerow tree. Crown asymmetry to the west.	No action	>10	C1
T8	Damson <i>Prunus domestica</i>										Tree felled.	No action	<10	U
T9	Damson <i>Prunus domestica</i>	5	136 102	2.41	18.25	3 2.5 4 2	1 N	OM	F-P	P	Twin stem from base. Asymmetry due to linear group. New hedge planted on boundary.	No action	>10	C1
T10	Ash <i>Fraxinus excelsior</i>	8.5	170	1.63	8.35	3 1 3 2.5	2 W	SM	P	P	Ash Dieback Disease present. Internal epicormic growth present. Retaining previous year's keys.	Fell	<10	U

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
H11	<i>Forsythia sp.</i>	4.5	Av. 60	0.48		2 2 2 2	0.5 W	MA	F	F	Partially trimmed to step down to new hedge.	No action	>10	C1
T12	Plum <i>Prunus domestica</i>										Tree felled.	No action	>10	C1
T13	Norway Spruce <i>Picea abies</i>	10.6	265	2.84	25.35	3 3 3 3	1 W	SM	F	F		No action	>20	C1
T14	Variegated Poplar <i>Populus candicans</i> 'Aurora'	7	360	4.32	58.63	4 4 3 4	0	SM	P	P	Basal and stem epicormic growth. Major dead wood. Windblown tree. Reduced vitality – not viable long-term.	Remove major dead wood.	>10	C1
T15	Apple <i>Malus domestica</i>	5	314	3.67	42.31	3 3 1 4	0.5 E	MA	F	F	Crown asymmetry to west.	No action	>20	C1

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
H16	Hedge	4.5	Av. 62 @ 1.5m	0.60		2 2 2 2	0	MA	F	G	Forsythia/Laurel – managed annually.	No action	>20	C3

T17	Beech <i>Fagus sylvatica</i>	16	807	9.68	294.37	11 8 10 8	1.8 S	MA	F- P	F	Wind-blown tree with asymmetry from southwest to northwest. Epicormic growth on north aspect of stem trimmed to "hedge" form. Driveway within 0.5m of west aspect of stem. Drainpipe within 0.5 west aspect. Leaf mould/compost east aspect. Past pruning wound at 1.4-1.6m on north aspect decay present. Stem and root buttress impacting shed. Epicormic growth callousing around concrete support of shed roof. Further past pruning wound at 2.5 - northeast aspect - possible decay - no access to assess. Stem forks at 1.9m to give 3No. main scaffold limbs that support the crown structure. Possible compression forks in unions between stems. Further past and recent pruning wounds about low canopy. Crown is full, low and congested with crossing and rubbing limbs visible. Crack in bark of middle stem 1.5-2.5m south aspect. Possible limb fusion mid-crown. Tree touching adjacent shed/building. Past pruning wounds from remedial work carried out to facilitate recent development.	Remove organic matter from base. Crown lift to 4m above ground level to provide clearance over drive and site. Reduce low lateral limbs by approx. 1-3m with 40-80mm pruning wounds to reduce weight on west stem and balance crown.	>40	B1
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No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
T18	Monkey Puzzle <i>Araucaria araucana</i>	0.75	37	0.24	0.18	0.2 0.4 0.3 0.3	0.5 S	JU	G	F	Recently moved.	No action	>40	C1
T19	Apple <i>Malus domestica</i>										Tree felled.			
T20	Plum <i>Prunus domestica</i>	5.5	75 90	1.44	6.51	2 2.5 1 2.5	1.5 N	EM	F	F	Suppressed.	No action	>20	C1
T21	Eucalyptus <i>Eucalyptus sp.</i>	16	765	8.41	222.20	8 6 5 8	1.5 N	MA	F	F	On neighbouring property. Crown asymmetry to north and east over boundary. Wind-blown tree. Major dead wood evidence of shed limb and past pruning.	Remove major dead wood	>40	C1
T22	Lawson Cypress <i>Chamaecyparis lawsoniana cv.</i>										Tree felled.			

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
T23	Cotoneaster <i>Cotoneaster frigidus</i>										Shrub felled.			
T24	Bay <i>Laurus nobilis</i>										Shrub felled.			
T25	<i>Pittisporum tenuifolium</i> 'Variegatum'										Shrub felled.			
T26	Holly <i>Ilex aquifolium</i> cv.	7	170	1.20	4.52	1 3 3 3	0.5 E	EM	P	P	Upper crown dieback to approx. 4m. Raised ground levels to within 2m of stem.	No action	>20	C2
T27	Japanese Maple <i>Acer palmatum</i> 'Atropurpureum'	3	80	0.96	2.90	1.5 1.5 1.5 1.5	1.5 E	MA	F- P	F	Neighbours tree.	No action	>10	C1

No.	Species	Height (m)	Stem Ø (mm)	RPA Radius (m)	RPA (m ²)	N S E W	CC	MA	Vitality	Structure	Structural Condition/Site Notes	Recommendations	Estimated Useful Contribution (Years)	Retention Category
T28	Japanese Maple <i>Acer japonicum</i>	5	4 x 80	1.92	11.58	2.5 2.5 2.5 2.5	1 E	MA	F	F	Neighbours tree. Trimmed to compact form.	No action	>10	C1
T29	Magnolia <i>Magnolia soulangiana</i>	5.5	154 73 172	2.31	16.76	3 7 5 2	1 E	MA	F	P	Recent pruning over road - heavy asymmetry to south and east.	No action	>10	C1

Tree Survey Key:

Survey data:

Height (H):	Height in metres.
Stem Diameter (O):	Diameter of stem in millimetres measured at 1.5m above adjacent ground level. (If required).
Crown spread (CS):	Radius of crown in metres measured in metres from stem centre to north, south, east and west.
Maturity (MA):	JU = Juvenile - a young tree that can be easily re-planted. (1/5 th life expectancy). SM = Semi-mature - An established tree with considerable growth potential. (2/5 th of life expectancy). EM = Early mature - A tree reaching its ultimate height and whose growth is slowing however it will still increase considerably in stem diameter and crown spread. (3/5 th life expectancy). MA = Mature - A tree with limited potential for further significant increase in size although likely to have a significant safe useful life expectancy. (4/5 th life expectancy). FM = Fully mature - A tree with limited potential for further significant increase in size although likely to have a significant safe useful life expectancy. (4/5 th life expectancy). V = Veteran - A tree which shows ancient characteristics and/or of ecological, cultural or aesthetic value.
Structural (S):	G = Good - no significant structural issues. F = Fair - Structural issues that can be remedied. P = Poor - Structural issues that cannot be remedied.
Physiological (P):	G = Good - No significant health problems. F = Fair - Symptoms of ill health that can be remedied. P = Poor - Symptoms of ill health that cannot be remedied.
Conditions:	A written assessment of significant features to describe the condition of tree.
Recommendations:	A written description of the remedial works and re-inspection date recommended for the management of the tree.
Risk:	1 – High - Not acceptable 2 – Medium - Tolerable 3 – Low - Acceptable.
Work priority:	U – urgent – immediate action required. 1 – High (within 3 months) 2 – Moderate (3 months – 1 year) 3 – Low (1 – 3 years)
Inspection frequency:	Very high – 6 months. High - 12 months. Moderate - 18 months. Low – 3 years. Very low – 5 years.

General remedial tree work recommendations:

Formative prune -	Remove major dead wood, damaged, crossing and rubbing limbs.
Crown thin -	Selective removal of a percentage of lateral growth evenly throughout canopy whilst maintaining overall size and shape of crown.
Crown reduction -	Overall reduction of height and lateral growth, in metres, whilst retaining natural form of tree, to suitable growth points and given pruning wound dimension.
Crown lift -	Remove and/or prune low branches to raise crown to specified height in metres above ground level.

Glossary of Tree Survey Terms:

Tree Identification:

Species – Identification of tree using common and scientific names.

Height – Measurement of the tree's height in metres.

Stem diameter – Measurement of the tree's stem diameter at 1.5m above ground level in metres, centimetres or millimetres (specified).

Crown spread – Measured by its radius to the cardinal compass directions (N, S, E, W).

Age class assessment:

Maturity/Life stage –

- JU – Juvenile – a young tree that can be easily re-planted. (1/5th life expectancy).
- SM – Semi-mature – An established tree still to reach its ultimate height and spread and with considerable growth potential. (2/5th of life expectancy).
- EM – Early mature – A tree reaching its ultimate height and whose growth is slowing however it will still increase considerably in stem diameter and crown spread. (3/5th life expectancy).
- MA – Mature – A tree with limited potential for further significant increase in size although likely to have a significant safe useful life expectancy. (4/5th life expectancy).
- FM – Fully mature – A mature tree that is approaching senescence. (5/5th life expectancy).
- V – Veteran - A tree which shows ancient characteristics and/or of ecological, cultural or aesthetic value.

Classifications for distinctive trees:

- Notable – Mature trees that stand out in the local environment because they are large in comparison with other trees.
- Heritage – A tree that is part of our history and culture and can relate to specific historic events or people.
- Veteran – A tree which shows ancient characteristics and/or of ecological, cultural or aesthetic value.
- Ancient – Of great age for its species with veteran features.

Structural assessment:

(P) - Assessment of physical condition – by determining the overall structural condition of the various components of a trees physical structure.

- Roots – Assessing for root decay, root heave and any signs of root damage or stress.
- Stem – Inspecting for cracks, cavities, decay and other defects in the trunk.
- Branches – Examining branch unions, dead wood and signs of breakage or potential failure.

Good = no significant structural issues. Fair = Structural issues that can be remedied. Poor = Structural issues that cannot be remedied.

Health Evaluation:

(V) - Assessment of physiological condition and vitality – determining the overall vitality of the tree through its growth patterns in relation to vigour, foliar health and canopy condition.

- Foliage – Identifying signs of disease, pests, or nutrient deficiencies through leaf characteristics.
- Canopy – Assessing the density and distribution of foliage, as well as signs of dieback or unusual growth patterns.
- Vigor – A tree's inherent (genetic) capacity for growth and resilience and its ability to recover from damage.
- Vitality – Assessment of the tree's current state of health based on how it is influenced by environmental factors in relation to expected vigour, foliar health and canopy condition.

Good = No significant health problems. Fair = Symptoms of ill health that can be remedied. Poor = Symptoms of ill health that cannot be remedied.

Condition assessment: A written description recording the significant features observed during the assessment of the physiological and structural condition during the tree inspection.

Recommendations/Management considerations: A written description of the remedial tree work recommended to mitigate any significant features that need addressing. A recommendation for a continued inspection regime and/or any other management considerations that should be considered.

Risk – The risk from trees exists only if there is a potential for tree failure and potential for harm to result from that failure. The likelihood of failure, the potential target and the likely occupancy of the target are taken into account.

1. High likelihood of failure.
2. Moderate likelihood of failure.
3. Low likelihood of failure.

Urgency – The time frame within which the tree work recommendations should take place.

1. High priority – Work to be undertaken within 3 months.
2. Moderate – work to undertaken within 12 months.
3. Low priority – Work to be undertaken within 3 years.

Use of data: The data in this survey is for the use of the named client only.

Limitations: The limitations of the survey are detailed in the accompanying report.

Pre – development Tree Survey Assessment and Terminology

Local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for a proposed development. The potential effect of a development on trees, whether statutorily protected (e.g. by TPO/Con Area) or not, is a material consideration that is taken into account in considering planning applications. Consideration should be given to:

- Legal designations e.g. Tree Preservation Orders, Conservation Areas.
- Planning policy – National - National Planning Policy Framework (NPPF)/Regional/Local.
- Guidance and best practice: BS8545:2014. **BS5837:2012**, BS4428:1989, NHBC Chapter 4.2, BRE CP75/75, BRE 209.

The level of arboricultural information required for planning may depend on the Local Planning Authority (LPA) or type of application being made.

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations provides information, guidance and recommendations for the consideration and retention of trees during the planning and construction process. Information provided in our reports include:

Root Protection Area Calculation

RPA - Root Protection Area – a design tool used to show the minimum area around a retained tree that contains sufficient rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. Size and shape based on calculations and constraints noted in BS5837:2012 section 4.6.

RPA radius – Radius of RPA in metres based on the relevant calculation in BS5837:2012 section 4.6.

RPA area – Area of the RPA calculated using the RPA radius and applied in relation to the retained tree and onsite constraints.

Retention assessment:

ULE – Useful Life Expectancy – Estimated remaining contribution to a site in years (<10, >10, >20, >40)

CAT – BS 5837:2012 Retention category –

- U – Unsuitable for retention. 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.
- A – Tree(s) of high quality with an estimated remaining life expectancy of at least 40 years.
- B – Tree(s) of moderate quality with an estimated remaining life expectancy of at least 20 years.
- C – Tree(s) of low quality with an estimated remaining life expectancy of at least ten years, or young trees with a stem diameter below 150mm.

BS 5837:2012 Retention sub-category –

- 1 = Mainly arboricultural values. 2 = Mainly landscape values. 3 = Mainly cultural values including conservation.

For more detail see BS5837:2012 cascade chart below.



Tree Constraints Plan (TCP) – site plan indicating the location of the trees identified in the tree survey, their canopy dimensions, the root protection areas, amended RPA due to any physical constraints and the shade patterns of the trees.

Arboricultural Impact Assessment Drawing (AIA) – site plan super-imposing the proposed development on the tree constraints plan.

Tree Protection Plan (TPP) – site plan showing retained trees and how they will be protected during the construction phase.

Arboricultural Method Statement (AMS) – a written document providing a description and timeline of the activities required to successfully retain the trees during the proposed development.

Pre-development surveys:

Root Protection Area (RPA): RPA radius (m): Radius of RPA from stem. RPA area (m²): RPA in metres squared.

Crown clearance (CC): Height of first significant branch in metres above ground level and direction of growth.

ULE: Useful life expectancy – estimated useful contribution of tree to site (in years).

Retention Category: Category grading - U = Remove. A = High quality and value. B = Moderate quality and value. C = Low quality and value.
Subcategories - 1 = Mainly arboricultural values. 2 = Mainly landscape values. 3 = Mainly cultural values including conservation.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2



Appendix 2

Tree Constraints Plan

The Grove

Bowden's Lane

Penhow

Caldicott

NP26 3AA

Drawing number: 251215-TG-TCP-Rev D-NB

Appendix 3

Arboricultural Impact Assessment Drawing

The Grove

Bowden's Lane

Penhow

Caldicott

NP26 3AA

Drawing number: 251215-TG-AIA-Rev E-NB

Appendix 4

Shade Assessment Drawing

The Grove

Bowden's Lane

Penhow

Caldicott

NP26 3AA

Drawing number: 251215-TG-SP-Rev A-NB

Appendix 5

Tree Protection Plan

The Grove

Bowden's Lane

Penhow

Caldicott

NP26 3AA

Drawing number: 251215-TG-TPP-Rev E-NB