

Tree survey to BS 5837 (2012): with constraints and impacts

Wharfedale, Station Approach, Hythe CT21 5UJ

Summary

This report arises from a proposal to demolish Wharfedale and replace it with a terrace of four dwellings. The site is not in a conservation area but trees at or in the immediate vicinity of the site are protected by four Tree preservation orders.

I recommend the removal of several trees and shrubs, all of which have low or negligible retention value.

Encroachments into Root protection areas (RPAs) are easy to manage, especially where the existing tarmac of Station Road (which is responsible for most of the encroachments) is to persist. I specify methods in the event that any part of it is taken up, and for the footway proposed in the outer RPA of T21 Cherry.

I specify simple protection measures during site works and include a Schedule of tree works that consists largely of works for maintenance purposes.

Note:

Report 160401b. Tree survey to BS 5837 (2012) with constraints and impacts: Lower Station Approach, Hythe CT21 5UJ

... refers to an overlapping site that is to share the same pedestrian access, vehicular access and turning circle. Parts of the text in this report refer to the combined site.

Report: 160401a of 21 July 2016.

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Tree position and constraints plan	attached as separate document
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1. Objectives

To survey the trees on, and within influencing distance of, Wharfedale, Hythe.
To describe the constraints to the proposed development.
To discuss these constraints and to make recommendations as appropriate.

2. Preamble

There are several stages in the procedure recommended in BS 5837 (2012): *Trees in relation to design, demolition and construction – Recommendations*.

1. *Tree Survey and assessment of trees' conservation value.*
2. *Tree Constraints Plan.*
3. *Arboricultural Impacts.*
4. *Tree Protection Plan.*
5. *Arboricultural Method Statement.*

Any constraints to development identified in (2) are discussed in relation to the context in (3) to arrive at practical recommendations. Where appropriate, specific measures to avoid damage to trees during site works are set out in (4) and (5).

Trees were surveyed according to the precepts and procedures of Lonsdale (2006) and Mattheck & Breloer (1998).

The technical terms I use in this report are italicized in the text and defined in the glossary (Appendix I).

2.1. Companion report

Note that:

*160401b. Tree survey to BS 5837 (2012): With constraints and impacts
Lower Station Approach, Hythe CT21 5UJ*

... refers to an overlapping site that is to share the same pedestrian and vehicular access, and turning circle, as the development proposed for Wharfedale.

It was convenient to conduct the *Tree survey* for the whole (combined) site. The *Tree survey schedule*, *Tree position plan* and some parts of the text in this report also refer to the combined site (as they do in the companion report).

3. Scope

I visited the site on 22 April 2016. I inspected the trees and other vegetation with the aid of a *sounding mallet* and binoculars.

Measurements were by tape for (i) horizontal distance and (ii) tree diameter, and by inclinometer as appropriate for (iii) tree height.

4. Abbreviations and units

Dimensions are in metres (m) or centimetres, area is in square metres (m²). Trunk diameter was measured or estimated 1.5m above the ground unless otherwise stated.

SDC	Shepway District Council
G	Group
RPA	<i>Root protection area</i> (see glossary)
T	Tree

5. Plans and design

The topographical survey is *Additional detail to previous survey*, Dwg. P938, dated 3 March 2016, by ACAD Mapping Ltd.

The proposed design is *Preliminary design*, Dwg. 995/SK3, by Keith Barker Design, except that the access to Cannongate Road, proposed for the north end of the site, was revised on *Highway alignment vertical feasibility*, Dwg. 0001 Rev. A01, dated 11 July 2016, by Waterman.

The *Tree position plan* is a derivative of these plans.

I use my discretion to plot trees not shown on the topographical survey and believe that I have done this with satisfactory accuracy for the purpose.

6. Planning and other constraints

6.1. Planning constraints

Trees at or in the immediate vicinity of the combined site are protected by four TPOs:

*Identity in
this report*

TPO 11 (1999)	T1 Holly T2 Oak	T1 T2
TPO 4 (2000)	T1 Lime	T3
TPO 7 (2015)	T1 Sycamore T2 Sycamore	T11 T12
TPO 5 (2016)	A1 Trees of whatever species including sycamore situated within the dotted line on the map.	G4

The location maps from the four TPOs are given in Appendix II.

TPO 11 (1999) has a third tree, noted by hand, on the location map, but this tree is not mentioned in the First Schedule of the order. It is in the same position as T1 of TPO 4 (2000), and is assumed to be that tree.

TPO 5 (2016) is thought not to be relevant to the redevelopment of Wharfedale.

6.2. Wildlife constraints

Native wildlife is protected primarily under *The Wildlife and Countryside Act 1981* (as amended). The level of protection varies with species. Note that protection may include reckless as well as intentional harm, so that ignorance resulting in injury to some protected species is not a defence.

Animal species with a high level of protection include the *hazel dormouse* and all species of *bats*, while the *slow-worm* is protected under the 1981 Act from intentional killing or injury.

No native bird may be disturbed at its nest, which means that works to trees or other vegetation that contain nests should not be undertaken during the *nesting season*.

6.3. Miscellaneous constraints

Depending on whether the soil and subsoil is *shrinkable*, some trees may be within influencing distance of the proposed development according to guidance in NHBC (2009), which would suggest implications for foundation design to avoid the risk of *structural movement* (see Section 7.1).

7. Site description

The site is primarily south-facing, but also tends to slope down to Blackhouse Hill to the west. It consists of the existing property of Wharfedale, to be demolished, the almost unused Station Approach, and the vegetated bank on the east side rising to the properties on Cannongate Road.

During my site visit, the north boundary of the ownership of Lantern Cottage was marked by a new closeboard fence. I understand that this fence is to be moved.

I also noted recent tree reduction works to T21 Cherry, which had been carried out without my knowledge.

7.1. Geology and soil

According to the *Geology of Britain Viewer* the site is on Atherfield Clay. The exposure of this clay is some 100m wide, with Weald Clay outcropping downslope and Lower Greensand outcropping upslope. No superficial deposits are recorded, but some *colluvium* is likely. Atherfield Clay and Weald Clay are both shrinkable.

8. Introduction to Tree survey

This section consists of four parts:

- (i) The *Scheme for conservation value*, reproduced from BS 5837 (2012).
- (ii) *Notes* give further details of the survey method.
- (iii) The *Tree survey schedule* describes the trees surveyed in numbered sequence, classifies them according to conservation value and gives their RPA radius.
- (iv) The trees' positions are shown on the *Tree position plan*.

These parts are all given in full in Appendix III.

Tree works are recommended in two categories, arising from the proposed development (see Section 9 *Tree constraints and impacts*) and for maintenance purposes (see *Tree survey schedule*). They are consolidated in Section 11 *Schedule of tree works*.

The tree survey included an assessment of *tree risk* for on-site trees.

8.1. Perspective on conservation value

The bank rising on the east side to Cannongate Road has low amenity or arboricultural value. Its general appearance is scruffy, with rank herbs and *English elm* suckers. These latter no doubt arise from trees killed by Dutch elm disease and will be periodically re-infected, so that they are unlikely to attain any appreciable size. The vegetation stabilizes the bank to minimize *soil erosion*.

The other TPO trees are at the top of Station Approach and are largely unaffected by the proposal.

9. Tree constraints and impacts

See *Tree position and constraints plan* attached

Conservation value is rated from high (A) to low (C), while (U) is either undersize or valueless in BS 5837 (2012).

9.1. Loss of trees

Tree	Reason: Within footprint of proposed ...
<i>Combined site (affecting Wharfedale)</i>	
G10 (U) PART Sycamore	Vehicular access
G13 (U) PART Herbs and low vegetation	Turning circle
G14 (U) PART	Turning circle
G20 (C) PART Beech	Pedestrian access from Blackhouse Hill
T22 (C) Cordyline	Pedestrian access from Blackhouse Hill
<i>Wharfedale only</i>	
G15 (U) PART Mixed shrubs	Outbuilding
T16 (C) Cherry laurel	Terrace
T17 (C) Bay laurel	Terrace
G18 (C) Snake-bark maple	Terrace

Note: This vegetation consists either of hedge-form boundary vegetation or trees so small that they may be removed without the assistance of a tree surgeon. (See Schedule of tree works).

Impacts

No significant trees are to be lost.

9.2. Encroachment into Root protection areas

Tree	Encroachment by area	Reason: Proposed ...
<i>Combined site (affecting Wharfedale)</i>		
T3 (TPO) Lime	Uncertain	Change to layout of vehicular access. See text.
T12 (TPO) Sycamore (a)	See text	Existing surface of Station Road Turning circle
T12 (TPO) Sycamore (b)	4%	
<i>Wharfedale only</i>		
T21 (B) Cherry	5%	Footway

Impacts

The first two RPA encroachments in the table above (T3 Lime and T12 Sycamore (a)) are caused by the existing tarmac surface of Station Road. Any roots beneath this surface are protected from damage unless the surface is taken up.

Near T3 Lime a vehicular access to Cannongate Road is to be created. If the existing surface is accepted or is augmented without excavation (as is preferable from the point of view of the nearby trees), the impact on T3 will be minimal.

If any part of the surface within the RPA of T3 is to be taken up, the methods described in Section 10 are to be adhered to.

T12 Sycamore (b)

The second encroachment into the RPA of T12 Sycamore is by a turning circle proposed for the outer part of the RPA (5m from the tree). The encroachment is not significant if the methods described in Section 10 are adhered to.

T21 Cherry

The encroachment into the RPA of T21 Cherry is by a footway proposed for the outer part of the RPA (5m from the tree). Appropriate methods are described in Section 10.

Design suggestion

The footway proposed near T21 Cherry extends from Blackhouse Hill, round T21 in a semi-circle to the south and continues to the proposed turning circle on the east side of the site. (This is feasible because the fence enclosing the ownership of Lantern Cottage is to be moved.) However, since the footway is to serve the proposed terrace it seems more logical for the footway to pass round T21 in a semi-circle to the north.

10. Tree protection

Excavation in RPAs

Excavation within RPAs should be by hand whenever possible, or otherwise should minimize root damage, for instance by careful machine-scrape. If roots are pulled up mechanically they may shatter longitudinally (which is very damaging).

(i) Take-up of tarmac surface (near T3 Lime) – if required

This take-up may be required if the level is to be augmented. The take-up is to be by *pull-back* without disturbing the underlying sub-base or bedding course. The level can then be augmented as necessary with more sub-base. Compaction is allowed because the original course of sub-base should be incompressible.

(ii) Footway near T21 Cherry

The footway is to be in the outer part of the RPA, 5m from the tree. I recommend a maximum *formation level* of 20cm to conserve underlying roots, if necessary building up from ground level or using *no-dig* techniques.

(iii) General

In the event of root damage within an RPA:

- (i) Sever cleanly with secateurs or a pruning saw.
- (ii) Cross-cut roots of whatever size are not to be allowed to dry out. If necessary they should be covered with damp hessian or a membrane and watered from time to time.

Arboricultural supervision

If any root greater in diameter than 25mm is severed within 2.5m of any retained tree, the Shepway DC Tree Officer or other competent arboriculturist is to be notified and given the opportunity to inspect, to evaluate *tree risk* and the future wellbeing of the tree, and to make recommendations as appropriate.

Tree protection fencing

Tree protection fencing is to be erected prior to any site works (except for pre-development tree works) and removed after the main construction is complete. Heras fencing is acceptable only if the panels are clamped together and side-strutted to give some impact resistance. See *Tree position plan*.

Note: The exact position of the fencing around T21 Cherry is dependent on the final configuration of the boundary with Lantern Cottage.

11. Schedule of tree works

Works arising from the proposed development

NOTE: This vegetation consists either of hedge-form boundary vegetation or trees so small that they may be removed without the assistance of a tree surgeon.

Combined site

G10 PART Sycamore	Vehicular access
G13 PART Herbs and low vegetation	Turning circle
G14 PART	Turning circle
G20 PART Beech	Pedestrian access from Blackhouse Hill
T22 Cordyline	Pedestrian access from Blackhouse Hill

Wharfedale only

G15 PART Mixed shrubs	Outbuilding
T16 Cherry laurel	Terrace
T17 Bay laurel	Terrace
G18 Snake-bark maple	Terrace

For the remainder of this schedule, works to comply with BS 3998 (2010)

Works recommended for maintenance purposes

Combined site

T8 Sycamore

Fell

Reason: To anticipate the death or disfigurement of the tree following fire damage.

Note: Ownership uncertain – confer with neighbour before undertaking works.

T12 Sycamore

Raise crown to height 6m on west side (over Station Approach access).

Reason: To reduce the imbalance of the crown and for site access facilitation.

12. References

BS 3998 (2010). *Tree work – Recommendations*. British Standards Institution, London.

B.S. 5837 (2012). *Trees in relation to design, demolition and construction – Recommendations*. British Standards Institution, London.

Lonsdale, D. (2006). *Principles of tree hazard assessment and management*. Dept. Communities & Local Government and the Forestry Commission. Research for Amenity Trees No. 7. 4th Impression. The Stationery Office, London. ISBN 0-11-753355-6.

Mattheck, C. and Breloer, H. (1998). *The body language of trees: A handbook for failure analysis*. D.E.T.R. Research for Amenity Trees No. 4. 4th Impression. The Stationery Office, London. ISBN 0-11-753067-0.

Patch, D. & Holding, B. (2007). *Through the trees to development*. Practice Note 12, Arboricultural Advisory and Information Service. Alice Holt Lodge, Wrecclesham, Farnham, Surrey GU10 4LH. ISSN 1358-8249. (Supersedes APN 1 *Driveways close to trees*.)

13. Copyright and limitations

This report is for the client's exclusive use in serving the purpose for which it was written. It may not be otherwise used, reproduced or disseminated without the author's written consent.

APPENDIX I: DEFINITION OF TERMS USED IN THIS REPORT

Bats: All bats are European protected species, so that it is an offence to kill or injure a bat, whether deliberately or recklessly, to damage or destroy a roost site even if it is unoccupied, or to disturb a bat while it is occupying a roost.

Potential roost sites in trees include: voids created by woodpeckers and decay; fissures and crevices caused by injury or structural failure, including open or partly closed cracks and storm damage; loose dead bark separated from the underlying wood; and the pockets created by the intertwining stems of rank ivy (if greater in diameter than about 40mm). These features are associated with large and *veteran* trees but also occur in smaller and younger trees.

Before carrying out any tree work it is good practice to assess the trees concerned for their potential to contain bat roosts. If there is potential, a bat survey by a licensed surveyor should be carried out. For further guidance see SIN010 *Bats: European Protected Species*.

Colluvium: The soil accumulated downslope, the product of soil creep and erosion, influencing soil properties.

English elm: The English elm, traditionally classified as *U. procera*, is thought not to be native; the only elm certainly native to Britain is the wych elm (*Ulmus glabra*).

English elm and numerous taxa traditionally classified as subspecies or varieties of English elm resemble field elm (*U. minor*), whose natural range is mainly in southern Europe eastwards.

Formation level: The deepest point of an excavation; the starting level, usually expressed as a depth below ground level, for the construction of a structure.

Geocell: A kind of ground reinforcement cellular system made of geosynthetic and consisting of a three-dimensional honeycomb-like structure. When filled with soil or other fill it may protect a slope from soil erosion or spread load, and is often used in no-dig surfaces.

Geology of Britain viewer: An online service of the British Geological Survey. The solid geology and superficial sediments, at 1:50,000 or smaller scales, can be viewed for any postcode or map reference in the UK. <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Hazel dormouse: The hazel dormouse is a nocturnal and arboreal mouse-like mammal about 15cm long counting the slightly bushy tail. It is found in open woodland with a dense understorey and untrimmed hedges. The dormouse is omnivorous and has many food sources, but hazel (*Corylus avellana*) nuts are favoured prior to hibernation. See Natural England Species information note SIN005 *Dormouse: European protected species*.

Maturity: The stages in the life cycle of a tree. Young or juvenile trees have not yet reached $\frac{1}{3}$ of their expected mature height. Early-mature trees are between $\frac{1}{3}$ and $\frac{2}{3}$ of expected mature height. Mature trees are close to their full height and crown size, these dimensions being determined by the context, while main-stem diameter continues to increase relatively rapidly. In late-mature trees main-stem diameter (which by now is large) increases slowly, accumulated *deadwood* and defects in the aerial part are likely to be evident if the tree is unmanaged, and some crown separation is increasingly likely. Senescent trees are in a decline associated with lessening crown volume, so that the crown becomes sparse or dies back, developing relatively large-diameter deadwood.

Narrow fork: Where a stem divides into two at a narrow (acute) angle, as when two branches are co-dominant and close to the vertical and in multi-stem trees. The union is structurally imperfect but does not necessarily constitute a defect.

Nesting season: Conventionally from 1 March to 31 July, although subject to variation from year to year depending on the weather.

No-dig surface: A surface built largely on top of the ground, whose thickness (typically 10–20cm) is minimized by the use of a geocell or similar layer to spread load. The geocell is filled with stone typically 2–4cm across or other no-fines aggregate (sub-base is not suitable), and ideally surfaced with a no-fines gravel to allow gas exchange and the free passage of rainwater. The aim is generally to avoid prejudice to underlying tree roots.

According to guidance in Patch & Holding (2007), any vegetation should be killed by herbicide and removed at the ground surface, and the site levelled by filling low spots with sharp sand. Alternatively, some geocell manufacturers recommend a *formation level* of 10cm. The sub-grade must not be compacted, and where edge restraint is required the surface should be edged with boards pinned in position to minimize soil disturbance.

Post-development pressure for tree works: When a development is so close to a tree or trees that the residents are expected to be anxious about tree risk, excessive shading or other nuisance.

Pull back: The removal of a hard surface by a machine working backwards, pulling the broken pieces onto the remaining surface and avoiding any traffic on the newly exposed soil that would otherwise cause soil compaction or soil poaching.

Root protection area (RPA): The circular area around the base of a tree, expressed in m², that contains sufficient rooting volume to ensure the future well-being of the tree in the event of nearby soil disturbance (as on a development site). RPA radius is the radius of the circle.

Shrinkable soil: Soils that shrink on drying (and swell on re-wetting) are shrinkable. Several kinds of stiff clay have high shrinkability.

Slow-worm: A legless lizard up to about 0.5m long resembling a small snake. Slow-worms are native to Europe and western Asia and are found throughout Britain. They are not venomous but bite their prey. They prefer to hide under various objects warmed by the sun rather than to bask in the open. They hibernate in winter and may live for up to 30 years in the wild.

Soil erosion: The loss of soil from the surface of the land (with its deposition elsewhere). Soil may move down a slope owing to rainfall, run-off, freeze-thaw action, the habitual passage or burrowing of animals etc. Soil is much more resistant to erosion if vegetated because much of the force of rain is absorbed by the vegetation, the soil surface is otherwise physically protected, run-off is reduced and the plants' root systems help to bind the soil.

Sounding mallet: A mallet for tapping at a woody stem which might be defective, particularly the base of a tree trunk. The sound helps to reveal the presence of internal defects otherwise undetectable by visual inspection, the extent of defects that are largely internal or whether the bark is dead.

Stag-head: The outer branches of a tree that have died and now tend to protrude beyond the present extent of the crown. May be indicative of a progressive decline or of a past injurious episode (for example due to summer drought or insect infestation) from which the tree has since recovered.

Structural movement: A shift in a structure, typically causing cracks in the event of differential movement.

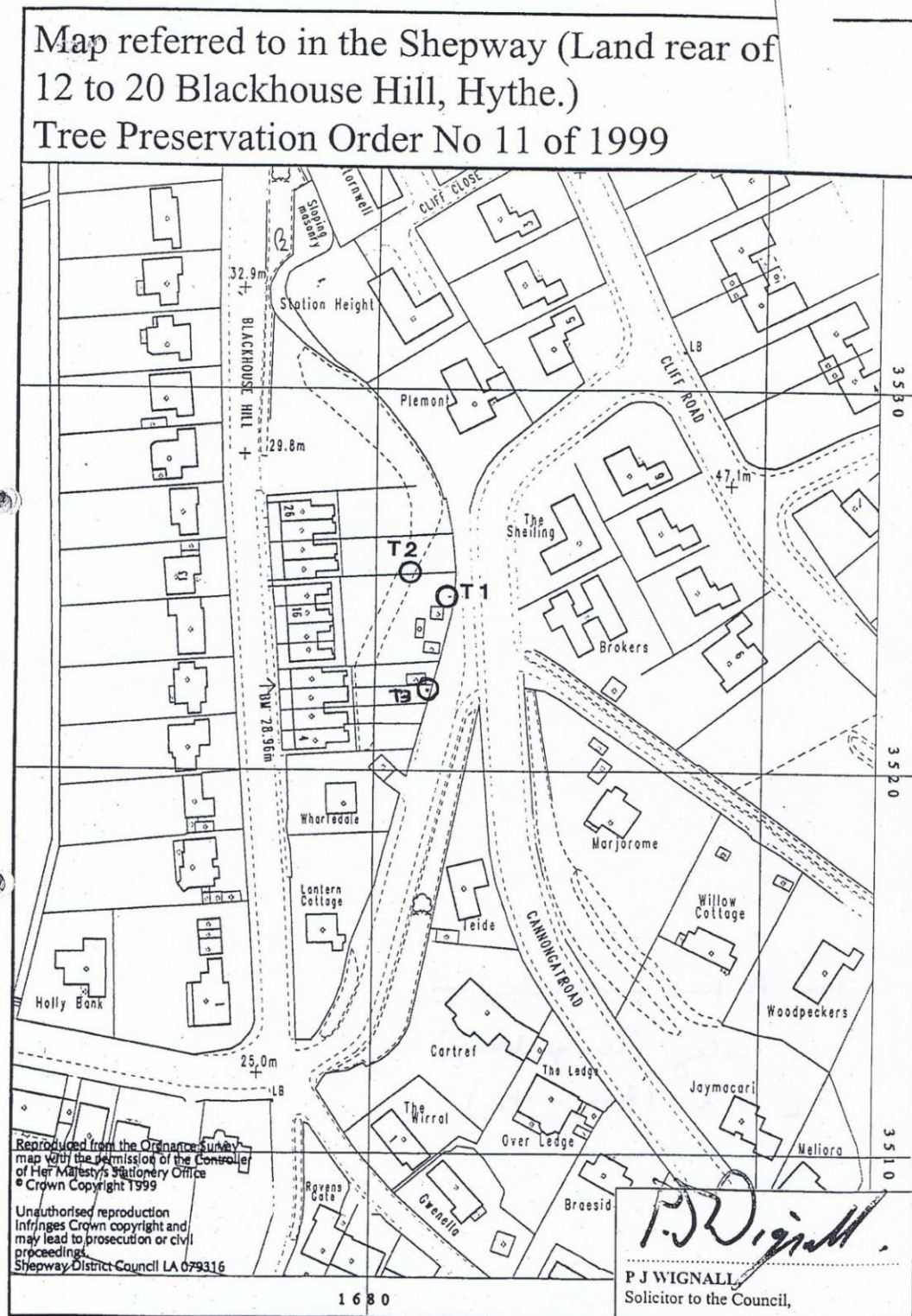
Sucker: A shoot arising adventitiously from the roots of a tree, often in response to pruning, damage, decline in the crown or felling. Suckers tend to be vigorous, sometimes forming a jungle if unchecked and reducing the vigour of the crown if the parent tree is still standing.

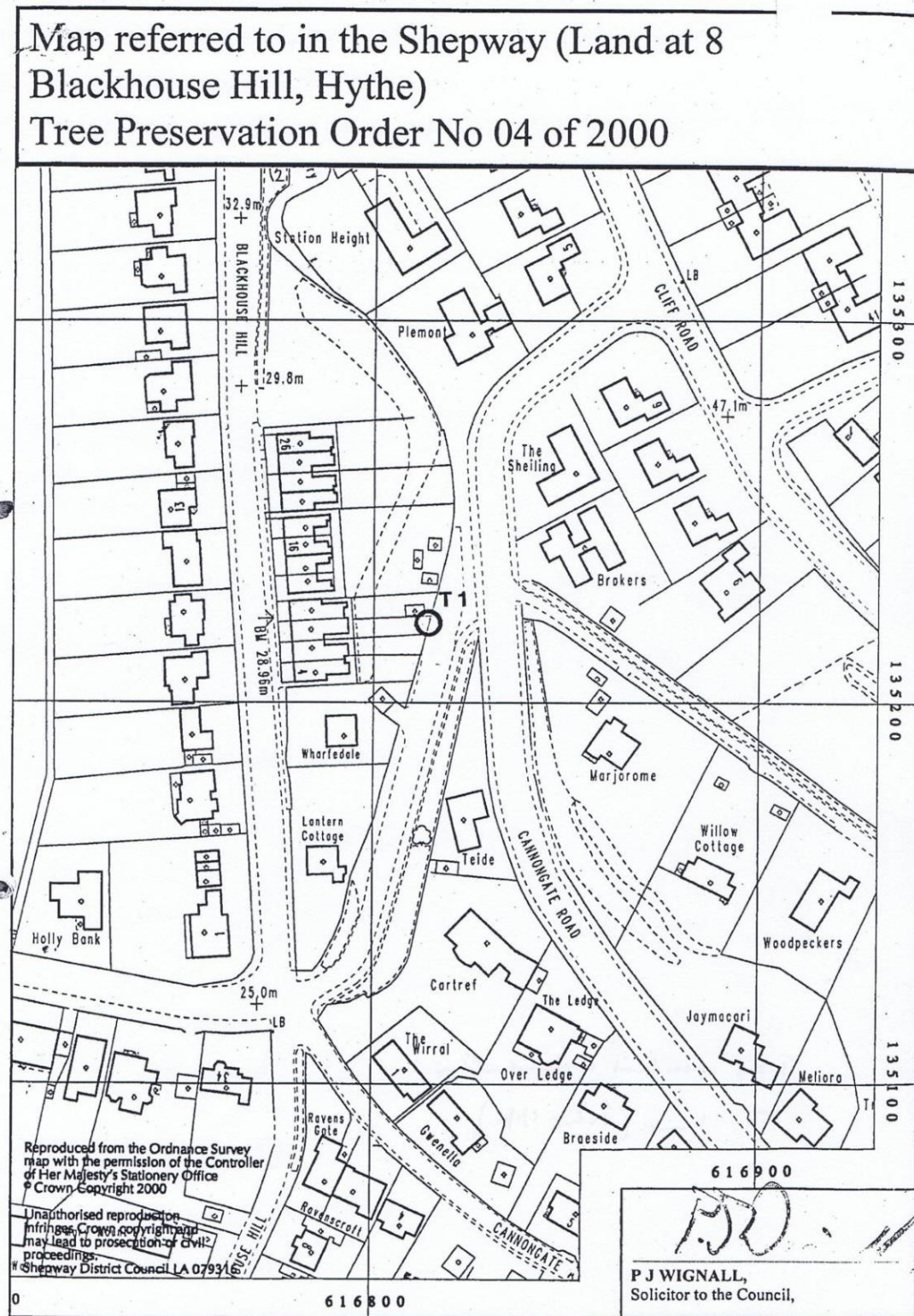
Tree risk: The risk that a tree causes damage or injury if it (or part of it) suffers structural failure. Tree risk is a composite of several variables. A hazard has the capacity to cause harm, which may be more or less serious depending on the magnitude of the hazard (for instance the weight of a branch and the height from which it would fall). Probability is the chance that a hazard eventuates, and is influenced by the loading at potential points of structural failure, the nature of any structural defects, the extent and effectiveness of any compensatory growth, and site factors. A target is anything within range of a hazard, *ie.* within the target area, that could suffer injury or damage if the hazard eventuated.

Tree risk comprises (hazard magnitude × probability × target value × occupancy).

Wildlife and Countryside Act 1981: The main Act giving protection to wildlife and supplemented by other Acts including the Countryside and Rights of Way Act 2000. The Act makes it an offence to kill or injure any wild bird (excluding game birds), damage or destroy the nest of any wild bird while being built or in use, or take eggs.

Woodland character: A wooded area in which the tree canopies are largely closed and the ground vegetation (if any) is unmanaged, giving a semi-natural appearance.

APPENDIX II: LOCATION PLANS OF FOUR TREE PRESERVATION ORDERS**(1) TPO 11 OF 1999**

APPENDIX II continued**(2) TPO 4 OF 2000**

APPENDIX II continued

(3) TPO 7 of 2015

Map referred to in the Shepway
(Land at and adjoining Teide, Cannongate Road, Hythe).

Tree Preservation Order No. 07 of 2015



APPENDIX II continued

(4) TPO 5 OF 2016



APPENDIX III: TREE SURVEY

(i) Scheme for retention value: Extract from BS 5837 (2012)

A: High quality and value, anticipated retention span at least 40 years.

1. Arboricultural value 2. Landscape value 3. Cultural/conservation value

B: Moderate quality and value, anticipated retention span at least 20 years.

1. Arboricultural value 2. Landscape value 3. Cultural/conservation value

C: Low quality and value, anticipated retention span at least 10 years. Not to be retained where they represent a significant constraint to the development.

U: Undersize (below 15cm diameter) or valueless (any existing value lost within 10 years).

(ii) Notes

Note 1: The scheme above is a guide. Conservation value relies on subjective assessments which are often debatable and context-dependent; they are discussed in more detail in the text.

Note 2: 'Crown radius' noted in the *Tree Survey Schedule* is the horizontal distance the crown extends from the trunk of the tree or, where stated, across the boundary into the site.

Note 3: A measurement prefixed by 'c' denotes that a measurement is approximate owing to a technical difficulty (eg. presence of ivy, asymmetrical stem etc.).

Note 4: A notional RPA is an estimate based on experience (in the absence of satisfactory guidance), as for a hedge or recently coppiced tree.

Note 5: Trunk diameter was measured 1.5m above the ground unless otherwise stated.

Note 6: Any collective or variable measurement is summarized as the maximum. For example, the maximum crown radius of T1 is 4m ('to 4').

(iii) Tree Survey Schedule – COMBINED SITE Wharfedale and Lower Station Approach, Hythe CT21 5UJ. Surveyed May 2016.

Tree/ Group	Species	Diam (cm)	Ht. (m)	Crown radius (m)	Head- room (m)	Value	RPA radius (m)	Comments	Recommendations*
T1	Holly (<i>Ilex aquifolium</i>)	c. 40	10	to 4	0	TPO (B)	4.8	T1 of TPO 11 (1999) <i>Mature</i> , ivy. Formless, foliated to ground level, edge of crown 3m from footway.	
T2	English oak (<i>Quercus robur</i>)					TPO		T2 of TPO 11 (1999) OFF-SITE. Largely obscured by T5. Not within influencing distance of site.	
T3	Lime (<i>Tilia</i> spp.)	c. 70	18	7	8	TPO (A)	8.4	T1 of TPO 4 (2000) OFF-SITE. Mature, crown raised to half height to give lollipop-like profile.	
T4	Sycamore (<i>Acer pseudoplatanus</i>)	c. 35	11	4	4	C	4.2	Early mature. Ivy almost to full height, vigour low. Headroom 4m over footway.	
T5	Sycamore		c. 15			U		OFF-SITE. Crown sparse. Not within influencing distance of site.	
T6	Elder (<i>Sambucus nigra</i>)	c. 30	10	to 4	0	C	3.6	Late-mature, ivy. Tree 3m from footway (cf. topo), near edge of crown 1m from footway. Intergrown with thicket of multi-stem privet, the crown of which extends to the edge of the footway.	
G7	Nettle, bramble, cow parsley					U		Bank.	
T8	Sycamore	35 GL	16	3	8	U	3.5	OWNERSHIP UNCERTAIN, straddling fence. Early-mature. Twin-stem from height 1m. Lower branches (to height 5-6m) recently roughly pruned and fire recently set at base, presumably in an attempt to kill the tree. Tree newly foliated but at least half is likely to die back later in the season.	Fell.
T9	Common ash (<i>Fraxinus excelsior</i>)	c. 30	14	3	9	C	3.6	OFF-SITE. Early-mature. Lower branches recently roughly cut back at height 2-8m.	
G10	Sycamore	c. 5	1.8			U		Abundant small stems pruned into an approximation of a hedge.	

T=tree; G=group; Diam=main-stem diameter; Ht=height; GL=ground level; RPA=root protection area; *Maintenance works.

(iii) Tree Survey Schedule continued – COMBINED SITE Wharfedale and Lower Station Approach, CT21 5UJ. Surveyed May 2016.

Tree/ Group	Species	Diam (cm)	Ht. (m)	Crown radius (m)	Head- room (m)	Value	RPA radius (m)	Comments	Recommendations*
T11	Sycamore	65	18	6	4	C	7.8	T1 of TPO 7 (2015) OFF-SITE. Late-mature. <i>Narrow fork</i> at height 2m with erosion of the bark on the west side and evidence of heavy loading on the west side. The upper crown is beginning to thin with some small-diameter <i>stag-heads</i> in the outer crown. The tree leans to the east. Very slow to flush, may be half-dead or dying.	
T12	Sycamore	36+58	18	8	to 3	A	8.0	T2 of TPO 7 (2015) Mature, twin-stem from ground level. Crown more extensive on site side, descends to lowest point over the private access of Station Approach.	Raise crown to height 6m on west side (over Station Approach access, reducing the imbalance of the crown.
G13	Herbs and low woody vegetation		< 5			U		Nettle, bramble, cow parsley, young sycamore coppice or seedlings, elm coppice or suckers.	
G14	Mainly privet (<i>Ligustrum vulgare</i>)		1.5-2.0			U		Trimmed hedge, variable in places with sycamore seedlings, ivy and clematis.	
G15	Mixed shrubs		to 3			U		In bed adjacent to path.	
T16	Cherry laurel (<i>Prunus laurocerasus</i>)	40 GL (MS to 15)	4	4	0	C	4.0	Mature, trimmed, globular crown. 2m from boundary, providing some screening.	
T17	Bay laurel (<i>Laurus nobilis</i>)	30 GL	3	to 2	0	C	3.0	Trimmed into hedge-form. Part of garden design.	
G18	Snake Bark Maple (<i>Acer</i> spp.)	20GL	4	2	1.5	C	2.0	Two trees of small-tree species, formerly topped at height 2m, dense globular crown.	
G19	Fruit trees	10-20	4-6	to 3	1.5	C	2.4	Mature, 3 pears, 3 apple, in step down from lawn. Dwarfing rootstocks, close to mature size, apples more vigorous than pears.	
G20	Beech (<i>Fagus sylvatica</i>)		5	1	0	C		Hedge, untrimmed, vigorous.	

T=tree; G=group; Diam=main-stem diameter; Ht=height; MS=multi-stem; GL=ground level; RPA=root protection area; *Maintenance works.

(iii) Tree Survey Schedule continued – COMBINED SITE Wharfedale and Lower Station Approach, CT21 5UJ. Surveyed May 2016.

Tree/ Group	Species	Diam (cm)	Ht. (m)	Crown radius (m)	Head- room (m)	Value	RPA radius (m)	Comments	Recommendations*
T21	Cherry (<i>Prunus</i> spp.) Ornamental flowering type	54	6	6	3	B	6.5	Mature, unusually large specimen. Grafted at height 1.5m, large swellings at this height. Tree largely free of defect. Recently topped unsympathetically at height 6m, removing most of the crown, with high probability of die-back from some of the stubs to leave large-diameter stag-heads.	
T22	Cordyline (<i>Cordyline australis</i>)	15	4	0.5	2	C	1.8	Juvenile.	
T23	Ornamental shrub species	c. 15 GL	3	2	0	U	1.5	Dense, hemi-spherical garden feature.	
G24	Mixed species	c. 5	1-3	to 1	0	C	1.0 notional	Hazel, Fuschia, other ornamentals, ivy, sycamore seedlings, all approximating to a variable hedge.	
T25	Holly (<i>Ilex aquifolium</i>)	10	5	to 3	2	U	1.2	Young. Ivy to full height, crown sparse, vigour low.	
T26	Wayfaring tree (<i>Viburnum lantana</i>)	c. 20 GL	4	to 2	1.5	C	2.0	Mature. Multi-stem thicket at height 0-1m, crown globular above this height.	
G27	Mixed species		4			C		Elm, hazel, hawthorn, sycamore seedlings. Dense, more or less unitary mass of woody vegetation at the top of the bank. Ground largely bare for 3m from access.	
T28- T36	Ground vegetation							Elder, hazel, ground ivy and garden escapes.	
T28	Sycamore	52	22	NS EW 8 ? 6 4	0-6	B	6.2	Late-mature. Ivy. Crown narrow, health good. Several shoots from near ground level to diameter 10cm giving foliage at height 0-6m, partly associated with rotten stub of 30cm diameter at height 1m on the south side (tree was formerly a twin-stem). Crown extends to just beyond mid-point of access.	
T29	Holm oak (<i>Quercus ilex</i>)	35	c. 18			B	4.2	Early-mature, at top of bank. Roots helping to stabilize bank.	

T=tree; G=group; Diam=main-stem diameter; Ht=height; MS=multi-stem; GL=ground level; RPA=root protection area; *Maintenance works.

(iii) Tree Survey Schedule continued – COMBINED SITE Wharfedale and Lower Station Approach, CT21 5UJ. Surveyed May 2016.

Tree/ Group	Species	Diam (cm)	Ht. (m)	Crown radius (m)	Head- room (m)	Value	RPA radius (m)	Comments	Recommendations*
T30	Sycamore	c. 30	18	6 into site	6	U	3.6	Early-mature. Ivy full height. Most of stem cross-section hollow at ground level, cavity open on south side. Crown unbalanced to north. Formally unsafe.	Fell.
T31	Sycamore	32	18	6 into site	6	A	3.8	Early-mature. Small amount of ivy, form good.	
T32	Holm oak	25	8			C	3.0	Early-mature. Vigour low, dominated and suppressed by neighbouring trees.	
T33	Sycamore	c. 40	20	8 into site	8	B	4.8	Early-mature. Ivy almost to full height.	
T34	Sycamore	c. 35	20	8 into site	6	B	4.2	Early-mature. Ivy almost to full height.	
G35	Sycamore	to 20	16			B	2.4	Juvenile multi-stems, coppice origin.	
T36	Lime	c. 100	18	to 8	6	B	12.0	OFF-SITE. Mature multi-stem from height 1m, intergrown with sycamores. Five stems arise at height 1m, diameter 20-50. The three on the north (site) side are separated from the rest by fissures and staining of the bark in the main stem to ground level. Tree risk significantly elevated.	

T=tree; G=group; Diam=main-stem diameter; Ht=height; MS=multi-stem; RPA=root protection area; *Maintenance works.